

# Schlage

## Electronic security

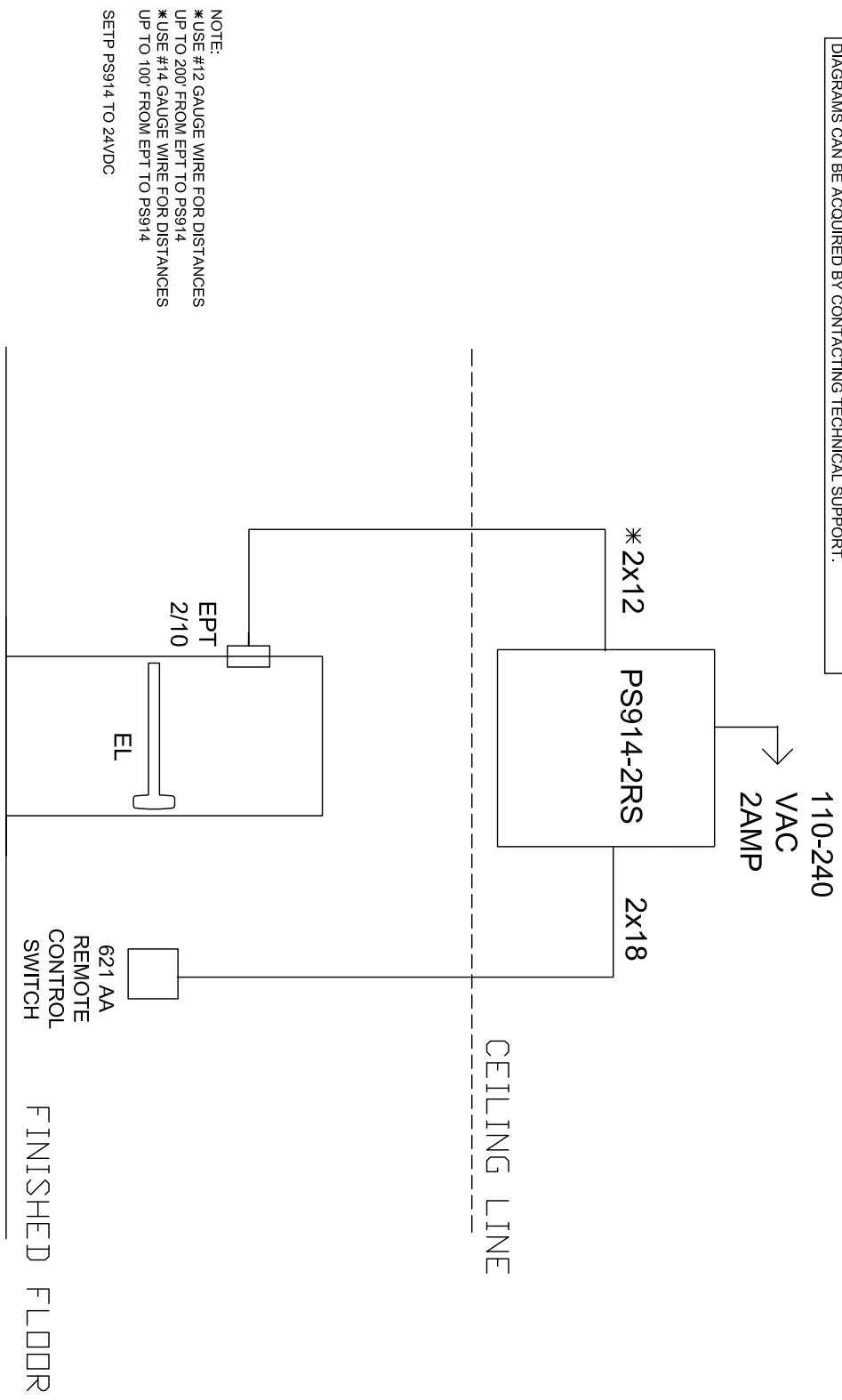
### System Components

### Wiring Diagrams

### Master Index



THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



NOTE:  
 \*USE #12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914  
 \*USE #14 GAUGE WIRE FOR DISTANCES UP TO 100' FROM EPT TO PS914  
 SETP PS914 TO 24VDC

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:	
1 VON DUPRIN DR FALCON EL PANIC DEVICES	
1 PS914-2RS POWER SUPPLY	
1 EPT POWER TRANSFERS	
1 621 AA REMOTE CONTROL PUSH BUTTON	
TYPE	REMOTE 621AA PB WITH SINGLE EL DEVICES

OPERATION: REMOTE CONTROL 621 AA PB TO SIGNAL SINGLE EL ELECTRIC PANIC BAR TO RETRACT FOR ENTRY. THIS CONFIGURATION REPRESENTS A NON FIRE RATED OPENING. IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN PS914 ENCLOSURE.	
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REVISION DATE	5-3-13
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**ALLEGION™**

TITLE: REMOTE 621AA PB WITH SINGLE EL PANICS

DRAWING TYPE: RISER DIAGRAM

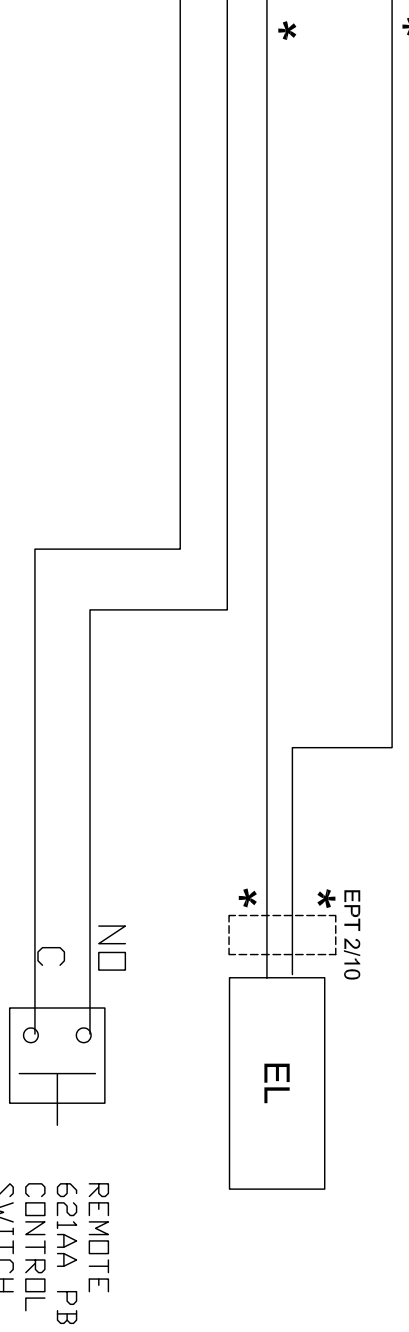
DWG NO:	109550
DRAWN/CHECKED BY:	B DOVE
REV:	A



THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.

110-240	GND	NC	C	NO	+24
VAC	NEU	AC MONITOR			
2AMP	LINE	PS914 POWER SUPPLY			
900	GND	*			
-2RS	02	*			
	I2	*			
	01	*			
	I1	*			
	SC	*			

NOTE:  
 \*USE #12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914  
 \*USE #14 GAUGE WIRE FOR DISTANCES UP TO 100' FROM EPT TO PS914  
 SET PS914 TO 24VDC



REMOTE  
 621AA PB  
 CONTROL  
 SWITCH

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD, MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:	1 VON DUPRIN DR FALCON EL PANIC DEVICES 1 PS914-2RS POWER SUPPLY 1 EPT POWER TRANSFERS 621 AA REMOTE CONTROL SWITCH
TYPE	REMOTE 621AA PB WITH SINGLE EL DEVICES

OPERATION:	REMOTE CONTROL 621AA PB TO SIGNAL SINGLE ELECTRIC PANIC BARS TO RETRACT FOR ENTRY. THIS CONFIGURATION REPRESENTS A NON FIRE RATED OPENING.
DATE DRAWN	5-3-13
REVISION DATE	5-3-13
DATE	5-3-13
REVISION	5-3-13
DATE	5-3-13
REVISION	5-3-13

**ALLEGION™**

TITLE: REMOTE 621AA PB WITH SINGLE EL PANICS

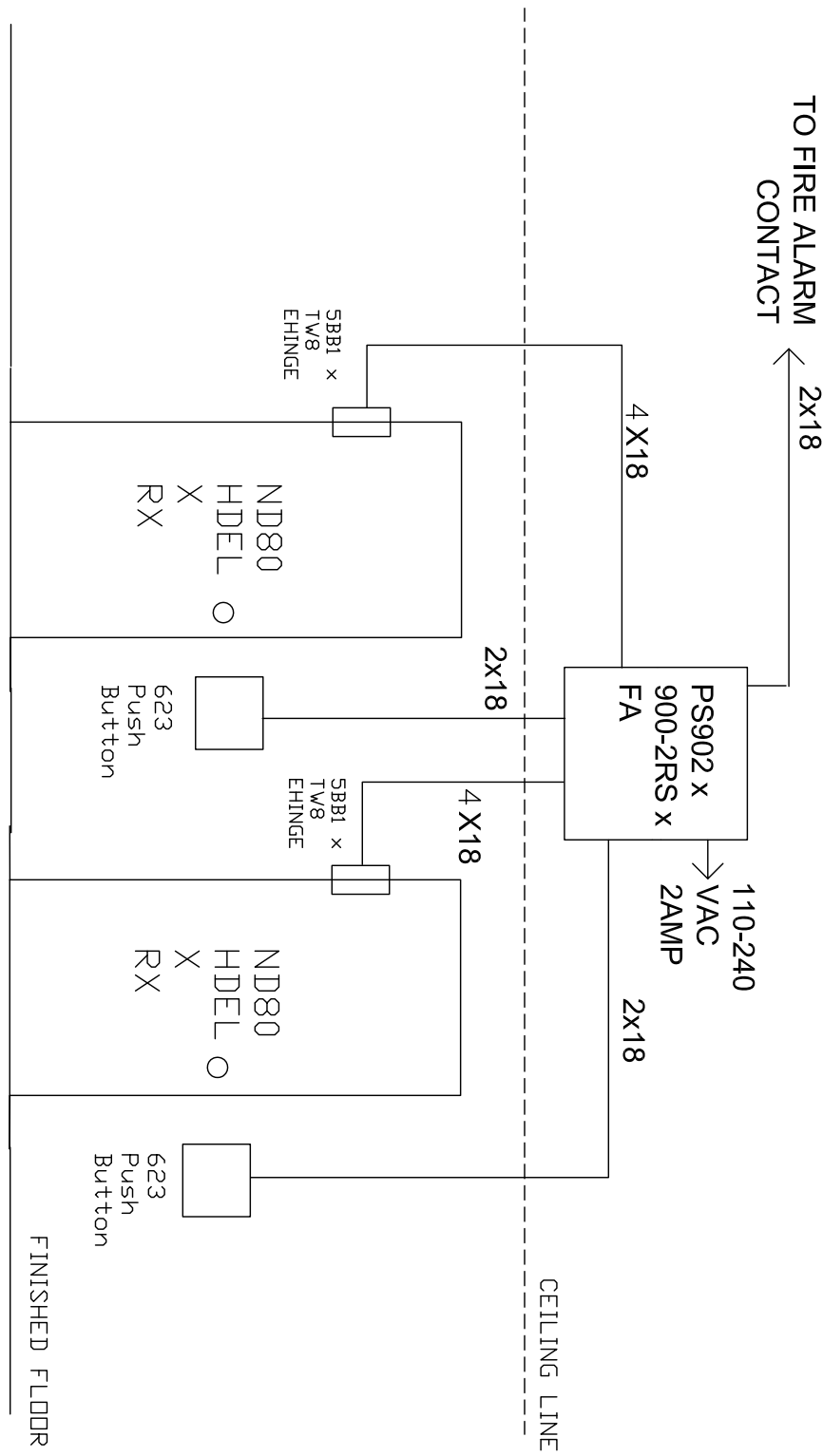
DRAWING TYPE: WIRING DIAGRAM

DWG NO: 109550

DRAWN/CHECKED BY: B DOVE

REV: A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD, MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY.  
 5) ADDITIONAL WIRING WILL BE REQUIRED FROM ACP THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:	1 PS902-2RS-FA 2 623 PUSHBUTTONS 2 5BB1 T/W8 EHINGES 2 ND80 HDL X RX LOCKSETS
TYPE	1 FIRE ALARM CONTACT BY BUILDING SYSTEM SHARED RESTROOM

OPERATION: COMMON RESTROOM SHARED BY 2 ROOMS. DOORS NORMALLY UNLOCKED. UPON ENTERING RESTROOM ONE OF THE MOMENTARY 623 PUSHBUTTONS WILL BE PRESSED TO LOCK BOTH DOORS. LEAVING THE RESTROOM - WHEN EITHER LEVER IS USED TO EXIT, RX SWITCH IN LEVER WILL ELECTRICALLY UNLOCK BOTH DOORS. FIRE ALARM ACTIVATION TO CAUSE NO EL LOCKS TO UNLOCK. IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN THE ISSUE POWER SUPPLY.	DATE DRAWN: 4-25-13	REVISION DATE: 4-25-13
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TITLE: ND80 HDL X RX LOCKSETS ON SHARED RESTROOM

**ALLEGION™**

DRAWING TYPE: RISER DIAGRAM

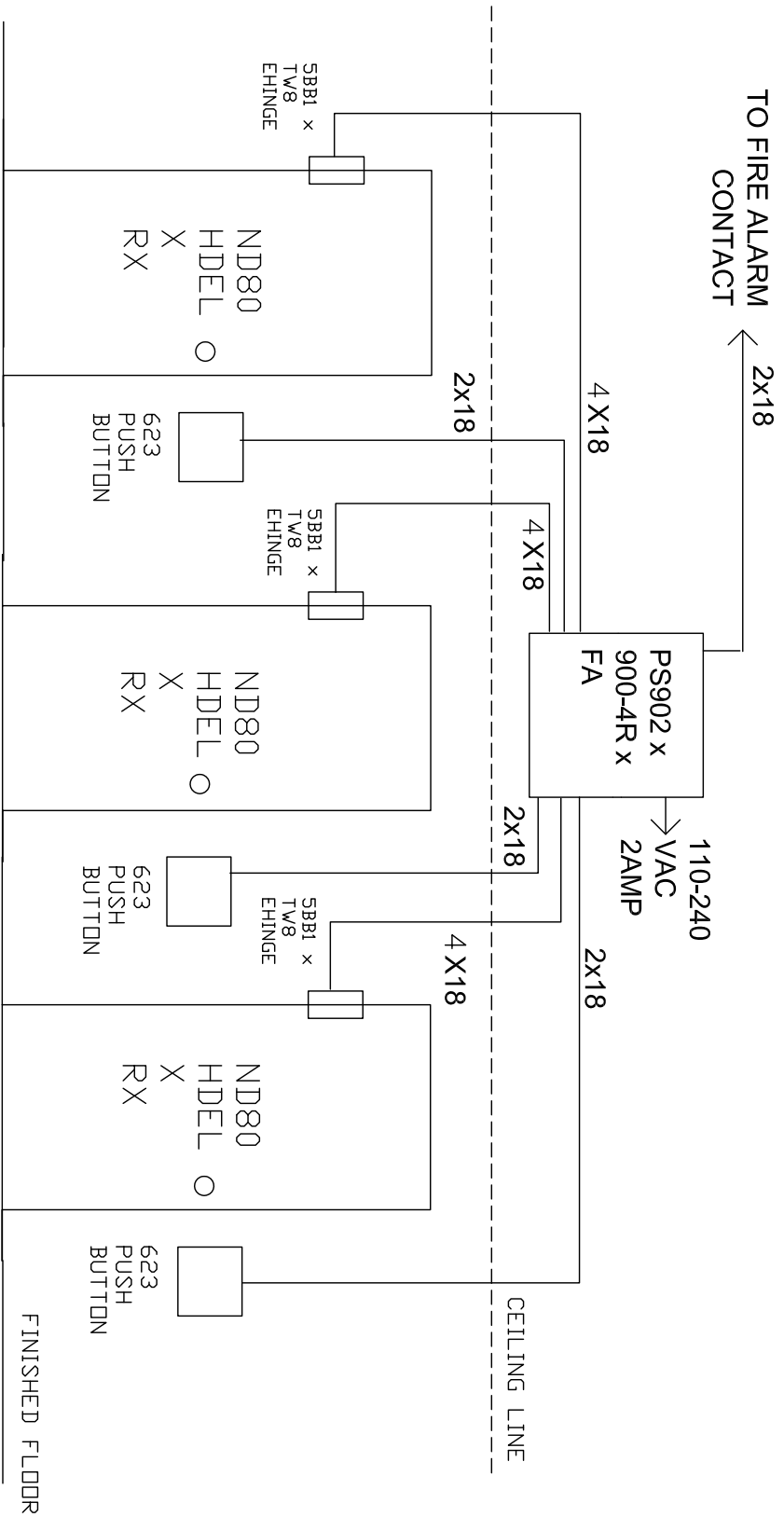
DWG NO: 109529

DRAWING CHECKED BY: B DOVE

REV: A



THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. 5) ADDITIONAL WIRING WILL BE REQUIRED FROM ACP THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:	
1	PS902-4R-FA
3	623 PUSHBUTTONS
3	SBBI TW8 EHINGES
3	ND80 HDEL X RX LOCKSETS
1 FIRE ALARM CONTACT BY BUILDING SYSTEM	
TYPE	SHARED RESTROOM - 3 DOORS

SEPARATE COMMON RESTROOM SHARED BY 3 ROOMS. DOORS NORMALLY UNLOCKED. UPON ENTERING RESTROOM ONE OF THE MOMENTARY 623 PUSHBUTTONS WILL BE PRESSED TO LOCK ALL DOORS. LEAVING THE RESTROOM - WHEN ANY LEVER IS USED TO EXIT. RX SWITCH IN LEVER WILL ELECTRICALLY UNLOCK ALL DOORS. FIRE ALARM ACTIVATION TO CAUSE ALL ND EL LOCKS TO UNLOCK. IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN THE PS902 POWER SUPPLY.	
DATE DRAWN	4-30-13
REVISION DATE	4-30-13
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**ALLEGION™**

TITLE: 3 ND80 HDEL X RX LOCKSETS ON SHARED RESTROOM

DRAWING TYPE: RISER DIAGRAM

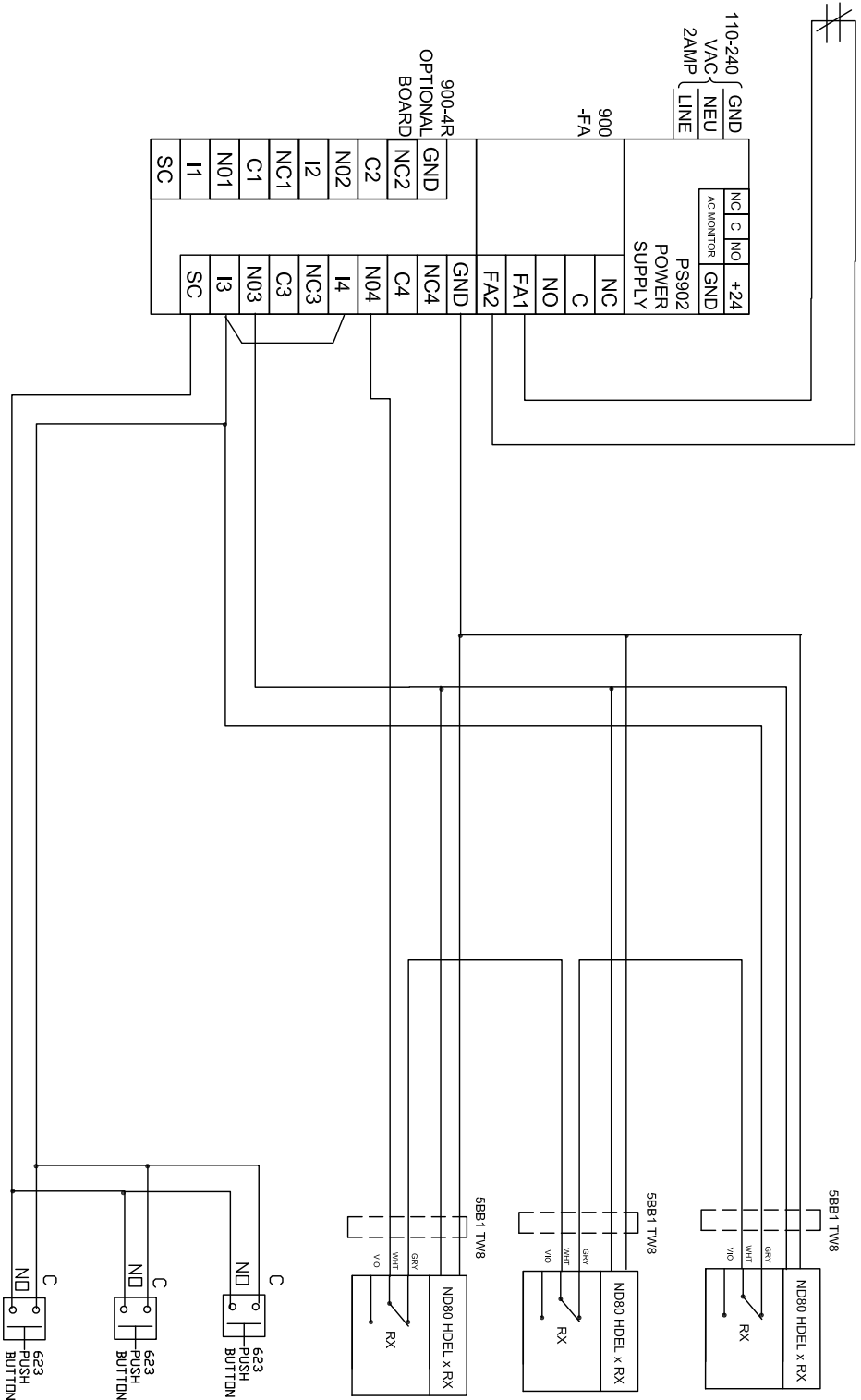
DWG NO: 109537

DRAWING CHECKED BY: B DOVE

REV: A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.

NORMALLY  
CLOSED  
FIRE  
ALARM  
CONTACT



NOTES:  
1) ALL LOW VOLTAGE WIRING TO BE STANDARD MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:	
1	PS902-4R-FA
3	623 PUSHBUTTONS
3	5B81 TW8 HINGES
3	ND80 HDL X RX LOCKSETS
1 FIRE ALARM CONTACT BY BUILDING SYSTEM	
TYPE	SHARED RESTROOM -
	3 DOORS

OPERATION:	
COMMON RESTROOM SHARED BY 3 ROOMS. DOORS NORMALLY UNLOCKED.	
UPON ENTERING RESTROOM ONE OF THE MOMENTARY 623 PUSHBUTTONS WILL BE PRESSED TO LOCK ALL DOORS.	
LEAVING THE RESTROOM - WHEN ANY LEVER IS USED TO EXT. RX SWITCH IN LEVER WILL ELECTRICALLY UNLOCK ALL DOORS.	
FIRE ALARM ACTIVATION TO CAUSE ALL ND EL. LOCKS TO UNLOCK.	
IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN THE PS902 POWER SUPPLY.	
DATE DRAWN:	4-30-13
REVISION DATE:	4-30-13

**ALLEGION™**

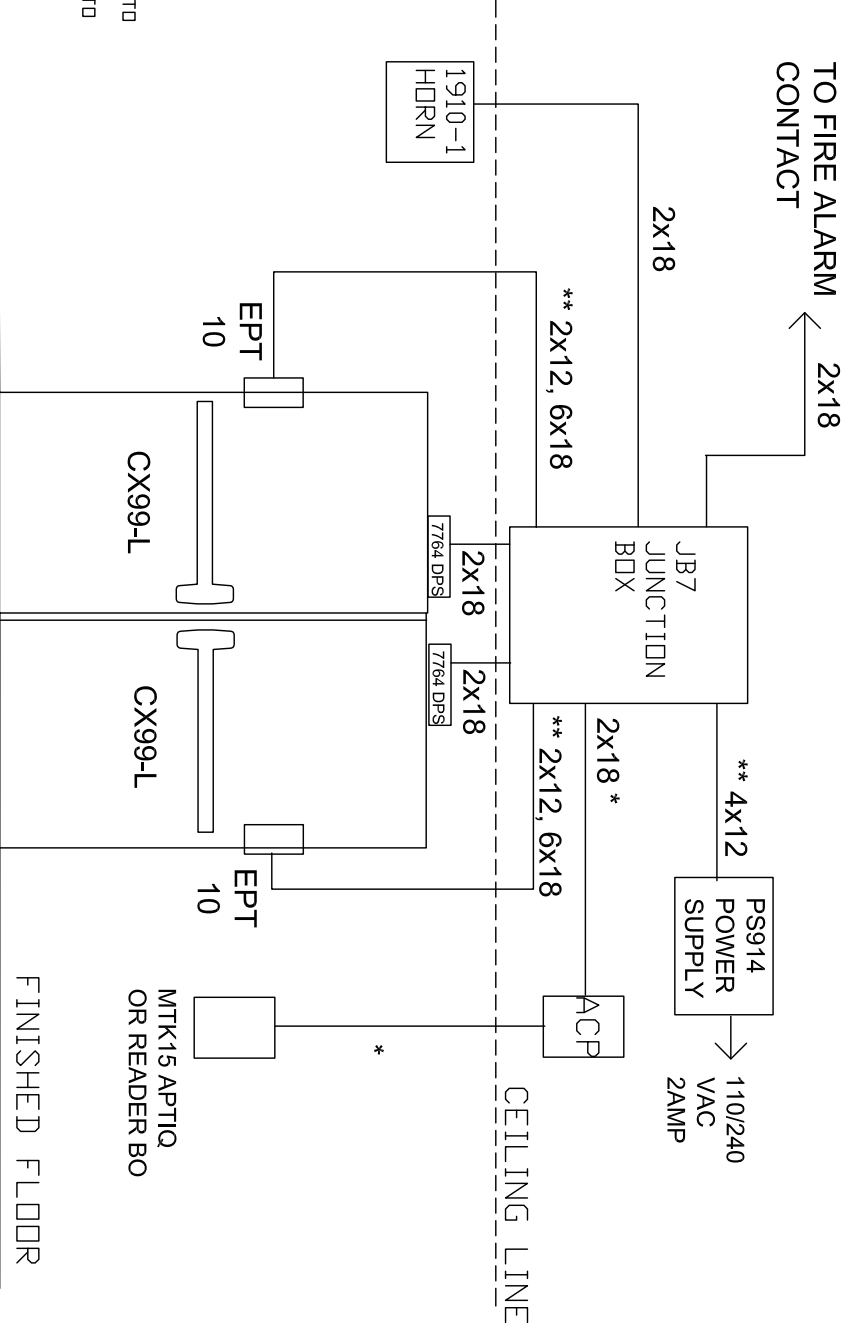
TITLE:  
3 ND80 HDL X RX LOCKSETS  
ON SHARED RESTROOM

DRAWING TYPE:  
WIRING DIAGRAM

DWG NO.: 109537  
DRAWN/CHECKED BY: B DOVE

REV: A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



\*\* USE 12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914 OR USE 14 GAUGE FOR DISTANCES UP TO 100' FROM EPT TO PS914

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:	
2	CX99-L RIM DEVICE
2	EPT10
2	7764 DPS
1	JB7 JUNCTION BOX
1	MULLION
1	1910-1 HORN
1	PS914
1	MTK15 READER BY ACP BO
1	FIRE ALARM CONTACT

OPERATION:	
CHECKS TO PROVIDE DELAY EGRESS, WHEN CX IS IN ALARM AUDIBLE WILL SOUND IN CX DEVICE AND EXTERNAL 1910-1 HORN.	
FIRE ALARM TO RELEASE DOORS FOR IMMEDIATE EGRESS.	
STAGGER REARM TIMES ON CX DEVICES BY SETTING SWITCHES ON CX PCB DIFFERENTIALLY.	
MTK15 READER TO RELEASE BOTH CX THROUGH ACP CONTROL CONTACT FOR AUTHORIZED PASSAGE. MTK15 OR KEYSWITCH IN CX DEVICE TO RESET CX FROM ALARM.	
IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN JB7 JUNCTION BOX.	

TITLE:  
**CX DOUBLE DOOR CX WITH PS914**

**ALLEGIION™**

DRAWING TYPE:  
**RISER DIAGRAM**

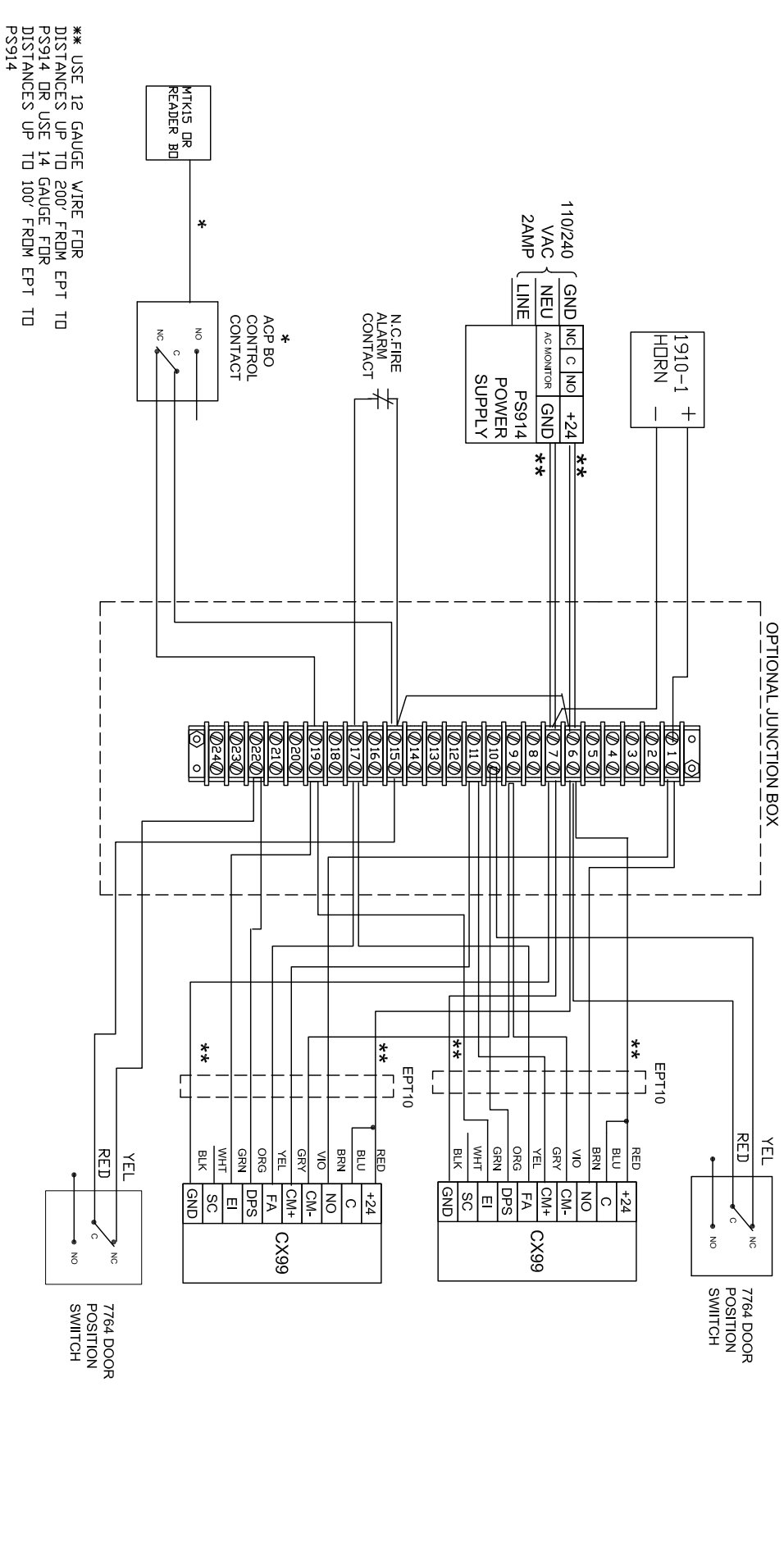
DWG NO.: 109520  
 DRAWING CHECKED BY: B DOVE

REV: A

DATE DRAWN	REVISION DATE
4-22-13	4-22-13

TYPE:  
 DELAYED EGRESS  
 DOUBLE DOOR

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



\*\* USE 12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914 OR USE 14 GAUGE FOR DISTANCES UP TO 100' FROM EPT TO PS914

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD, MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY.  
 5) ADDITIONAL WIRING WILL BE REQUIRED FROM ACP THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:

- 2 CX 98/99-L RIM DEVICE
- 2 EPT10
- 2 7764 DPS
- 1 JBT JUNCTION BOX
- 1 MULLDN
- 1 1910-1 HORN
- 1 PS914
- 1 MTK15 READER BY ACP BO
- 1 FIRE ALARM CONTACT

TYPE: DELAYED EGRESS DOUBLE DOOR

OPERATION:

CHECKS TO PROVIDE DELAY EGRESS. WHEN CX IS IN ALARM AUDIBLE WILL SOUND IN CX DEVICE AND EXTERNAL 1910-1 HORN.

FIRE ALARM TO RELEASE DOORS FOR IMMEDIATE EGRESS.

STAGGER REARM TIMES ON CX DEVICES BY SETTING SWITCHES ON CX PCB DIFFERENTIALLY.

MTK15 READER TO RELEASE BOTH CX THROUGH ACP CONTROL CONTACT FOR AUTHORIZED PASSAGE. MTK15 OR KEYSWITCH IN CX DEVICE TO RESET CX FROM ALARM. IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN JBT JUNCTION BOX.

DATE DRAWN: 4-22-13 REVISION DATE: 4-22-13

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ALLEGION™

CX DOUBLE DOOR CX WITH PS914

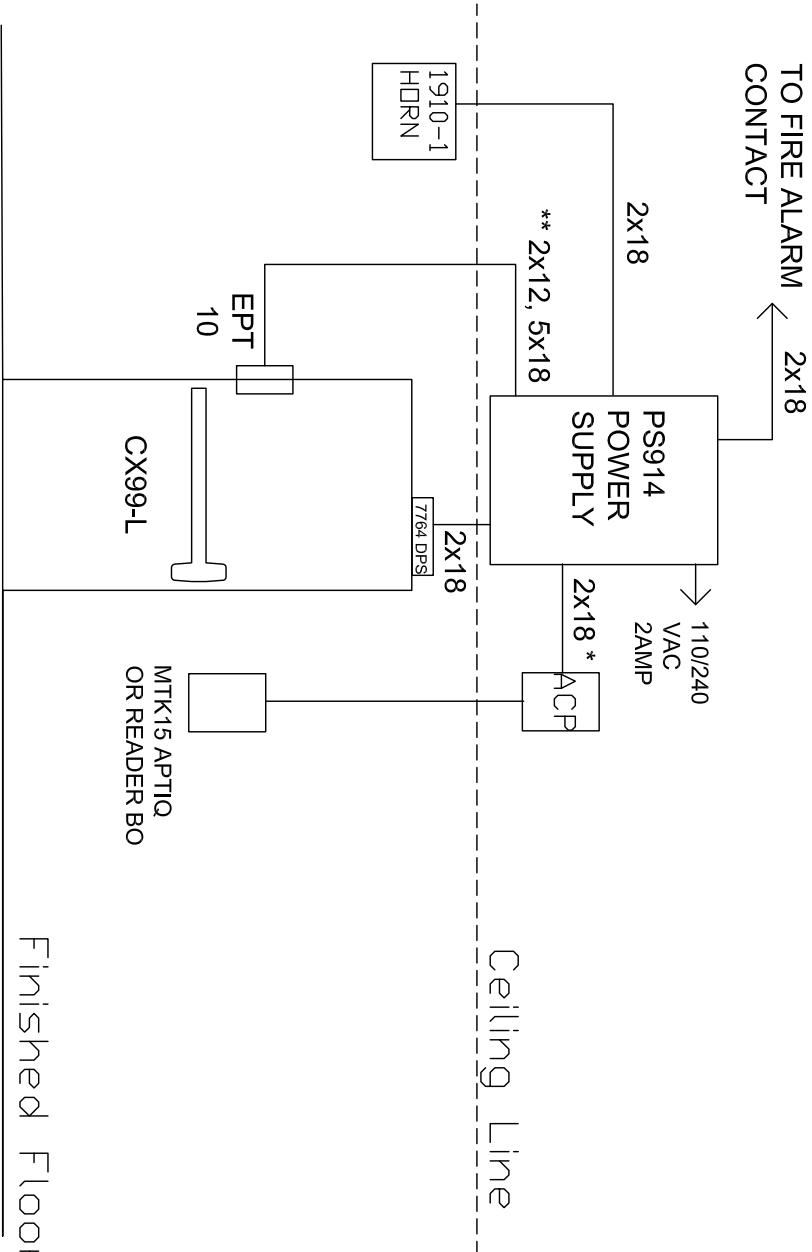
WIRING TYPE: WIRING DIAGRAM

DWG NO: 109520

DRAWN/CHECKED BY: B DOVE

REV: A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



\*\* USE 12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914 OR USE 14 GAUGE FOR DISTANCES UP TO 100' FROM EPT TO PS914

- NOTES:
- 1) ALL LOW VOLTAGE WIRING TO BE STANDARD, MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.
  - 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.
  - 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.
  - 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.
  - 5) ADDITIONAL WIRING WILL BE REQUIRED FROM ACP

HARDWARE USED:	
1	CX 987/99-L RIM DEVICE
1	EPT10
1	7764 DPS
1	1910-1 HDRN
1	PS914
1	MTK15 READER BY ACP BO
1	FIRE ALARM CONTACT
TYPE	DELAYED EGRESS SINGLE DOOR

OPERATION:	
DATE DRAWN	4-22-13
REVISION DATE	4-22-13
DATE	4-22-13
REVISION	4-22-13

CHEXIT TO PROVIDE DELAY EGRESS. WHEN CX IS IN ALARM AUDIBLE WILL SOUND IN CX DEVICE AND EXTERNAL 1910-1 HDRN.  
 FIRE ALARM TO RELEASE DOOR FOR IMMEDIATE EGRESS.  
 MTK15 READER TO RELEASE CX THROUGH ACP CONTROL CONTACT FOR AUTHORIZED PASSAGE. MTK15 OR KEYSWITCH IN CX DEVICE TO RESET CX FROM ALARM.  
 IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN PS914 ENCLOSURE.

TITLE: CX SINGLE DOOR CX WITH PS914

**ALLEGIION™**

DRAWING TYPE: RISER DIAGRAM

DWG NO.: 109519

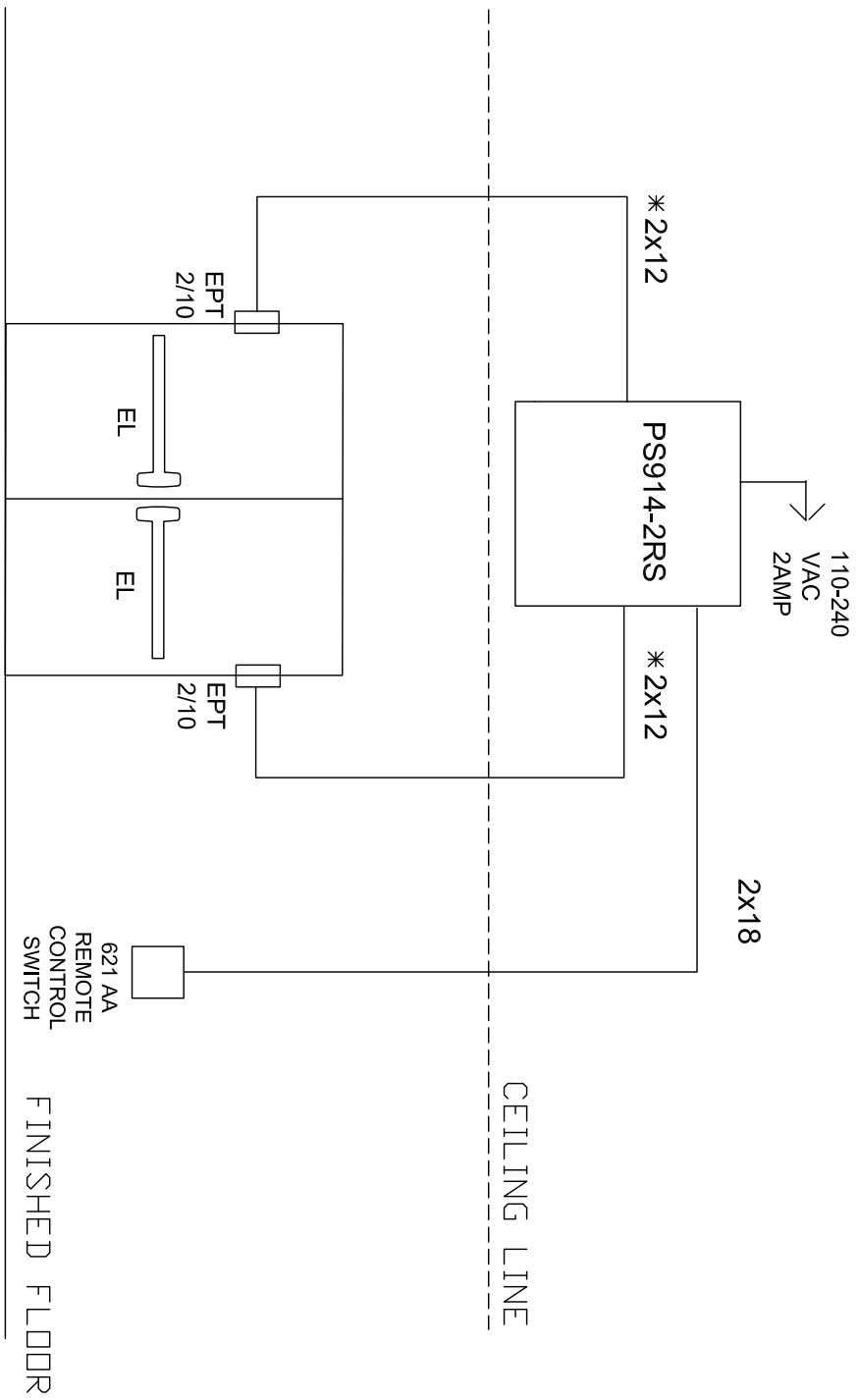
DRAWING CHECKED BY: B DOVE

REV: A





THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.




NOTE:  
 \* USE #12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914  
 \* USE #14 GAUGE WIRE FOR DISTANCES UP TO 100' FROM EPT TO PS914  
 SET PS914 TO 24VDC

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:	
2 VDN DUPRIN DR FALCON EL PANIC DEVICES	1 PS914-2RS POWER SUPPLY
2 EPT POWER TRANSFORMERS	1 621 AA REMOTE CONTROL PUSH BUTTON
TYPE	
REMOTE 621AA PB WITH PAIR EL DEVICES	

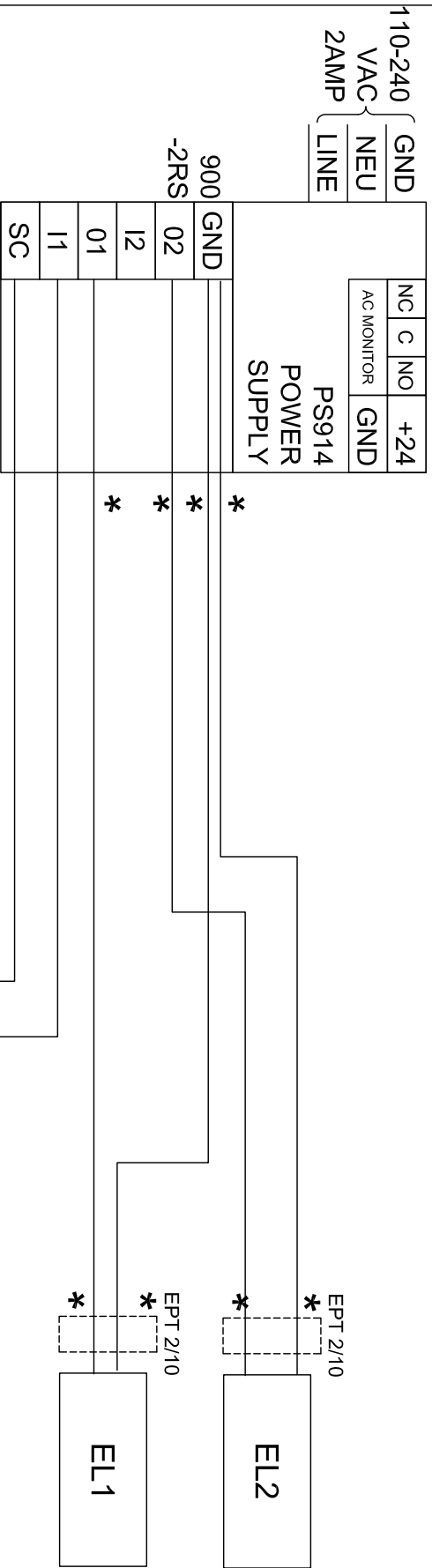
OPERATION:	
REMOTE CONTROL 621 AA PB TO SIGNAL PAIR EL ELECTRIC PANIC BAR TO RETRACT FOR ENTRY.	
THIS CONFIGURATION REPRESENTS A NON FIRE RATED OPENING.	
IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN PS914 ENCLOSURE.	
DATE DRAWN	REVISION DATE
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THIS REMOTE 621AA PB WITH PAIR EL PANICS RISER DIAGRAM

DWG NO:	109551
DRAWN/CHECKED BY:	B DOVE
REV	A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



NOTE:  
 \*USE #12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914  
 \*USE #14 GAUGE WIRE FOR DISTANCES UP TO 100' FROM EPT TO PS914  
 SET PS914 TO 24VDC

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:	TYPE
2 VDN DUPRN DR FALCON FIRE RATED EL PANIC DEVICES	REMOTE 621AA PB WITH PAIR NON FIRE RATED EL DEVICES
1 PS914-RS POWER SUPPLY	
2 EPT POWER TRANSFORMERS	
621 AA REMOTE CONTRL SWITCH	

OPERATION:  
 REMOTE CONTROL 621AA PB TO SIGNAL PAIR ELECTRIC PANIC BARS TO RETRACT FOR ENTRY.  
 THIS EXAMPLE IS A NON FIRE RATED APPLICATION.  
 IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN PS914 ENCLOSURE.

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 REVISION DATE: 5-3-13  
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**ALLEGION™**

TITLE: REMOTE 621AA PB WITH PAIR NON FIRE RATED EL PANICS

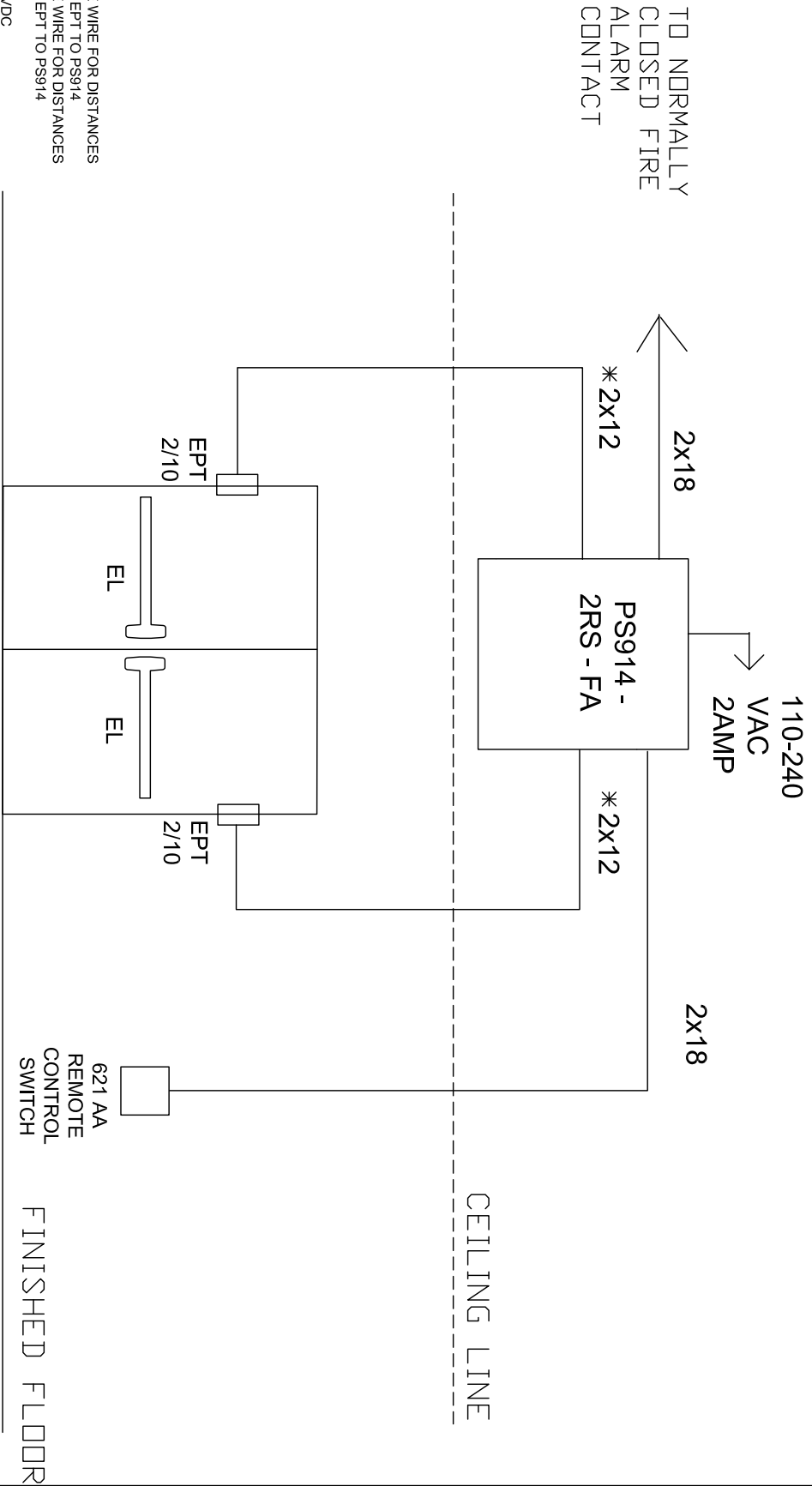
DRAWING TYPE: WIRING DIAGRAM

DWG NO: 109551

DRWNG CHECKED BY: B DOVE

REV: A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



NOTE:  
 \* USE #12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914  
 \* USE #14 GAUGE WIRE FOR DISTANCES UP TO 100' FROM EPT TO PS914  
 SET PS914 TO 24VDC

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
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 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED: 2 VON DUPRIN DR FALCON FIRE RATED EL PANIC DEVICES 1 PS914-2RS-FA POWER SUPPLY 2 EPT POWER TRANSFERS 1 621 AA REMOTE CONTROL PUSH BUTTON 1 FIRE ALARM CONTACT	TYPE REMOTE 621AA PB WITH PAIR FIRE RATED EL DEVICES
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OPERATION: REMOTE CONTROL 621 AA PB TO SIGNAL PAIR FIRE RATED EL ELECTRIC PANIC BAR TO RETRACT FOR ENTRY. RELEASING 621AA PUSH BUTTON OR FIRE ALARM WILL CAUSE EL LATCHES TO EXTEND. IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN PS914 ENCLOSURE.	DATE DRAWN: 5-3-13 REVISION DATE: 5-3-13
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**ALLEGION™**

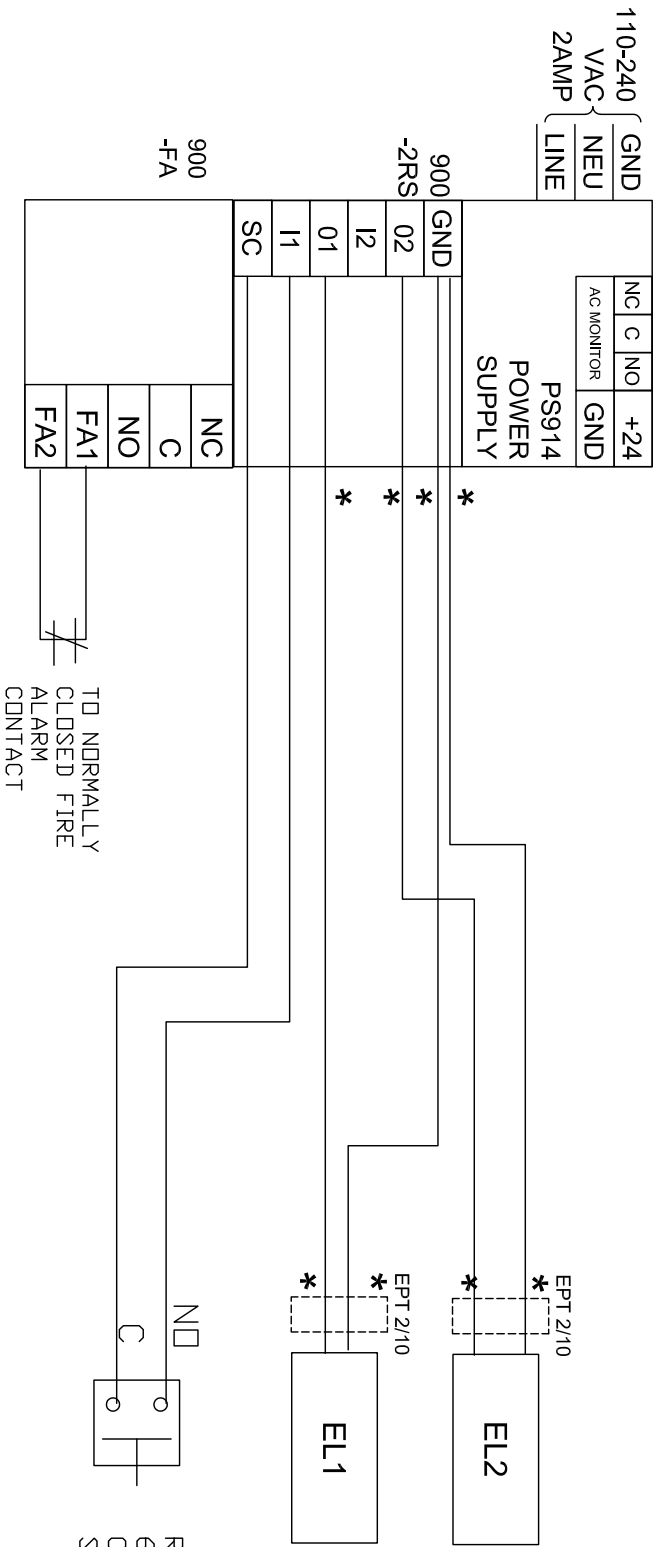
TITLE: REMOTE 621AA PB WITH PAIR FIRE RATED EL PANICS

DRAWING TYPE: RISER DIAGRAM

DWG NO.: 109553  
 DRAWING CHECKED BY: B DOVE

REV: A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



NOTE:  
 \* USE #12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914  
 \* USE #14 GAUGE WIRE FOR DISTANCES UP TO 100' FROM EPT TO PS914  
 SET PS914 TO 24VDC

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD, MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
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 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:  
 2 VON DUREIN DR FALCON FIRE RATED EL PANIC DEVICES  
 1 PS914-2RS-FA POWER SUPPLY  
 2 EPT POWER TRANSFERS  
 621 AA REMOTE CONTROL SWITCH  
 1 FIRE ALARM CONTACT  
 TYPE REMOTE 621AA PB WITH PAIR FIRE RATED EL DEVICES

OPERATION:  
 REMOTE CONTROL 621AA PB TO SIGNAL PAIR FIRE RATED ELECTRIC PANIC BARS TO RETRACT FOR ENTRY.  
 RELEASING 621AA PUSH BUTTON OR FIRE ALARM TO CAUSE EL LATCHES TO EXTEND.  
 IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN PS914 ENCLOSURE.

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 REVISION DATE: 5-3-13  
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**ALLEGION™**

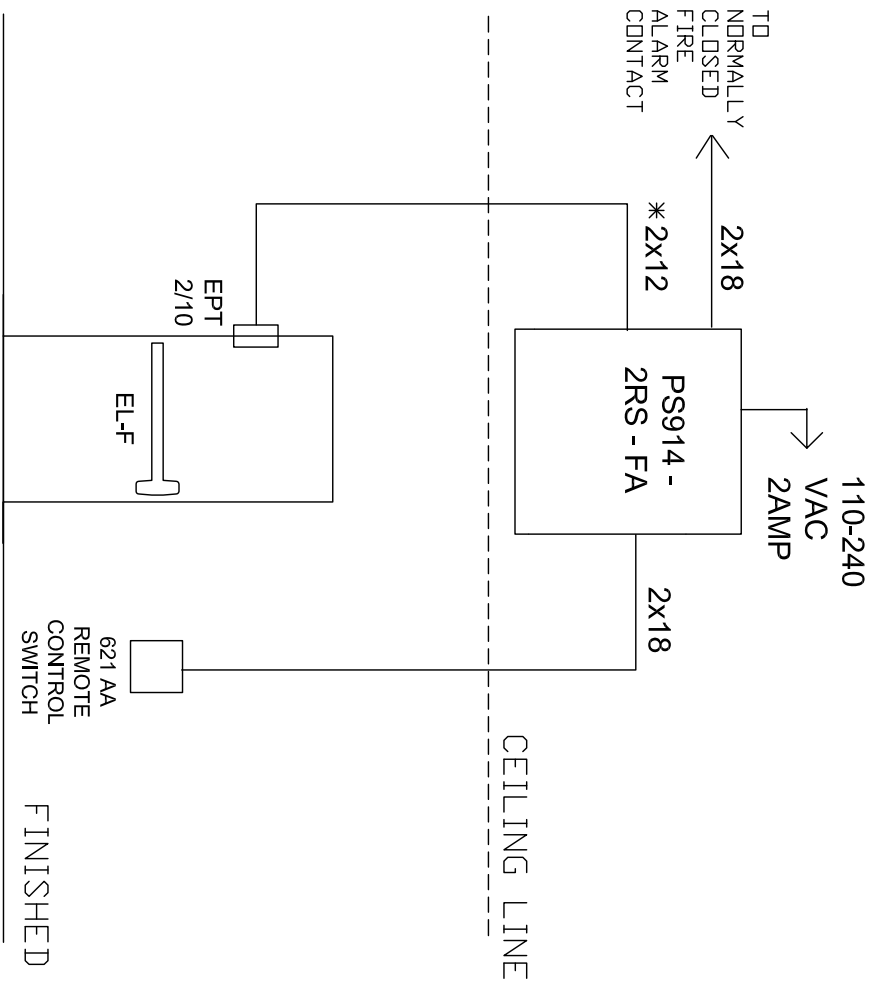
TITLE: REMOTE 621AA PB WITH PAIR FIRE RATED EL PANICS

DRAWING TYPE: WIRING DIAGRAM

DWG NO.: 109553  
 DRAWING CHECKED BY: B DOVE

REV: A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



NOTE:  
 \*USE #12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914  
 \*USE #14 GAUGE WIRE FOR DISTANCES UP TO 100' FROM EPT TO PS914  
 SETP PS914 TO 24VDC

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD, MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. 5) ADDITIONAL WIRING WILL BE REQUIRED FROM ACP THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:  
 1 VON DUREN OR FALCON FIRE RATED EL PANIC DEVICES  
 1 PS914-2RS POWER SUPPLY  
 1 EPT POWER TRANSFERS  
 1 621 AA REMOTE CONTROL PUSH BUTTON  
 1 FIRE ALARM CONTACT  
 TYPE REMOTE 621AA PB WITH SINGLE FIRE RATED EL DEVICES

OPERATION:  
 REMOTE CONTROL 621 AA PB TO SIGNAL SINGLE EL ELECTRIC PANIC BAR TO RETRACT FOR ENTRY.  
 RELEASING 621 AA PUSH BUTTON OR FIRE ALARM TO CAUSE EL LATCHES TO EXTEND.  
 IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN PS914 ENCLOSURE.

DATE DRAWN: 5-3-13  
 REVISION DATE: 5-3-13  
 copyright 2013

**ALLEGION™**

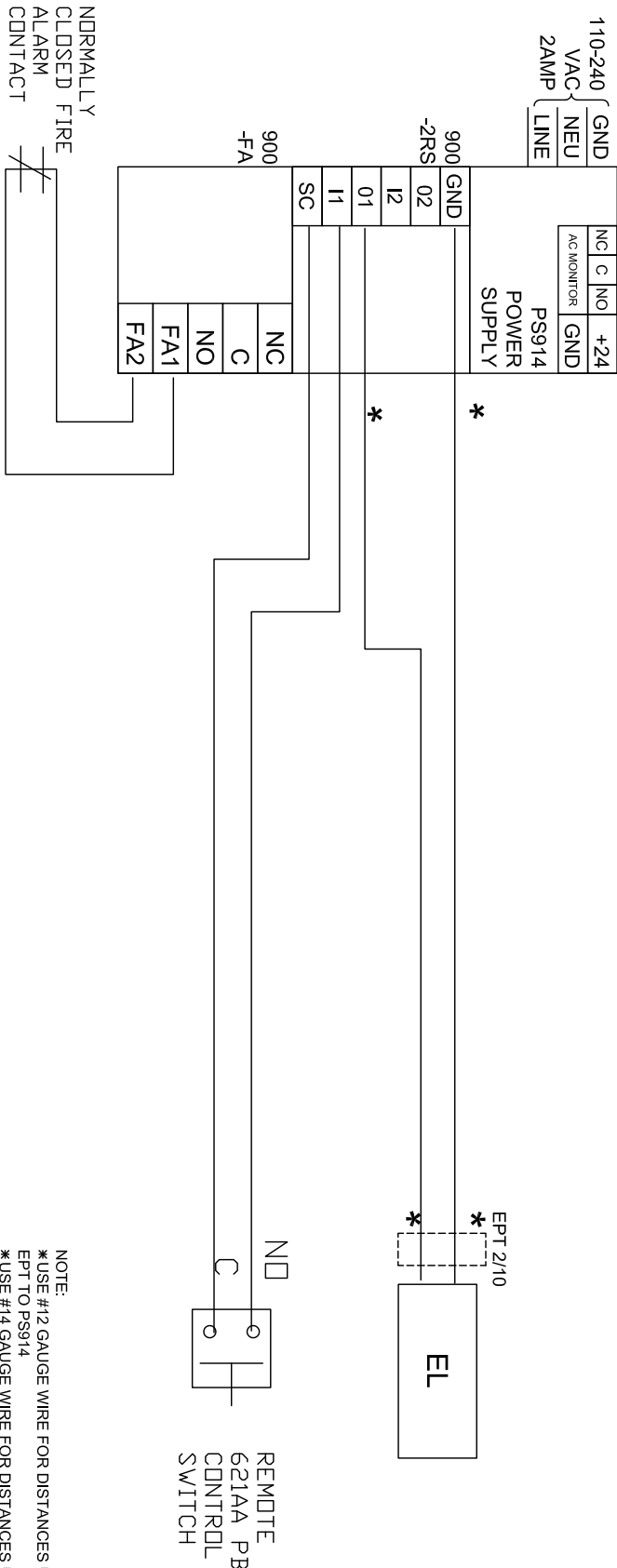
TITLE: REMOTE 621AA PB WITH SINGLE FIRE RATED EL PANICS

DRAWING TYPE: RISER DIAGRAM

DWG NO: 109552  
 DRAWING CHECKED BY: B DOVE

REV: A

THIS DIAGRAM REPRESENTS A GENERIC CONFIGURATION. CUSTOM WIRING DIAGRAMS CAN BE ACQUIRED BY CONTACTING TECHNICAL SUPPORT.



NOTE:  
 \*USE #12 GAUGE WIRE FOR DISTANCES UP TO 200' FROM EPT TO PS914  
 \*USE #14 GAUGE WIRE FOR DISTANCES UP TO 100' FROM EPT TO PS914  
 SET PS914 TO 24VDC

NOTES:  
 1) ALL LOW VOLTAGE WIRING TO BE STANDARD, MULTI-CONDUCTOR COLOR CODED WITHOUT SPLICES.  
 2) WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES.  
 3) REFER TO SPECIFIC PRODUCT INSTALLATION INSTRUCTIONS FOR SPECIFIC WIRING REQUIREMENTS.  
 4) THIS DRAWING IS FOR GRAPHICAL REPRESENTATION OF PRODUCTS DETAILED IN THE HARDWARE SET ONLY. THAT IS NOT SHOWN HERE. CONSULT PROVIDER FOR DETAILS.

HARDWARE USED:  
 1 VON DUPRIN DR FALCON FIRE RATED EL PANIC DEVICES  
 1 PS914-ERS POWER SUPPLY  
 1 EPT POWER TRANSFERS  
 621 AA REMOTE CONTROL SWITCH  
 1 FIRE ALARM CONTACT

TYPE REMOTE 621AA PB WITH SINGLE FIRE RATED EL DEVICES

OPERATION:  
 REMOTE CONTROL 621AA PB TO SIGNAL SINGLE ELECTRIC PANIC BARS TO RETRACT FOR ENTRY.  
 RELEASING 621AA PUSH BUTTON OR FIRE ALARM TO CAUSE EL LATCHES TO EXTEND.  
 IN THIS EXAMPLE ALL WIRING CONNECTIONS ARE MADE IN PS914 ENCLOSURE.

DATE DRAWN: 5-3-13 REVISION DATE: 5-3-13  
 copyright 2013

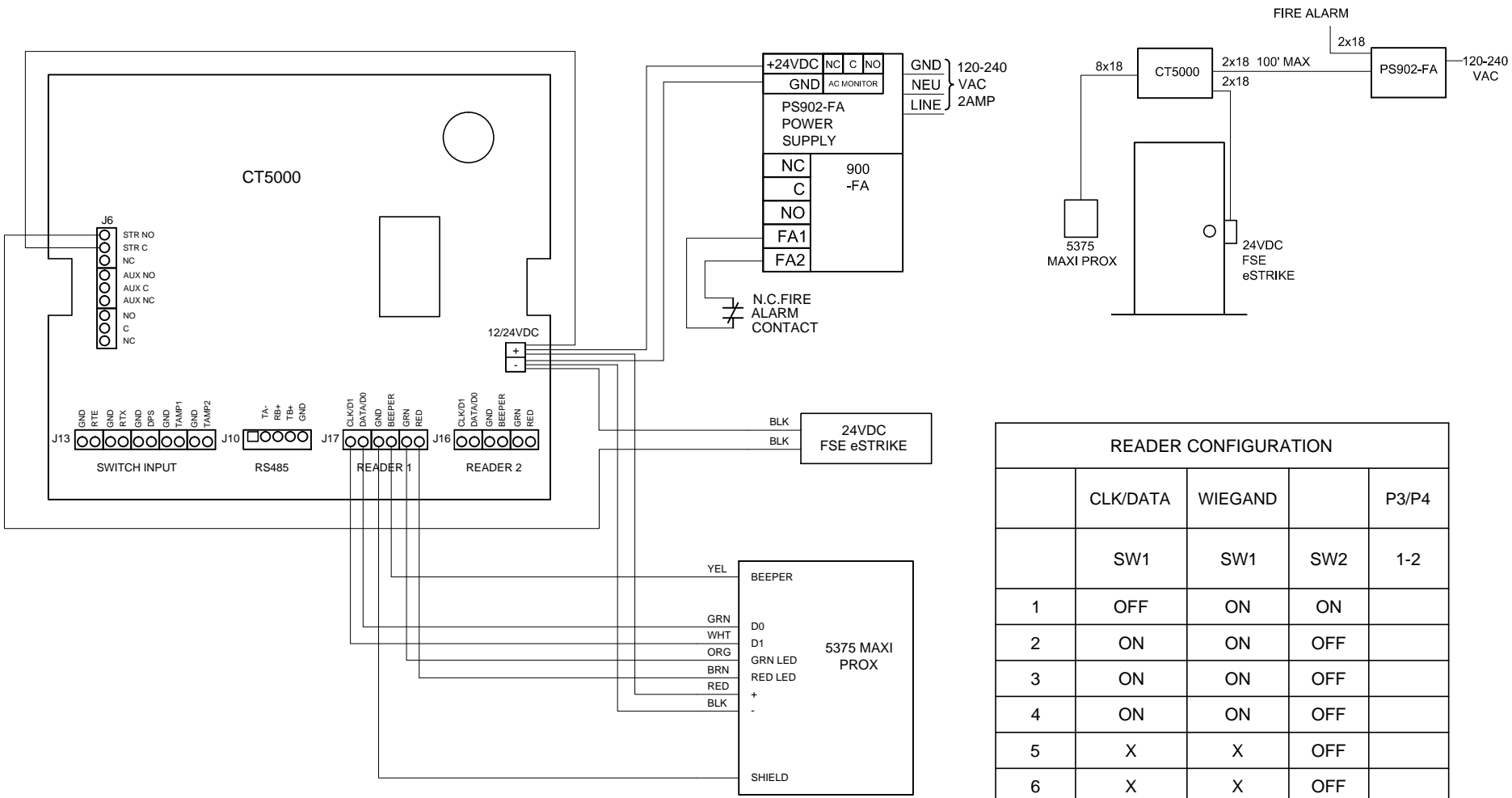
**ALLEGION™**

TITLE: REMOTE 621AA PB WITH SINGLE FIRE RATED EL PANICS

DRAWING TYPE: WIRING DIAGRAM

DWG NO.: 109552  
 DRAWN/CHECKED BY: B DOVE

REV: A

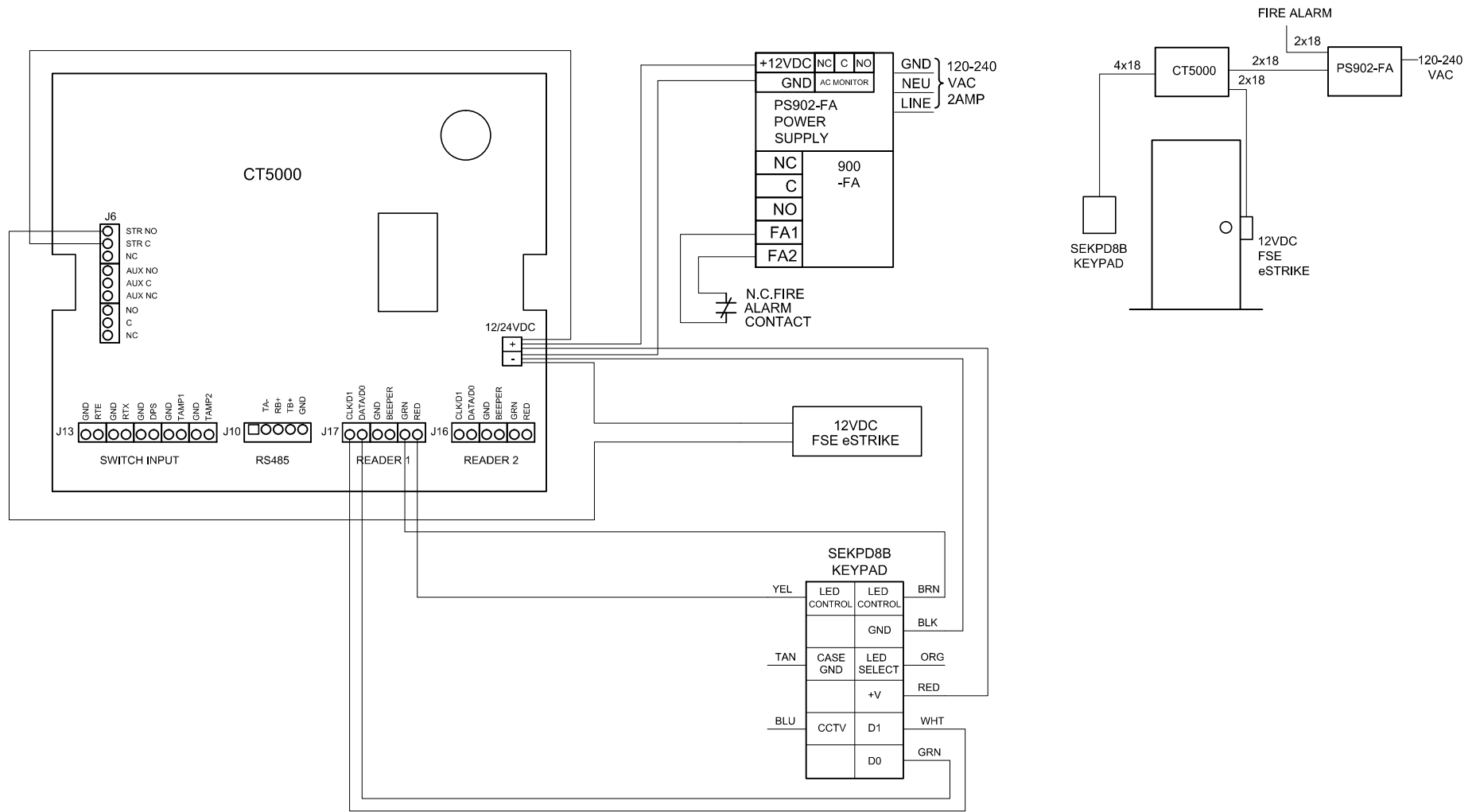


READER CONFIGURATION				
	CLK/DATA	WIEGAND		P3/P4
	SW1	SW1	SW2	1-2
1	OFF	ON	ON	
2	ON	ON	OFF	
3	ON	ON	OFF	
4	ON	ON	OFF	
5	X	X	OFF	
6	X	X	OFF	
7	ON	ON	OFF	
8	ON	ON	OFF	

5375 MAXI PROX TO SIGNAL FSE eSTRIKE TO RELEASE THROUGH SES CT5000.  
 FIRE ALARM TO DISABLE 5375 MAXI PROX FUNCTION AND CAUSE FSE eSTRIKE TO REMAIN LOCKED.  
 IF NOT A FIRE RATED OPENING AND FIRE ALARM IS NOT REQUIRED, OMIT FA BOARD IN PS902-FA POWER SUPPLY.

CREATOR: BRENDA DOVE 05/16/12	TITLE: CT5000/5375 MAXI PROX WITH FSE eSTRIKE	515122CT5000
APPROVED: MANFRED STEFFES 05/16/12		DRAWING NO.





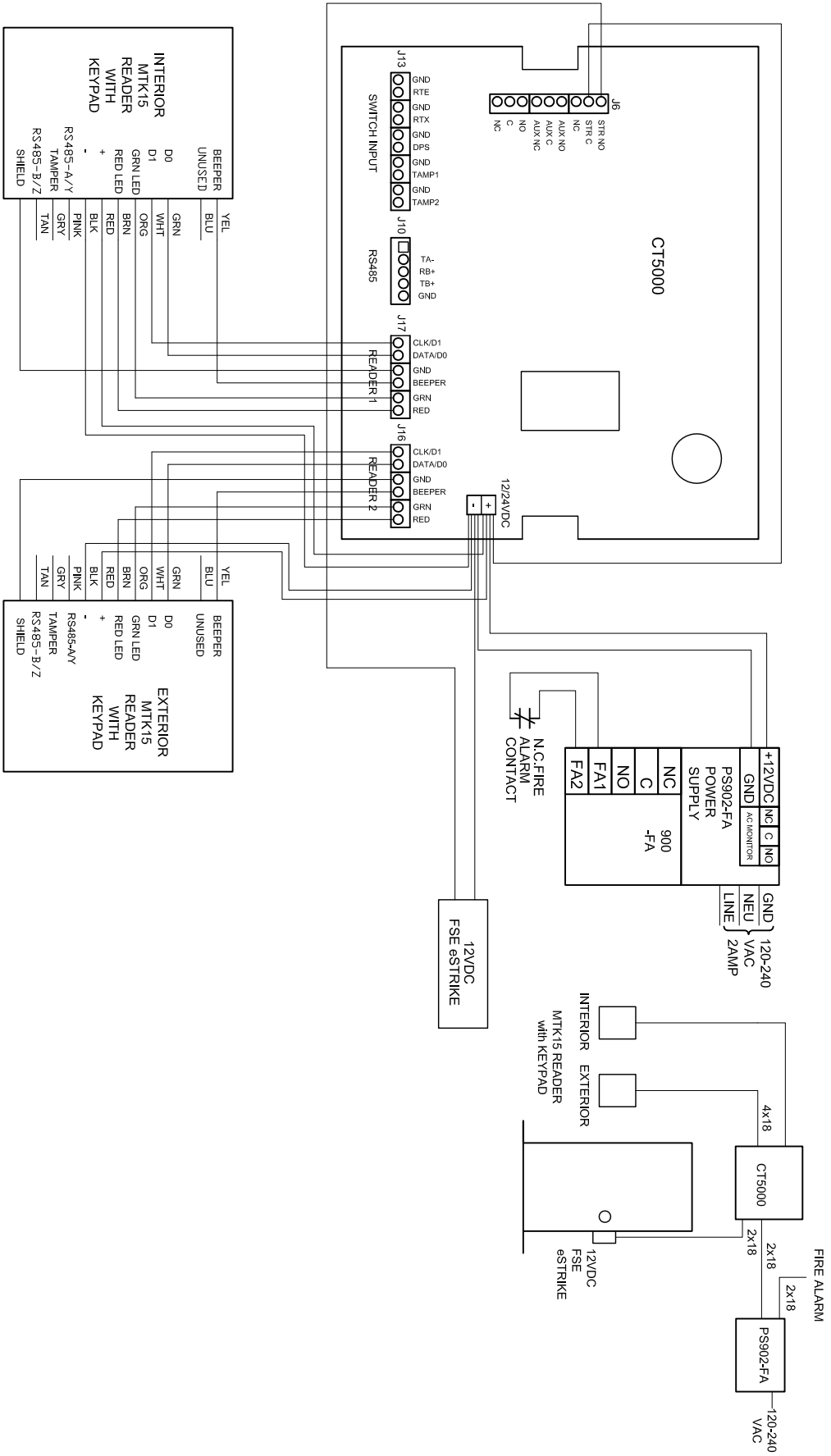
SEKPD8B TO SIGNAL FSE eSTRIKE TO RELEASE THROUGH SES CT5000.

FIRE ALARM TO DISABLE SEKPD8B FUNCTION AND CAUSE FSE STRIKE TO REMAIN LOCKED.

IF NOT A FIRE RATED OPENING AND FIRE ALARM IS NOT REQUIRED OMIT FA BOARD IN PS902-FA POWER SUPPLY.

SET SEKPD8B AND PS902 VOLTAGE TO 12VDC.

CREATOR: BRENDA DOVE 02/17/12	TITLE: CT5000/SEKPD8B KEYPAD WITH FSE eSTRIKE	23121CT5000
APPROVED: TODD GINTER 02/29/12		DRAWING NO.

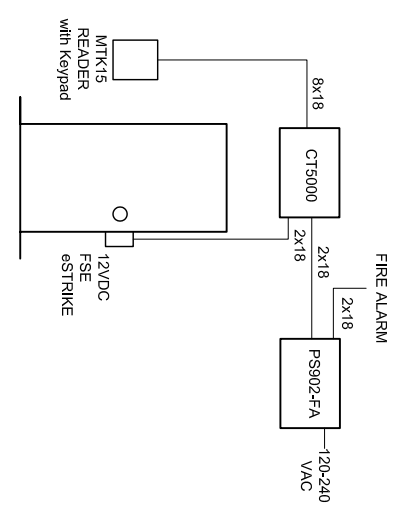
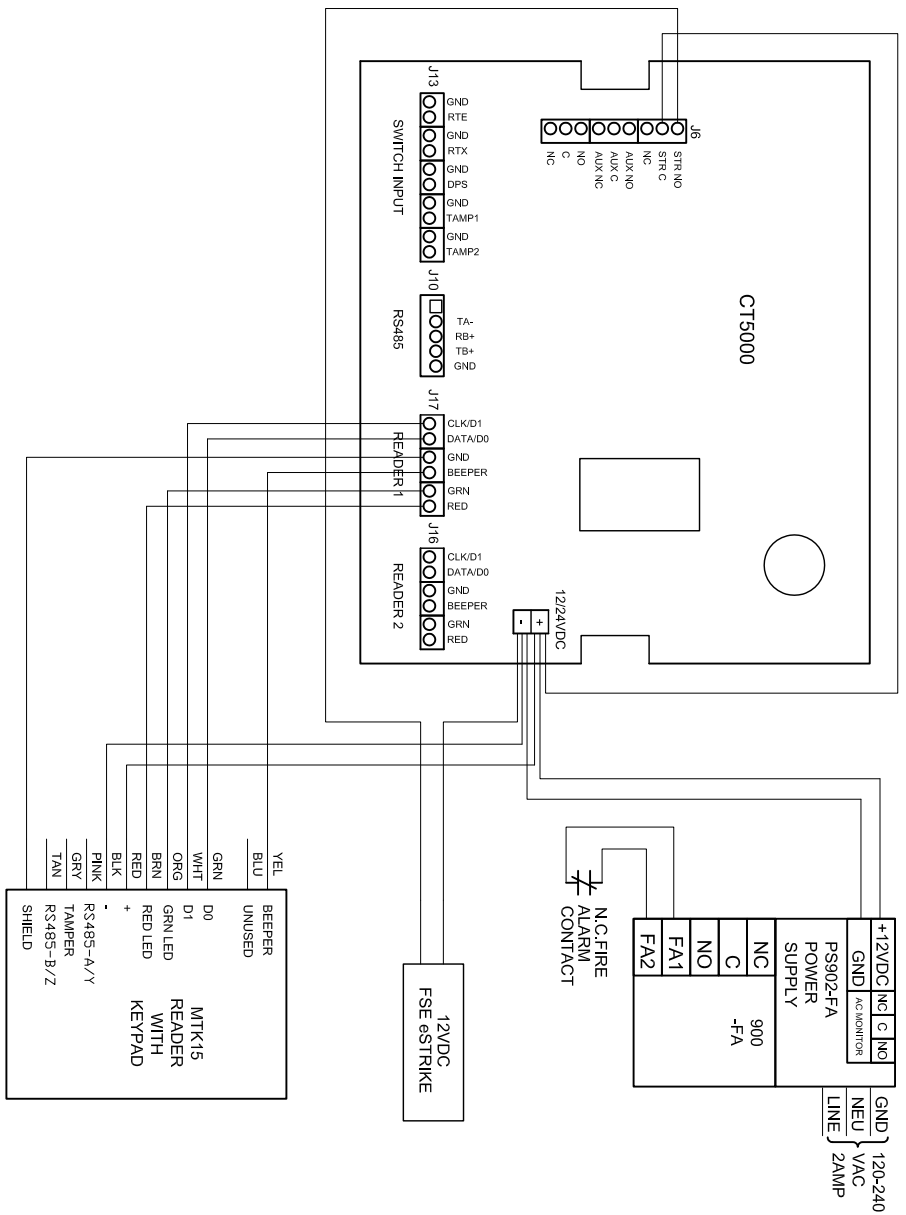


INTERIOR OR EXTERIOR MTK15 TO SIGNAL FSE eSTRIKE TO RELEASE THROUGH SES CT5000.  
 FIRE ALARM TO DISABLE MTK15 FUNCTION AND CAUSE FSE STRIKE TO REMAIN LOCKED. IN THIS DIAGRAM THERE WILL BE NO PASSAGE THROUGH THIS OPENING UNDER A FIRE ALARM CONDITION.  
 IF FIRE ALARM IS NOT REQUIRED OMIT FA BOARD IN PS902-FA POWER SUPPLY.  
 SET PS902 VOLTAGE TO 12VDC.

CREATOR:  
 BRENDIA DOVE 02/20/12  
 APPROVED:  
 TODD GINTER 02/29/12

TITLE:  
 CT5000/MTK15 with KEYPAD and FSE eSTRIKE

222124CT5000  
 Rev 2  
 10/1/12 revision 2



MTK15 TO SIGNAL FSE eSTRIKE TO RELEASE THROUGH SES CT5000.  
 FIRE ALARM TO DISABLE MTK15 FUNCTION AND CAUSE FSE eSTRIKE TO REMAIN LOCKED.  
 IF NOT A FIRE RATED OPENING AND FIRE ALARM IS NOT REQUIRED OMIT FA BOARD IN PS902-FA POWER SUPPLY.  
 SET PS902-FA VOLTAGE TO 12VDC.

CREATOR: BREND A DOVE 02/22/12  
 APPROVED: TODD GINTER 02/29/12

TITLE: CT5000/MTK15 MULTI TECH READER WITH KEYPAD WITH FSE eSTRIKE

222121CT5000 Rev 2 10/11/12 Rev 2

# Schlage

## Electronic security

### System Components

### Brochures / Sales Materials

### Master Index



**SCHLAGE**

# Electromagnetic locks



# Electromagnetic locks from Schlage

Schlage has a rich heritage in electronic security. For years we have led the industry by providing a broad portfolio of solutions to meet the diverse needs of the market. Today, our electromagnetic locking portfolio continues to evolve to meet your changing needs.

Schlage® electromagnetic locks are used to secure the door in conjunction with push bars, request-to-exit devices, or credential readers for fail-safe applications when code compliance permits. You can use them on a single standalone door or as part of an access control system. Electromagnetic locks do not contain moving parts, making them extremely durable and preferred for high security applications.

Electromagnetic locks consist of an armature and a coil assembly, which become magnetized when an electric current passes through them. This magnetic field secures the door. Electromagnetic locks are fail-safe by design. To unlock the door simply remove power.

## **M400 Series electromagnetic locks**

As a robust line of electromagnetic locks, the M400 Series has unique design elements that make them easy to install and secure.

### **Features**

- Auto voltage selection is standard
- Plus package (P) adds magnetic bond sensor, relocking time delay, door status monitor
- Optional mounting kits available including: top jamb mount, double and glass door
- **Certifications**
- UL 1034, UL 10C 3 hour fire rating
- BHMA Grade 1:
  - M420 – 500 lb. hold force for traffic control
  - M450 – 1000 lb. hold force for high security
  - M490 – 1500 lb. hold force for max security

## Electromagnetic specialty locks

Schlage's electromagnetic specialty locks provide flexibility for a variety of applications. They offer a depth of features and a proven record of performance.

### Features and certifications

**M490DE:** Delays egress with 15 second timer: includes integrated alarm

- Designed to meet NFPA 101 & BOCA, UL 10C 3 hr fire rating, UL 294, and BHMA 1500 lb. hold force

**M490G:** Gate lock is weather resistant for exterior swinging and sliding gates

- BHMA 1500 lb. hold force rated

**GF3000:** Concealed locking mechanism enhances security and appearance

- UL 10C 3 hr fire rating, BHMA 1500 lb. hold force

**320M:** MiniLine is mortise designed for interior sliding doors

- UL 10C 3 hr fire rating, UL 1034 listed

## 40/70 Series electromagnetic locks

Ease of installation makes the 40/70 Series a perfect choice for retrofit applications. It is also easy to select and stock.

### Features

- Magnetic bond sensor and door status monitor standard

### Certifications

- UL 10C 1 hour fire rating and BHMA Grade 1:
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## M390RFK

Designed to retrofit Locknetics 390+ without any additional prep.

### Features

- Door position switch, magnetic bond sensor and relocking time delay.

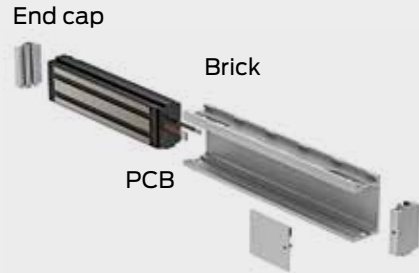
### Certifications

- ANSI/BHMA A 156.25 Grade 1 1500 lb. hold force
- UL 10C 3 hour fire rating

## Flexible

Field configurable handing gives you more options

- 1 Remove printed circuit board (PCB) end caps and brick



- 2 Flip and insert brick

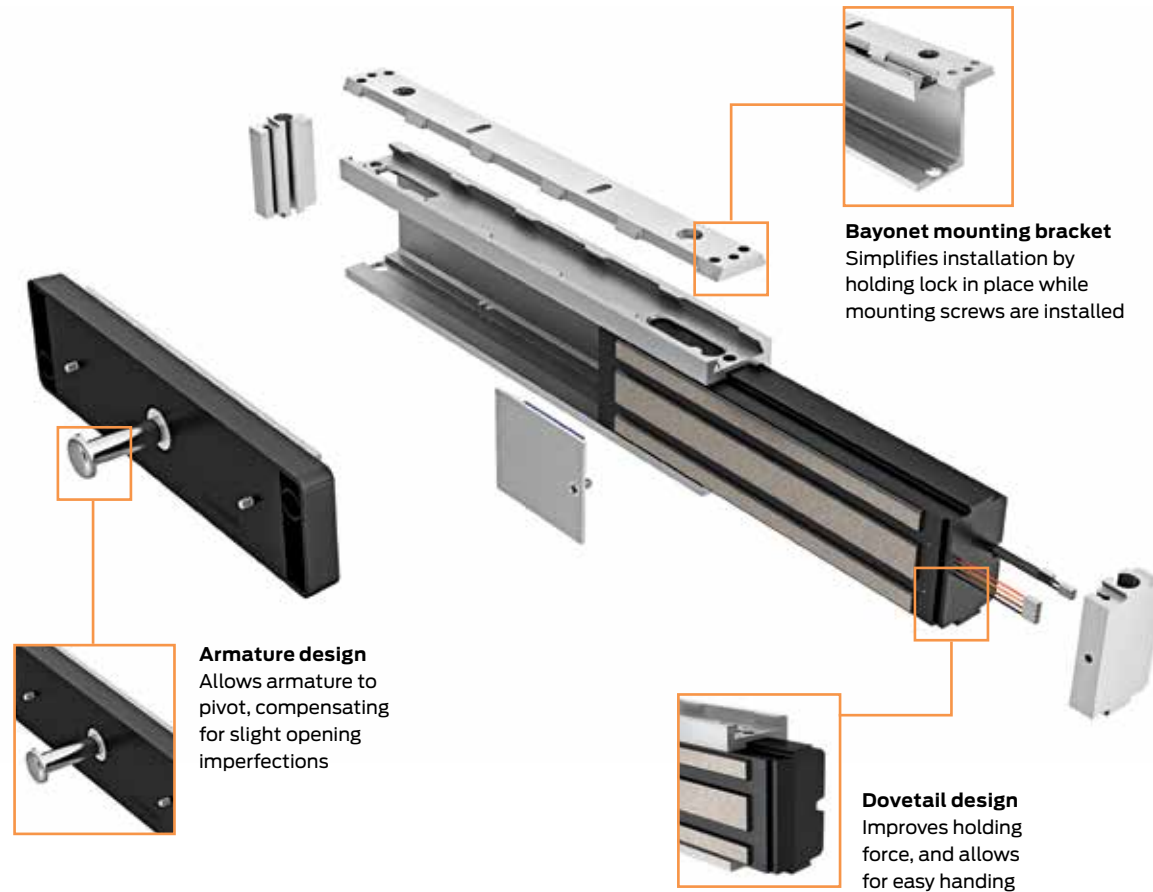


- 3 Replace end caps and PCB



## M400 Electromagnetic locks

The M400 Series from Schlage was designed to be robust, easy to install, and secure. There is no need to consider door handing as all the M400 Series electromagnetic locks are non-handed and symmetrical, allowing for optimum placement of the magnet no matter the application. The new bayonet mounting bracket makes installation easier, allowing the installer to have their hands free during the mounting process. Two single electromagnetic locks can be joined together to easily become a double with the new innovative connector block.



## Scalable

Connector block lets you easily convert a single to a double electromagnetic lock

- 1 Two single M400 Series electromagnetic locks



- 2 Add the connector block



- 3 Double electromagnetic lock





## About Allegion

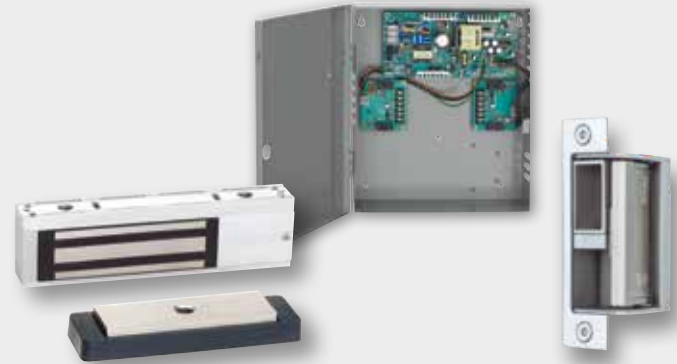
Allegion (NYSE: ALLE) creates peace of mind by pioneering safety and security. As a \$2 billion provider of security solutions for homes and businesses, Allegion employs more than 8,000 people and sells products in more than 120 countries across the world. Allegion comprises more than 25 global brands, including strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®.

For more, visit [www.allegion.com](http://www.allegion.com)

*aptiQ* ■ LCN ■  ■ STEELCRAFT ■ VON DUPRIN

System components

## Quick cross reference guide



Allegion offers a full portfolio of system components, including: power supplies, electric strikes, electromagnetic locks, and system accessories that allow your customer to customize an electronic access control solution for their unique application.

To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

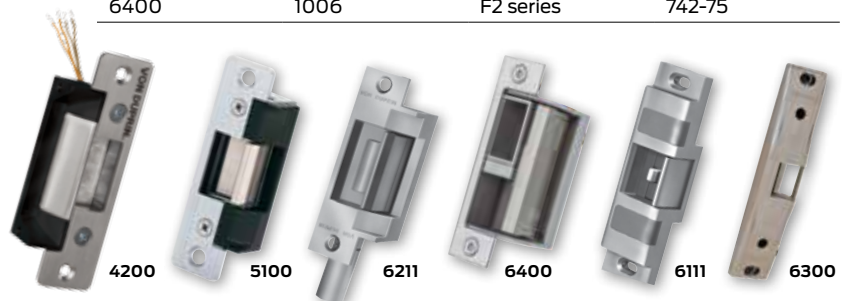
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

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## About Allegion

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System components

## Quick cross reference guide



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### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
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- Mortise or surface mounted shear lock
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- MiniLine™ mortise mounted for interior sliding doors
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M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

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- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

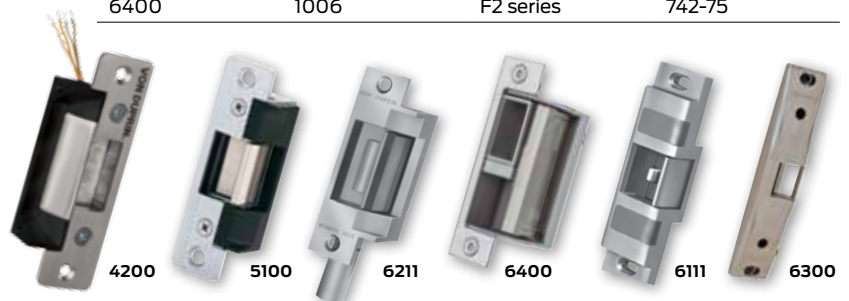
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6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75





# Power supplies

## Schlage

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- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
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- Universal 120-240 VAC input
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- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

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## About Allegion

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**SCHLAGE**

# PS900 Series

**Power supplies**





# Introducing the PS900 Series

The PS900 Series is a consolidated line of power supplies and accessories that offers enhanced flexibility and functionality. In addition, the PS900 is easy to order and install. The full line is UL 294 certified, the industry standard for reliability and performance.

The PS900 Series can be used in a variety of applications to convert high voltage AC power into the low voltage DC outputs required by most access control devices. The PS900 Series of power supplies protects devices downstream by providing Class 2<sup>1</sup>, filtered, and regulated power.

Once power is converted to low voltage DC, the PS900 Series offers a variety of distribution options, including basic fuse protection, simple relay, and advanced logic providing complex sequencing and timing functions.

<sup>1</sup> PS906 can provide Class 2 rated outputs when used with 900-8P distribution board.

# Overview

Three models of the PS900 Series are available. All convert high voltage 120 VAC-240 VAC (50-60 HZ) power to regulated and filtered low voltage power. Output can be field configured to either 12 VDC or 24 VDC.

- PS902: 2 amps
- PS904: 4 amps
- PS906: 6 amps

Note: The Von Duprin PS914 and 900-2RS are available for use with electrified exit devices.

## Features

- Constant output rating at both 12 VDC and 24 VDC provides superior performance
- Polarized connectors for option boards eliminate need for racks and side connectors
- Flat mounting of option boards provides easier access to terminal blocks for connection of electrified devices
- High voltage protective cover
- Battery back-up board auto-selects voltage
- Fire alarm relay can be configured to provide either switched or un-switched outputs from a power supply

## Certifications

- UL 294 certified—the standard for access control
- Class 2 rated <sup>1</sup>

<sup>1</sup> Except PS906, output rating exceeds Class 2 power limits

## The PS900 Series provides greater flexibility

The PS900 Series is a flexible solution that can be customized to meet your unique needs. Five distribution boards are available to choose from as well as a fire alarm board and battery back-up board. The chart below shows how many boards each model can accept:

Number of connectors	PS902 <sup>1</sup> (2 amps)	PS904 <sup>1</sup> (4 amps)	PS906 <sup>1</sup> (6 amps)
Option boards	1	2	3 <sup>2</sup>
Battery backup board	1	1	1

<sup>1</sup> One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it must be connected to an option board.

<sup>2</sup> If battery back-up is installed, only two additional option boards can be used.

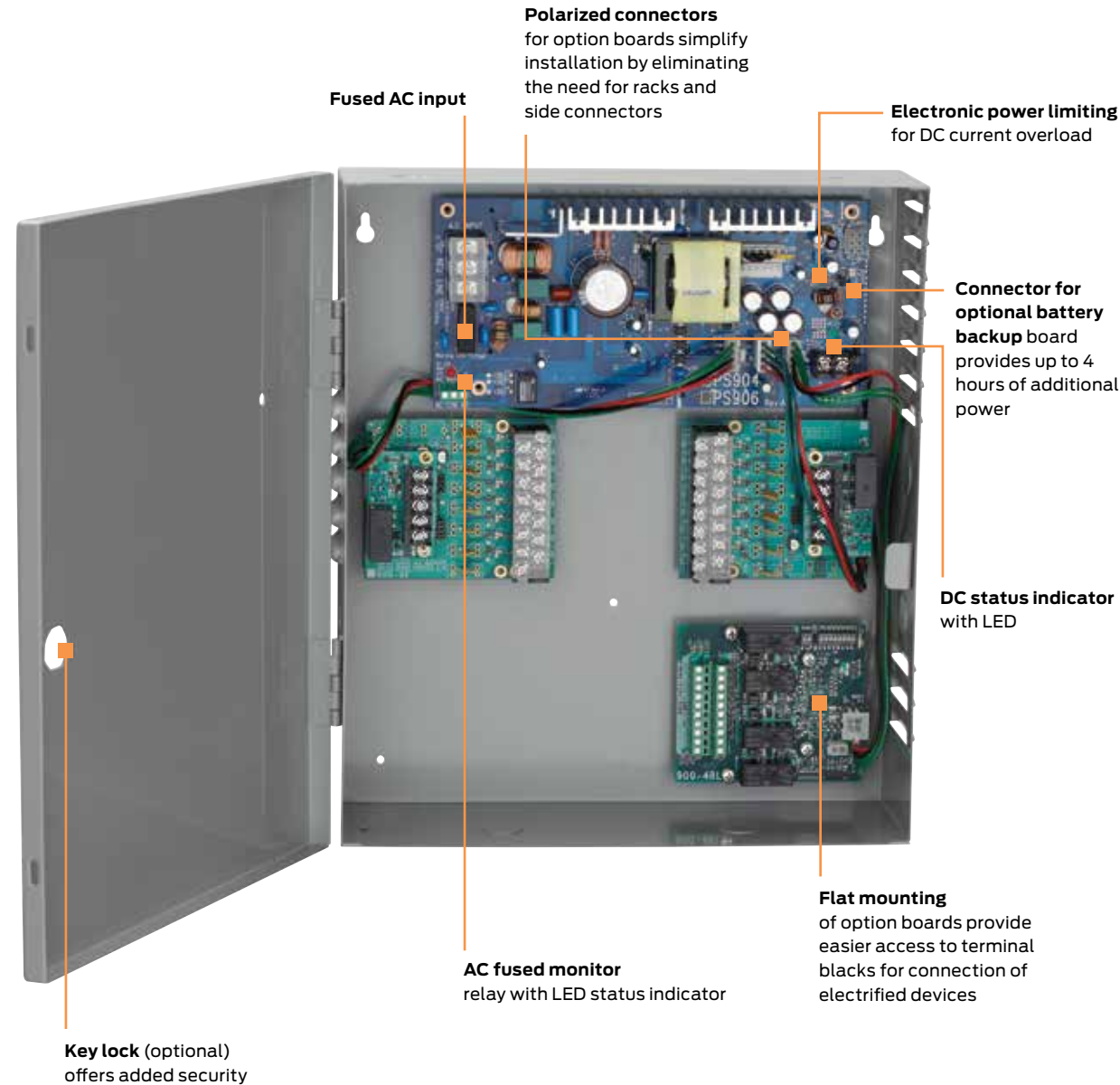
### Applications

The PS900 Series of power supplies works with many electrified devices including Schlage® electromagnetic locks, Schlage AD Series hardwired locks, Schlage electrified mechanical locks, Von Duprin® electrified strikes and many other brands.

No matter what solution you choose, you can be confident that Schlage will stand behind it. Schlage has a rich heritage in security. For over 90 years we've endeavored to develop a complete line-up of security solutions you can trust. Simply put, we believe everyone deserves peace of mind—every day.

## PS900 Series power supplies from Schlage

Designed for superior flexibility, performance and ease of use.



Note: The PS906 power supply is pictured above configured with two 900-8P FA's and one 900-4RL.

## Accessories

The Schlage PS900 Series features seven option boards for use in a variety of applications. All Schlage PS900 Series option boards are UL294 certified.

### Optional distribution boards:

**900-4R:** 4 relay controlled output board to power multiple devices

**900-4RL:** 4 relay distribution board with logic is field configurable for time delay function, auto operator, security interlock

**900-8F:** Provides 8 individually fuse-protected outputs, giving the flexibility to power multiple devices and provide another layer of protection

**900-8P:** Provides 8 individual PTC (resettable fuse) protected outputs for use with a variety of access control devices

**900-2RS:** 2 relay control board required to power QEL or EL exit device<sup>1</sup>

### Additional option boards:

**900-FA:** Emergency interface relay integrates with fire alarm and is used to cut power in case of emergency

**900-BBK:** Battery backup kit includes two 7A/hr batteries and provides up to four hours of backup power when cycled every 5 minutes at full load

<sup>1</sup>EL Exit device requires PS914

## About Allegion

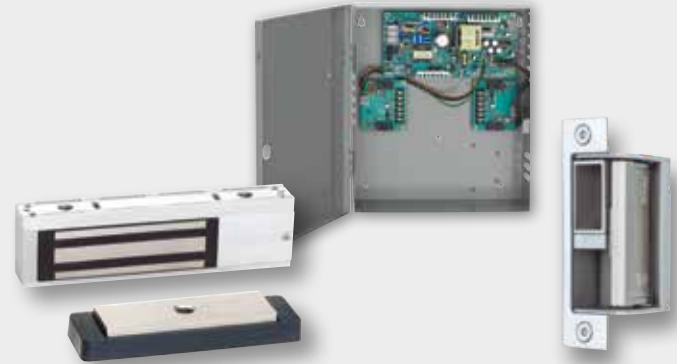
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For more, visit [www.allegion.com](http://www.allegion.com)

*aptiQ* ■ LCN ■ **SCHLAGE** ■ STEELCRAFT ■ VON DUPRIN

System components

## Quick cross reference guide



Allegion offers a full portfolio of system components, including: power supplies, electric strikes, electromagnetic locks, and system accessories that allow your customer to customize an electronic access control solution for their unique application.

To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000



# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

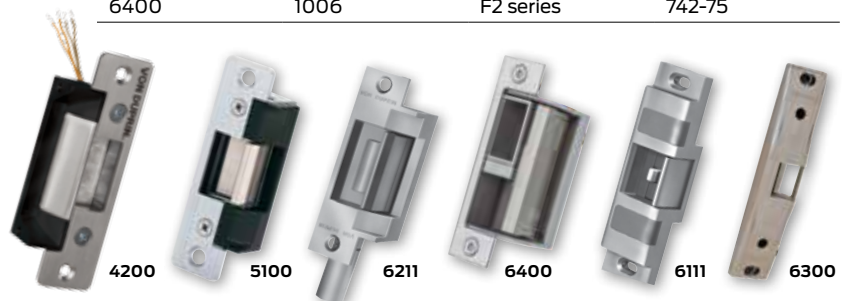
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
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PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

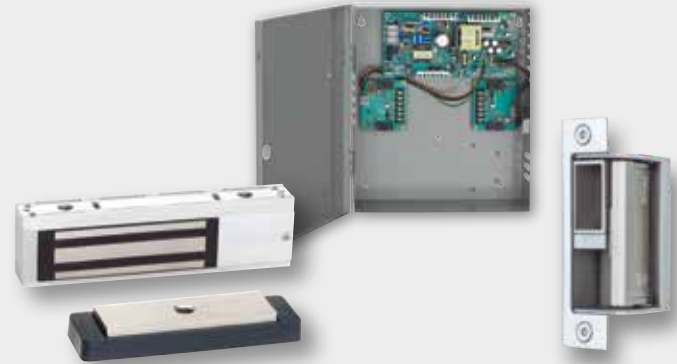
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### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
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- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
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- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
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Competitive model numbers		
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M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
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M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

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- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

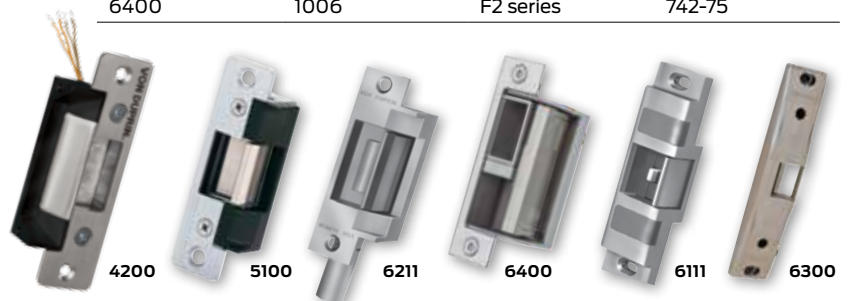
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5100	5200 7000	7 Series	-
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6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
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6114	-	-	310-5
6121	-	-	310-4-100
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6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
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6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

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- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

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PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

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- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

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Option boards	1	2	3
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**VON DUPRIN®**

# Electric strikes

**Safety, performance and quality  
you can trust**

At critical moments of life safety, Von Duprin® gives you the confidence of knowing that the products you count on will perform.

Von Duprin electric strikes have been designed and tested to the highest standards in the industry to provide the assurance of quality and reliability. You can turn to Von Duprin for expertise and service at any time before, during or after installation. We offer a full line of electric strikes to accommodate a wide range of door preps and locking hardware. Whether you're deploying the electric strike in a standalone setting or as part of a comprehensive access control system, Von Duprin electric strikes are an ideal solution. Our broad portfolio provides coverage for virtually any application. Including all-in-one strikes for retrofit applications that have many field configurable options. As well as, electric strikes with a wide range of factory configurable options for new construction and specialized applications.

## 4200 Series

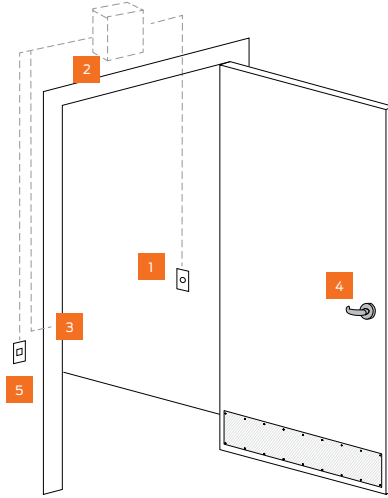


**Traffic control**, up to 500,000 cycles, 1000 lbs. static strength

**Affordable** option for commercial applications

**Field configure** power failure mode without disassembling the strike

**Cylindrical** lockset applications



Ideal for interior applications such as a doctors office entrances that require visitor management and traffic control.

- 1 Schlage KP2000E standalone keypad
- 2 Von Duprin PS902 power supply
- 3 Von Duprin 4211 electric strike
- 4 Schlage® AL Series lock
- 5 Schlage 621 pushbutton

## 5100 Series

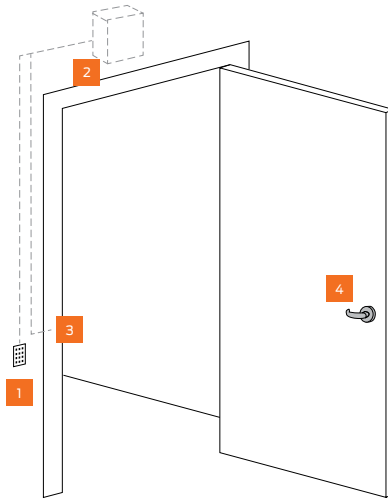


**Medium duty**, up to 1,000,000 cycles, 1300 lbs static strength

**Three faceplates standard** accommodates more applications

**Multiple finish options**

**Cylindrical** lockset applications



Simple and cost effect way to add standalone access control to perimeter openings such as employee entrances.

- 1 Schlage KP212 standalone keypad
- 2 Von Duprin PS902 power supply
- 3 Von Duprin 5100 electric strike
- 4 Schlage ND Series lock

Series	Lockset (latchbolt throw)				Types of doors		Dimensions	
	Cylindrical	Mortise	Mortise deadbolt	Exit	Single	Pair	Face plate length	Backbox depth
<b>4200 Series</b>	4211: up to 3/4" 4212: up to 5/8"	-	-	-	■	-	4 7/8"	1 3/8"
<b>5100 Series</b>	up to 5/8"	-	-	-	■	-	-	-
<b>6300 Series</b>	-	-	-	Rim exit, up to 3/4"	■	Pair with mullion	9"	Surface mounted - 3/4" projection
<b>6400 Series</b>	up to 3/4"	up to 3/4"	-	Mortise exit, up to 3/4"	■	-	4 7/8"	1 5/8"



## 6300 Series

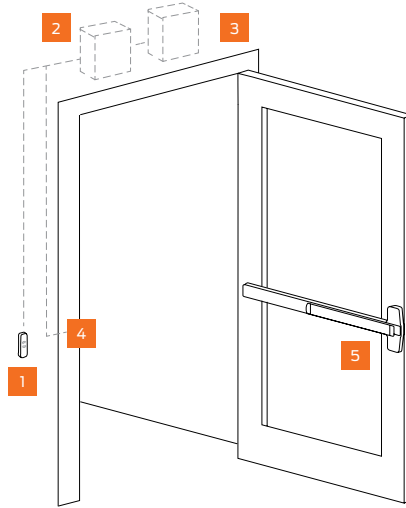


**Heavy duty**, up to 1,000,000 cycles, 1300 lbs. static strength

**Surface mounted**, quick and easy installation

**Fire rated**, fail secure

**Rim** exit device applications



Surface mounted strike for challenging applications such as aluminum storefronts.

- 1 aptiQ™ SM10 smart card reader
- 2 Schlage CT5000 offline controller
- 3 Von Duprin PS902 power supply
- 4 Von Duprin 6300 electric strike
- 5 Von Duprin 98 Series exit device

## 6400 Series

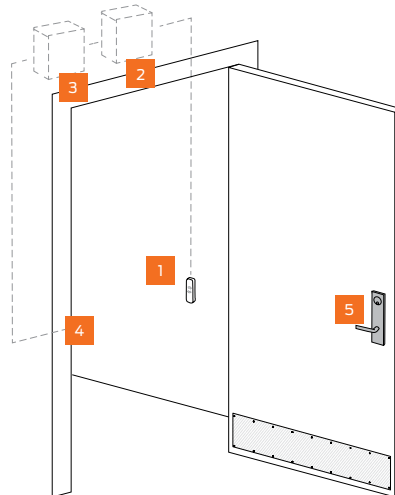


**Heavy duty**, up to 1,000,000 cycles, 1300 lbs. static strength

**Modular design** adjusts to centerline of many MS/MD locks

**Fire rated**, fail secure

**Mortise or cylindrical** lockset applications



Designed for high security applications such the electrical room of a small business.

- 1 aptiQ SM10 smart card reader
- 2 Schlage CT5000 offline controller
- 3 Von Duprin PS902 power supply
- 4 Von Duprin 6400 electric strike
- 5 Schlage L9000 mortise lock

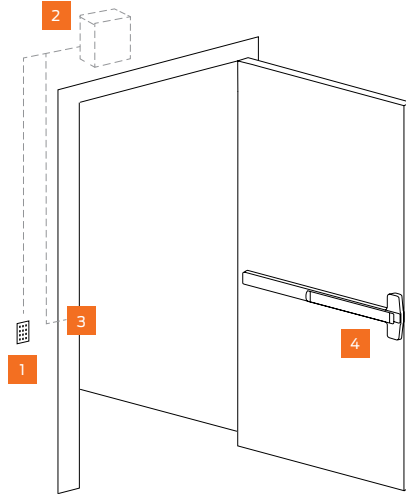
Door and frame material			Codes	Power requirements		Additional options			Series
Hollow metal	Wood	Aluminum	Fire rated	AC	DC	Latchbolt monitor	Rectifier kit	Entry buzzer	
■	■	-	-	-	12/24	4211: N/A 4212: Standard	Optional	Optional (Fail-secure only)	<b>4200 Series</b>
■	■	■	-	-	12/24	-	Optional	-	<b>5100 Series</b>
■	■	■	-	-	12/24	-	Optional	Optional	<b>6300 Series</b>
■	■	■	■	12 to 24	12/24	Optional	-	-	<b>6400 Series</b>

The 6100 Series and 6200 Series have a many different models to accommodate virtually any application and type of lockset. Please see the data sheet to make the proper selection.

6100 Series



**Heavy duty**, up to 1,000,000 cycles, 1300 lbs. static strength  
**Broad application coverage** with a variety of factory orderable options  
**Rim** exit device applications



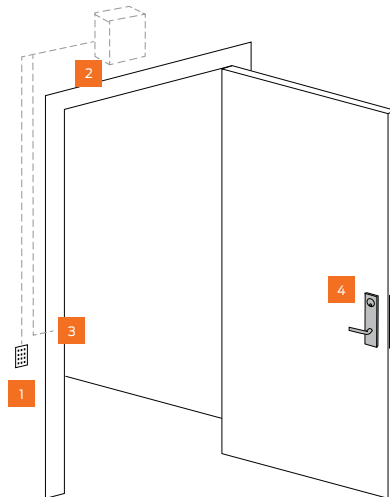
Ideal for high abuse applications such as perimeter entrances and exits where secure access control is required.

- 1 Schlage KP232 standalone keypad
- 2 Von Duprin PS902-FA power supply
- 3 Von Duprin 6100 Series electric strike
- 4 Von Duprin 98 Series exit device

6200 Series



**Heavy duty**, up to 1,000,000 cycles, 1300 lbs. static strength  
**Broad application coverage** with a variety of factory orderable options  
**Mortise or cylindrical** lockset applications



Heavy duty product designed for high security applications such as laboratories or records offices.

- 1 Schlage KP212 standalone keypad
- 2 Von Duprin PS902-FA power supply
- 3 Von Duprin 6200 Series electric strike
- 4 Schlage L9000 mortise lock

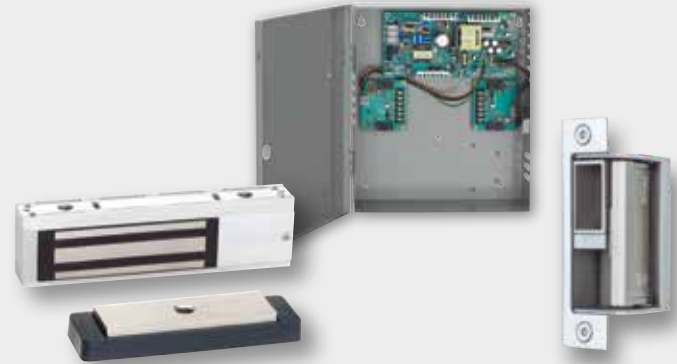
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System components

## Quick cross reference guide



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To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

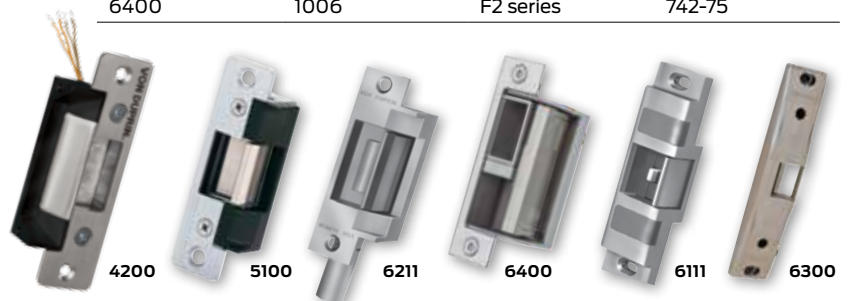
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

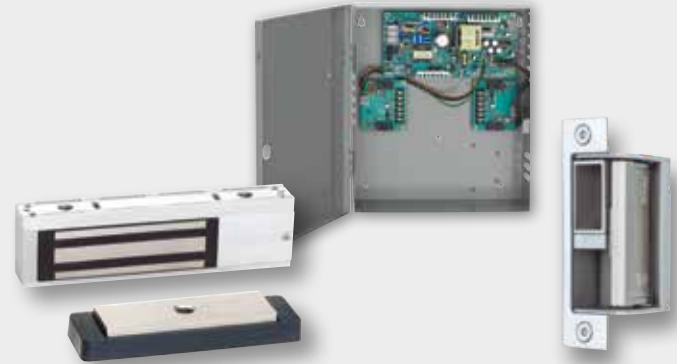
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- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000



# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

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- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

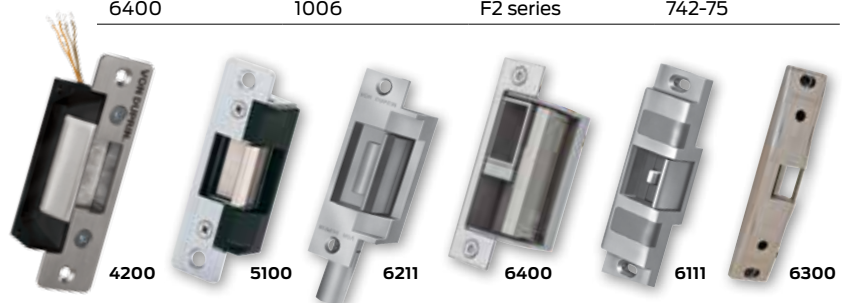
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## Competitive model numbers

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6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
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6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

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PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

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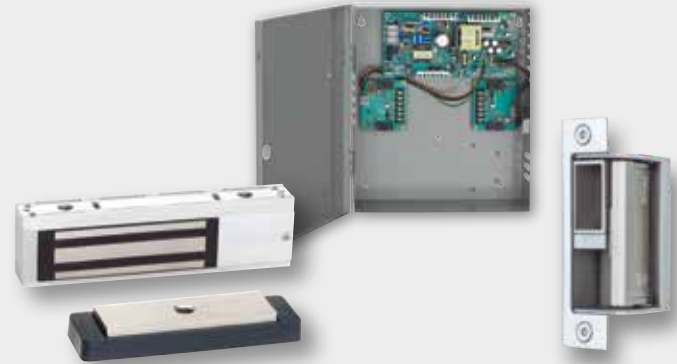
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- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

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72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

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### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

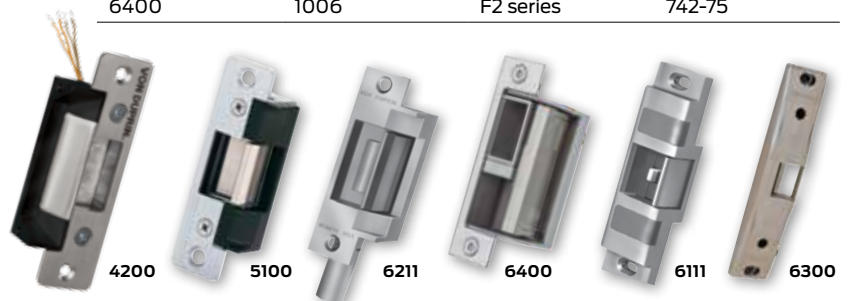
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6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

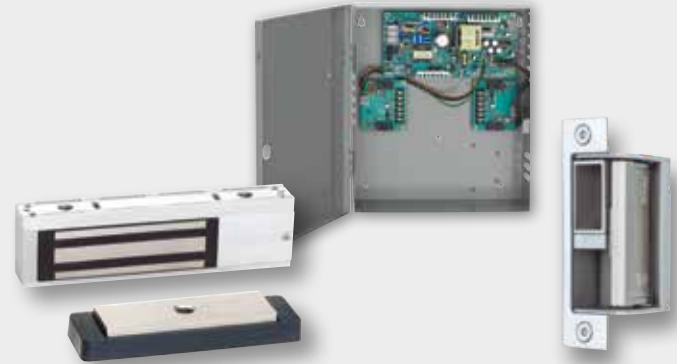
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System components

## Quick cross reference guide



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To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series



# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000



# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

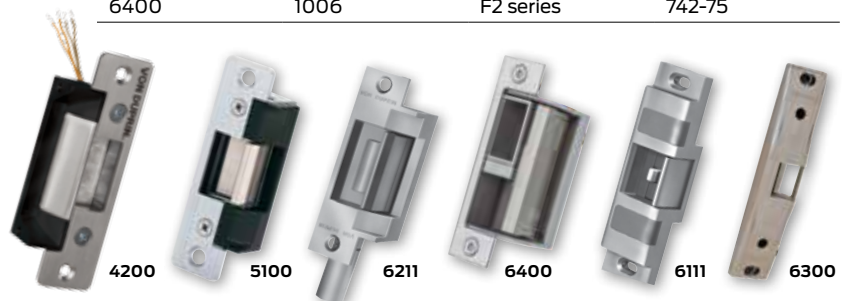
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
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PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

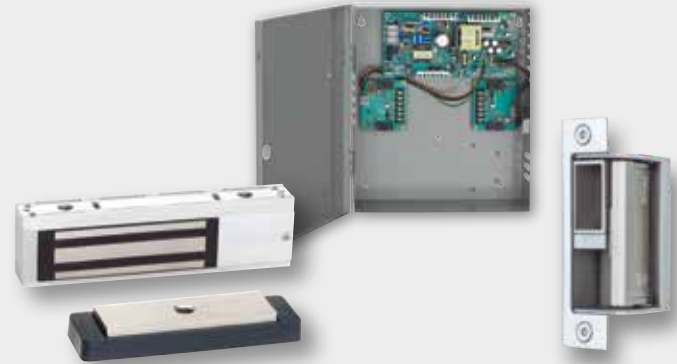
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- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
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## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

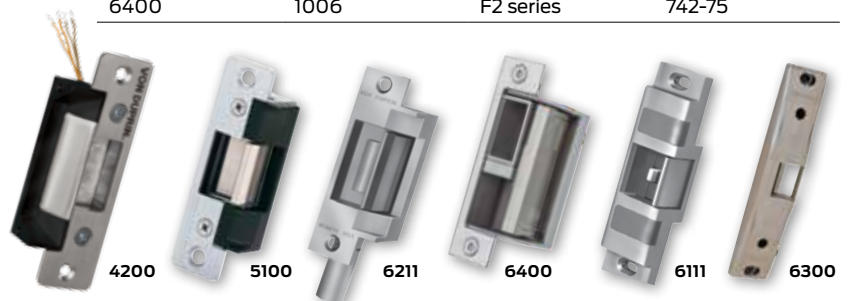
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- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
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6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
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6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
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6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
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# Power supplies

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PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
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PS902



PS914

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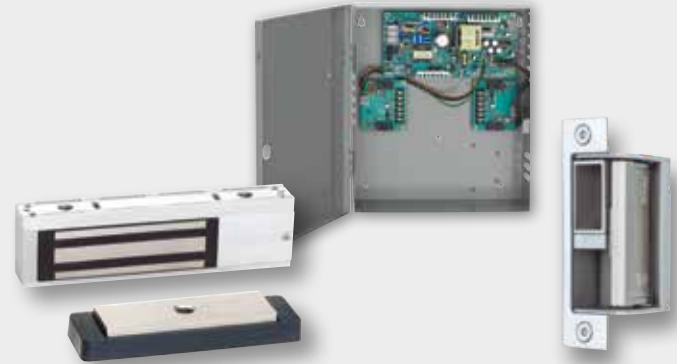
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- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series



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- MiniLine™ mortise mounted for interior sliding doors
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M420P	320+DSM-MBS	M38DLST M380BD
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M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
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M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000



# Electric strikes

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- Optional latchbolt monitoring
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- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC,12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

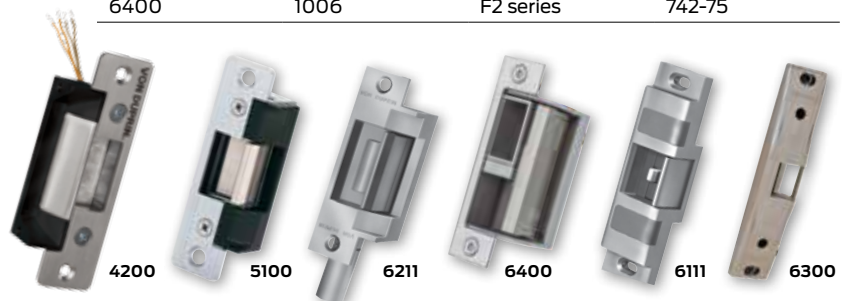
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## Competitive model numbers

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4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
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6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
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6224AL	-	-	310-2 RF
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- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

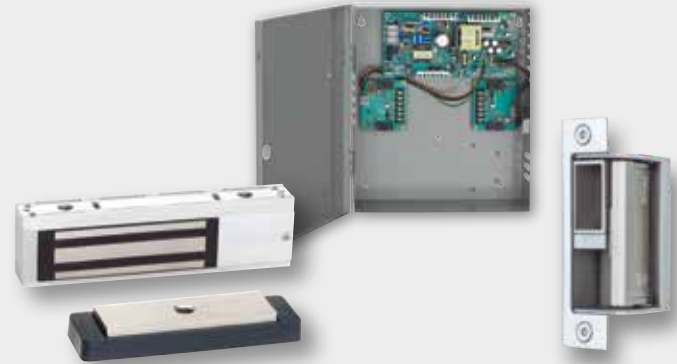
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System components

## Quick cross reference guide



Allegion offers a full portfolio of system components, including: power supplies, electric strikes, electromagnetic locks, and system accessories that allow your customer to customize an electronic access control solution for their unique application.

To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

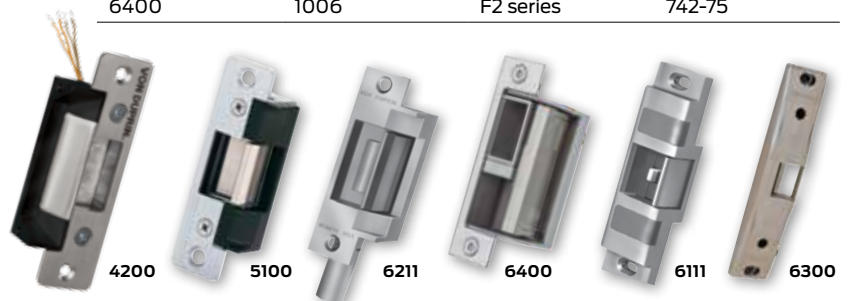
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
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- Universal 120-240 VAC input
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- **900-4R** - Independently controlled relays to power multiple devices
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PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
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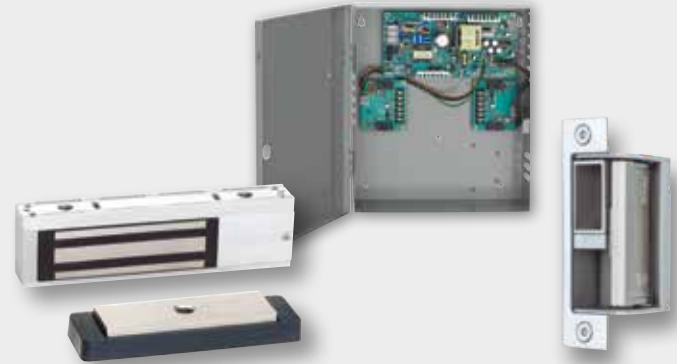
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- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series



# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
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M420



M390RFK



70



GF3000



# Electric strikes

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- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

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- 12/24VDC,12/24VAC field selectable
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- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

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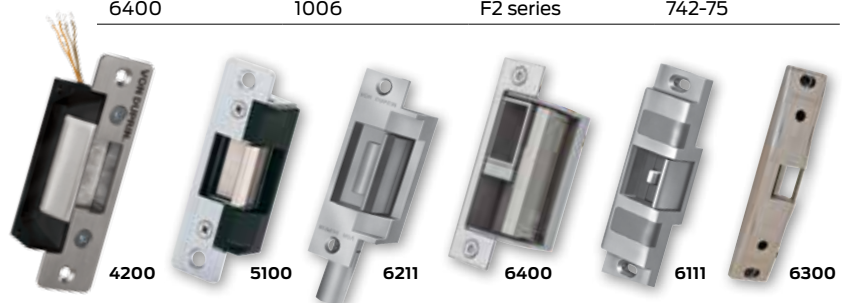
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6225	1006J-2	-	310-2 OB
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-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

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- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

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# Schlage

## Electronic security

### System Components

Datasheets  
Master Index



**SCHLAGE**

# 320M

Mortise mount sliding door  
electromagnetic lock



## Overview

Schlage provides the industry's most complete selection of electromagnetic locks. The 320M MiniLine™ is UL listed and engineered to meet the ANSI/BHMA standards for electromagnetic locks. As a mortise mounted electromagnetic lock, it is designed for use on sliding doors and interfaces with electronic access control systems, automatic door operators, and fire or hazard sensing systems to provide egress upon detectable emergency. With a fail-safe design, it offers an excellent solution for both security and life safety requirements when connected to the fire alarm circuit.

The 320M has been installed in thousands of locations worldwide including airports, hospitals, nursing homes, schools, universities, libraries, museums, retail and office buildings, laboratories, and government buildings.

## Features and benefits

- 500 lb. hold force rating
- Compact, mortise mount design for sliding doors
- Includes mounting tabs and armature mounting block
- Low maintenance - no moving parts
- Meets security and life safety requirements
- Field selectable 12 or 24 VDC operation
- Standard features include adjustable time delay (ATD), door status monitor (DSM), and magnetic bond sensor (MBS)
- cUL and CSFM certified, meets ANSI/BHMA A156.23 standard
- UL 10C listed for positive pressure fire tests of door assembly
- Limited lifetime warranty on magnetic coil assembly

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## Specifications

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Holding force	Meets or exceeds BHMA standard of 500 lbs
Input voltage	12/24 VDC
Current draw	.45A@ 12 VDC .23A @ 24 VDC
Wiring	Wire leads 12" long
Lock body (L x H x D)	7" x 1 <sup>3</sup> / <sub>8</sub> " x 1 <sup>7</sup> / <sub>8</sub> "
Armature (L x H x D)	4 1/4" x 1 1/2" x 5/8"
Weight	6 lbs

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**Note for wood frames:** Due to higher ambient operating temperatures, it is required that the 12 VDC configuration be used.

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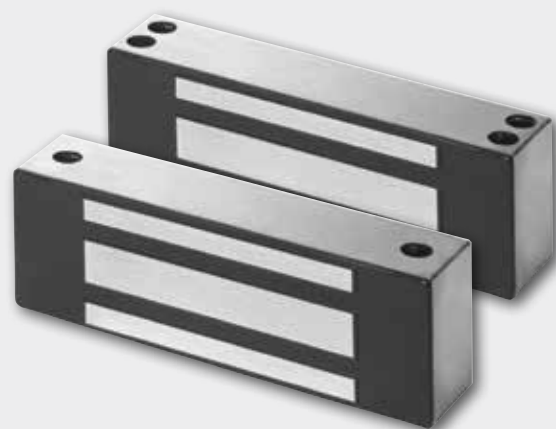


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**SCHLAGE**

## 40/70 Series

### Electromagnetic locks



### Overview

Schlage's 40/70 Series electromagnetic locks come in five models and are ideal for virtually any retrofit application. These magnetic door locks feature a brick magnet design, providing an all-in-one solution that enables quick and easy installation. Common templating and standardized features such as automatic voltage selection, magnetic bond sensor, door status monitor and stainless steel housing make these magnetic locks easy to stock, easy to select and easy to install.

### Features and benefits

- Ideal for retrofit applications
- Single and top jamb (TJ) models available
- Double magnet model available (70 Series only)
- Low amp draw:
  - 40 Series: .15A @24 VDC, .32A @12 VDC
  - 70 Series - .12A @24 VDC, .25A @12 VDC
- Hold force options right for your application:
  - 40 Series - 500 lb. rated for traffic control applications
  - 70 Series - 1000 lb. rated for high security applications
- Standard features include automatic voltage selector (AVS), magnetic bond sensor (MBS) and door position switch (DPS)
- Simplified 2-piece lock and armature installation
- Stainless steel housing in satin finish – standard with options for single lock dress covers in 3 finishes
- Single lock accessories include: Herculite door kit, universal header bracket, header extension bracket, concrete/wood brackets and aluminum spacer brackets
- UL 10C listed for positive pressure fire tests of door assemblies
- ANSI/BHMA A156.23 Grade 1, cUL and CSFM certifications
- Limited lifetime warranty on magnetic coil assembly

## Specifications

	40	40TJ*	70	70TJ*	72
Holding force	500 lbs	500 lbs	1000 lbs	1000 lbs	1000 lbs / door leaf
Lock Type	Single	Single top jamb	Single	Single top jamb	Double <sup>1</sup>
Input voltage (auto selected)	12/24 VDC	12/24 VDC	12/24 VDC	12/24 VDC	12/24 VDC
Current draw @ 12 VDC	.32A	.32A	.25A	.25A	.50A
@ 24 VDC	.15A	.15A	.12A	.12A	.25A
Lock dimensions (H x L x D)	1 7/8" x 8" x 1 5/8"	1 7/8" x 8" x 1 5/8"	3" x 8" x 1 7/8"	3" x 8" x 1 7/8"	3" x 22" x 1 7/8"
Weight (approximate)	4 lbs	4 lbs	8 lbs	12 lbs	15 lbs
Certifications	UL 10C, cUL, CSFM, ANSI/BHMA 156.23	UL 10C, cUL, CSFM, ANSI/BHMA 156.23	UL 10C, cUL, CSFM, ANSI/BHMA 156.23	UL 10C, cUL, CSFM, ANSI/BHMA 156.23	UL 10C, cUL, CSFM, ANSI/BHMA 156.23
Temperature	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)

\* 40TJ/70TJ - Top jamb unit (inswinging doors). Magnetic mounts on inside top jamb. Adjustable from top edge of armature.

<sup>1</sup> Separate housings

## Filler plates

Filler plates available in 628 satin aluminum or 335 satin black finishes

1 1/4" x 1/8"

1 1/4" x 1/4"

1 1/4" x 3/8"

1 1/4" x 1/2"

1 1/4" x 5/8"

## Ordering information

- **40 and 70** - Single locks
- **40TJ and 70TJ** - Top jamb single locks for inswinging doors
- **72** - Double lock

Accessories (Available in 628 satin aluminum or 335 satin black.

Dress covers also available in 605 bright brass)

- **HDB-40 and HDB-70** - Herculite door brackets
- **UHB** - Universal header bracket
- **HEB** - Header extension bracket
- **CWB-40 and CWB-70** - Concrete/wood brackets
- **ASB-40 and ASB-70** - Aluminum spacer brackets
- **DC40** - (specify finish #)
- **DC70** - (specify finish #)
- **OSA** - (70 model only) - 1/4" offset armature option

Finishes (accessories only)

- **628** US28 Satin aluminum, anodized (standard)
- **605** US3 Bright brass (dress cover only)
- **335** US19 Satin black, anodized

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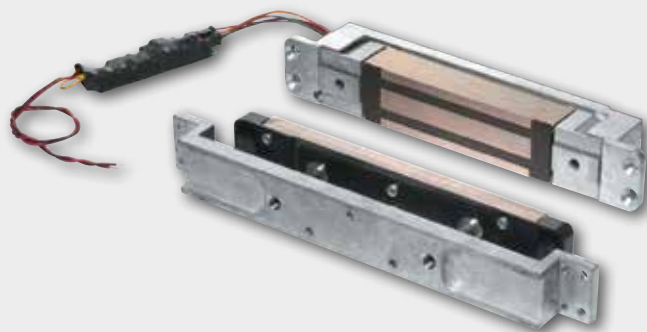


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## GF3000

Mortise mounted shear lock



### Overview

GF3000 Series shear locks feature a patented design, offering advances over any shear lock in the market.

A microprocessor-based control module provides advanced electronic features. This circuitry automatically senses and adjusts input voltage, allowing for operation from 12 to 24 volt DC power sources.

These mortise shear locks offer the advantage of a totally concealed locking mechanism, providing superior security and appearance while allowing for normal door movement. The patented design incorporates locking “tabs” on the magnet assembly with mating grooves in the armature plate.

The GF3000 Series locks are ideally suited for commercial grade quality hollow metal doors and frames, as well as herculite doors with top rail. Advances in design provide low operating temperatures, making these shear lock suitable for use in the growing demand for concealed locks in wood frames.

The GF3000TRD model is available when armature adjustment is required from the edge of the door due to flush ceiling conditions. The GF3000BRD model is available when no top rail mounting is available.

### Features and benefits

- 3000 lb. hold force rating
- Fully concealed shear lock mortise design
- Automatic voltage selection (AVS) 12/24 VDC (filtered)
- Built-in automatic relock switch
- Adjustable time delay on relock, 0-30 seconds
- Low temperature operation
- Microprocessor controlled
- Optional Magnetic Bond Sensor (MBS) to monitor the secure/not secure condition of the lock
- Optional Door Status Monitor (DSM) to sense the open/closed position of the door
- ANSI/BHMA 156.23, UL 10C, cUL, and CSFM certifications
- Limited lifetime warranty on magnetic coil



## Specifications

	GF3000	GF3000TRD	GF3000BRD
Holding force	3000 lbs	3000 lbs	3000 lbs
Input voltage*	12/24 VDC	12/24 VDC	12/24 VDC
Current draw	.90A @ 12VDC .45A @ 24VDC	.90A @ 12VDC .45A @ 24VDC	.90A @ 12VDC .45A @ 24VDC
Lock body Dimensions (L x H x D)	9 1/2" x 1 1/2" x 1 1/2"	9 1/2" x 1 1/2" x 1 1/2"	N/A
Lock body with mounting tabs	11 9/16" x 1 1/2" x 1 1/2"	11 9/16" x 1 1/2" x 1 1/2"	7 1/16" x 1 1/2" x 1 3/16"
Threshold box	N/A	N/A	7 1/2" x 2 1/4" x 1 3/4"
Armature	8 3/8" x 1 3/8" x 1/2"	8 3/8" x 1 3/8" x 1/2"	6 1/8" x 1 3/8" x 7/16"
Armature bracket	10 5/8" x 1 3/8" x 1"	6 1/4" x 1 3/8" x 1 1/4"	6 1/4" x 1 3/8" x 1 1/4"
Weight	7 lbs.	6 lbs.	6 lbs.
Certifications	UL 10C, cUL, CSFM, ANSI/BHMA 156.23	UL 10C, cUL, CSFM, ANSI/BHMA 156.23	UL 10C, cUL, CSFM, ANSI/BHMA 156.23

\*Requires filtered, regulated power supply.

## Ordering information

- **GF3000** (Standard Model): Fully concealed shear lock. The armature mounts into top of door or top rail and magnet mounts into header or frame. Air gap adjustment is from top edge of door. Vertical mounting of magnet and armature is also an option.
- **GF3000TRD** (Top Rail Door): Fully concealed shear lock intended for use when top of door is not accessible for air gap adjustment after door is hung. Armature mounts into top of door or top rail and magnet mounts into header or frame. Air gap adjustment is from latch edge of door.
- **GF3000BRD** (Bottom Rail Door): Fully concealed shear lock intended for use when top of door is not accessible for air gap adjustment after door is hung. Armature mounts into bottom of door or bottom rail and magnet mounts into floor. Air gap adjustment is from edge of armature. Popular application for Herculite doors.

### Options

- **DSM/MBS** - Door Status Monitor/Magnetic Bond Sensor

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**SCHLAGE**

## GF3000

Surface mounted  
shear lock



### Overview

GF3000 Series shear locks' patented design provides powerful holding force in low profile models for inswinging and outswinging doors. A microprocessor-based control module provides advanced electronic features. This circuitry automatically senses and adjusts input voltage, allowing for operation from 12 to 24 volt DC power sources.

The lightweight, black anodized housing can be quickly mounted without need of brackets and is finished off with a satin aluminum decorative plate for a clean look.

### Features and benefits

- 3000 lb. hold force rating
- Automatic voltage selection (AVS) 12/24 VDC (filtered)
- Built-in automatic relock switch
- Adjustable time delay on relock, 0-30 seconds
- Low temperature operation
- Microprocessor controlled
- Optional Magnetic Bond Sensor (MBS) to monitor the secure/not secure condition of the lock
- Optional Door Status Monitor (DSM) to sense the open/closed position of the door
- Housing is black anodized with BHMA 628 satin aluminum decorative plate
- Meets ANSI/BHMA 156.23 standard
- UL 10C and cUL certifications
- Limited lifetime warranty on magnetic coil assembly

## Specifications

	GF3000SM	GF3000TJ
Holding force (lbs.)	3000	3000
Door type	Outswinging	Inswinging
Current Draw	.90A @ 12VDC .45A @ 24VDC	.90A @ 12VDC .45A @ 24VDC
Lock housing (L x H x D)	9 13/16" x 1 7/8" x 2"	9 13/16" x 1 7/8" x 2"
Armature housing (L x H x D)	9 13/16" x 1 1/4" x 2"	9 13/16" x 1 1/4" x 2"
Weight	9 lbs.	9 lbs.
Certifications	UL10C, cUL, CSFM, ANSI/BHMA 156.23	UL10C, cUL, CSFM, ANSI/BHMA 156.23

## Ordering information

- **GF3000SM (Surface Mounted):** Surface mounted shear lock intended for use on outswinging doors. Surface mounted magnet mounts under header and surface mounted armature assembly mounts into door just under magnet assembly. Air gap adjustment is from top of door.
- **GF3000TJ (Top Jamb):** Surface mounted shear lock intended for use on inswinging doors that are flush with frame's inner face. Surface mounted armature assembly mounts onto top of door or top rail and surface mounted magnet mounts onto frame's face. Air gap adjustment is from top of door.

### Options

- **DSM/MBS** - Door Status Monitor/Magnetic Bond Sensor

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# M390RFK Retrofit

Electromagnetic lock



## Overview

The M390RFK is designed to retrofit the Locknetics 390+ without any additional prep. This ensures ease of installation for retrofit applications. The M390RFK comes standard with a Door Status Monitor (DSM), Magnetic Bond Sensor (MBS), and Relocking Time Delay (RTD). It's design employs a standardized circuit board with easy-to-install connectors, adjustable mounting brackets and integrated mounting screws. The armature housing was designed to eliminate noise and sagging, increasing the overall reliability of the product. The armature housing also holds magnets for the DSM feature without having to mount an additional plate to the armature, ensuring quicker, more reliable installations.

The M390RFK easily interfaces with most electronic access control systems in the market today, as well as automatic door operators and fire, or other hazard sensing systems for egress and emergency egress.

## Features and benefits

- Direct retrofit for Locknetics 390+ electromagnetic lock for outswinging doors
- Single lock model has 1500 lbs. of holding force for maximum security applications
- Automatic voltage selection (AVS)
- Adjustable mounting brackets
- Standard features include door status monitor (DSM), magnetic bond sensor with LED indicator (MBS) and a relocking time delay (RTD) of 0-110 seconds
- UL 10C listed for positive pressure fire tests of door assemblies: 3 hours
- cUL certified
- Limited lifetime warranty on magnetic coil assembly

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## M390RFK electromagnetic lock specifications

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Holding force	1500 lbs
Door type	Single outswinging only
Input voltage (standard unit)	12 or 24 VDC
Current draw (amps standard unit)	.65A @ 12 VDC .45A @ 24 VDC
Height	2 7/8"
Length	10 1/2"
Depth	1 5/8"
Weight (approximate)	12.4 lbs
Certifications	UL 10C, cUL
Temperature	-10° to 60°C (14° to 140° F)

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# M420/422

## Electromagnetic locks



### Overview

M400 Series electromagnetic locks from Schlage are designed with the customer in mind to be robust, easy-to-install, and secure. The unique bayonet mounting feature makes installation easier, allowing the installer to have their hands free during the mounting process.

All M400 Series electromagnetic locks are symmetrical with field-selectable handing, allowing optimum placement of the magnet, no matter the application. They are designed to provide automatic voltage sensing for 12 and 24 volts along with polarity protection to make wiring less complex. M420 models are tested and certified to meet or exceed UL 1034 and BHMA 500 lb hold force requirements.

The M420 electromagnetic locks come in four configurations to meet your specific security needs. Single and double door models are offered in standard configurations. Plus versions of these models with "P" designations add intelligent sensing and reporting features needed to integrate with access control systems along with additional available options. Kits are available for top jamb, double door, and glass door applications.

### Features and benefits

- 500 lb. hold force rating for traffic control applications
- "Plus" models offer magnetic bond sensor (MBS), adjustable relock time delay (RTD) and door position switch (DPS)
- Automatic voltage selection (AVS)
- Symmetrical design with field-selectable handing for optimum placement
- Bayonet mount simplifies installation by eliminating the need to hold lock overhead while securing
- Armature mount pivot feature compensates for slight opening imperfections
- Optional mounting kits available for top jamb mount, double door and Herculite glass doors
- Aluminum housing in 628 satin finish
- ANSI/BHMA 156.23 Grade 1, UL 1034, UL 10C, cUL, CFSM certifications
- Limited lifetime warranty on magnetic coil assembly

## Additional features

### All models

- Automatic Voltage Selection (AVS) senses the voltage applied to the lock and responds accordingly

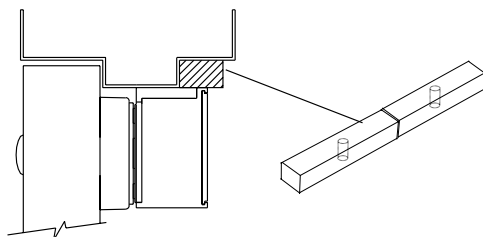
### M420P/M422P

- Magnetic Bond Sensor (MBS) monitors the strength of the bond between the lock and armature so you know the door is secure
- Door Position Switch (DPS) monitors whether the door is open or closed
- Relock Time Delay (RTD) provides a relock delay that is adjustable from 0.5 to 30 seconds
- Optional accessories (P models only)
  - ATS/LED Combines anti-tamper switch (ATS) with magnetic bond sensor in one kit.
    - ATS provides an indication that the cover of the magnet is securely fastened to the lock and that the on board circuitry is secure
    - Magnetic bond sensor indicator (LED) provides visual indication of magnetic bond at the lock

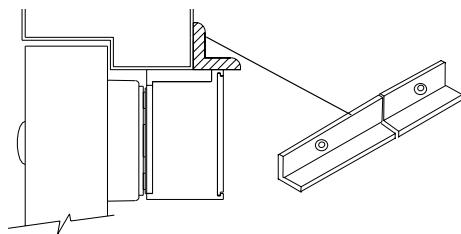
### Optional accessories (for all)

- Herculite door bracket kit
- Top jamb (inswinging doors) kit
- Double door connector kit (converts two single magnetic locks to a double)

### Filler Plate



### Angle Bracket



## M420/M422 electromagnetic lock specifications

Specification	M420/M420P	M422/M422P
Holding force	meets or exceeds BHMA standard of 500 lbs	meets or exceeds BHMA standard of 500 lbs
Input voltage (auto selected)	12/24 VDC	12/24 VDC
Current draw (amps standard unit)	.75A @ 12 VDC .38A @ 24 VDC	1.5A @ 12 VDC .76A @ 24 VDC
Automatic dual voltage	12/24 VDC	12/24 VDC
Height	2 1/2"	2 1/2"
Length	9"	18 1/16"
Depth	1 3/8"	1 3/8"
Weight (approximate)	6 lbs	12 lbs
Certifications	UL 1034, UL 10C, ANSI/BHMA156.23, cUL, CSFM	UL 1034, UL 10C, ANSI/BHMA156.23, cUL, CSFM
Temperature	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)
Wire gauge	14-22 AWG	14-22 AWG

## Filler plates and angle brackets specifications

Length	9"
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### Filler plates

Width x Height	Plate no.
1 1/4" x 1/8"	4201F
1 1/4" x 1/4"	4202F
1 1/4" x 3/8"	4203F
1 1/4" x 1/2"	4204F
1 1/4" x 5/8"	4205F
3/4" x 1/2"	4206F
3/4" x 5/8"	4207F
3/4" x 3/4"	4208F

### Angle brackets

Width x Height	Bracket no.
1" x 1"	4201A
1 1/2" x 1"	4202A
1 1/2" x 1 1/2"	4203A
1 1/2" x 2"	4204A
1 1/2" x 2 1/2"	4205A

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# M450/452

## Electromagnetic locks



### Overview

M400 Series electromagnetic locks from Schlage are designed with the customer in mind to be robust, easy-to-install, and secure. The unique bayonet mounting feature makes installation easier, allowing the installer to have their hands free during the mounting process.

All M400 Series electromagnetic locks are symmetrical with field-selectable handing, allowing optimum placement of the magnet, no matter the application. They are designed to provide automatic voltage sensing for 12 and 24 volts along with polarity protection to make wiring less complex. M450 models are tested and certified to meet or exceed UL 1034 and BHMA 1000 lb hold force requirements.

The M450 electromagnetic locks come in four configurations to meet your specific security needs. Single and double door models are offered in standard configurations. Plus versions of these models with "P" designations add intelligent sensing and reporting features needed to integrate with access control systems along with additional available options. Kits are also available for top jamb, double door, and glass door applications.

### Features and benefits

- 1000 lb. hold force rating for high security applications
- "Plus" models offer magnetic bond sensor (MBS), adjustable relock time delay (RTD) and door position switch (DPS)
- Automatic voltage selection (AVS)
- Symmetrical design with field-selectable handing for optimum placement
- Bayonet mount simplifies installation by eliminating the need to hold lock overhead while securing
- Armature mount pivot feature compensates for slight opening imperfections
- Optional mounting kits available for top jamb mount, double door and Herculite glass doors
- Aluminum housing in 628 satin finish
- ANSI/BHMA 156.23 Grade 1, UL 1034, UL 10C, cUL, CFSM certifications
- Limited lifetime warranty on magnetic coil assembly



## Additional features

### All models

- Automatic Voltage Selection (AVS) senses the voltage applied to the lock and responds accordingly

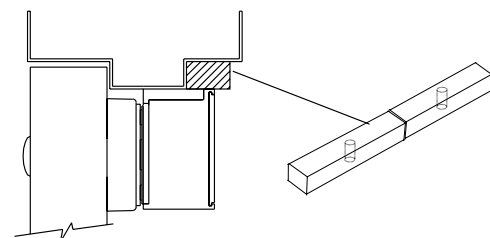
### M450P/M452P

- Magnetic Bond Sensor (MBS) monitors the strength of the bond between the lock and armature so you know the door is secure
- Door Position Switch (DPS) monitors whether the door is open or closed
- Relock Time Delay (RTD) provides a relock delay that is adjustable from 0.5 to 30 seconds
- Optional accessories (P models only)
  - ATS/LED Combines anti-tamper switch (ATS) with magnetic bond sensor in one kit.
    - ATS provides an indication that the cover of the magnet is securely fastened to the lock and that the on board circuitry is secure
    - Magnetic bond sensor indicator (LED) provides visual indication of magnetic bond at the lock

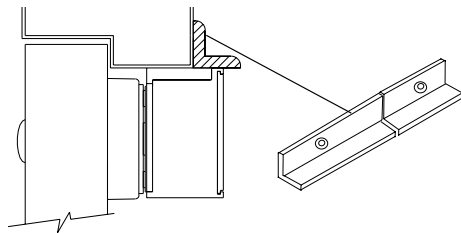
### Optional accessories (for all)

- Herculite door bracket kit
- Top jamb (inswinging doors) kit
- Double door connector kit (converts two single magnetic locks to a double)

### Filler Plate



### Angle Bracket



## M450/M452 electromagnetic lock specifications

Specification	M450/M450P	M452/M452P
Holding force	meets or exceeds BHMA standard of 1000 lbs	1000 lbs per door leaf
Door type	Single	Double
Input voltage (auto selected)	12/24 VDC	12/24 VDC
Current draw	.75A @ 12 VDC .38A @ 24 VDC	1.5A @ 12 VDC .75A @ 24 VDC
Height	3"	3"
Length	10 1/4"	20 9/16"
Depth	1 3/4"	1 3/4"
Weight (approximate)	10 lbs	20 lbs
Certifications	UL 1034, UL 10C, ANSI/BHMA156.23, cUL, CSFM	UL 1034, UL 10C, ANSI/BHMA156.23, cUL, CSFM
Temperature	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)
Wire gauge	14-22 AWG	14-22 AWG

## Filler plates and angle brackets specifications

Length	10 1/4"
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### Filler plates (order 2 if purchasing a double lock)

Width x Height	Plate no.
1 1/4" x 1/8"	4501F
1 1/4" x 1/4"	4502F
1 1/4" x 3/8"	4503F
1 1/4" x 1/2"	4504F
1 1/4" x 5/8"	4505F
3/4" x 1/2"	4506F
3/4" x 5/8"	4507F
3/4" x 3/4"	4508F

### Angle brackets (order 2 if purchasing a double lock)

Width x Height	Bracket no.
1" x 1"	4501A
1 1/2" x 1"	4502A
1 1/2" x 1 1/2"	4503A
1 1/2" x 2"	4504A
1 1/2" x 2 1/2"	4505A

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# M490/492

## Electromagnetic locks



### Overview

M400 Series electromagnetic locks from Schlage are designed with the customer in mind to be robust, easy-to-install, and secure. The unique bayonet mounting feature makes installation easier, allowing the installer to have their hands free during the mounting process.

All M400 Series electromagnetic locks are symmetrical with field-selectable handing, allowing optimum placement of the magnet no matter the application. They are designed to provide automatic voltage sensing for 12 and 24 volts along with polarity protection to make wiring less complex. M490 models are tested and certified to meet or exceed UL 1034 and BHMA 1500 lb hold force requirements.

The M490 electromagnetic locks come in four configurations to meet your specific security needs. Single and double door models are offered in standard configurations. Plus versions of these models with "P" designations add intelligent sensing and reporting features needed to integrate with access control systems along with additional available options. Kits are also available for top jamb, double door, and glass door applications.

### Features and benefits

- 1500 lb. hold force rating for maximum security applications
- "Plus" models offer magnetic bond sensor (MBS), adjustable relock time delay (RTD) and door position switch (DPS)
- Automatic voltage selection (AVS)
- Symmetrical design with field-selectable handing for optimum placement
- Bayonet mount simplifies installation by eliminating the need to hold lock overhead while securing
- Armature mount pivot feature compensates for slight opening imperfections
- Optional mounting kits available for top jamb mount, double door and Herculite glass doors
- Aluminum housing in 628 satin finish
- ANSI/BHMA 156.23 Grade 1, UL 1034, UL 10C, cUL, CFSM certifications
- Limited lifetime warranty on magnetic coil assembly

## Additional features

### All models

- Automatic Voltage Selection (AVS) senses the voltage applied to the lock and responds accordingly

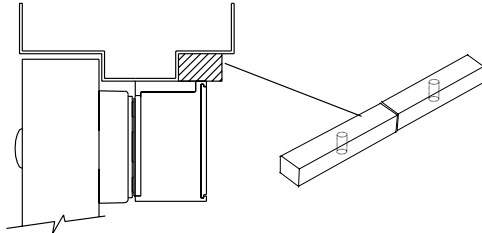
### M490P/M492P

- Magnetic Bond Sensor (MBS) monitors the strength of the bond between the lock and armature so you know the door is secure
- Door Position Switch (DPS) monitors whether the door is open or closed
- Relock Time Delay (RTD) provides a relock delay that is adjustable from 0.5 to 30 seconds
- Optional accessories (P models only)
  - ATS/LED Combines anti-tamper switch (ATS) with magnetic bond sensor in one kit.
    - ATS provides an indication that the cover of the magnet is securely fastened to the lock and that the on board circuitry is secure
    - Magnetic bond sensor indicator (LED) provides visual indication of magnetic bond at the lock

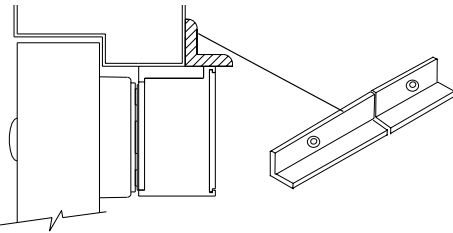
### Optional accessories (for all)

- Herculite door bracket kit
- Top jamb (inswinging doors) kit
- Double door connector kit (converts two single magnetic locks to a double)

### Filler Plate



### Angle Bracket



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## M490/M492 electromagnetic lock specifications

Specification	M490/M490P	M492/M492P
Holding force	Meets or exceeds BHMA standard of 1500 lbs	Meets or exceeds BHMA standard of 1500 lbs
Door type	Single	Double
Input voltage (auto selected)	12/24 VDC	12/24 VDC
Current draw	.65A @ 12 VDC .35A @ 24 VDC	1.3A @ 12 VDC .7A @ 24 VDC
Height	3"	3"
Length	12 1/2"	25 1/16"
Depth	1 3/4"	1 3/4"
Weight (approximate)	14 lbs	28 lbs
Certifications	UL 10C, UL 1034, ANSI/BHMA A156.23, cUL, CSFM	UL 10C, UL 1034, ANSI/BHMA A156.23, cUL, CSFM
Temperature	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)
Wire gauge	14-22 AWG	14-22 AWG

## Filler plates and angle brackets specifications

Length	12 1/2"
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### Filler plates

Width x Height	Plate no.
1 1/4" x 1/8"	4901F
1 1/4" x 1/4"	4902F
1 1/4" x 3/8"	4903F
1 1/4" x 1/2"	4904F
1 1/4" x 5/8"	4905F
3/4" x 1/2"	4906F
3/4" x 5/8"	4907F
3/4" x 3/4"	4908F

### Angle brackets

Width x Height	Bracket no.
1" x 1"	4901A
1 1/2" x 1"	4902A
1 1/2" x 1 1/2"	4903A
1 1/2" x 2"	4904A
1 1/2" x 2 1/2"	4905A

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SCHLAGE

## M490DE

Delayed egress  
electromagnetic lock



### Overview

The Schlage M490DE delayed egress electromagnetic lock is designed to meet NFPA 101 Life Safety Code while providing the same robust, easy-to-install, security of our M400 Series magnetic locks. The M490DE has a 15-second delayed egress timer with audible alarm which can be configured to trigger by an internal “plunger switch,” or by external contacts, such as a request-to-exit push bar.

All M400 Series electromagnetic locks are symmetrical with field-selectable handing, allowing optimum placement of the magnet no matter the application. They are designed to provide automatic voltage sensing for 12 and 24 volts along with polarity protection to make wiring less complex. M490DE models are tested and certified to meet or exceed UL special locking arrangements and BHMA 1500 lb hold force requirements.

M490DE electromagnetic locks come in four configurations to meet your specific security needs. Single and double door models are offered in standard configurations. Plus versions of these models with “P” designations add intelligent sensing and reporting features needed to integrate with access control systems.

This easy-to-install, cost effective solution provides maximum access security and safety.

### Features and benefits

- 1500 lb. hold force rating for maximum security applications
- 15 second delay - activated by internal plunger switch or auxiliary input
- LED Indication with audible alerts
- Release input, reset input, fire alarm input
- Plus models offer magnetic bond sensor (MBS), adjustable relock time delay (RTD) and door position switch (DPS)
- Automatic voltage selection (AVS)
- Bayonet mount simplifies installation by eliminating the need to hold lock overhead while securing
- Armature pivot feature compensates for slight copening imperfections
- Aluminum housing in 628 satin finish
- UL special locking arrangements, UL 10C, cUL, CSFM certifications
- Meets NFPA 101 life safety code
- BOCA compliant option available
- Limited lifetime warranty on magnetic coil assembly

## Standard features

### ALL MODELS

- Auto Voltage Selection (AVS) senses the voltage applied to lock and responds accordingly
- Internal plunger switch activates delayed egress timer

### Optional accessories

- Herculite door bracket kit (HDB)

### M490DEP/M490DEP-2

- Magnetic Bond Sensor (MBS) monitors the strength of the bond between the lock and armature so you know the door is secure
- Door Position Switch (DPS) monitors whether the door is open or closed
- BOCA compliant (upon request) with options for 15- or 30-second time delay

## Ordering information

### STANDARD MODELS

- M490DE** - Single lock, 15-second delay
- M490DE-2** - Double lock, separate housing, 15-second delay

### Optional preset

- M490DE-30S** - Single lock, factory set 30-second delay (requires fire marshal letter of approval)

### PLUS MODELS

- M490DEP** - Single lock, 15-second delay
- M490DEP-2** - Double lock, 15-second delay
- M490DEP-BC** - BOCA compliant single lock, factory set 15-second delay with auto re-armed and locked state after door is opened and re-closes
- M490DEP-BC30S** - BOCA compliant single lock, factory set 30-second delay with auto re-armed and locked state after door is opened and re-closes (requires fire marshal letter of approval)

## M490DE electromagnetic delayed egress lock specifications

Specification	M490DE/M490DEP	M490DE-2/M490DEP-2
Holding force	Meets or exceeds BHMA standard of 1500 lbs	Meets or exceeds BHMA standard of 1500 lbs per door leaf
Input voltage (auto selected)	12/24 VDC	12/24 VDC
Current draw	.75A @ 12 VDC .45A @ 24 VDC	1.25A @ 12 VDC .76A @ 24 VDC
Height	3"	3"
Length	12 1/2"	25 1/16"
Depth	3 1/16"	3 1/16"
Weight (approximate)	16 lbs	32 lbs
Certifications	UL special locking arrangement, UL10C, cUL, CSFM	
Temperature	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)
Wire gauge	14-22 AWG	14-22 AWG

## Filler plates

Length	12 1/2"
Width x Height	Plate no.
1 1/4" x 1/8"	4901F
1 1/4" x 1/4"	4902F
1 1/4" x 3/8"	4903F
1 1/4" x 1/2"	4904F
1 1/4" x 5/8"	4905F
3/4" x 1/2"	4906F
3/4" x 5/8"	4907F
3/4" x 3/4"	4908F

## Angle brackets

Length	12 1/2"
Width x Height	Bracket no.
1" x 1"	4901A
1 1/2" x 1"	4902A
1 1/2" x 1 1/2"	4903A
1 1/2" x 2"	4904A
1 1/2" x 2 1/2"	4905A

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## About Allegion

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## M490G

Electromagnetic gate lock



### Overview

The Schlage M490G is a weather resistant electromagnetic gate lock with 1500 lbs of holding force designed for use on all types of sliding and swinging gates. As a high security magnetic lock, it can accommodate misalignment problems while supplying superior holding force.

A 1/2" compression connector is provided for installation of 1/2" EMT conduit, ensuring protection of hook-up wiring from weather and vandalism. Heavy-duty plating resists corrosion of mating surfaces, providing a low maintenance locking device.

A modified top jamb mounting bracket allows a single M490G to be mounted in a variety of positions. The M490G gate lock may be mounted to any gate frame or post. Special brackets may be required to adapt the lock to a particular frame or post. It is important that the lock is mounted so that the armature pulls straight back from the magnet face.

The M490G can be field configured for either 12 or 24 VDC operation. Magnetic Bond Sensor (MBS) and Gate Status Monitor (DPS) are standard.

### Features and benefits

- 1500 lb. hold force rating
- Magnetic bond sensor (MBS) and gate status monitor (DPS)
- Field selectable 12 or 24VDC operation
- Built-in voltage spike suppressor
- Electroless nickel plated finish
- Corrosion and weather resistant for exterior use
- Universal mounting brackets for swinging or sliding gate applications
- 1/2" EMT compression fitting protects hookup wires from weather and vandalism
- Two foot wire leads
- Accommodates gate misalignment
- No moving parts - low maintenance
- Limited lifetime warranty on magnetic coil assembly

## Standard features

### M490G

- Magnetic Bond Sensor (MBS) monitors the strength of the bond between the lock and armature so you know the door is secure
- Door Position Switch (DPS) monitors whether the door is open or closed
- Universal Mounting Brackets for swinging or sliding gate applications
- Built-in voltage spike suppression
- 1/2" EMT compression fitting
- Special corrosion resistant plating

## M490G electromagnetic gate lock specifications

Specifications	M490G
Holding force	Meets or exceeds BHMA standard of 1500 lbs
Input voltage (field selectable)	12/24 VDC
Current draw (amps standard unit)	.65A @ 12 VDC .35A @ 24 VDC
Height	3"
Length	11"
Depth	1 3/4"
Weight (approximate)	14 lbs
Temperature	-31° to 151° F (-35° to 66° C)
Wire gauge	14-22 AWG

## Filler plates

Length	11"
Width x Height	Plate no.
1 1/4" x 1/8"	49G1F
1 1/4" x 1/4"	49G2F
1 1/4" x 3/8"	49G3F
1 1/4" x 1/2"	49G4F
1 1/4" x 5/8"	49G5F
1 1/4" x 3/4"	49G6F
3/4" x 1/2"	49G7F
3/4" x 5/8"	49G8F

## Angle brackets

Length	11"
Width x Height	Bracket no.
1" x 1"	49G1A
1 1/2" x 1"	49G2A
1 1/2" x 1 1/2"	49G3A
1 1/2" x 2"	49G4A
1 1/2" x 2 1/2"	49G5A

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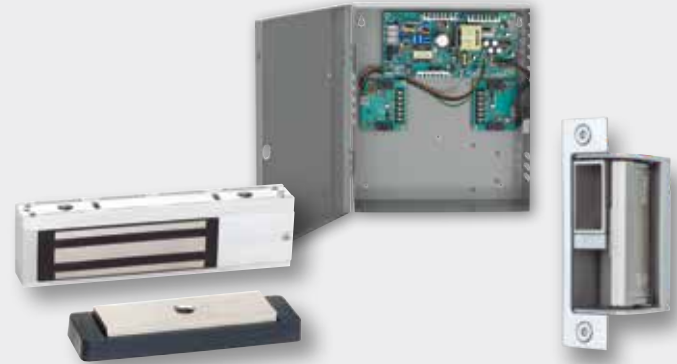
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System components

## Quick cross reference guide



Allegion offers a full portfolio of system components, including: power supplies, electric strikes, electromagnetic locks, and system accessories that allow your customer to customize an electronic access control solution for their unique application.

To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series



# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC,12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

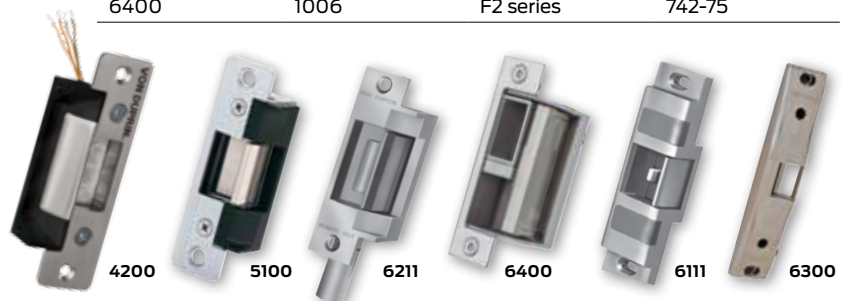
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

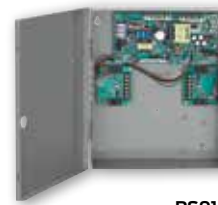
- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

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## About Allegion

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**SCHLAGE**

# PS900 Series

**Power supplies**





# Introducing the PS900 Series

The PS900 Series is a consolidated line of power supplies and accessories that offers enhanced flexibility and functionality. In addition, the PS900 is easy to order and install. The full line is UL 294 certified, the industry standard for reliability and performance.

The PS900 Series can be used in a variety of applications to convert high voltage AC power into the low voltage DC outputs required by most access control devices. The PS900 Series of power supplies protects devices downstream by providing Class 2<sup>1</sup>, filtered, and regulated power.

Once power is converted to low voltage DC, the PS900 Series offers a variety of distribution options, including basic fuse protection, simple relay, and advanced logic providing complex sequencing and timing functions.

<sup>1</sup> PS906 can provide Class 2 rated outputs when used with 900-8P distribution board.

# Overview

Three models of the PS900 Series are available. All convert high voltage 120 VAC-240 VAC (50-60 HZ) power to regulated and filtered low voltage power. Output can be field configured to either 12 VDC or 24 VDC.

- PS902: 2 amps
- PS904: 4 amps
- PS906: 6 amps

Note: The Von Duprin PS914 and 900-2RS are available for use with electrified exit devices.

## Features

- Constant output rating at both 12 VDC and 24 VDC provides superior performance
- Polarized connectors for option boards eliminate need for racks and side connectors
- Flat mounting of option boards provides easier access to terminal blocks for connection of electrified devices
- High voltage protective cover
- Battery back-up board auto-selects voltage
- Fire alarm relay can be configured to provide either switched or un-switched outputs from a power supply

## Certifications

- UL 294 certified—the standard for access control
- Class 2 rated <sup>1</sup>

<sup>1</sup> Except PS906, output rating exceeds Class 2 power limits

## The PS900 Series provides greater flexibility

The PS900 Series is a flexible solution that can be customized to meet your unique needs. Five distribution boards are available to choose from as well as a fire alarm board and battery back-up board. The chart below shows how many boards each model can accept:

Number of connectors	PS902 <sup>1</sup> (2 amps)	PS904 <sup>1</sup> (4 amps)	PS906 <sup>1</sup> (6 amps)
Option boards	1	2	3 <sup>2</sup>
Battery backup board	1	1	1

<sup>1</sup> One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it must be connected to an option board.

<sup>2</sup> If battery back-up is installed, only two additional option boards can be used.

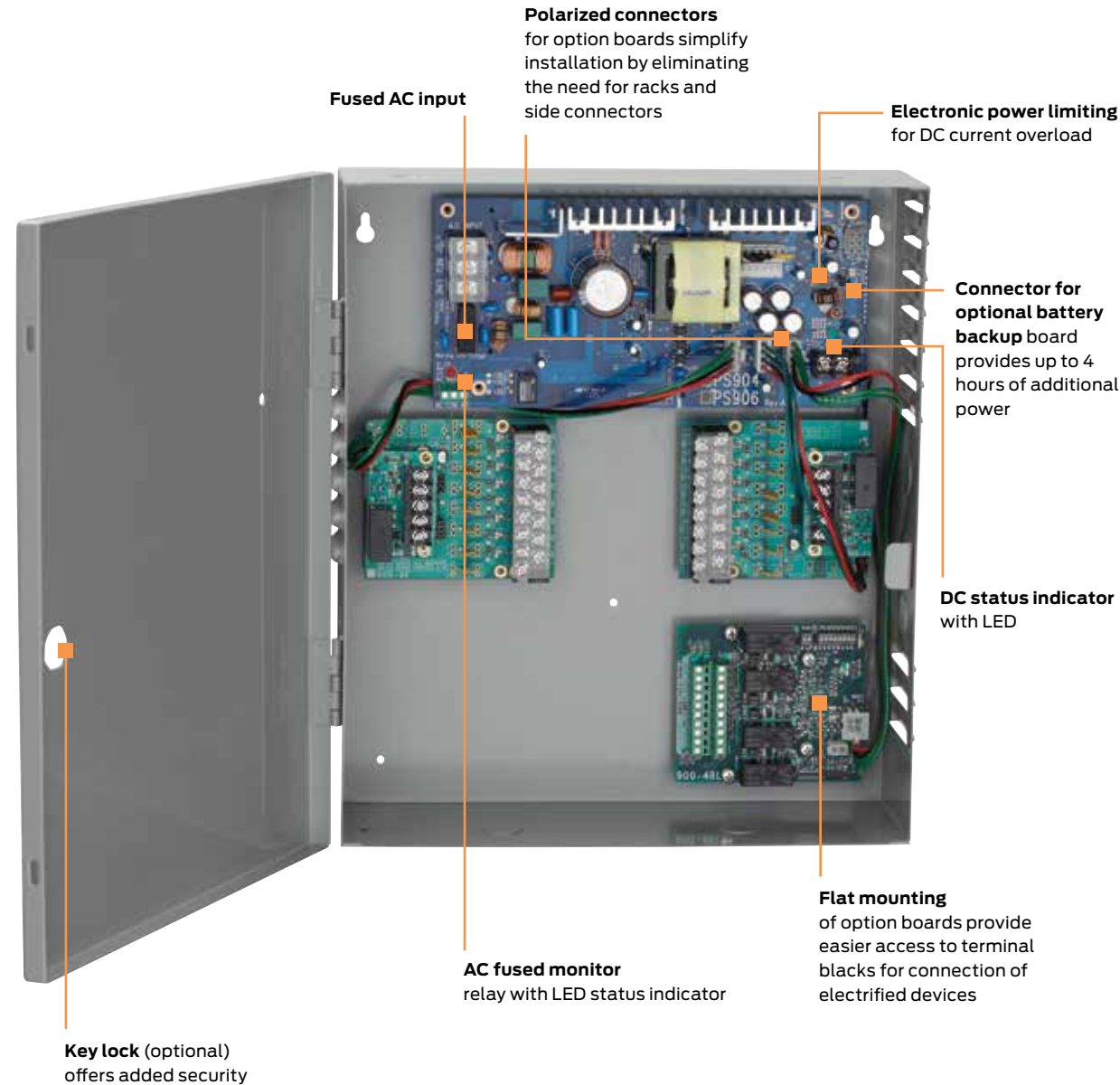
### Applications

The PS900 Series of power supplies works with many electrified devices including Schlage® electromagnetic locks, Schlage AD Series hardwired locks, Schlage electrified mechanical locks, Von Duprin® electrified strikes and many other brands.

No matter what solution you choose, you can be confident that Schlage will stand behind it. Schlage has a rich heritage in security. For over 90 years we've endeavored to develop a complete line-up of security solutions you can trust. Simply put, we believe everyone deserves peace of mind—every day.

## PS900 Series power supplies from Schlage

Designed for superior flexibility, performance and ease of use.



Note: The PS906 power supply is pictured above configured with two 900-8P FA's and one 900-4RL.

## Accessories

The Schlage PS900 Series features seven option boards for use in a variety of applications. All Schlage PS900 Series option boards are UL294 certified.

### Optional distribution boards:

**900-4R:** 4 relay controlled output board to power multiple devices

**900-4RL:** 4 relay distribution board with logic is field configurable for time delay function, auto operator, security interlock

**900-8F:** Provides 8 individually fuse-protected outputs, giving the flexibility to power multiple devices and provide another layer of protection

**900-8P:** Provides 8 individual PTC (resettable fuse) protected outputs for use with a variety of access control devices

**900-2RS:** 2 relay control board required to power QEL or EL exit device<sup>1</sup>

### Additional option boards:

**900-FA:** Emergency interface relay integrates with fire alarm and is used to cut power in case of emergency

**900-BBK:** Battery backup kit includes two 7A/hr batteries and provides up to four hours of backup power when cycled every 5 minutes at full load

<sup>1</sup>EL Exit device requires PS914

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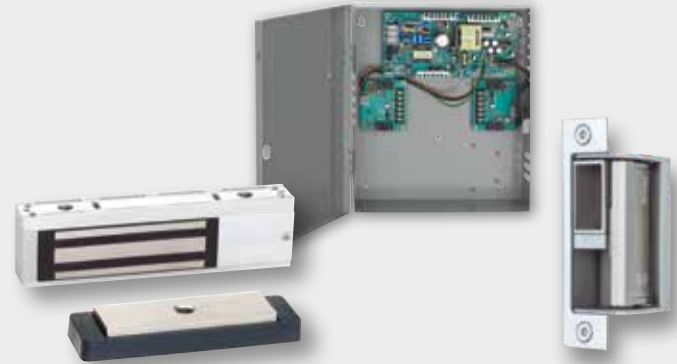
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System components

## Quick cross reference guide



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- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

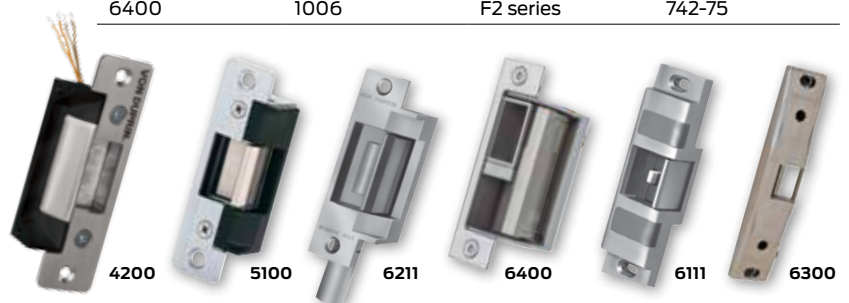
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

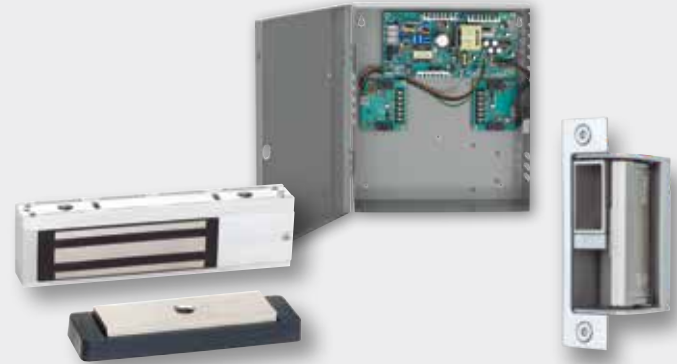
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## About Allegion

Allegion (NYSE: ALLE) creates peace of mind by pioneering safety and security. As a \$2 billion provider of security solutions for homes and businesses, Allegion employs more than 8,000 people and sells products in more than 120 countries across the world. Allegion comprises 27 global brands, including strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®. For more, visit [www.allegion.com](http://www.allegion.com).

System components

## Quick cross reference guide



Allegion offers a full portfolio of system components, including: power supplies, electric strikes, electromagnetic locks, and system accessories that allow your customer to customize an electronic access control solution for their unique application.

To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

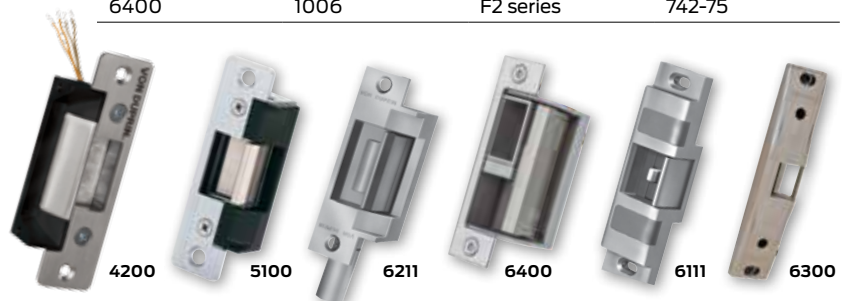
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75





# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

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**VON DUPRIN®**

# Electric strikes

**Safety, performance and quality  
you can trust**

At critical moments of life safety, Von Duprin® gives you the confidence of knowing that the products you count on will perform.

Von Duprin electric strikes have been designed and tested to the highest standards in the industry to provide the assurance of quality and reliability. You can turn to Von Duprin for expertise and service at any time before, during or after installation. We offer a full line of electric strikes to accommodate a wide range of door preps and locking hardware. Whether you're deploying the electric strike in a standalone setting or as part of a comprehensive access control system, Von Duprin electric strikes are an ideal solution. Our broad portfolio provides coverage for virtually any application. Including all-in-one strikes for retrofit applications that have many field configurable options. As well as, electric strikes with a wide range of factory configurable options for new construction and specialized applications.

## 4200 Series

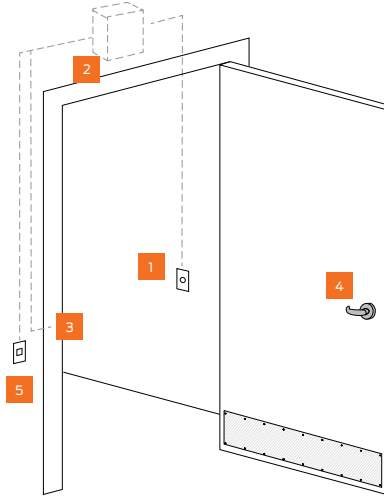


**Traffic control**, up to 500,000 cycles, 1000 lbs. static strength

**Affordable** option for commercial applications

**Field configure** power failure mode without disassembling the strike

**Cylindrical** lockset applications



Ideal for interior applications such as a doctors office entrances that require visitor management and traffic control.

- 1 Schlage KP2000E standalone keypad
- 2 Von Duprin PS902 power supply
- 3 Von Duprin 4211 electric strike
- 4 Schlage® AL Series lock
- 5 Schlage 621 pushbutton

## 5100 Series

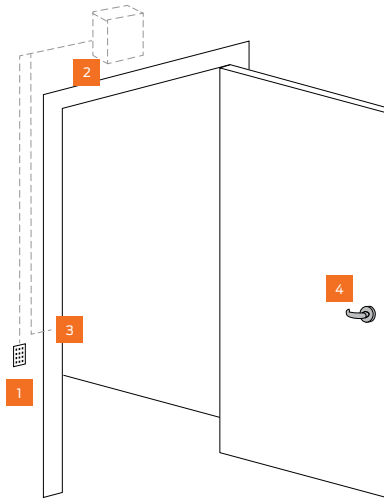


**Medium duty**, up to 1,000,000 cycles, 1300 lbs static strength

**Three faceplates standard** accommodates more applications

**Multiple finish options**

**Cylindrical** lockset applications



Simple and cost effect way to add standalone access control to perimeter openings such as employee entrances.

- 1 Schlage KP212 standalone keypad
- 2 Von Duprin PS902 power supply
- 3 Von Duprin 5100 electric strike
- 4 Schlage ND Series lock

Series	Lockset (latchbolt throw)				Types of doors		Dimensions	
	Cylindrical	Mortise	Mortise deadbolt	Exit	Single	Pair	Face plate length	Backbox depth
<b>4200 Series</b>	4211: up to 3/4" 4212: up to 5/8"	-	-	-	■	-	4 7/8"	1 3/8"
<b>5100 Series</b>	up to 5/8"	-	-	-	■	-	-	-
<b>6300 Series</b>	-	-	-	Rim exit, up to 3/4"	■	Pair with mullion	9"	Surface mounted - 3/4" projection
<b>6400 Series</b>	up to 3/4"	up to 3/4"	-	Mortise exit, up to 3/4"	■	-	4 7/8"	1 5/8"

## 6300 Series

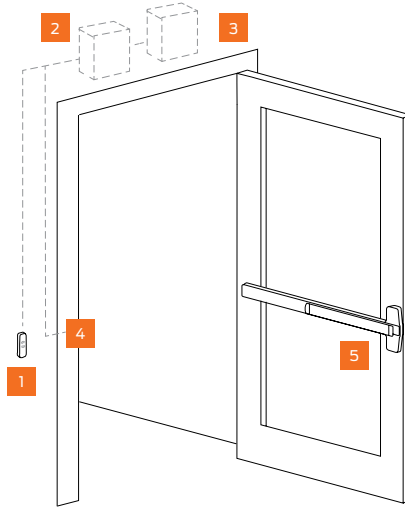


**Heavy duty**, up to 1,000,000 cycles, 1300 lbs. static strength

**Surface mounted**, quick and easy installation

**Fire rated**, fail secure

**Rim** exit device applications



Surface mounted strike for challenging applications such as aluminum storefronts.

- 1 aptiQ™ SM10 smart card reader
- 2 Schlage CT5000 offline controller
- 3 Von Duprin PS902 power supply
- 4 Von Duprin 6300 electric strike
- 5 Von Duprin 98 Series exit device

## 6400 Series

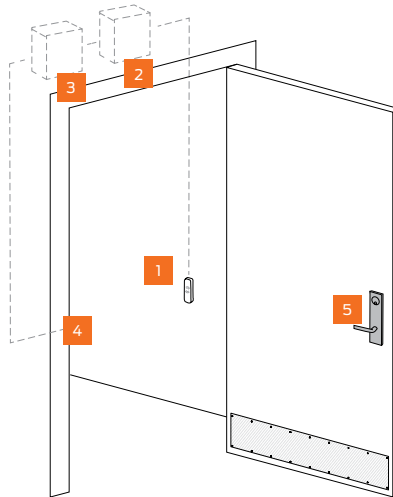


**Heavy duty**, up to 1,000,000 cycles, 1300 lbs. static strength

**Modular design** adjusts to centerline of many MS/MD locks

**Fire rated**, fail secure

**Mortise or cylindrical** lockset applications



Designed for high security applications such the electrical room of a small business.

- 1 aptiQ SM10 smart card reader
- 2 Schlage CT5000 offline controller
- 3 Von Duprin PS902 power supply
- 4 Von Duprin 6400 electric strike
- 5 Schlage L9000 mortise lock

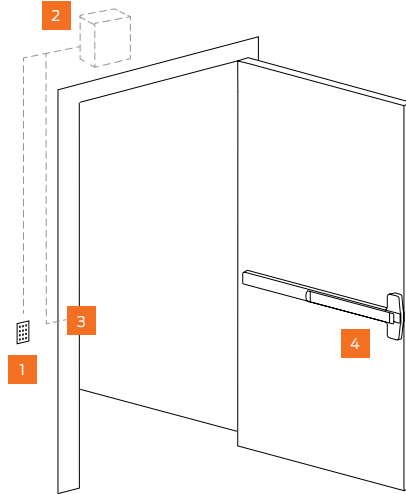
Door and frame material			Codes	Power requirements		Additional options			Series
Hollow metal	Wood	Aluminum	Fire rated	AC	DC	Latchbolt monitor	Rectifier kit	Entry buzzer	
■	■	-	-	-	12/24	4211: N/A 4212: Standard	Optional	Optional (Fail-secure only)	<b>4200 Series</b>
■	■	■	-	-	12/24	-	Optional	-	<b>5100 Series</b>
■	■	■	-	-	12/24	-	Optional	Optional	<b>6300 Series</b>
■	■	■	■	12 to 24	12/24	Optional	-	-	<b>6400 Series</b>

The 6100 Series and 6200 Series have a many different models to accommodate virtually any application and type of lockset. Please see the data sheet to make the proper selection.

6100 Series



**Heavy duty**, up to 1,000,000 cycles, 1300 lbs. static strength  
**Broad application coverage** with a variety of factory orderable options  
**Rim** exit device applications



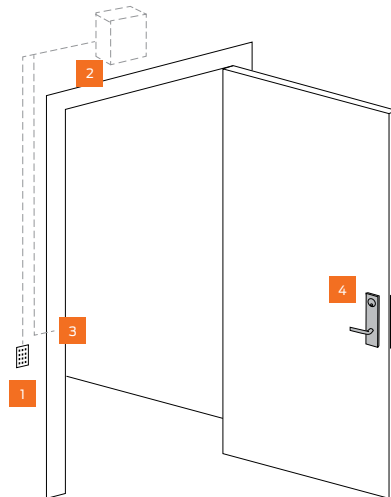
Ideal for high abuse applications such as perimeter entrances and exits where secure access control is required.

- 1 Schlage KP232 standalone keypad
- 2 Von Duprin PS902-FA power supply
- 3 Von Duprin 6100 Series electric strike
- 4 Von Duprin 98 Series exit device

6200 Series



**Heavy duty**, up to 1,000,000 cycles, 1300 lbs. static strength  
**Broad application coverage** with a variety of factory orderable options  
**Mortise or cylindrical** lockset applications



Heavy duty product designed for high security applications such as laboratories or records offices.

- 1 Schlage KP212 standalone keypad
- 2 Von Duprin PS902-FA power supply
- 3 Von Duprin 6200 Series electric strike
- 4 Schlage L9000 mortise lock

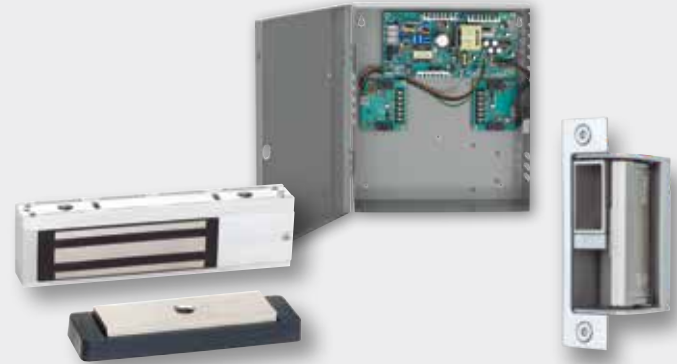
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System components

## Quick cross reference guide



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To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC, 12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

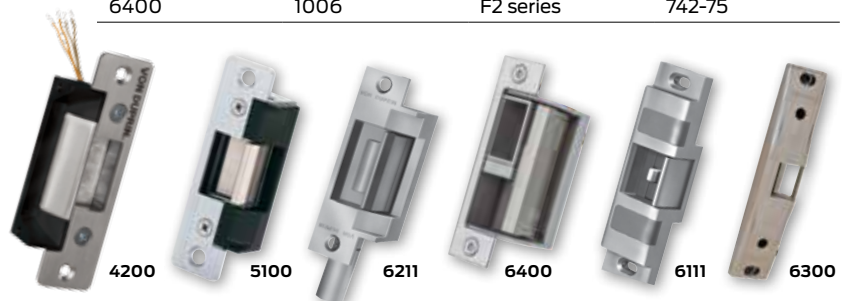
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75





# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

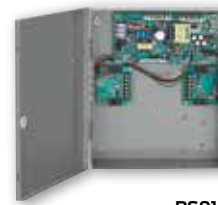
- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
PS904	510 (12V, 3A), 873 (12V, 4A or 24V, 2A) - no inrush applications SBB-3 (24V, 3A)	AQU244 (24V only) BPS-12-3 BPS-12-45 BPS-24-3 BPS-24-4	AL400ULX eFlow4N
PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

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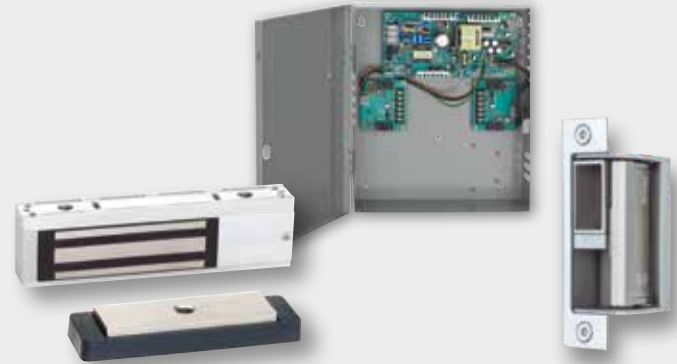
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System components

## Quick cross reference guide



Allegion offers a full portfolio of system components, including: power supplies, electric strikes, electromagnetic locks, and system accessories that allow your customer to customize an electronic access control solution for their unique application.

To make quickly specifying the right product easier, this cross reference guide highlights our product features and benefits, model numbers and comparable competitive products.

### Electric strikes

- 4200 Series
- 5100 Series
- 6100 Series
- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

- PS900 Series

### Electromagnetic locks

- M400 Series
- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

# Electromagnetic locks

## M400 Series

- Robust line of electromagnetic locks with unique new design elements that make them easy to install and secure
- UL 1034
- UL 10C 3 hour fire rating
- BHMA Grade 1
  - M420 - 500 lb. hold force for traffic control
  - M450 - 1000 lb. hold force for high security
  - M490 - 1500 lb. hold force for max security

## M390RFK

- Direct retrofit for our legacy 390 electromagnetic locks
- Field selectable 12/24 VDC
- Adjustable mounting brackets
- ANSI/BHMA A 156.23 Grade 1 with 1500 lbs. direct force
- UL listed for 3 hour fire rating

## 40/70 Series

- Easy to install
- Perfect choice for retrofit applications
- Magnetic bond sensor and door status monitor
- UL 10C 1 hour fire rating and BHMA Grade 1
  - 40 Series - 500 lb. hold force
  - 70 Series - 1000 lb. hold force

## GF3000 Series

- Mortise or surface mounted shear lock
- Totally concealed locking mechanism providing superior security & appearance
- Automatic Voltage Selection 12/24 VDC (filtered)
- Meets ANS/BHMA 156.23 standards
- UL10C Positive Pressure Fire Test of Door Assemblies

## 320M Series

- MiniLine™ mortise mounted for interior sliding doors
- UL listed for 3 hour fire rating

Competitive model numbers		
Schlage	Legacy Locknetics/ Schlage	Securitron
M420	320+	M38 M370
M420P	320+DSM-MBS	M38DLST M380BD
M450	350+	M68 M670
M450P	350+DSM-MBS	M68DLST M680BD
M490 M390RFK	390+	M82B
M490P	390+DSM-MBS	M82BD
-	390PIR DSM/MBS	iMXDa
M490DE	390DEL	-
M490DEP	390DEL-DSM-MBS-SEC	iEXDa
M490G	390G+DSM/MBS	M62FGBD
40	40	M32 M34
70	70	M62
72	72	DM62
GF3000	GF3000 280+	SAM SAM2-24
320M	320M	M34R



M420



M390RFK



70



GF3000

# Electric strikes

## For Use with Cylindrical/Mortise Locksets

### 4200 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- Optional latchbolt monitoring
- 3 face plate finish options

### 5100 Series

- Field selectable voltage of 12/24VDC
- Field convertible fail-secure to fail-safe
- 3 face plates standard to ensure compatibility with a variety of door and frame types
- Field adjustable keeper accommodates door and frame alignment issues

### 6200 Series

- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6400 Series

- 12/24VDC,12/24VAC field selectable
- Fail-secure only, fire rated
- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

### 6100 Series

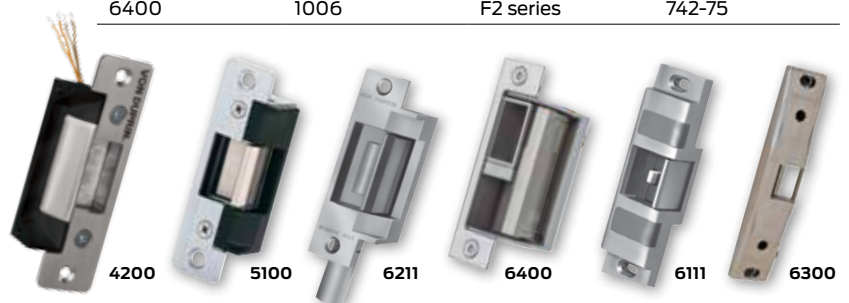
- 24VDC Standard; 12VDC and AC factory orderable
- Heavy duty stainless steel construction
- For single, double & fire rated doors

### 6300 Series

- Field selectable voltage 12/24VDC
- Fail secure, fire rated
- Easy to install- requires no alteration or cutting to existing frame
- Heavy duty stainless steel construction

## Competitive model numbers

Allegion	H.E.S	RCI	Folger Adam
4200	5000	6 Series	-
5100	5200 7000	7 Series	-
6111	-	-	-
6111 (Surface Vertical)	-	-	310-4-1 310-4-2 310-4-3 310-4-30
6112	-	0161	310-4
6113	-	-	-
6114	-	-	310-5
6121	-	-	310-4-100
6210	1006 4500	F2164 2364	742-75
6211	1006 7501	F1114	712 712-75
6211AL	1006	-	722
6211WF	1006	-	732 732-75
6212	7501	-	-
6212WF	8300	F2164	-
6213	-	-	-
6213 (Concealed Vertical)	-	-	310-6-1 310-6-2 310-6-3 310-6-8 310-6-30
6214	8500	-	310-2 3/4
6215	1006J-2	F1119	310-2
6216	1006H-2	-	310-3-1
6221	-	-	-
6222	-	-	310-2-3/4 OB
6223	-	-	-
6224	1006J-2	-	310-2 3/4
6224AL	-	-	310-2 RF
6225	1006J-2	-	310-2 OB
6226	-	F1119	310-2
6300	9400 9500 9600	F0162	-
6400	1006	F2 series	742-75



# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

### PS914 Series

- 4A @ 12/24 VDC output, field selectable with jumper
- High in-rush current for powering electrified panic devices
- UL294
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Option boards

- **900-4R** - Independently controlled relays to power multiple devices
- **900-2RS** - 2 relay EL panic device control board
- **900-4RL** - 4 relay board with integrated logic for controlling security interlocks
- **900-8F** - 8 individually fuse protected outputs, giving the flexibility to power multiple devices
- **900-8P** - 8 PTC protected outputs
- **900-FA** - Emergency interface relay integrates with fire alarm

## Competitive model numbers

Allegion	Legacy Allegion	Securitron	Altronix
PS902	505 (12/24V, 1A) 510 (24V, 2A), 861 (12V, 2A or 24V, 1A)	AQD3 AQU243 (24V only) BPS-12/24-1	AL300ULX eFlow3n
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PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
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- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

Note: One fire alarm board can be connected directly to the PS902. If a fire alarm board is desired for the PS904 or PS906 it can be connected to an option board.

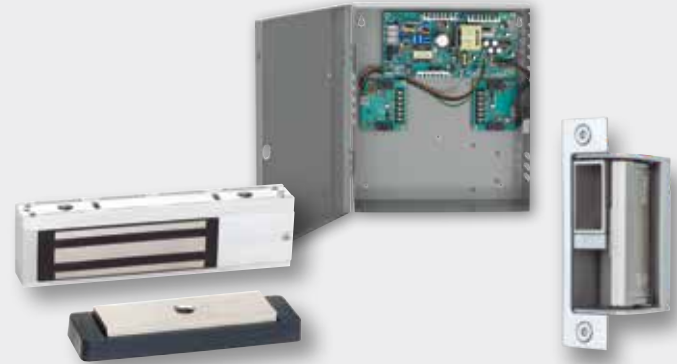
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- 6200 Series
- 6300 Series
- 6400 Series

### Power supplies

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- M390RFK
- 40/70 Series
- GF3000 Series
- 320M Series

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M420



M390RFK



70



GF3000

# Electric strikes

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- Heavy duty stainless steel construction
- For single, double & fire rated doors

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- Field adjustments to deadbolt keeper and dead latch ramp allow for alignment with a wide variety of door and frame types.

## For Use with Exit Devices

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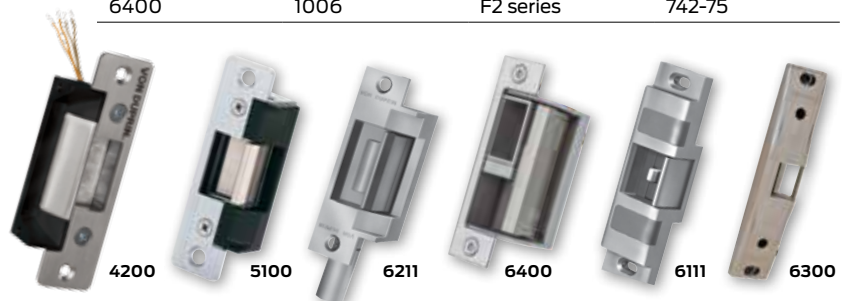
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6223	-	-	-
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6226	-	F1119	310-2
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6400	1006	F2 series	742-75





# Power supplies

## Schlage

### PS900 Series

- 2A, 4A or 6A @ 12/24 VDC output, field selectable with jumper
- UL 294
- Class 2 rated power limited output
- Universal 120-240 VAC input
- Low voltage DC, regulated and filtered
- Various controller option boards available

## Von Duprin

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- 4A @ 12/24 VDC output, field selectable with jumper
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## Option boards

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PS906	515 (24V, 5A), SBB-5 (24V, 5A)	AQD5 AQU126 (12V only) BPS-12-6 BPS-24-6	AL600ULX eFlow6N
-	515 (12V, 10A), SBB-20 (24V, 10A)	BPS-24-10	AL1024ULX eFlow102N eFlow104N
PS914	PS873	-	Strikelt1 Strikelt2



PS902



PS914

## Battery backup boards

- **900-BBK** - Battery backup kit
- **900-BB** – Battery backup board only
- **900-BAT** – Battery backup batteries only

Number of connectors	PS902 (2 amps)	PS904 (4 amps)	PS906 (6 amps)
Option boards	1	2	3
Battery backup board	1	1	1

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## 672 Series TouchBar

### Overview

The 672 TouchBar is a request to exit device which releases electromagnetic or electronic locks when the bar is depressed. Designed for easy installation, smooth operation and maximum durability, the 672 TouchBar offers unmatched features and user benefits.

The "Push to Exit" signage provides an obvious exit indication for building occupants and the simplified design allows for reversing the signage in the field. The new pivoting bar design allows 1/4" activation and the 2 1/4" low profile provides ample clearance through the door - notably less than others in the industry.

The 672 TouchBar Request to Exit Device is easy to install and simple to wire. The device's rugged cast ramped end caps deflect blows and provide extra durability.

- 1/4" Movement activates immediate release
- DPDT (standard)

### Features and Benefits

- Heavy duty aluminum extrusion with powder coat cast metal end caps - Maximum durability
- Field reversible, field sized
- Quick install brackets / Universal mounting system for aluminum, hollow metal and wood doors
- Low profile for greater clearance through door
- "PUSH TO EXIT" signage designates opening
- Glow in the Dark (GID) "PUSH TO EXIT" option

## ORDERING INFORMATION

### Door Size

36", 42" or 48"

### Finishes

**628** Satin Anodized Aluminum (standard)

**313** Dark Satin Bronze Anodized Aluminum

### TouchPads

**RD** Black with red "PUSH TO EXIT"

**GID** Black with Glow in the Dark "PUSH TO EXIT"

### Handing

**RHR** Right Hand Reverse

**LHR** Left Hand Reverse -Field Reversible

### Options

#### WD

Sexnut door kit for heavy duty wood door and hollow metal door applications

#### AR

18" x 1/2" armored door cord (less wire)

#### SHK

Aluminum door mounting shim kit includes brackets shims and screws for narrow stile aluminum doors.\*

\* Note: Screw pack has self-drilling and self-tapping screws for aluminum and wood door applications and rivnuts for hollow metal door applications.

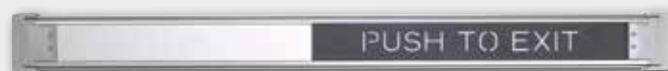
672 TouchBar Electrical Specifications	
<b>Input Voltage</b>	12 or 24 VDC maximum current draw .25 Amps
<b>Switch</b>	DPDT contacts rated 4 Amps @ 30 VDC 6A 125-250 VAC
<b>Wiring</b>	6 Conductor Cable - 20 AWG (standard)





## 692 Series

SmartBar™



### Overview

The 692 SmartBar is an electronic switching device with no moving parts, which serves as a non-latching request-to-exit bar at an egress door. It allows one motion egress at doors equipped with electromagnetic or electronic locks, with “no prior knowledge” required by the user. Touching the SmartBar at any point on the bar activates internal circuitry which controls power to the locking device. No moving parts results in low maintenance and long life.

The 692 SmartBar provides two directionally opposed infrared detection circuits to sense an exit request. As a person touches the bar, the light beam is broken. The patent-pending redundant system provides a high level of life safety and peace of mind to the end user.

An audible alarm is standard. This feature provides a security alarm to alert when there is a prolonged unlocked condition caused by a continued break in the light beam. This feature is desirable in applications requiring monitoring of security conditions or delayed egress.

- Dual Infrared detection circuits, patent-pending
- No moving parts – one motion egress
- Audible alarm standard, alerts prolonged unlock condition
- DPDT relay standard – single access control panel or auxiliary device

### Features and benefits

- Heavy-duty aluminum extrusion with cast metal end caps - maximum durability
- Field reversible, field sized
- Quick install brackets / universal mounting system for aluminum, hollow metal and wood doors
- Low profile for greater clearance through door
- “PUSH TO EXIT” signage designates opening
- Glow in the dark “PUSH TO EXIT” option

---

## 692 SmartBar electrical specifications

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Input voltage	12 or 24 VDC maximum current draw .5 amps
Switch	DPDT contacts rated 4 amps @ 30 VDC
Wiring	8 conductor cable - 20 AWG (standard)

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## Ordering information

### Door size

- 36", 42" or 48"

### Finishes

- **628** - Satin anodized aluminum (standard)
- **313** - Dark satin bronze anodized aluminum

### TouchPads

- **RD** - Black with red "PUSH TO EXIT"
- **GID** - Black with glow in the dark "PUSH TO EXIT"

### Handing

- **RHR** - Right hand reverse
- **LHR** - Left hand reverse - field reversible

### Options

- **WD** - Sexnut door kit for heavy-duty wood door and hollow metal door applications
- **SHK** - Aluminum door mounting shim kit includes brackets, shims and screws for narrow stile aluminum doors.\*

\* Screw pack has self-drilling and self-tapping screws for aluminum and wood door applications and rivnuts for hollow metal door applications.

Note: 18" x 1/2" armored door cord shipped standard.

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## About Allegion

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*aptiQ* ■ LCN ■  ■ STEELCRAFT ■ VON DUPRIN



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[www.allegion.com/us](http://www.allegion.com/us)



## Scan II™ Passive Infrared Motion Sensors

### Overview

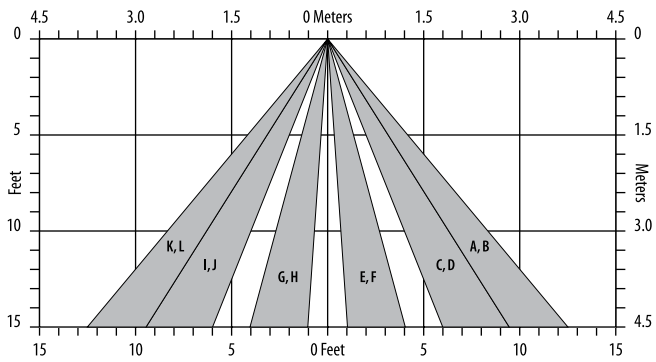
The Scan II™ is a Passive Infrared Detector specifically designed for “request to exit” applications. It has an adjustable relay latch time, is internally pointable, and provides two Form “C” sets of relay contacts.

The enclosure design consists of a three piece, high impact ABS plastic enclosure with fresnel lens and is available in white or black. The coverage area of Scan II™ is up to 8 by 10 feet (2.4m by 3m). Coverage is dependent upon mounting height and pattern angle. Pattern Pointability is  $\pm 14^\circ$  @ vertical. Surface mounting height range is from 7 to 15 feet (2.1m to 4.5m). The unit also features an externally visible activation LED.

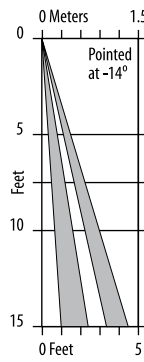


### Features and Benefits

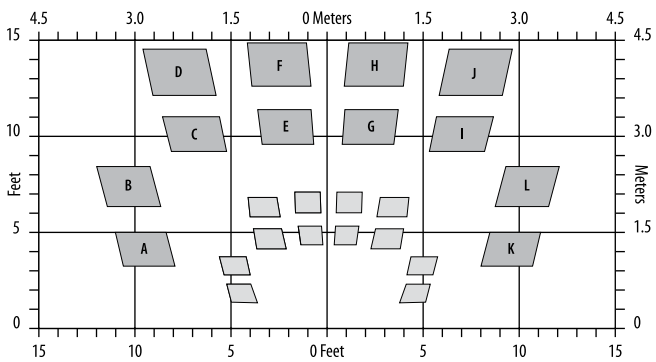
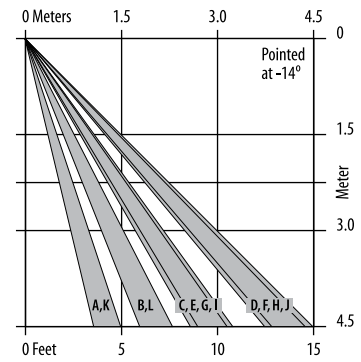
- Output – Two Form “C” relay contacts rated 1A @ 30 VDC for DC resistive loads
- Relay Latch Time is adjustable up to 60 seconds
- The relay mode can be programmed by the installer to reset when the timer expires or to remain activated until motion stops. The fail safe/fail secure mode can also be selected.
- 12/24 VDC, 26 mA @ 12 VDC or 24 VDC
- Output Two Form “C” relay contacts rated 1A @ 30 VDC for DC resistive loads
- Operating Temperature -20°F to 120°F (-29°C to 49°C)
- Size 1-1/2” (38mm) H x 6 1/4” (159mm) W x 1-1/2” (38mm) D
- UL Listed



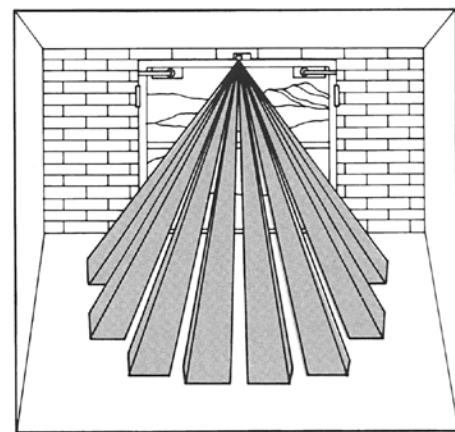
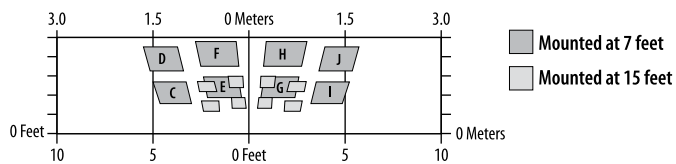
**Front View**



**Side View**



**Standard Pattern**  
Shown wall mounted, angled 14° down.



**Standard Pattern**  
Shown wall mounted, angled 14° down.

**ORDERING INFORMATION**

- Scan II – B**      Black
- Scan II – W**      White



# 800 Series

## Remote and Local Monitoring Stations

### Overview

#### 800 Series Local & Remote Monitoring Station

The 800 Series monitoring stations can provide monitoring for a single zone with up to 2 LED indicators.

#### 801 Series Local & Remote Monitoring Stations

The 801 unit includes an audible and visual indication of lock status and delay activation. Interfaces with electromagnetic locks with magnetic bond sensor (MBS) option. Unit mounts in a standard single gang electrical box.

The 801-KS fulfills a code requirement stating that a local signal assures users that a delayed egress system is functional. The unit includes an audible and visual indication of lock status and delay activation. Provides a Single Pole, Double Throw (SPDT) momentary x SPDT maintained contact arrangement keyswitch for legal release and reset of the system, which interfaces with a standard 1-1/4" mortise cylinder with standard straight cam. Interfaces with electromagnetic locks with magnetic bond sensor (MBS) option. Unit mounts in a standard double gang electrical box.



### Features and Benefits

#### 800 Series Local & Remote Monitoring Station

- Up to 2 LED Indicators

#### 801 Series Local & Remote Monitoring Stations

- 801-KS Option

<b>800 Specifications</b>	
<b>Operating Power:</b>	12/24 VDC
<b>LED Operating Power:</b>	6-28 VDC
<b>LED Current Draw:</b>	30 mA ea.
<b>Audible Input:</b>	10-28 VDC
<b>Audible Current Draw:</b>	3-14 mA
<b>Decibel Rating:</b>	80 dB @ 2 ft.
<b>Single Gang Unit</b>	
<b>Length:</b>	2-3/4"
<b>Width:</b>	1-1/2"
<b>Height:</b>	4-1/2"
<b>Finish:</b>	Stainless Steel
<b>800L1</b>	One (1) LED Indicator - red, green, and amber
<b>800L2</b>	Two (2) LED Indicators - red, green, and amber
<b>800A</b>	Audible Sounder

<b>801 Specifications</b>	
<b>Operating Power:</b>	12/24 VDC
<b>LED Operating Power:</b>	6-28 VDC
<b>LED Current Draw:</b>	30 mA ea.
<b>Audible Input:</b>	10-28 VDC
<b>Audible Current Draw:</b>	3-14 mA
<b>Decibel Rating:</b>	80 dB @ 2 ft.
<b>Single Gang Unit</b> 801* Local or Remote Monitoring System	
<b>Length:</b>	2-3/4"
<b>Width:</b>	1-1/2"
<b>Height:</b>	4-1/2"
<b>Finish:</b>	Stainless Steel
<b>Double Gang Unit</b> 801-KS* Local or Remote Monitoring System with Keyswitch (less cylinder)	
<b>Length:</b>	4-9/16"
<b>Width:</b>	1-15/16"
<b>Height:</b>	4-1/2"
<b>Finish:</b>	Stainless Steel
<b>Keyswitch Contacts:</b>	5A/250 VAC

\*Note: 801/801-KS requires MBS on locking device.







## 8200 Series Consoles

### Overview

Schlage 8200 Series desk consoles provide door control and monitoring for up to eight zones. Designed to meet a wide range of security requirements, the 8200 Series can control and monitor electric strikes, electromagnetic locks, electromechanical exit devices or other electric locks. The console can also be used for surveillance of monitoring devices.

The circuit boards inside the console are shipped for four or eight zone applications. This design allows for momentary or maintained switch operation. Pushbuttons control and monitor assigned zones, and a signaling horn provides an audible alert of any conditions change that is associated with the red indicator lamp. Console control can be disabled with the security keyswitch.



### Features and Benefits

- Slope front design, with anodized face plate and durable housing
- Each station provides maintained or momentary Single Pole, Double Throw (SPDT) pushbutton switch
- Red and green indicator lamps
- Security keyswitch
- Signaling horn
- Alarm reset button
- 24 VDC operation

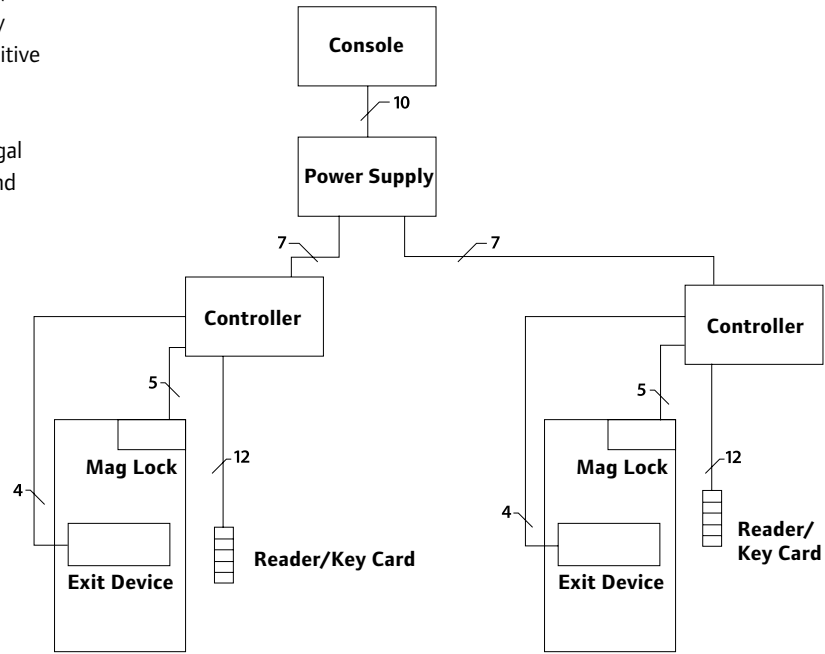
## SYSTEM DESIGN GUIDE

There are a number of applications where and 8200 Series Console is used to monitor and control multiple door openings. It is ideal for use at a guard or nurse station. (An example of a riser diagram for a two door nurse's station console is shown below.)

### DESCRIPTION OF SYSTEM OPERATION

Two single doors, each normally closed and secured by a magnetic lock. Magnetic lock to include Magnetic Bond Sensor (MBS) for remote monitoring of secure/not-secure condition. Legal access to be provided by keypad system. Egress to be provided by touch sensitive exit bars. Remote control and monitoring to be by a slope front desktop console. Each of two stations shall provide a momentary pushbutton switch for legal release, a red indicator for "not-secure" condition and a green indicator for "secure" condition.

Riser Diagram



Specifications	
<b>Switches (momentary or maintained)</b>	1.0 amps 24 VDC
<b>Lamps #85 Red/Green</b>	04 amps @24 VDC
<b>Terminal Block</b>	18/22 gauge wire
<b>Alarm output</b>	0.5 amps @ 24 VDC (breaker protected)
<b>Temperature Range</b>	32° to 120°F (0° to 49°C)
<b>Input Voltage</b>	24 VDC, ±15%

### ORDERING INFORMATION

Last Digit Indicates Number of Zones

**4 Station Console**  
**8204**

**8 Station Console**  
**8208**

### PUSHBUTTON FUNCTION

Select pushbutton function by zone.  
Select M (momentary) or A (alternate action, maintain) for each zone.

	1	2	3	4	5	6	7	8
<b>8204</b>	-	-	-	-	-	-	-	-
<b>8208</b>	-	-	-	-	-	-	-	-

### ACCESSORIES

Field Installable Push Buttons

**8200MS – Momentary Switch Assembly**

**8200 MA – Alternate Action (Maintained) Switch Assembly**





## *PB405 and PB405S*

### *Electrified Dead Bolt Locks*

#### *Overview*

The PB405 PowerBolt is a mortise, right angle deadbolt with a .61" bolt and a .67" throw. It is available fail safe PB405 or fail secure PB405S.

NOTE: Electromechanical locks not recommended where life safety may be compromised, or where panic bar hardware is the only means of egress.

**Mortise mount electric bolts furnished in Satin Aluminum Finish.**



#### **Features**

- 12/24V DC
- Magnetic door sensor
- Built in relocking option
- Fail-safe, or fail-secure

## Specifications

### **PB405 Electric Dead Bolt Lock (Fail Safe)**

1. Door sensor
2. 12V/24V DC
3. Current Draw: 0.9A @ 12 VDC, 0.45A @ 24 VDC;  
12/24 VDC dual voltage, field selectable
4. Fail-safe type (Power to lock)
5. Built-in Relocking option
6. Operation delay time: 0 sec., 3 sec., 5 sec., 9 sec.
7. Weight: 1.9lbs
8. Dimension: 7.87 in (L) x 1.26 in (W) x 1.57 in (D)

### **PB405S Electric Dead Bolt Lock (Fail Secure)**

1. Door sensor
2. 12V/24V DC.
3. Current Draw: 0.9A @ 12 VDC, 0.45A @ 24 VDC;  
12/24 VDC dual voltage, field selectable
4. Fail-secure type (Power to open.), MOV surge protection.
5. Operation delay time: 0 sec., 3 sec., 5 sec., 9 sec.
6. Built-in relocking option.
7. Weight 1.9lbs
8. Dimension: 7.87 in (L) x 1.26 (W) x 1.57 in (D)

## ORDERING INFORMATION

**405** - Rectangular Front, Fail Safe

**405S** - Rectangular Front, Fail Secure

**Fail Secure Lock** – Requires power to unlock

**Fail Safe Lock** – Requires power to lock





# 660 Series

Mini station control



## Overview

The 660 Series mini station control is designed for concealed desk application, and it is used to release an electric or electronic locking mechanism from a remote location. The 660 Series mini station control is mounted in a mini aluminum box, 2" x 2" x 1". The 660 is available with a momentary action pushbutton or maintained action toggle switch. Both can be surface mounted. A typical application is under a desk to release an entrance door.

## Features and benefits

- Surface mount application
- Choice of maintained or momentary action
- Compact size
- Recommended for concealed desk application

---

## Specifications

---

Switch contact rating	6 amp @ 120 VAC
Length	2"
Width	2"
Height	1"

---

## Ordering information

- **660-T4** - SPDT maintained toggle
- **660-PB** - PB SP momentary pushbutton

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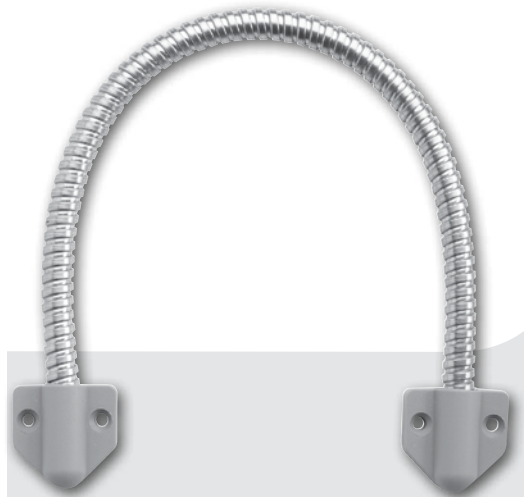
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# Armored Door Cords with Caps

## Overview

Used when installing electric exit devices or electric locks, armored door cords provide a simple and economical solution for transferring power from frame to door.



System Components  
Armored Door Cords

## Specifications

### Acceptable Wire Size Combinations

- Five 18 gauge
- Two 18 gauge and four 20 gauge
- Two 18 gauge and seven 22 gauge
- Seven 20 gauge
- Twelve 22 gauge

### 5/16" interior diameter;

### 3/8" outside diameter flexible door cord

Model	Description
788-12	12" x 3/8" less wires (inswinging)
788C-12	12" x 3/8" with 20" 4-Conductor wire, 20 gauge wire
788-18	18" x 3/8" less wires (outswinging)
788C-18	18" x 3/8" with 26" 4-Conductor wire, 20 gauge wire

### 3/8" interior diameter;

### 1/2" outside diameter flexible door cord

### Acceptable Wire Size Combinations

Model	Description
798-12	12" x 1/2" less wires (inswinging)
798C-12	12" x 1/2" with 20" 4-Conductor wire, 20 gauge wire
798-18	18" x 1/2" less wires (outswinging)
798C-18	18" x 1/2" with 26" 4-Conductor wire, 20 gauge wire







## CL-ENCODER2

Magnetic stripe  
credential encoder



### Overview

The CL-ENCODER2 is a motorized magnetic stripe encoder-reader that allows credentials to be instantly encoded and issued to users. Its compact footprint, rugged design and low audible noise make it a perfect choice for credential issuance in applications of any kind. A single card-slot design simplifies user interface - ensuring quality encoding every time. A smooth mechanical card-transport ensures fast, reliable, and high-quality encoder operation. A dual-color red/green LED provides clear status indications to the operator. Power-fail card return and manual card-eject features ensure that a customer's card can easily be retrieved under any conditions.

### Features and benefits

- Read and write Hi-Co and Lo-Co magnetic stripe cards per ISO 7810 and 7811
- Motorized for increased encoding precision and reliability
- Dual color LED status indicator
- Remote power pack
- Small footprint

## Specifications

Interface	<ul style="list-style-type: none"><li>▪ RS232 - for use with Schlage software</li><li>▪ USB</li></ul>
Dimensions (HxWxD)	3.85" x 4.47" x 8.44" (9.78 mm x 11.18 mm x 21.10 mm)
Weight	2 lbs (0.9 kg)
Magnetic stripe	Tracks 1, 2, 3 Hi-Co/Lo-Co read/write per ISO 7810, 7811
Card speed	7-11 i.p.s.
Input Voltage	+12 VDC flt 5 %
Current Draw	Idle: 300 mA Maximum: 3.0 A (during Hi-Co encode sequence) 1 A draw from an auxiliary serial port device
Communication Protocol	MagTek® MCP protocol
Command Set	MagTek MCP command set
MTBF	Electronics: 125,000 hours Magnetic read head: 1,000,000 passes (500,000 insertion cycles)
Temperature	Operating: 41°F to 113°F (5°C to 45°C) Storage: -40°F to 158°F (-40°C to 70°C)
Humidity	Operating and Storage: 5% to 95% non-condensing
Certifications	UL/CRU, CE Class B, FCC Class B
Material	PBT Polymer

## Ordering information

- **CL-ENCODER2** - Magnetic Stripe Encoder, includes power supply

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# Door Position Switches

## Overview

Door position switches are used to detect the open or closed status of an opening and then send this status to a control panel. They come in a variety of shapes and sizes and are designed for monitoring door positions, roof hatches, gates etc.

### Concealed SPDT Magnetic Switches

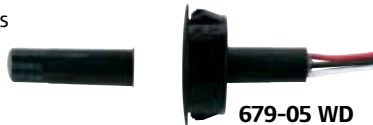
For Wood Doors and Frames  
0.3 Amps @ 30 VDC



For Hollow Metal Doors and Frames  
0.3 Amps @ 30 VDC



For Wood Doors and Metal Frames  
0.3 Amps @ 30 VDC



### Concealed/Flush Mount Magnetic Switches

For aluminum, wood and hollow metal doors  
0.25 Amps @ 30 VDC  
UL Listed



### Surface Mount Magnetic Switches

For aluminum, wood and hollow metal doors  
0.25 Amps @ 30 VDC  
UL Listed



Overhead Door, Floor Mount Magnetic Switch 674-OH

#### ORDERING INFORMATION

<b>674-OH</b>	Overhead Door Floor Mount
<b>679-05</b>	Wood Door and Frame
<b>679-05HM</b>	Hollow Metal Door and Frame
<b>679-05WD</b>	Wood Door and Metal Frame
<b>7764</b>	Concealed/Flush Mount
<b>7766</b>	Surface Mount





## Electronic Horns

### Overview

Electric horns are designed for use as an immediate local audible warning device incorporated in a security system. 1910 Selica Horns have eight combinations of volume, tone, and code that are easily user configurable. Strobe and latching combinations are also available.

Units are flush and surface mountable using a standard one or two gang electrical box. Surface and flush mounting kits are included with all horns.



### Features and Benefits

- All horns are off white in color and come with a skirt for a clean finish.
- Designed for indoor use only.
- Available in four models:
  - 1910-1 Horn 12/24 VDC
  - 1910S-1 Horn with Strobe 24 VDC
  - L1910-1 Horn with Latching 24 VDC
  - L1910S-1 Horn with Strobe and Latching 24 VDC
- Current Draw:
  - Less than 14 mA @ 12 V
  - Less than 28 mA @ 24 V
  - Less than 71 mA @ 24 V, with strobe
- Operating Temperature: 32°F to 120°F
- Anechoic Room @30 V 102 dba
- UL Reverbrant Room @30 V 88 dba

#### ORDERING INFORMATION

<b>1910-1</b>	12/24 VDC Horn
<b>1910S-1</b>	24 VDC Horn with Strobe
<b>L1910-1</b>	24 VDC Horn with Latching
<b>L1910S-1</b>	24 VDC Horn with Strobe and Latching



# Schlage

## Electronic security

### System Components

#### Installation Manuals

#### Master Index



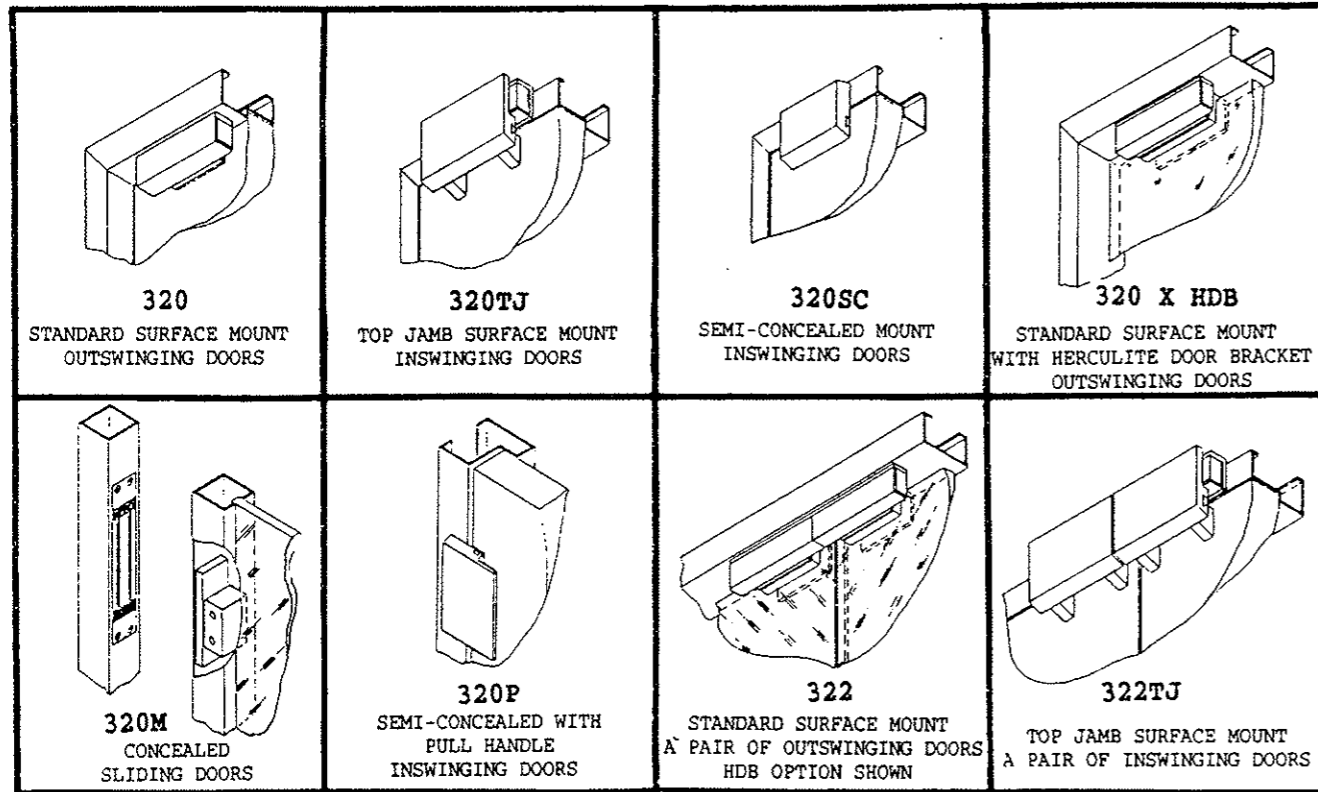


# 320 AND 322 SERIES LOCKS





# 320 AND 322 SERIES LOCKS GENERAL INFORMATION



THE 320 AND 322 SERIES LOCKS ARE MEDIUM SECURITY, HIGH PERFORMANCE LOCKING DEVICES, WHEN PROPERLY MOUNTED ON A QUALITY DOOR AND FRAME WILL WITHSTAND UP TO 650 LBS OF DIRECT FORCE. ANY OTHER CONDITIONS (IE: WEAK HEADER) MAY REQUIRE REINFORCEMENT.

**HOLDING FORCE:**

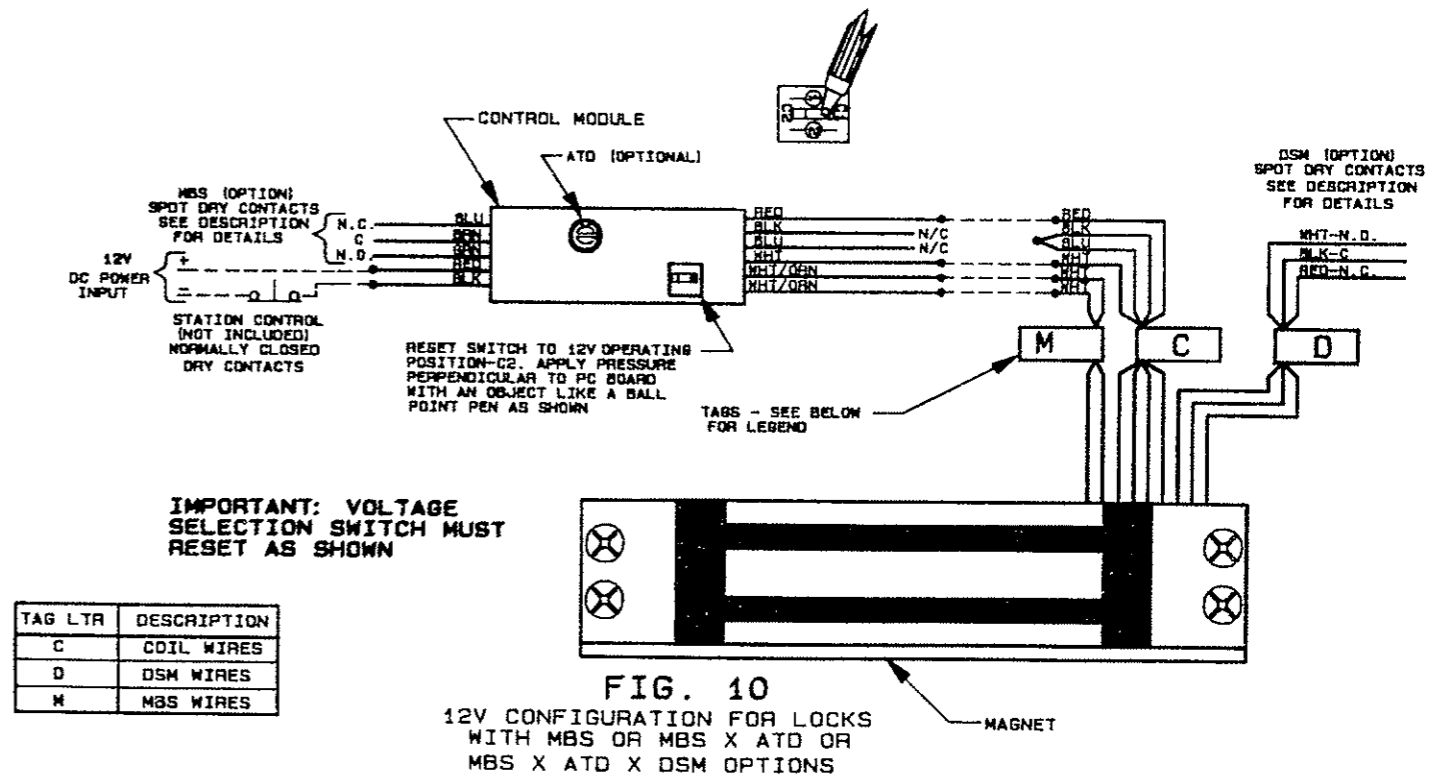
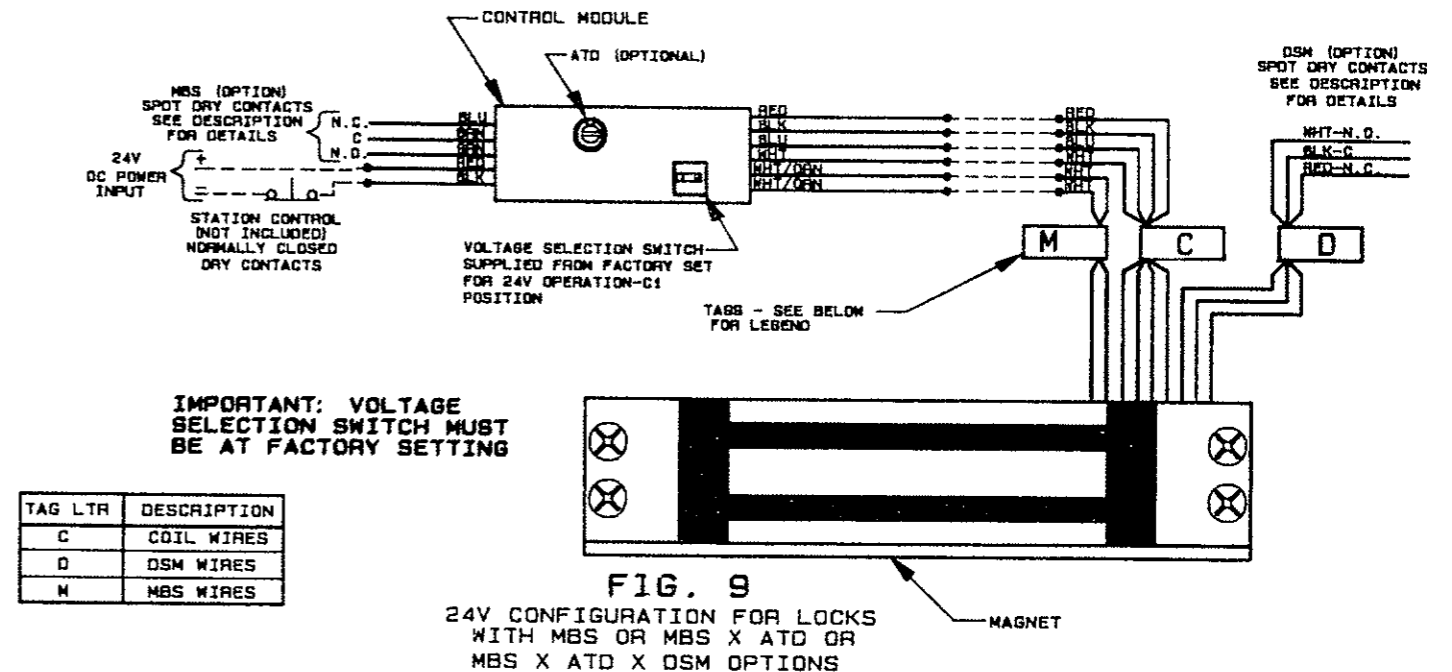
- 320 SERIES: 500 LBS @ 12V, 650 LBS @ 24V
- 322 SERIES: 500 LBS PER DOOR @ 12V
- 650 LBS PER DOOR @ 24V

**INDEX**

General Information-----Page 1  
 Installation Instructions---Page 2  
 Parts Identification:  
   Model 320 Series-----Page 4  
   Model 320T-----Page 5  
   Model 320SC-----Page 6  
   Model 320M-----Page 7  
   Model 320P-----Page 8  
   Model 322 Series-----Page 9  
   Model 322TJ-----Page 10  
 Parts List-----Page 11  
 Template Drawings-----Page 12  
 Wiring Instructions-----Page 15



# 320 SERIES LOCKS WIRING DETAILS ALL MODELS





# 320 SERIES LOCKS

## WIRING DETAILS

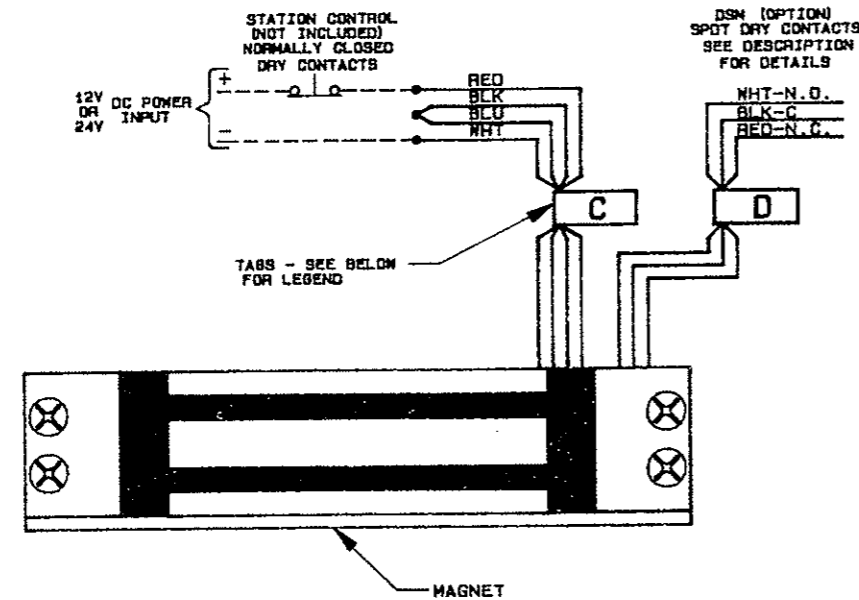
### ALL MODELS



# 320 AND 322 SERIES LOCKS

## INSTALLATION INSTRUCTIONS

**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK**



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES

**FIG. 7**  
12V OR 24V CONFIGURATION FOR LOCKS WITHOUT OPTIONS OR LOCKS WITH DSM OPTION

**GENERAL INFORMATION:**

- \* Handle the equipment carefully. Damaging the mating surfaces of the electromagnet or the armature may reduce locking efficiency.
- \* The electromagnet mounts rigidly to the door frame header. The armature mounts to the door and is designed to pivot about its center compensating for door misalignment.
- \* When installing an electromagnetic lock with the DSM option, care must be used to be certain that the end of the armature holding the permanent magnet will be directly opposite the DSM magnetic switch in the magnet assembly.

**CAUTION:**

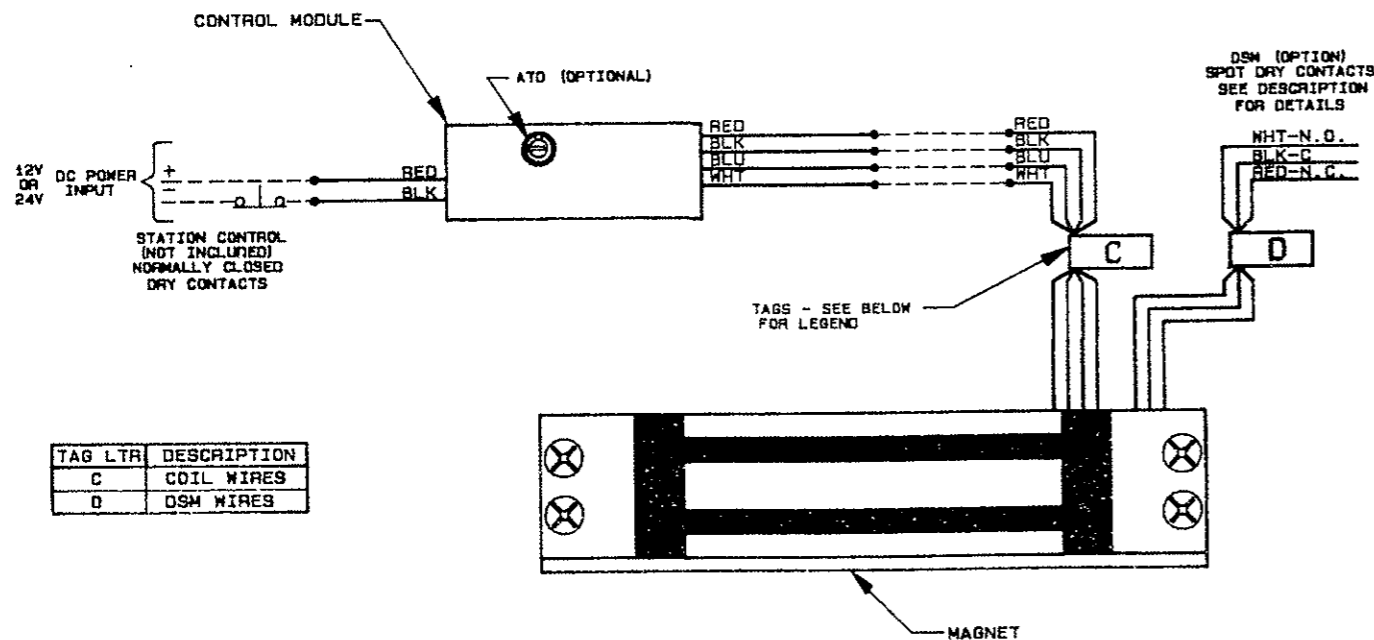
FAILURE TO SECURE THE ARMATURE TO THE DOOR MAY RESULT IN SERIOUS INJURY TO DOOR USER. FOR PROPER OPERATION, SAFETY AND SECURITY, SEX NUT/BOLT ASSEMBLY, WASHERS AND SPACERS MUST BE ASSEMBLED IN THE ORDER ILLUSTRATED AND SECURELY TIGHTENED 1/8 TO 1/4 TURN PAST HAND TIGHT.

**MAINTENANCE:**

- \* The electromagnet and armature are plated for corrosion resistance and require little maintenance. For maximum performance, occasional cleaning and an application of a protective coating to the electromagnet and the armature is recommended.

The following service should be done to both the armature and the electromagnet as required:

1. Clean the functional surfaces of the electromagnet and the armature by applying a light coating of silicon lubricant and wipe with a clean dry cloth.



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES

**FIG. 8**  
12V OR 24V CONFIGURATION FOR LOCKS WITH ATD AND ATD X DSM OPTIONS

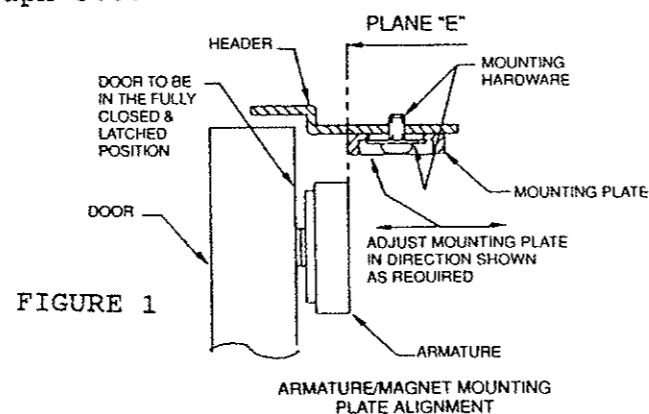


# 320 AND 322 SERIES LOCKS INSTALLATION INSTRUCTIONS

MODELS: 320, 320 X HDB, 322 AND 322 X HDB ONLY

NOTE: Hardware provided is for 1-3/4" door. If door thickness exceeds 1-3/4", an alternate sex nut is required.  
Order P/N - 399025 for 2" doors  
- 399026 for 2-1/4" doors  
or if additional information is required, consult factory.

- 1.0 Prep door and frame according to the appropriate template drawing. When using paper template, follow instructions on the template.
- 1.1 Install armature(s). Refer to Figures 2, 3 and 4 on page 12 and exploded views on pages 4, and 9 for parts identification.
- 1.2 Install the adjustable mounting plate onto frame, placing screws through the slots and into the holes "A" prepped for #10 screws.
- 1.3 With the door fully closed and latched, check the alignment of the magnet mounting plate with the armature as shown in Figure 1, below. When the magnet mounting plate and the armature are in the correct alignment, firmly tighten the screws. Using the mounting plate as a template, drill the remaining mounting holes "C".  
**WARNING: INSTALLATION OF THE REMAINING HARDWARE IS NECESSARY TO MAINTAIN ALIGNMENT.**
- 1.4 Refer to exploded views on pages 4 and 9 to complete mechanical installation.
- 1.5 Go to All Models, paragraph 3.0.



MODELS: 320TJ, 320M, 320P AND 322TJ ONLY

- 2.0 Prep door and frame according to the appropriate template drawing. When using paper template, follow instructions on the template.
- 2.1 Refer to exploded views on pages 5, 6, 7, 8 and 10 to complete mechanical installation.

### ALL MODELS

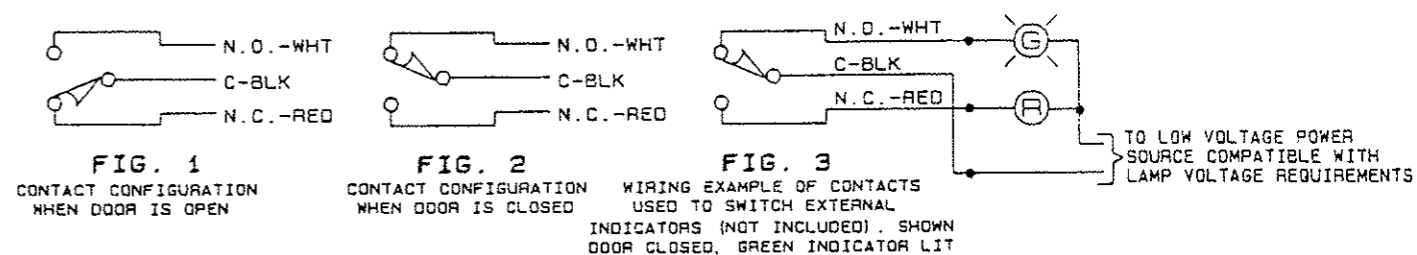
- 3.0 See wiring instructions on pages 15, 16, 17 and 18 and other applicable instructions to complete full installation.



# 320 SERIES LOCKS SPECIFICATION AND ELECTRICAL OPTIONS ALL MODELS

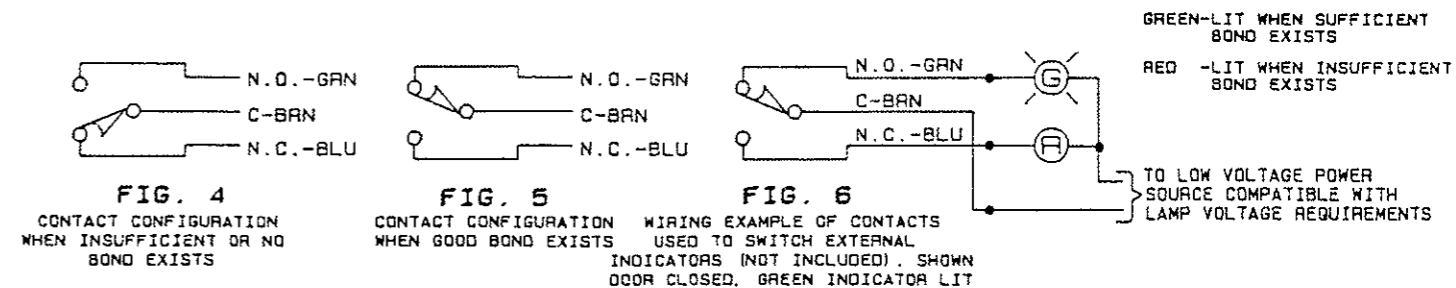
### DOOR STATUS SWITCH (DSM) OPTION:

The DSM provides a signal to indicate whether the door is open or closed. The lock mounting instructions should be followed closely to ensure reliable performance of this option. The DSM provides a signal via a set of form "C" dry contacts rated 100mA resistive at 24VDC. These contacts are accessed by the red, black and white wires. The contacts are labeled in the door opened condition which are: white-N.O. (normally open), black-C (common) and red-N.C. (normally closed). Closing the door causes the contacts across the black and white wires to close and the black and red wires to open. See Figures 1, 2 and 3 below.



### MAGNETIC BOND SENSOR (MBS) OPTION:

The MBS senses whether sufficient magnetic holding force exists to ensure adequate locking. It will respond to low line voltage, foreign materials in the magnetic gap, damage or dirty surfaces of the lock and/or armature. The MBS option provides a signal via a set of form "C" dry contacts rated 1 amp at 30VDC resistive load maximum. The dry contacts are accessed by three (3) wires which are green, blue and brown. They are labeled in a deenergized/no bond condition which are green-N.O. (normally open) and blue-N.C. (normally closed) and brown-C (common). Once the lock is energized and the magnet and armature are properly bonded, the contacts will switch, at which time the common (brown wire lead) and the normally open (green wire lead) will be closed contacts. See Figures 4, 5 and 6 below.





# 320 SERIES LOCKS

## SPECIFICATION AND ELECTRICAL OPTIONS

### ALL MODELS

#### SPECIFICATIONS:

VOLTAGE: 12V OR 24V FIELD SELECTABLE

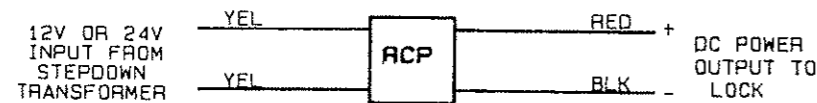
CURRENT: .225 AMP @ 12V  
.450 AMP @ 24V

RATED HOLDING FORCE;  
500 lbs @ 12v  
650 lbs @ 24v

#### ELECTRICAL OPTIONS:

##### RECTIFIER (RCP) OPTION:

The RCP option allows operation of a direct current (DC) lock from a low voltage alternating current (AC) supply, such as a 12 or 24 volt transformer. The RCP Module converts the AC voltage to DC voltage supplied to the lock. One (1) RC Module should be used for each lock. The RCP Module has four (4) leads. The two yellow wires are the low voltage AC input. The are connected to the low voltage side of the transformer. The red lead is the positive (+) DC output. It is connected to the positive (+) lock input. The black lead is the negative (-) DC output. It is connected to the negative (-) lock input.



##### ADJUSTABLE TIME DELAY (ATD) OPTION:

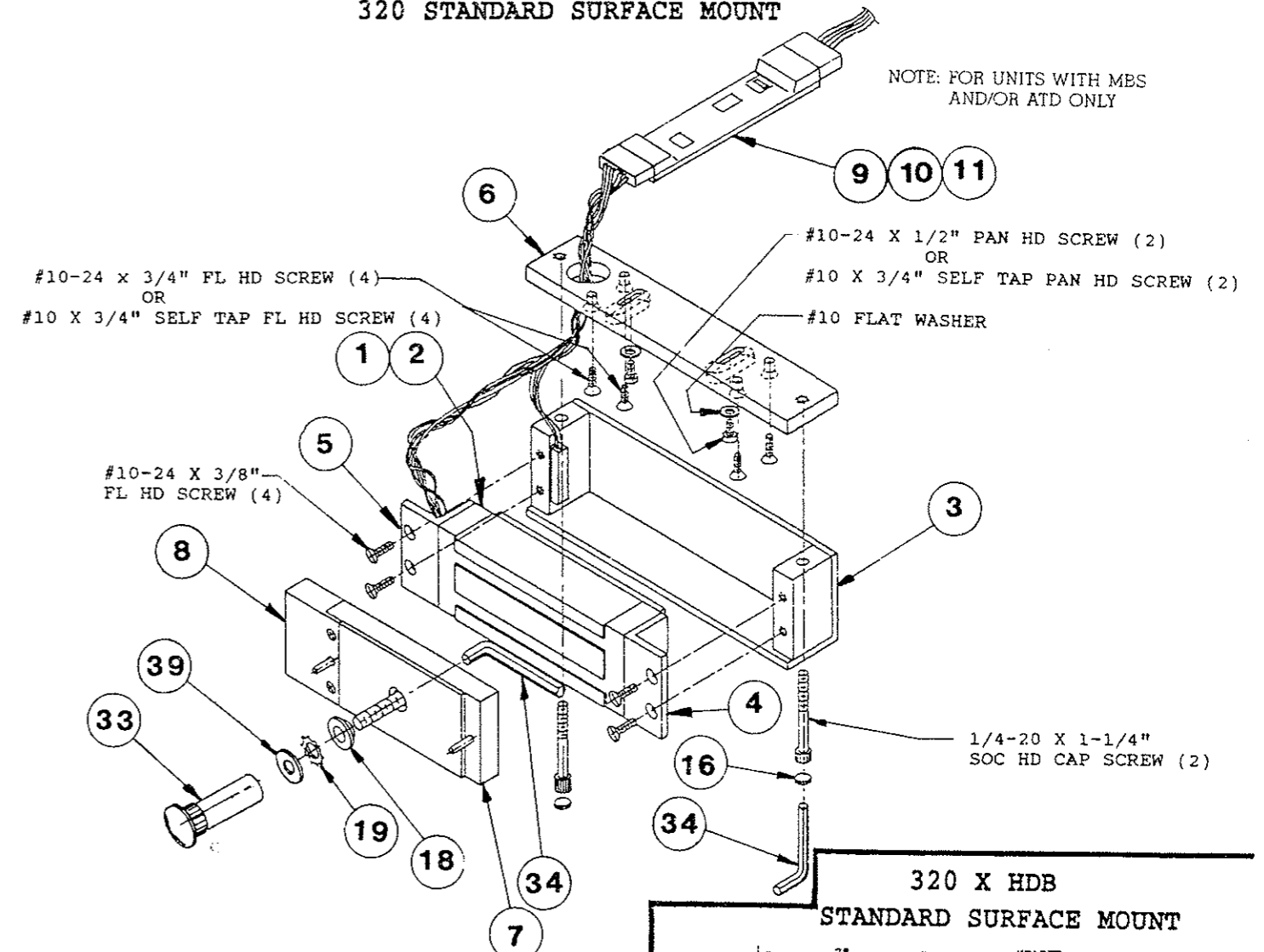
The ATD can be set to delay the relock from 0 to 30 seconds. To increase time, turn adjustment potentiometer clockwise. To decrease time, turn potentiometer counter-clockwise. The ATD will operate whenever input power is interrupted and then reapplied. For location of potentiometer, see Figures 8, 9 and 10.



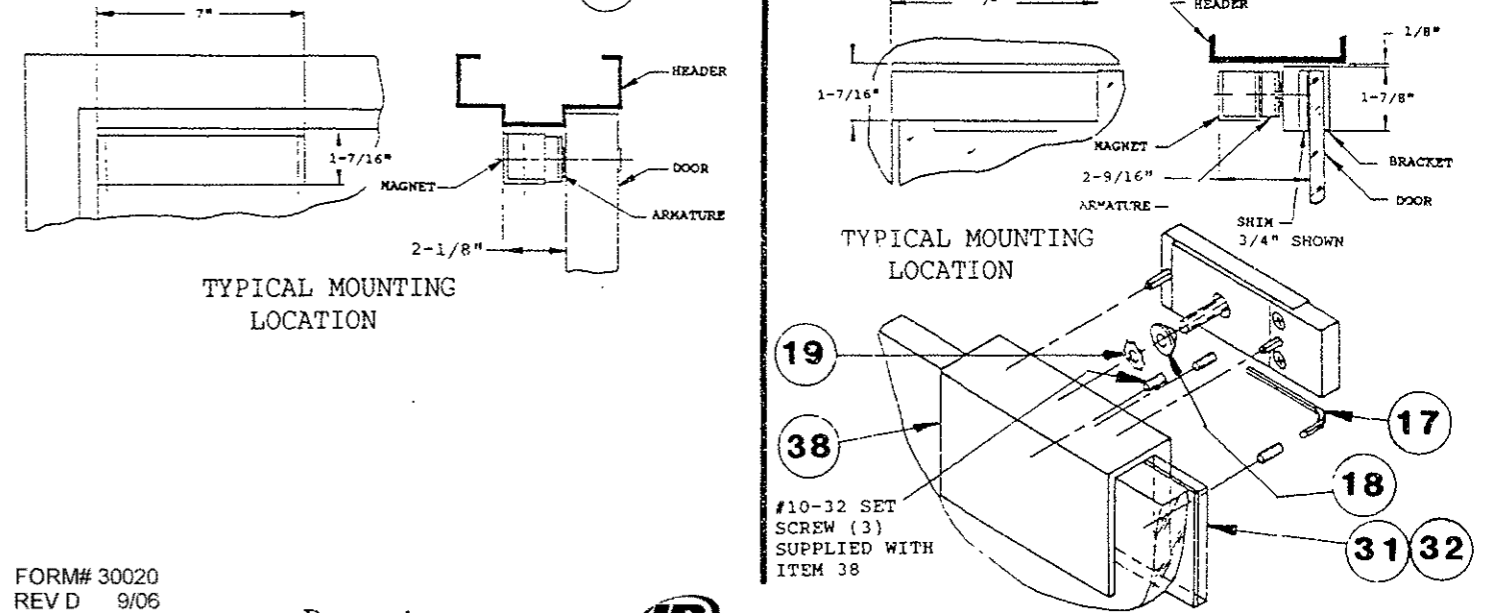
# 320 AND 322 SERIES LOCKS

## EXPLODED VIEW

### 320 STANDARD SURFACE MOUNT



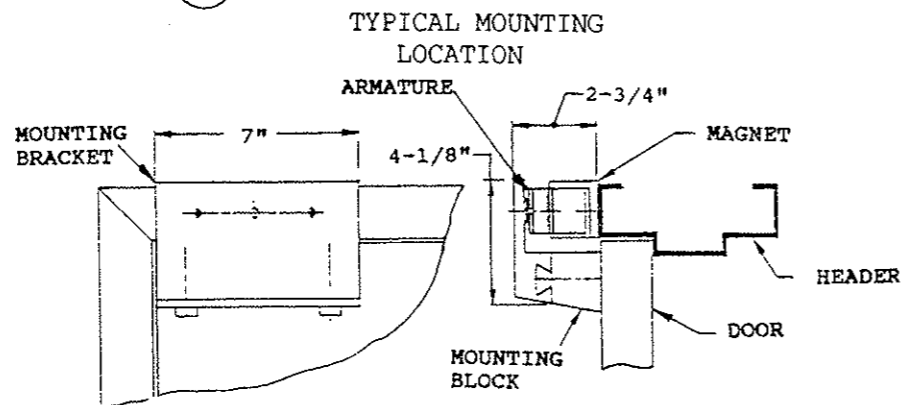
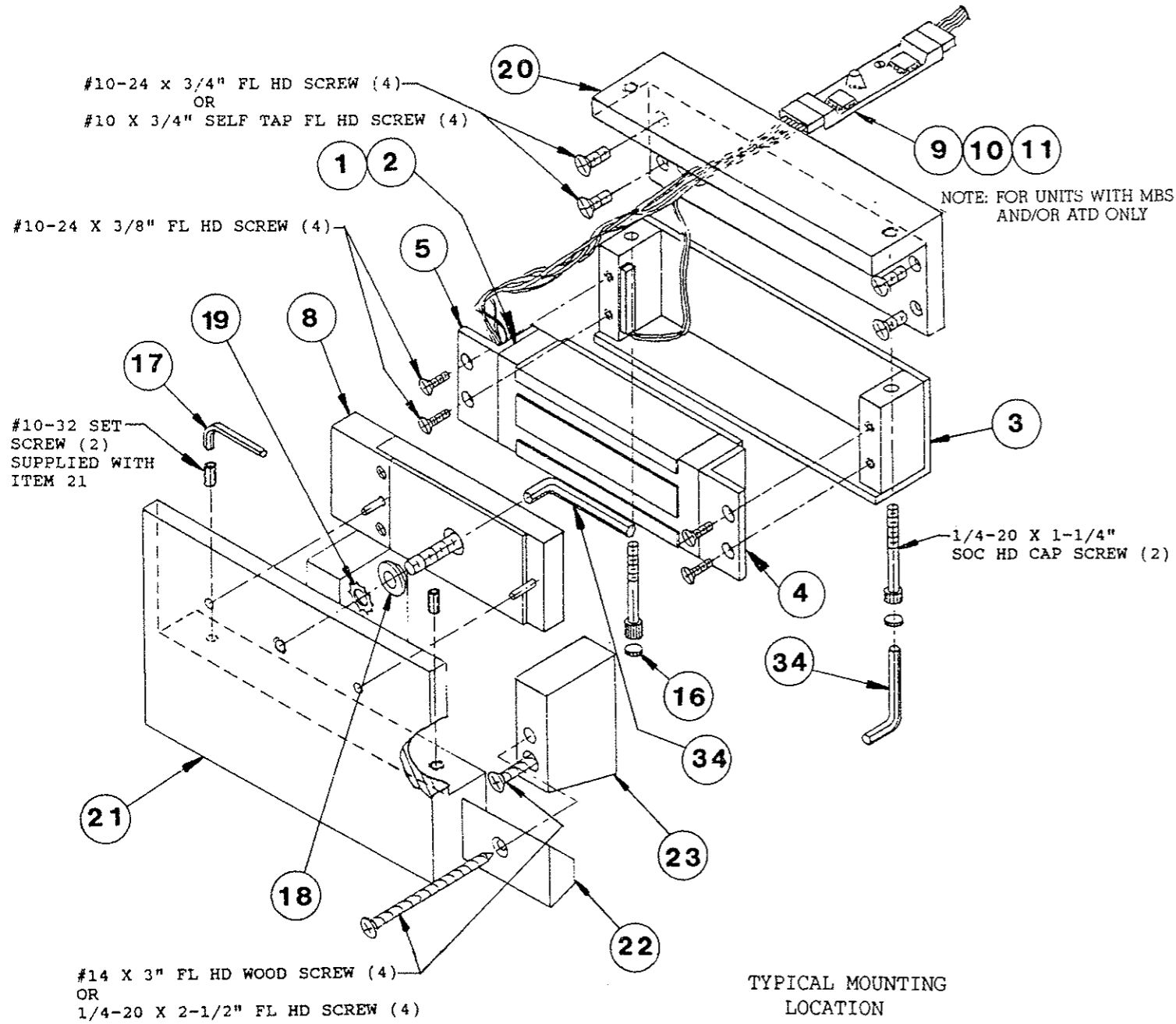
NOTE: FOR UNITS WITH MBS AND/OR ATD ONLY





# 320 AND 322 SERIES LOCKS EXPLODED VIEW

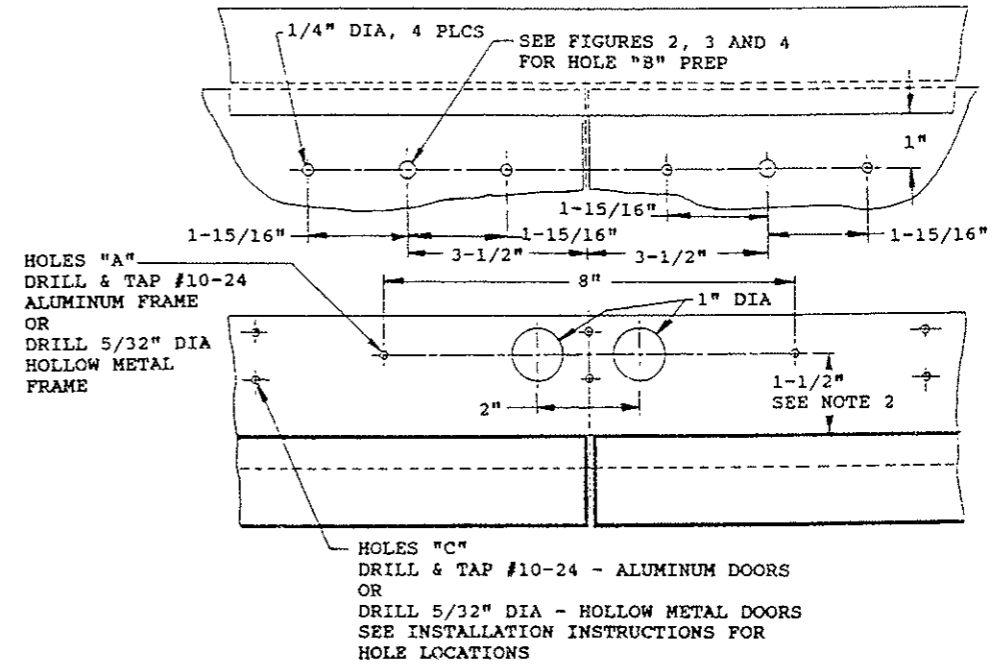
## 320TJ SERIES



# 320 AND 322 SERIES LOCKS

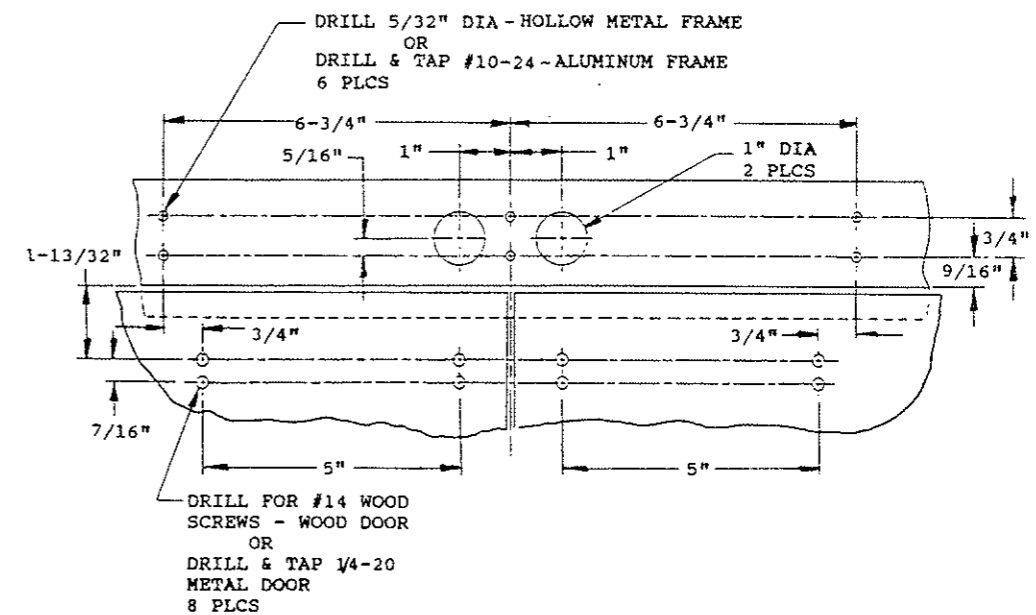
## TEMPLATE DRAWING

### 322 AND 322 X HDB TEMPLATE DRAWING



- NOTES:
1. MODEL 322 X HDB REQUIRES  
FRAME PREP ONLY
  2. FOR MODEL 322 X HDB 1-1/2"  
DIMENSION IS FROM ARMATURE  
BRACKET

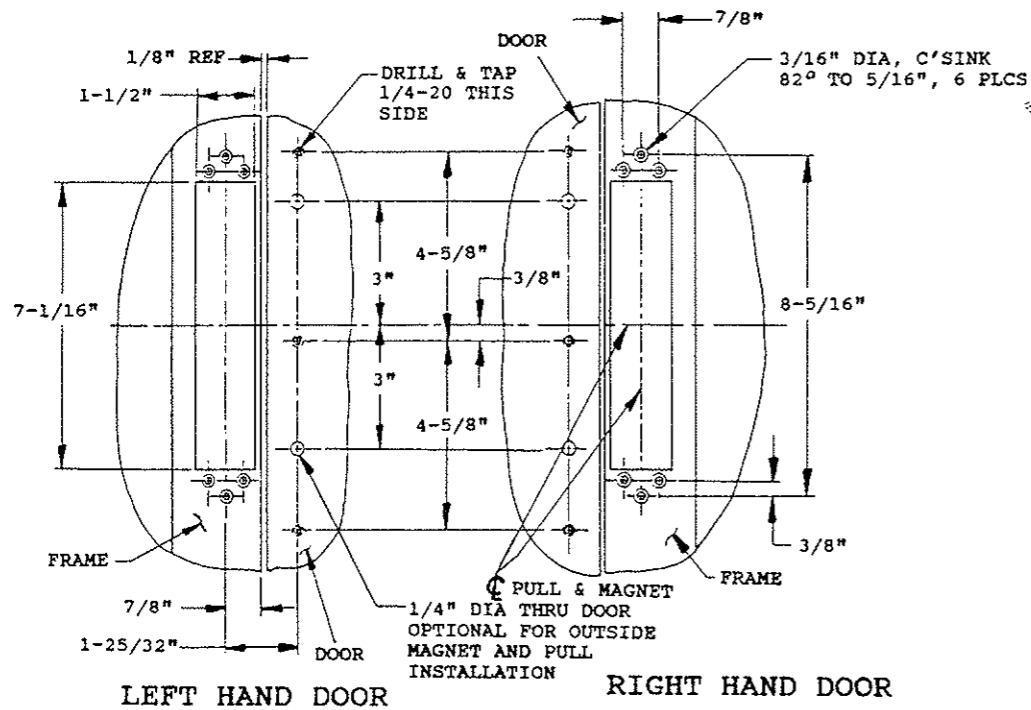
### 322TJ TEMPLATE DRAWING



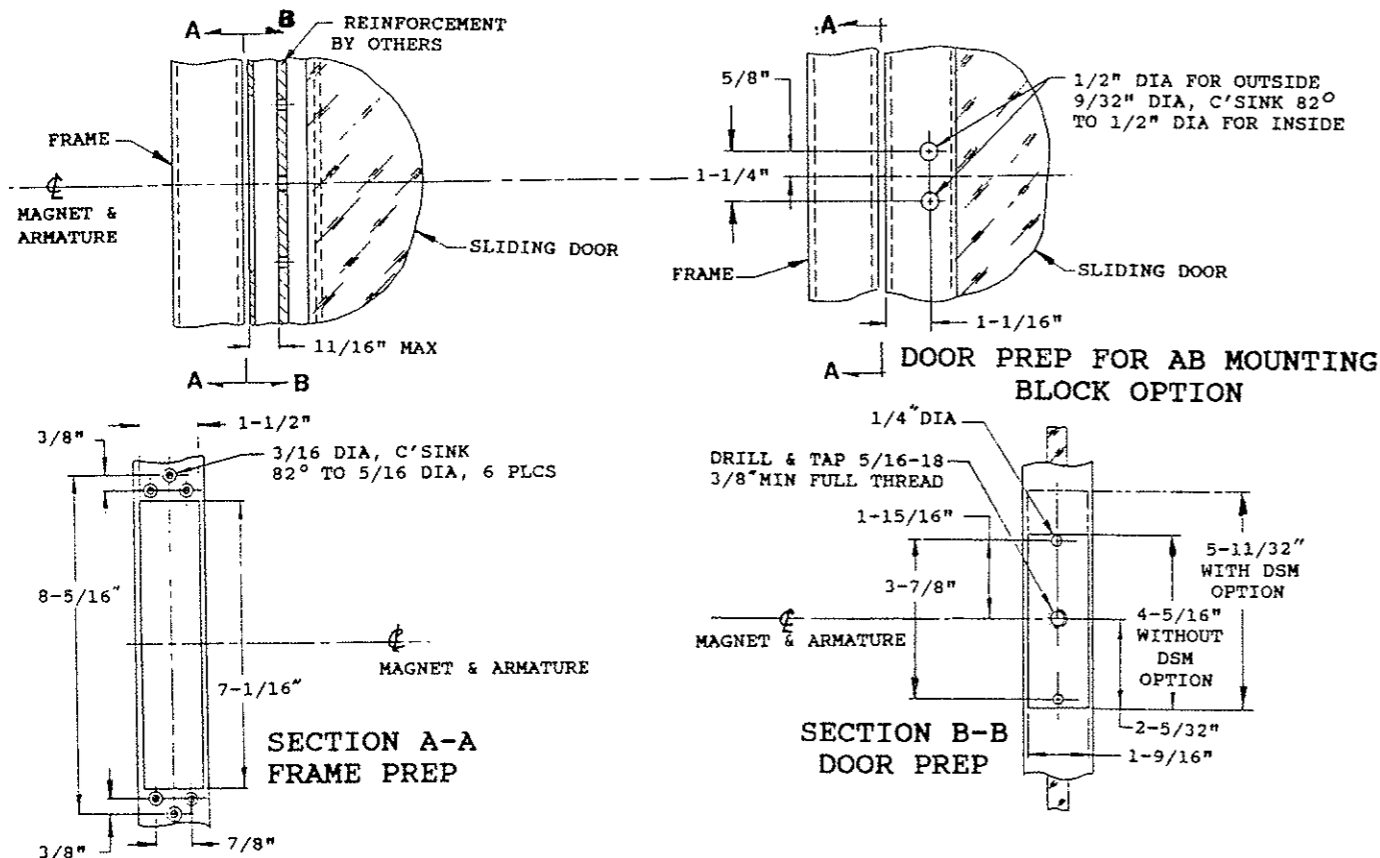


# 320 AND 322 SERIES LOCKS TEMPLATE DRAWING

320P  
TEMPLATE DRAWING

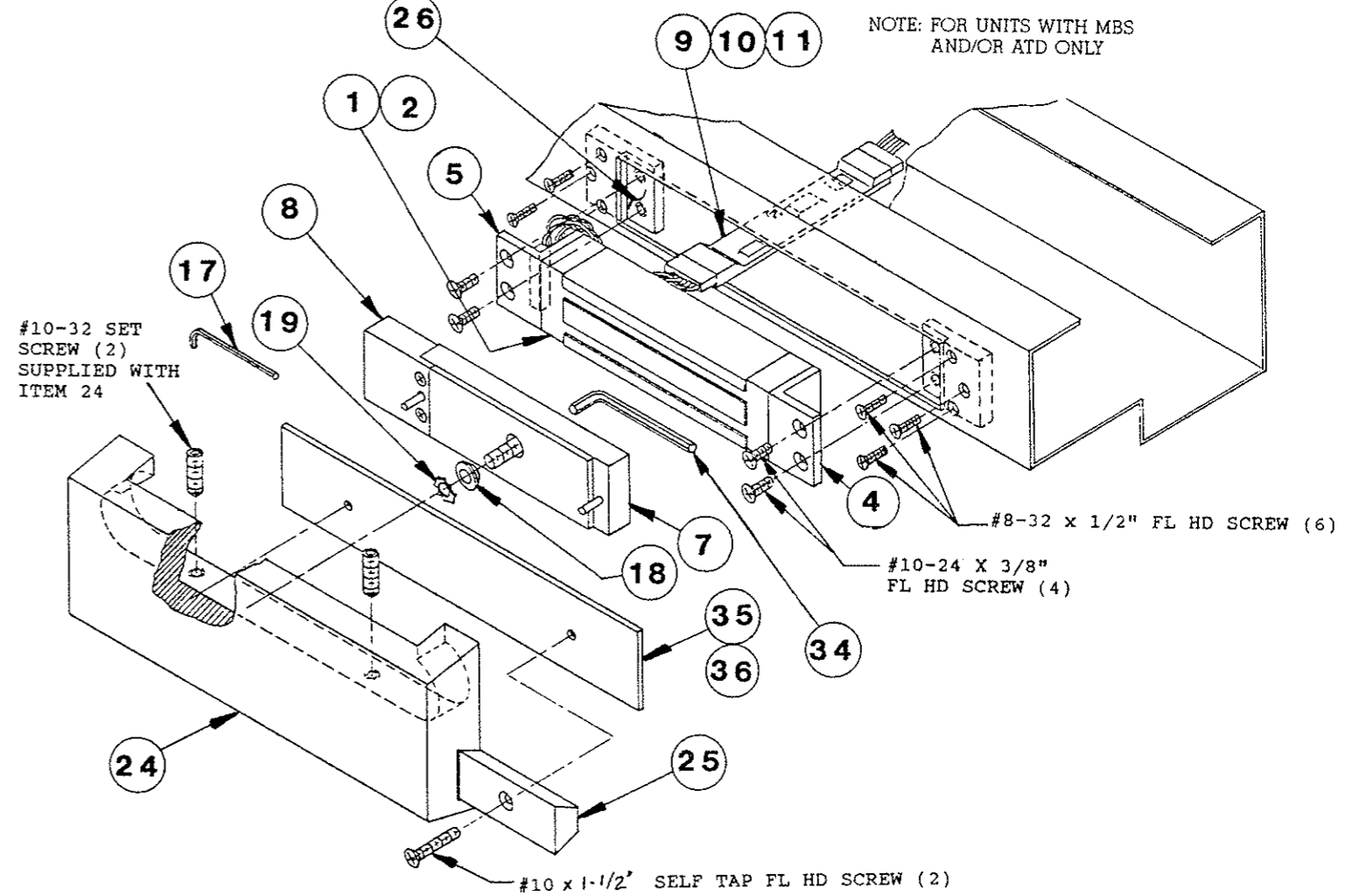


320M  
TEMPLATE DRAWING

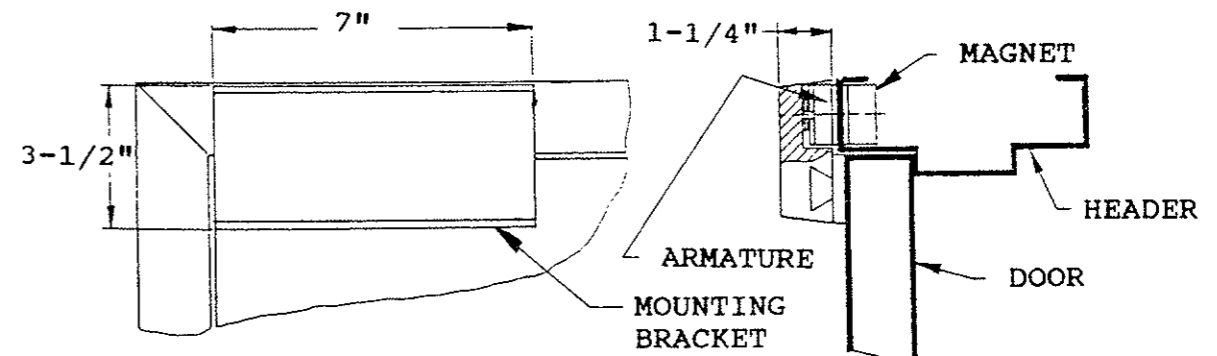


# 320 AND 322 SERIES LOCKS EXPLODED VIEW

320SC SERIES



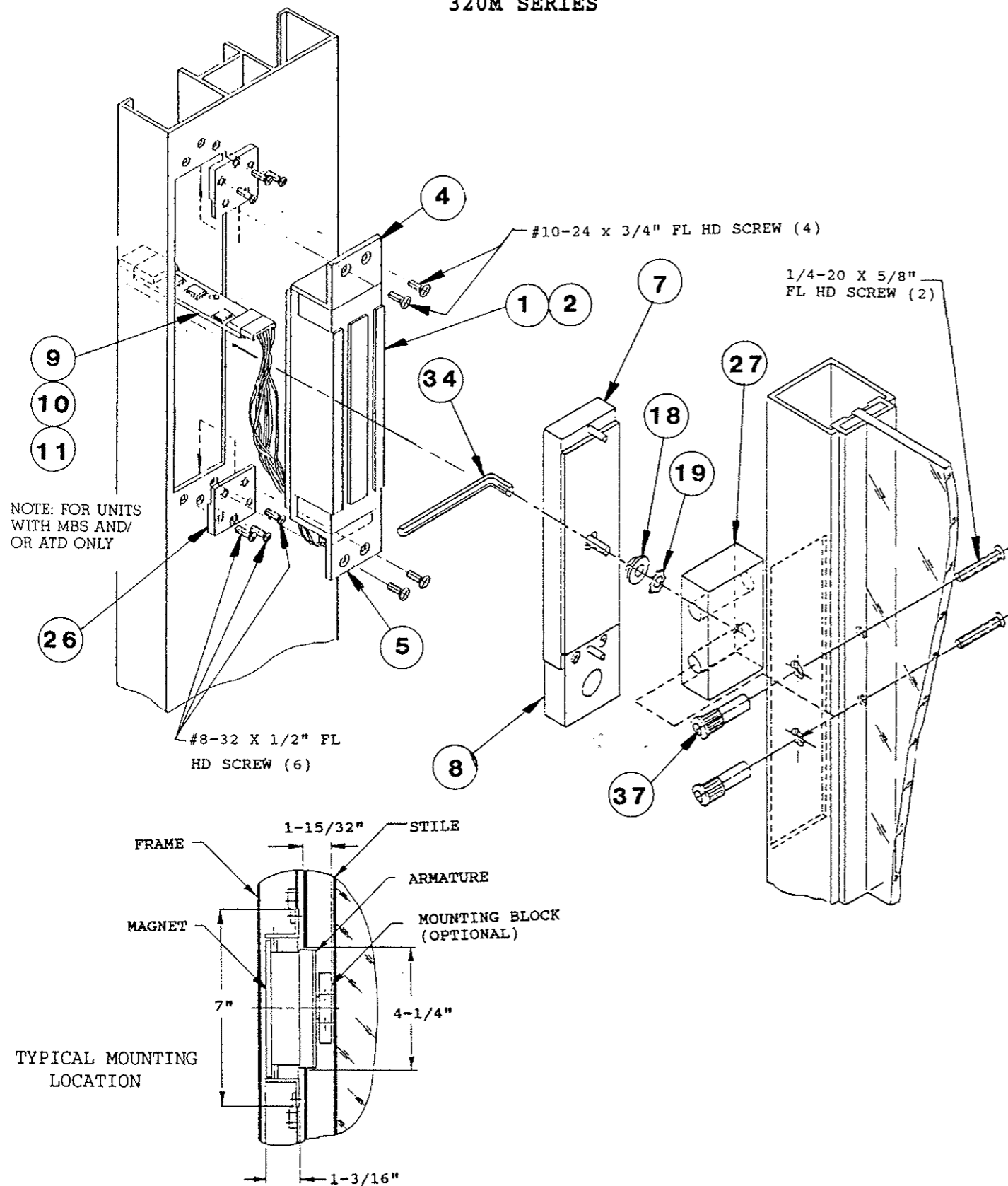
TYPICAL MOUNTING  
LOCATION





# 320 AND 322 SERIES LOCKS EXPLODED VIEW

## 320M SERIES

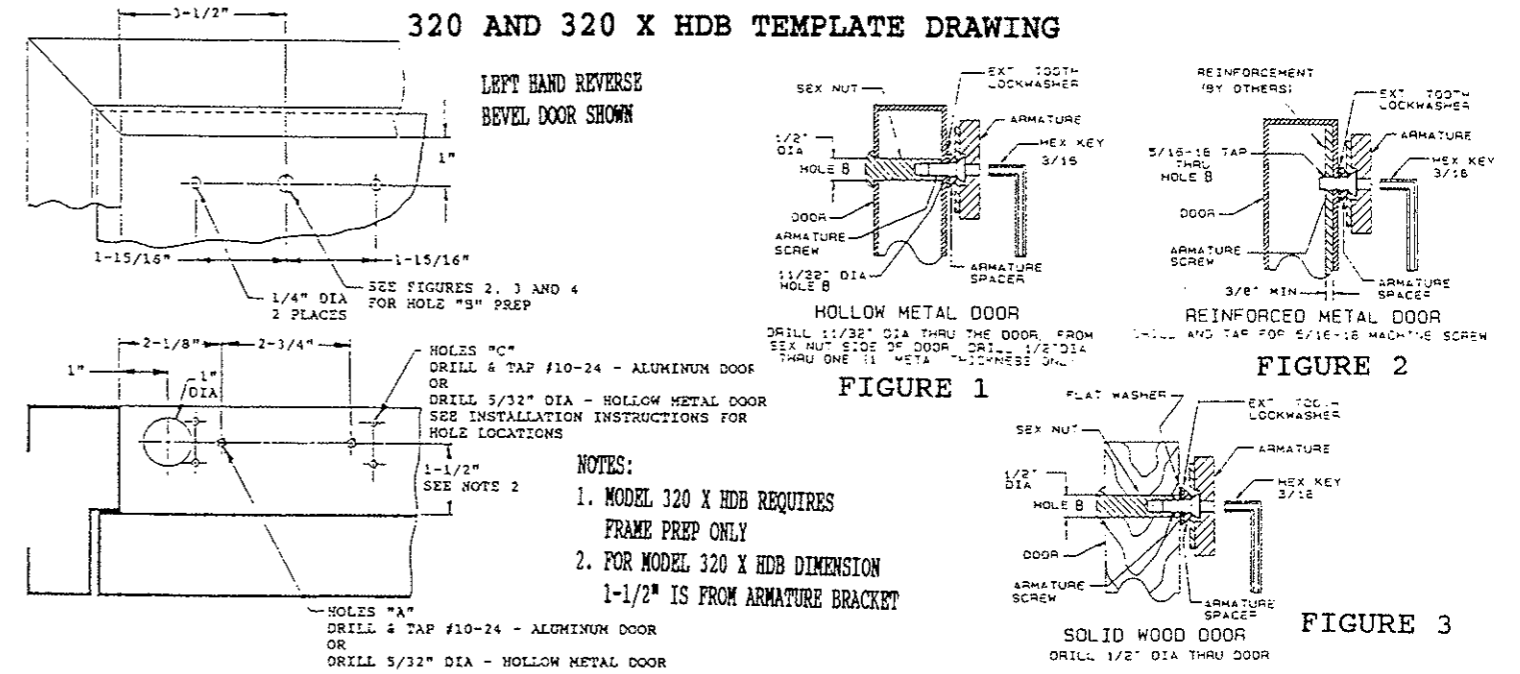


TYPICAL MOUNTING LOCATION



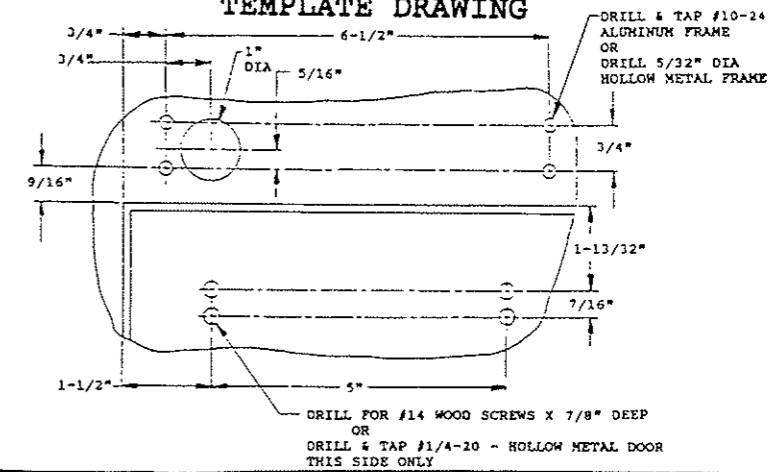
# 320 AND 322 SERIES LOCKS TEMPLATE DRAWING

## 320 AND 320 X HDB TEMPLATE DRAWING



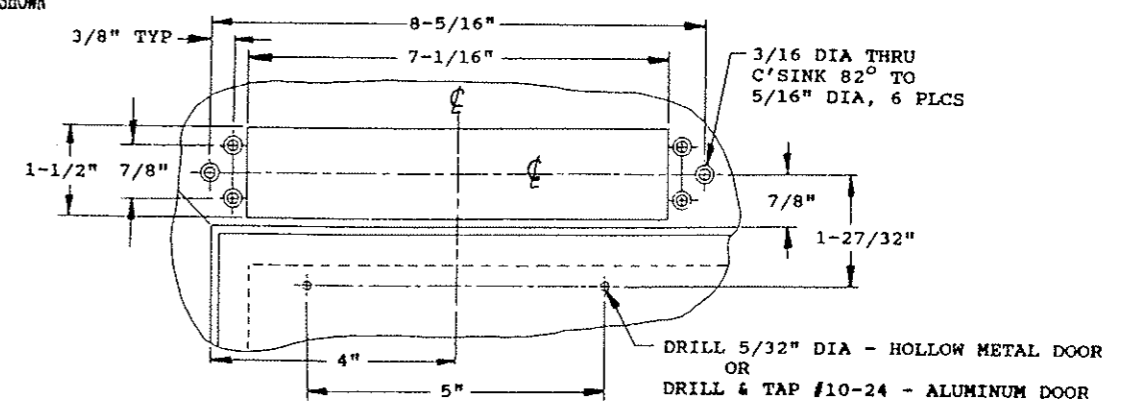
## 320TJ TEMPLATE DRAWING

LEFT HAND DOOR SHOWN



## 320SC TEMPLATE DRAWING

LEFT HAND DOOR SHOWN





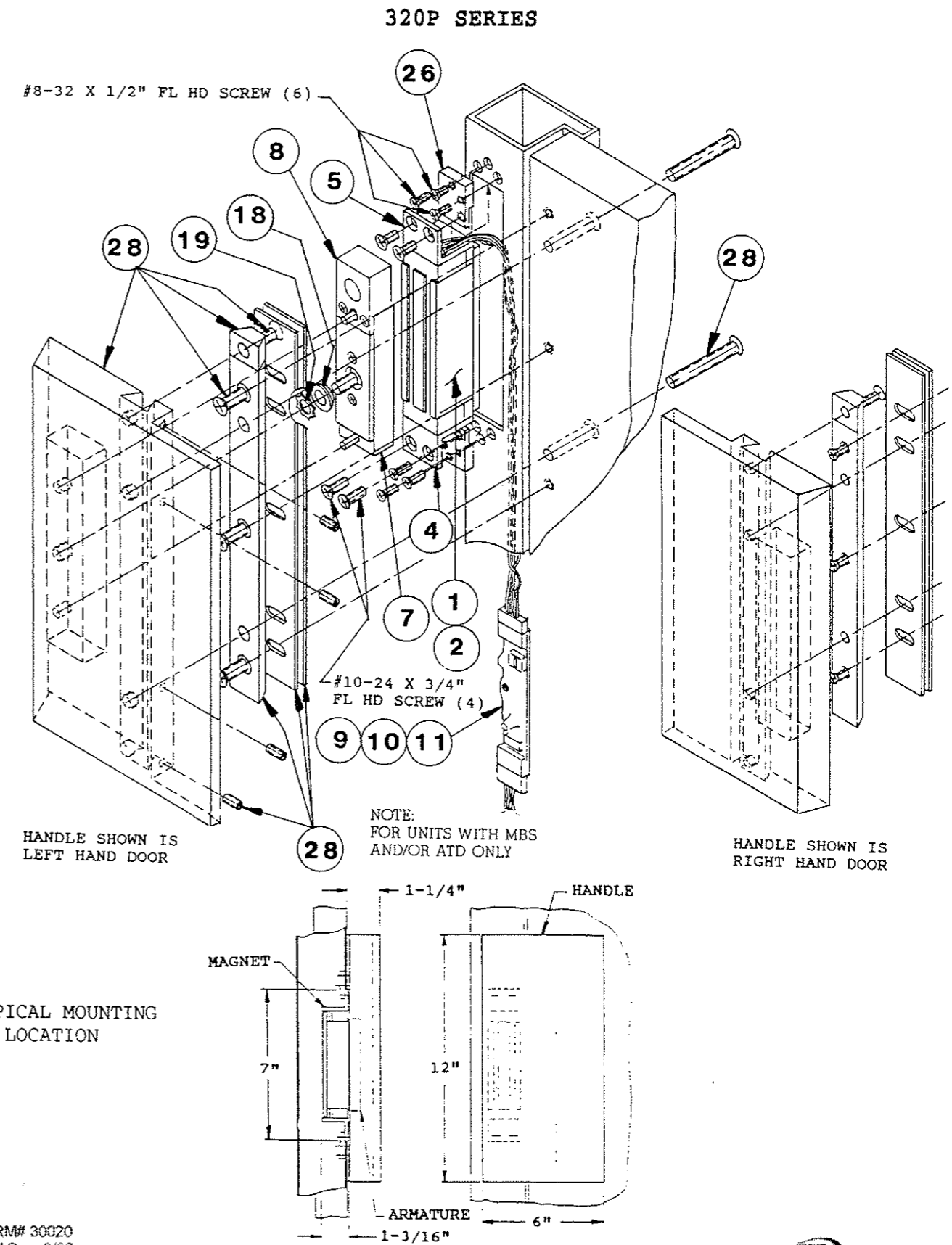


# 320 AND 322 SERIES LOCKS PARTS LIST

ITEM	PART NO.	DESCRIPTION	MODEL									
			320	320 HDB	320 TJ	320 SC	320 M	320 P	322	322 HDB	322 TJ	
1	320096	ELECTROMAGNET ASSY NO MBS	1	1	1	1	1	1	2	2	2	
2	320118	ELECTROMAGNET ASSY MBS	1	1	1	1	1	1	2	2	2	
3	CONSULT FACTORY	HOUSING-MAGNET	1	1	1	-	-	-	2	2	2	
4	320106	BRACKET-MOUNTING MAGNET	1	1	1	1	1	1	2	2	2	
5	320105	BRACKET-MOUNTING MAGNET	1	1	1	1	1	1	2	2	2	
6	320107	PLATE-MOUNTING	1	1	-	-	-	-	-	-	-	
7	320109	ARMATURE ASSY	1	1	1	1	1	1	2	2	2	
8	320115	BLOCK-DSM, ARMATURE	1	1	1	1	1	1	2	2	2	
9	320208	CONTROL MODULE MBS	1	1	1	1	1	1	2	2	2	
10	320209	CONTROL MODULE ATD	1	1	1	1	1	1	2	2	2	
11	320210	CONTROL MODULE ATD X MBS	1	1	1	1	1	1	2	2	2	
12												
13												
14												
15												
16	390022	ANTI-TAMPER PLUG	2	2	2	-	-	-	4	4	4	
17	270076	HEX WRENCH-3/32	1	1	1	1	-	-	1	1	1	
18	390255	SPACER-ARMATURE	1	1	1	1	1	1	2	2	2	
19	990185	LOCKWASHER-EXT TH	1	1	1	1	1	1	2	2	2	
20	320128	BRACKET-MTG, TJ MAGNET	-	-	1	-	-	-	-	-	-	
21	320130	BRACKET-MTG, TJ ARMATURE	-	-	1	-	-	-	-	-	2	
22	320170	DOVETAIL-TJ ARMATURE	-	-	1	-	-	-	-	-	2	
23	320172	BLOCK-MTG, TJ ARMATURE	-	-	2	-	-	-	-	-	4	
24	320168	BRACKET-MTG, SC ARMATURE	-	-	-	1	-	-	-	-	-	
25	320171	DOVETAIL-SC ARMATURE	-	-	-	1	-	-	-	-	-	
26	280006	MOUNTING TAB	-	-	-	2	2	2	-	-	-	
27	320177	MTG BLOCK, ARMATURE	-	-	-	-	1	-	-	-	-	
28	320191	HANDLE-PULL KIT	-	-	-	-	-	1	-	-	-	
29	320108	PLATE-MOUNTING	-	-	-	-	-	-	1	-	-	
30	320129	BRACKET-MTG, TJ MAGNET	-	-	-	-	-	-	-	-	1	
31	320145	SHIM ASSY-3/4 DDDR	-	1	-	-	-	-	-	2	-	
32	320129	SHIM ASSY-1/2 DDDR	-	1	-	-	-	-	-	2	-	
33	390498	SEX NUT, 1-3/4 DDDR	1	-	-	-	-	-	2	-	-	
34	270078	HEX WRENCH-3/16	1	1	1	1	1	1	1	1	1	
35	320174	SHIM-MTG, .187 THK	-	-	-	1	-	-	-	-	-	
36	320173	SHIM-MTG, .093 THK	-	-	-	1	-	-	-	-	-	
37	290014	SEX NUT, 1-3/4 DDDR	-	-	-	-	2	-	-	-	-	
38	320147	HDB ASSY	-	1	-	-	-	-	-	2	-	
39	990183	FLAT WASHER-5/16	1	-	-	-	-	-	2	-	-	



# 320 AND 322 SERIES LOCKS EXPLODED VIEW

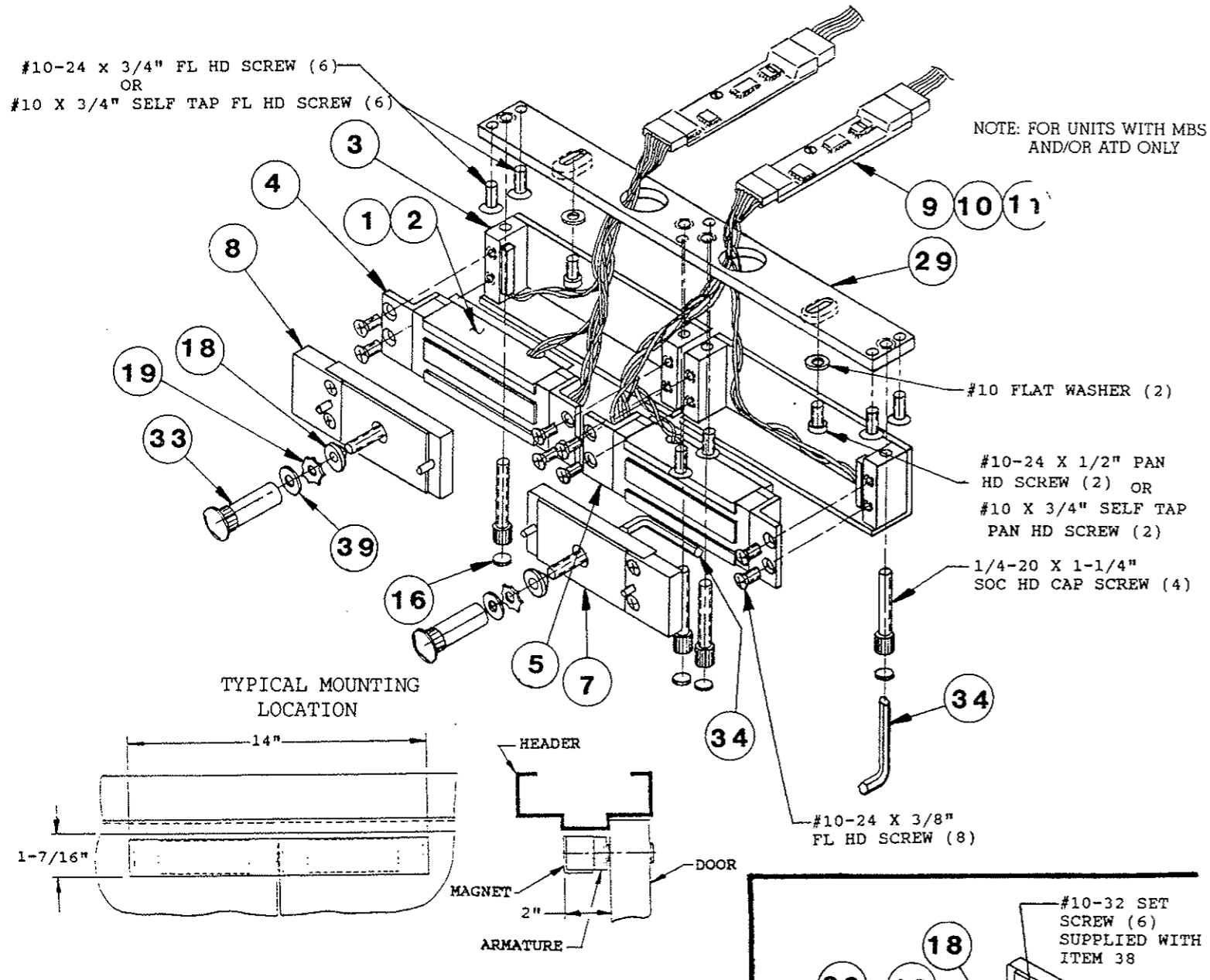




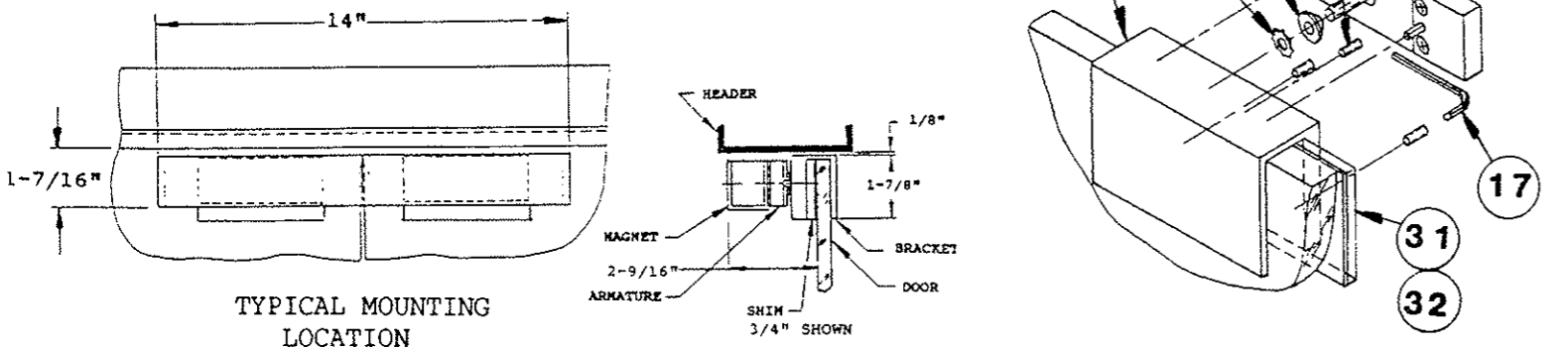


# 320 AND 322 SERIES LOCKS EXPLODED VIEW

## 322 STANDARD SURFACE MOUNT



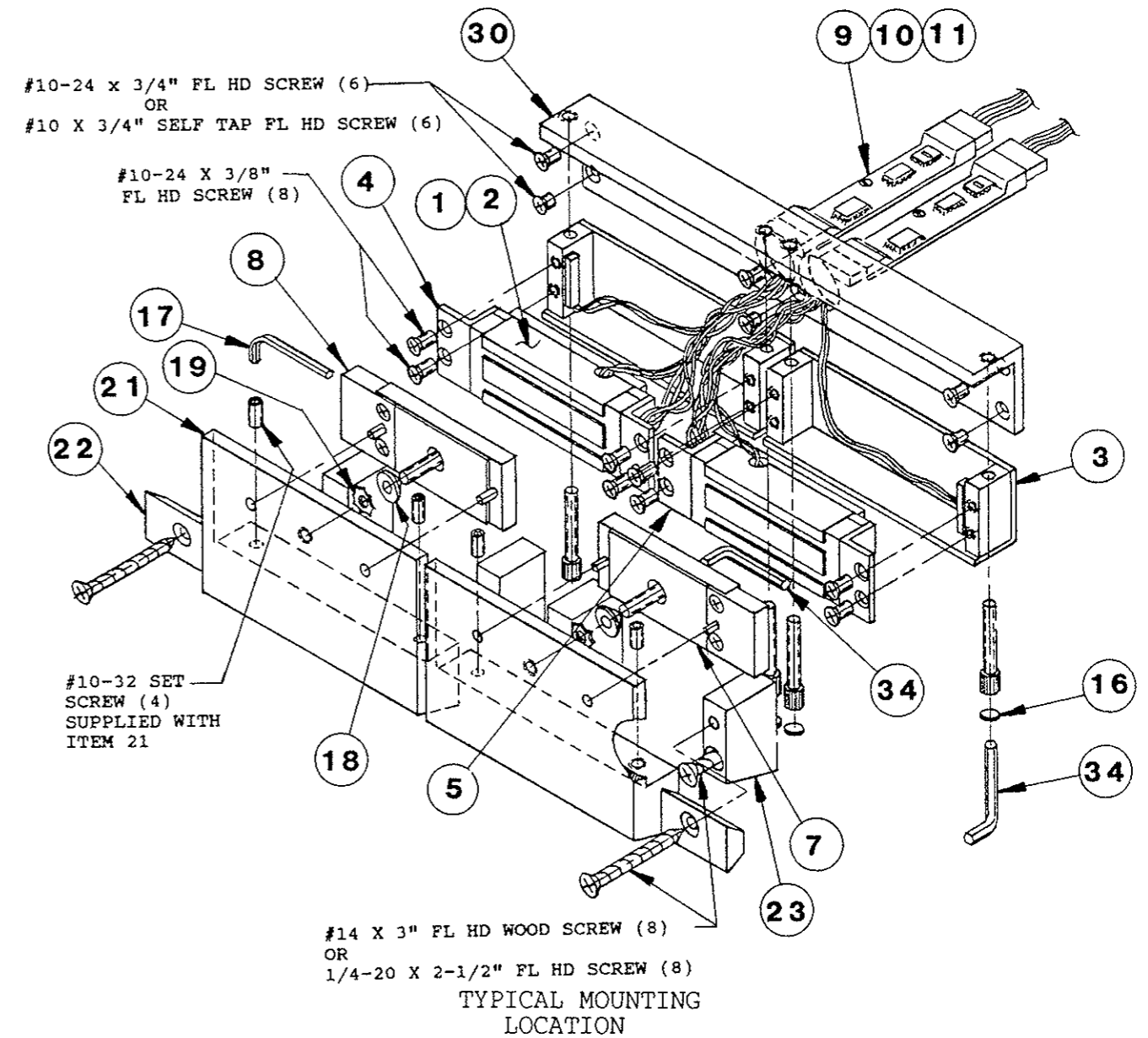
## 322 X HDB STANDARD SURFACE MOUNT



# 320 AND 322 SERIES LOCKS EXPLODED VIEW

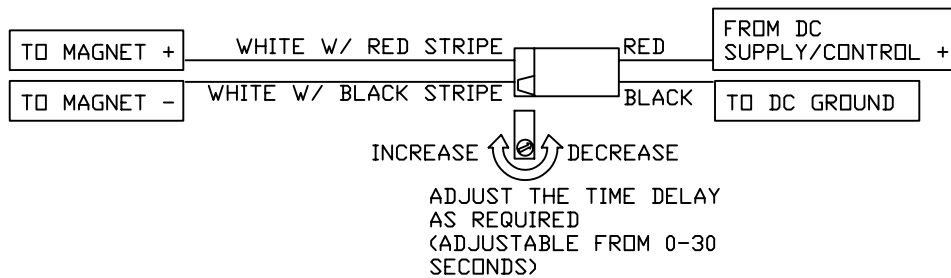
## 322TJ SERIES

NOTE: FOR UNITS WITH MBS  
AND/OR ATD ONLY



# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

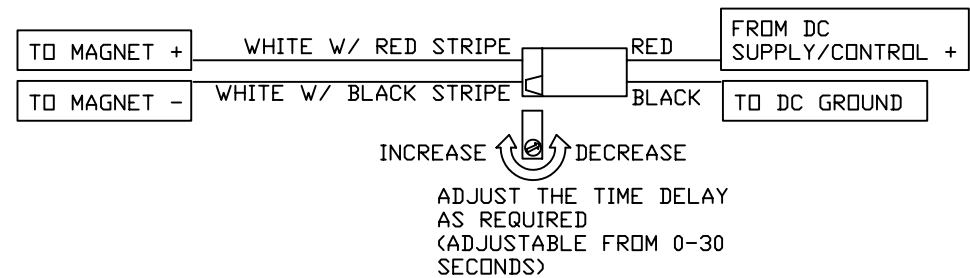


FORM 39476

01-29-2004

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

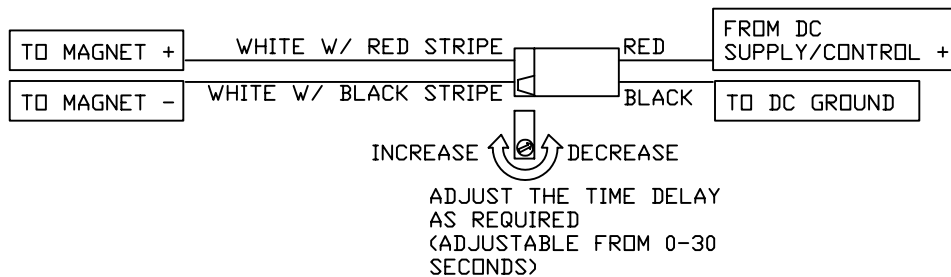


FORM 39476

01-29-2004

# RTD MODULE

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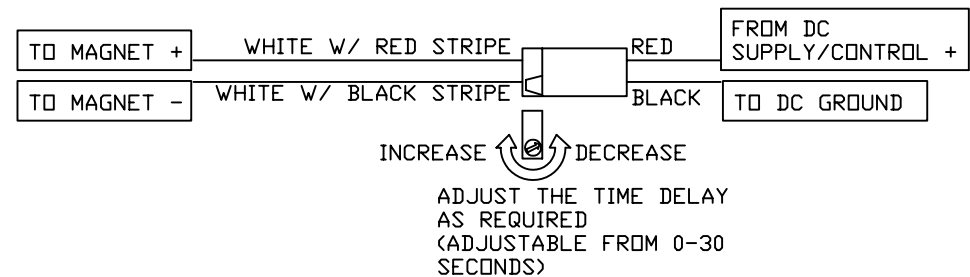


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FORM 39476

01-29-2004

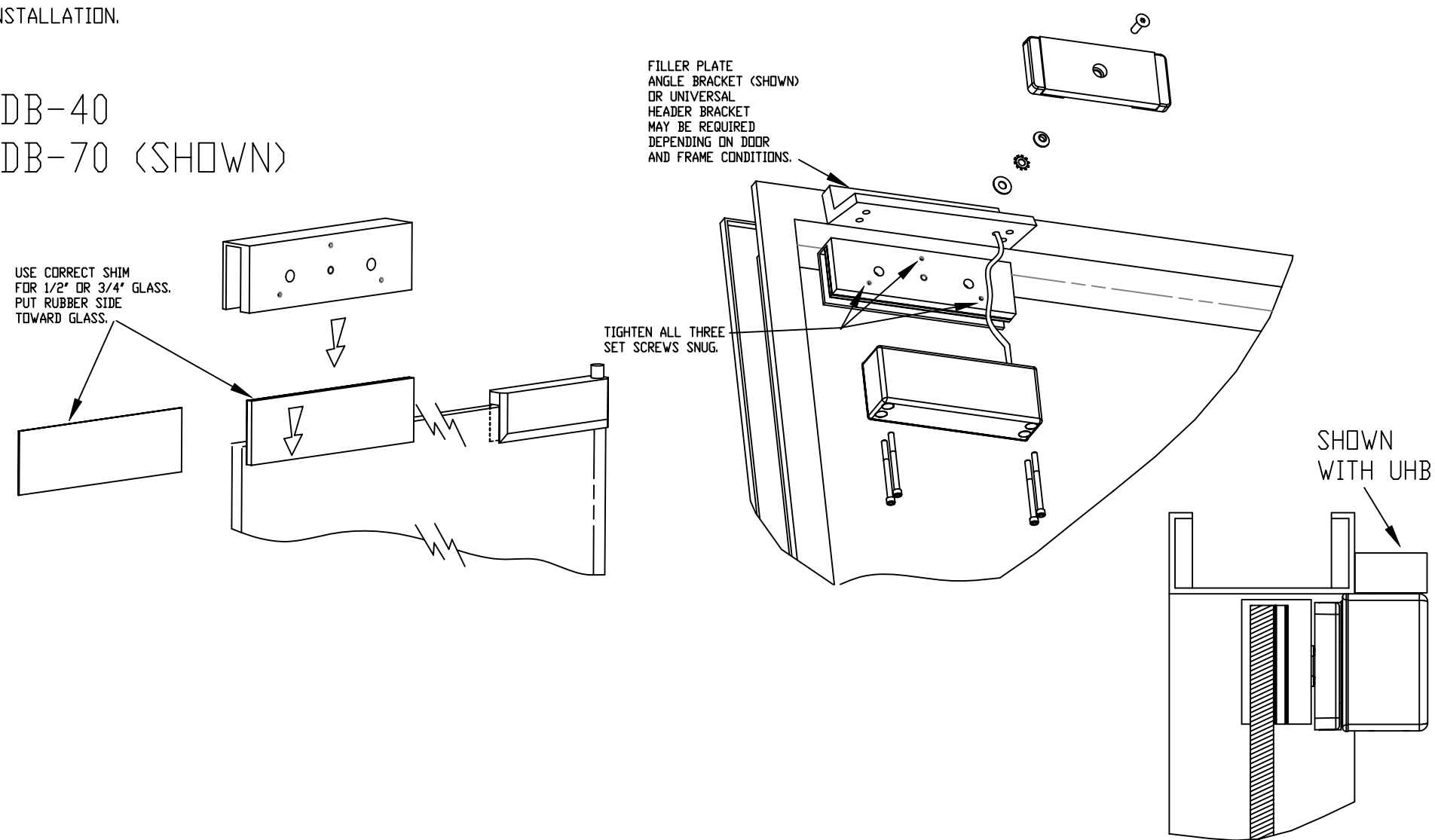
# LOCKNETICS®

## 40 & 70 SERIES MAGNETIC LOCK ACCESSORIES

THE PICTURES ON THIS SHEET SHOW MANY TYPICAL SITUATIONS WHICH CAN BE HELPED BY USING THE AVAILABLE MOUNTING ACCESSORIES. ALWAYS BE SURE THAT THE MAGNETIC LOCK IS PROPERLY FASTENED TO THE DOOR AND FRAME FOR A SECURE AND SAFE INSTALLATION.

HDB-40

HDB-70 (SHOWN)



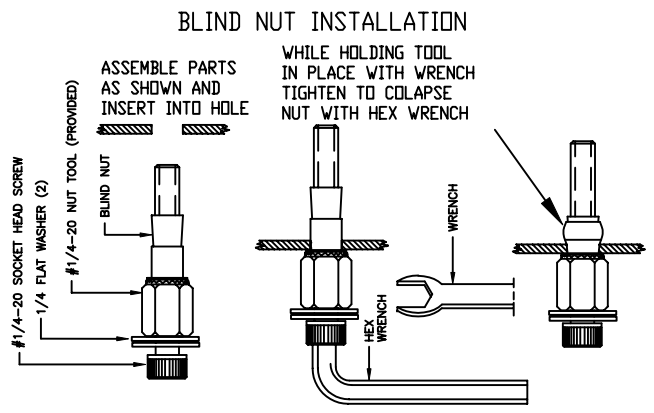
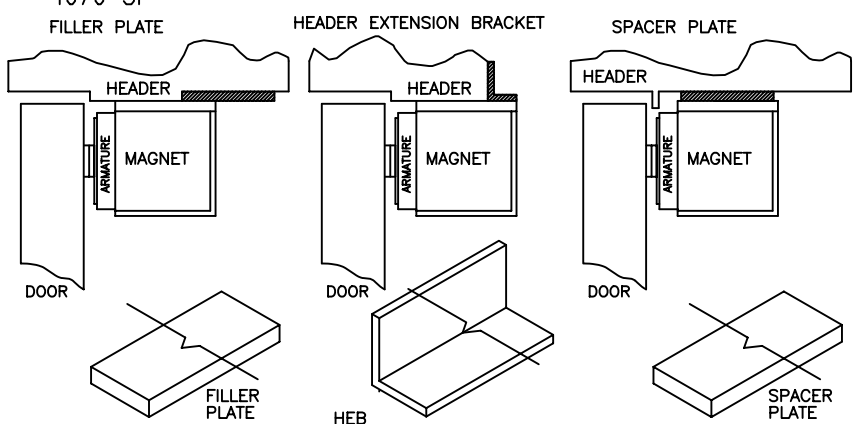
P/N 700251  
11/21/03

4070-1F  
4070-2F  
4070-3F  
4070-4F  
4070-5F

HEB

ASB-40  
ASB-70  
FOR BLADE STOP SPACING

CWB-40  
CWB-70 (SHOWN)  
CONCRETE/WOOD BRACKET

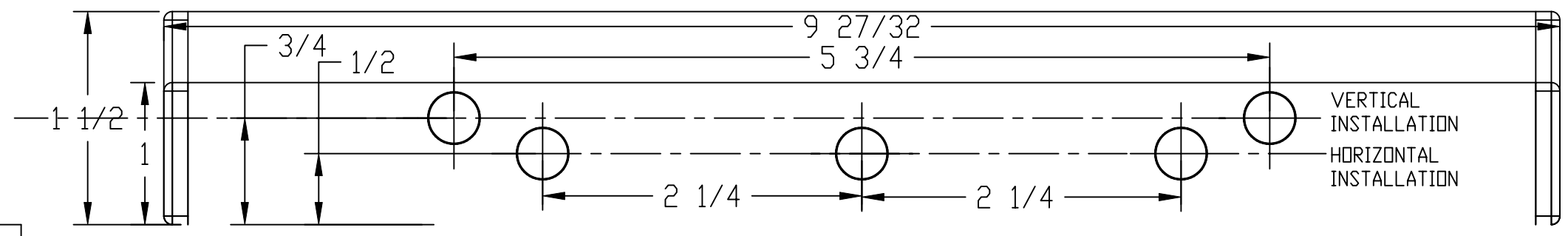


UHB MOUNTED VERTICALLY

UHB MOUNTED HORIZONTALLY

HOLE SIZE IS 3/8" FOR  
BLIND NUTS. DRILL/TAP  
1/4-20 FOR REINFORCED  
FRAMES

P/N 700251  
11/21/03



# LOCKNETICS.

## 40 SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

## TEMPLATE & INSTALLATION SHEET

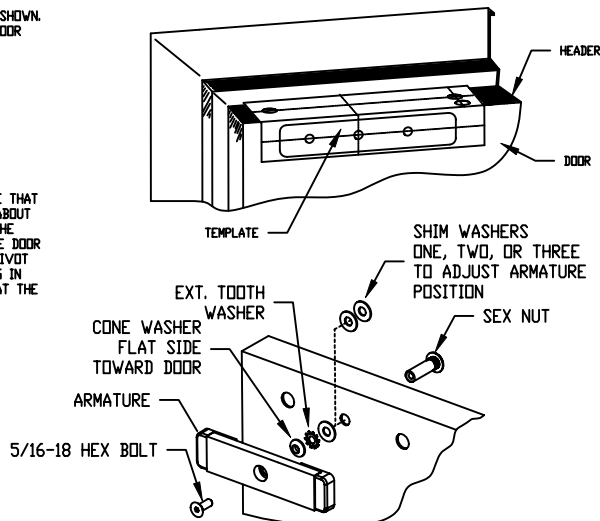
THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

- 1 PLACE TEMPLATE ON DOOR AND FRAME AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.

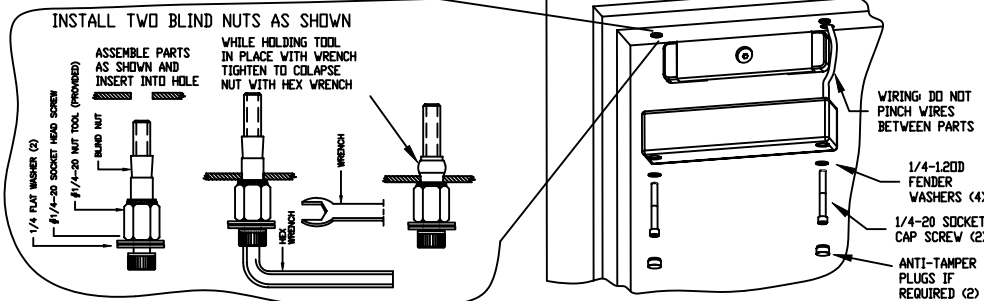
- 2 INSTALL ARMATURE PLATE ASSEMBLY. NOTE THAT ARMATURE PLATE ASSEMBLY MUST PIVOT ABOUT THE MOUNTING BOLT. THIS IS TO ALLOW THE MAGNET AND ARMATURE TO MATE WHEN THE DOOR IS CLOSED. IF THE ARMATURE DOES NOT PIVOT CHECK TO SEE THAT THERE IS NO BINDING IN THE 1/2" ARMATURE GUIDE HOLES AND THAT THE HARDWARE IS INSTALLED CORRECTLY.

- 3 MAKE WIRING CONNECTIONS

WIRING:	
RED:	(+) 0.300 AMP @ 12VDC
BLACK:	(-) 0.150 AMP @ 24VDC
WHITE:	MBS C 1 AMP MAX.
GREEN:	MBS NO @ 30VDC
ORANGE:	MBS NC @ 30VDC
YELLOW:	DSM C 0.10 AMP MAX.
BLUE:	DSM NO @ 30VDC
BROWN:	DSM NC @ 30VDC

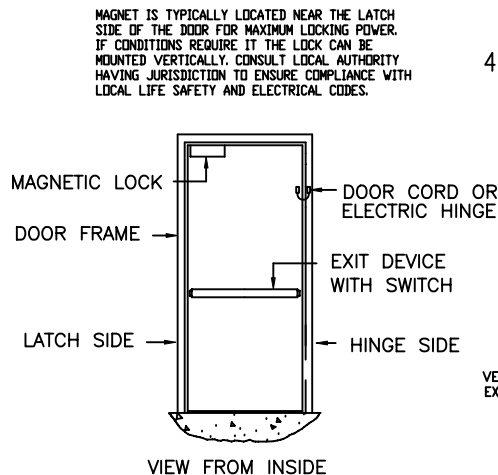


- 4 INSTALL MAGNET



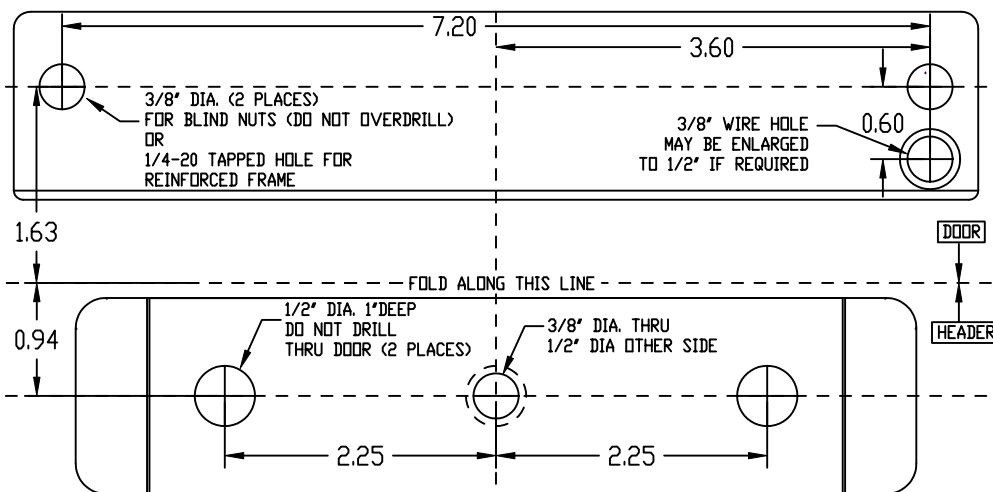
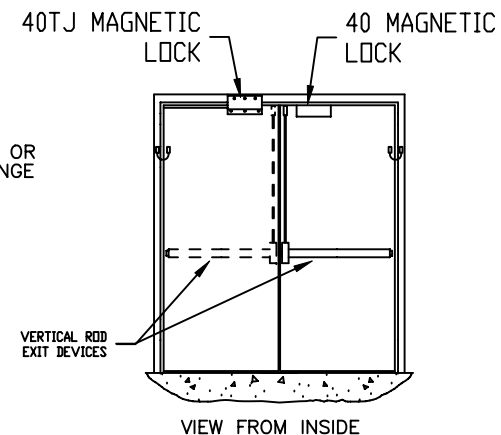
PART NUMBER 700195

### STANDARD SINGLE DOOR



### DOUBLE EGRESS DOOR

MAGNET IS TYPICALLY LOCATED NEAR THE LATCH SIDE OF THE DOOR FOR MAXIMUM LOCKING POWER. IF CONDITIONS REQUIRE IT THE LOCK CAN BE MOUNTED VERTICALLY. CONSULT LOCAL AUTHORITY HAVING JURISDICTION TO ENSURE COMPLIANCE WITH LOCAL LIFE SAFETY AND ELECTRICAL CODES.



PART NUMBER 700195

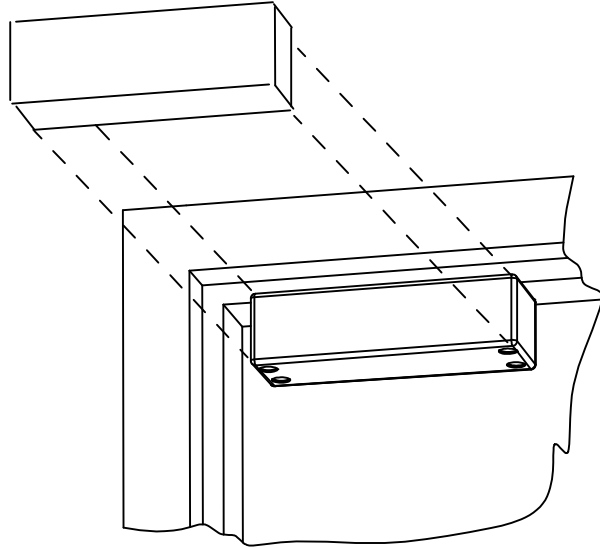
# LOCKNETICS®

## 40 & 70 SERIES MAGNETIC LOCK

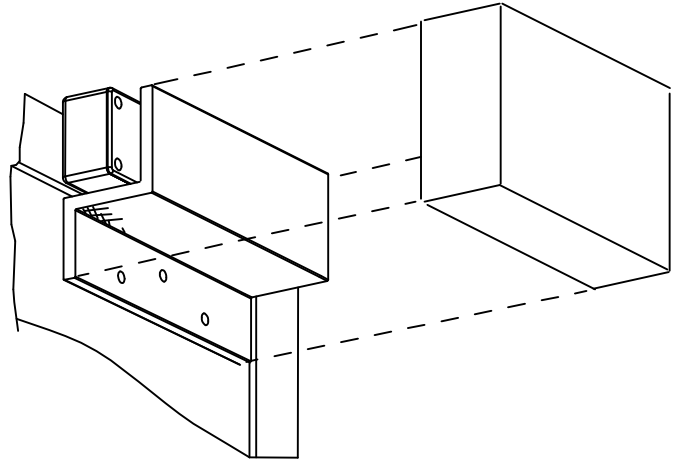
AFTER INSTALLING MAGNETIC  
LOCK AND FINAL ADJUSTMENT,  
REMOVE STICKY TAPE BACKING  
FROM INSIDE DRESS COVERS AND  
APPLY TO LOCK AS SHOWN.

# DRESS COVER INSTALLATION

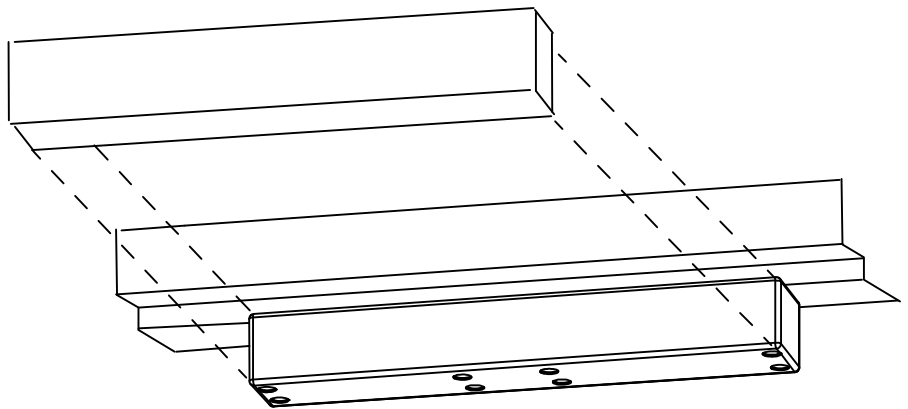
## 40/70 APPLICATION



## 40/70 TJ APPLICATION



## 72 APPLICATION



# LOCKNETICS.

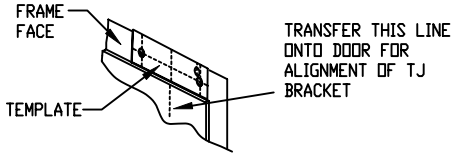
## 40TJ SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

# TEMPLATE & INSTALLATION SHEET

THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

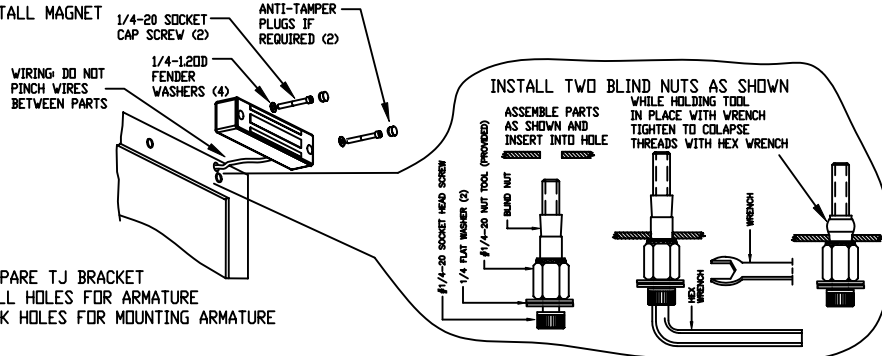
- ① PLACE TEMPLATE ON FRAME FACE AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.



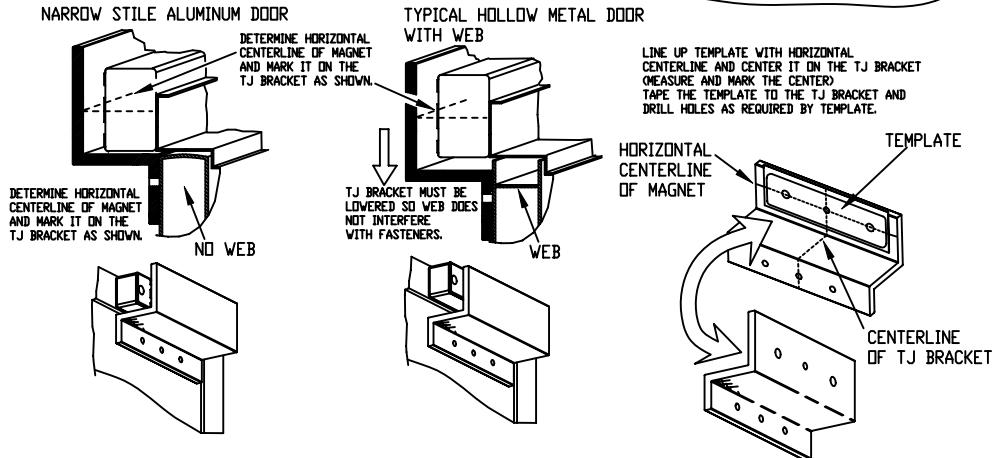
- ② MAKE WIRING CONNECTIONS (AFTER INSTALLING BLIND NUTS - SEE STEP 3)

WIRING:	(+) 0.300 AMP @ 12VDC
RED:	(-) 0.150 AMP @ 24VDC
BLACK:	
WHITE:	MBS C } 1 AMP MAX.
GREEN:	MBS ND } @ 30VDC
ORANGE:	MBS NC } @ 30VDC
YELLOW:	DSM C } 0.10 AMP MAX.
BLUE:	DSM ND } @ 30VDC
BROWN:	DSM NC } @ 30VDC

- ③ INSTALL MAGNET



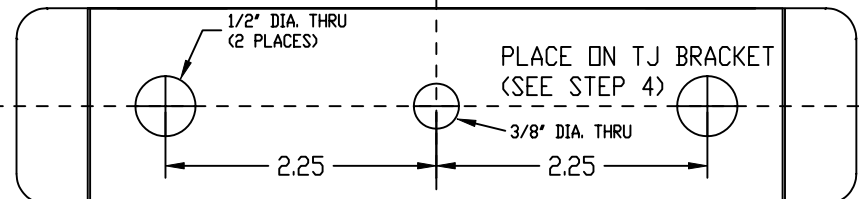
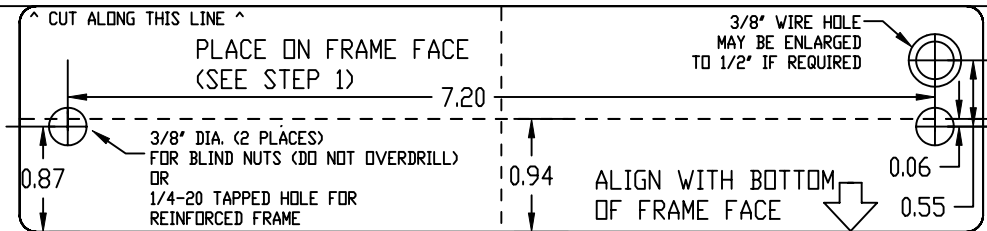
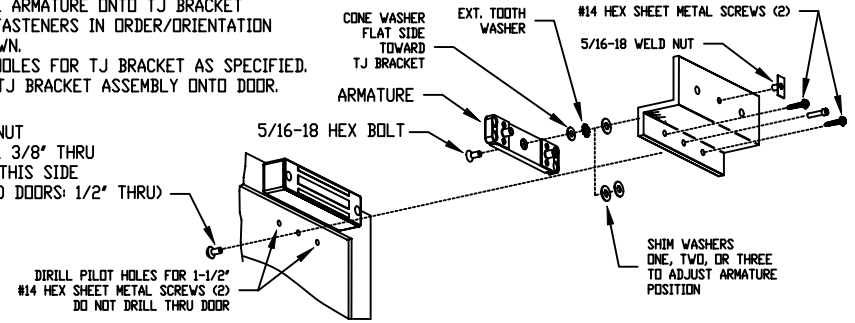
- ④ PREPARE TJ BRACKET  
DRILL HOLES FOR ARMATURE  
MARK HOLES FOR MOUNTING ARMATURE



PART NUMBER 700196

- ⑤ INSTALL ARMATURE ONTO TJ BRACKET USING FASTENERS IN ORDER/ORIENTATION AS SHOWN. DRILL HOLES FOR TJ BRACKET AS SPECIFIED. MOUNT TJ BRACKET ASSEMBLY ONTO DOOR.

SEX NUT  
DRILL 3/8" THRU 1/2" THIS SIDE (WOOD DOORS: 1/2" THRU)



PART NUMBER 700196

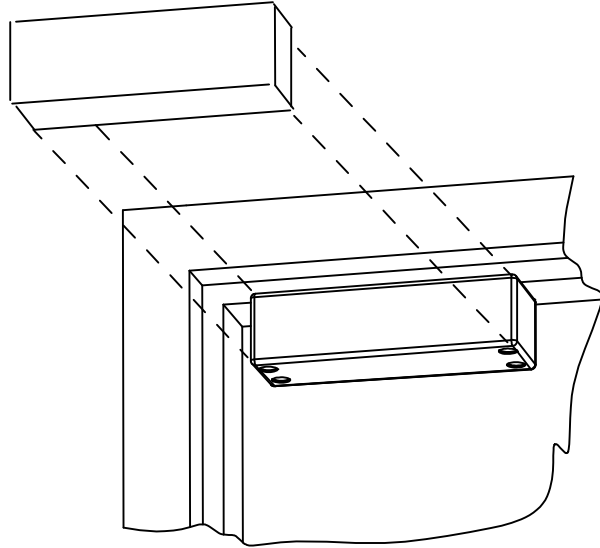
# LOCKNETICS®

## 40 & 70 SERIES MAGNETIC LOCK

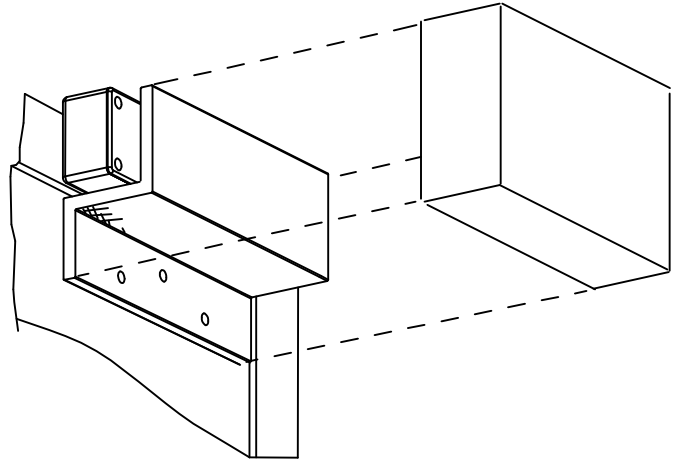
AFTER INSTALLING MAGNETIC  
LOCK AND FINAL ADJUSTMENT,  
REMOVE STICKY TAPE BACKING  
FROM INSIDE DRESS COVERS AND  
APPLY TO LOCK AS SHOWN.

# DRESS COVER INSTALLATION

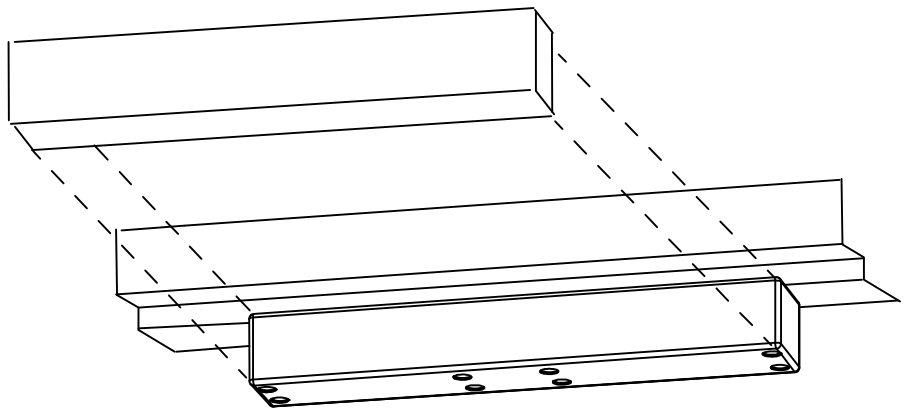
## 40/70 APPLICATION



## 40/70 TJ APPLICATION



## 72 APPLICATION





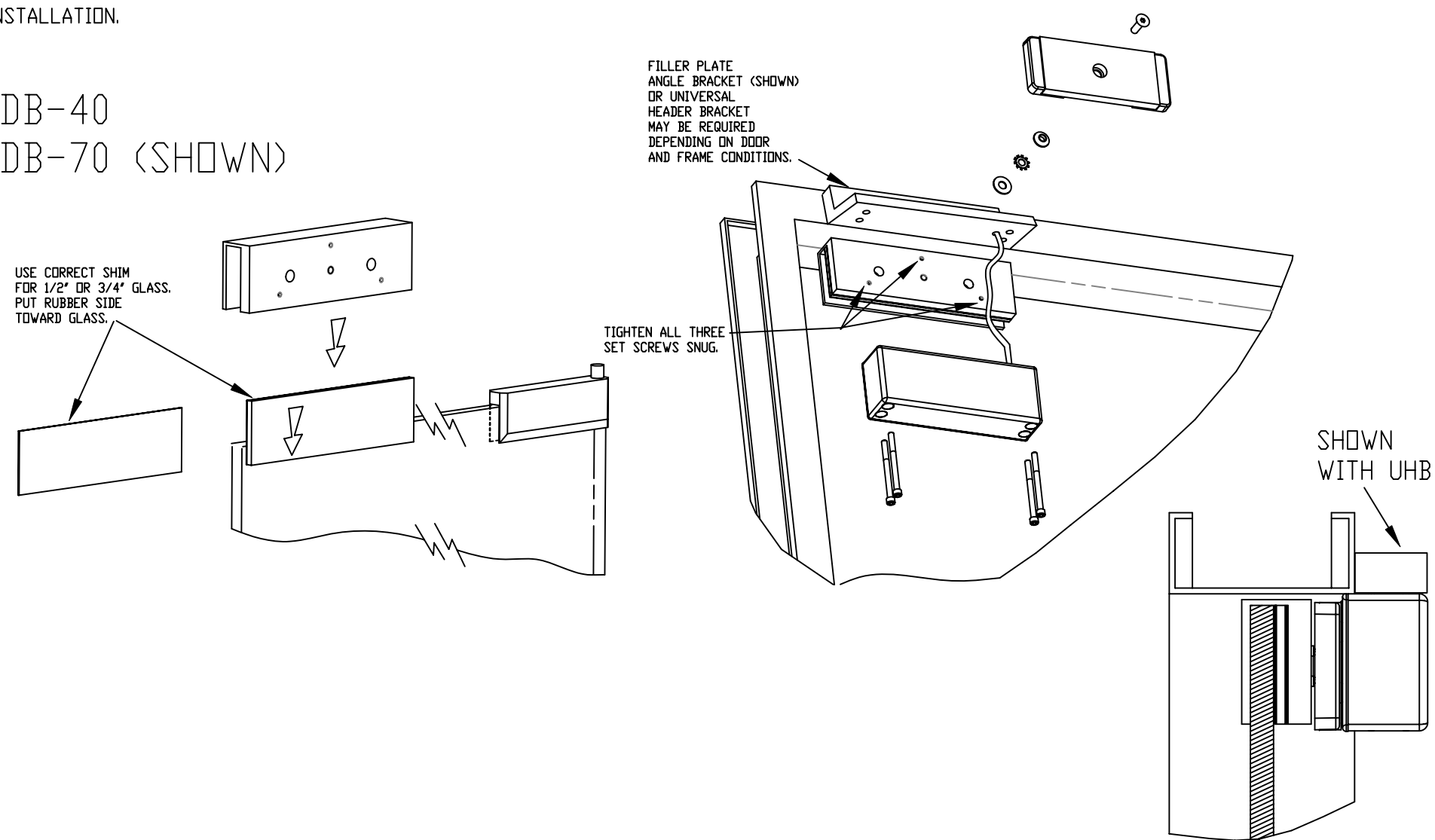
# LOCKNETICS®

## 40 & 70 SERIES MAGNETIC LOCK ACCESSORIES

THE PICTURES ON THIS SHEET SHOW MANY TYPICAL SITUATIONS WHICH CAN BE HELPED BY USING THE AVAILABLE MOUNTING ACCESSORIES. ALWAYS BE SURE THAT THE MAGNETIC LOCK IS PROPERLY FASTENED TO THE DOOR AND FRAME FOR A SECURE AND SAFE INSTALLATION.

HDB-40

HDB-70 (SHOWN)



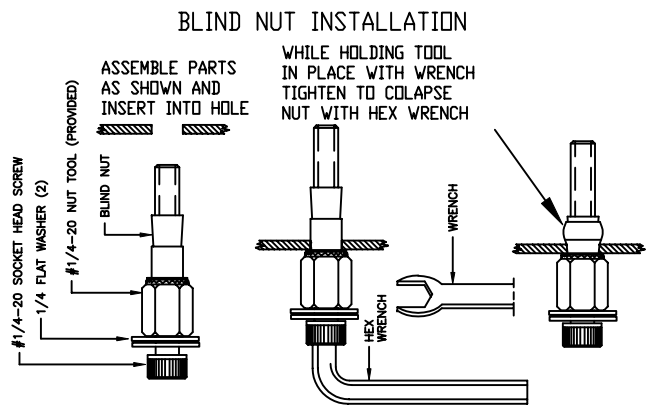
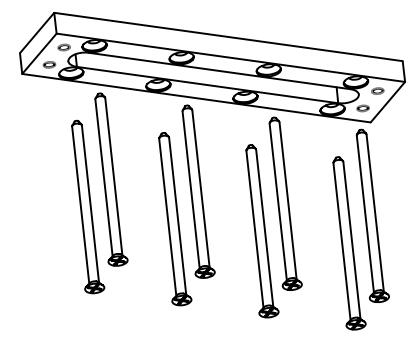
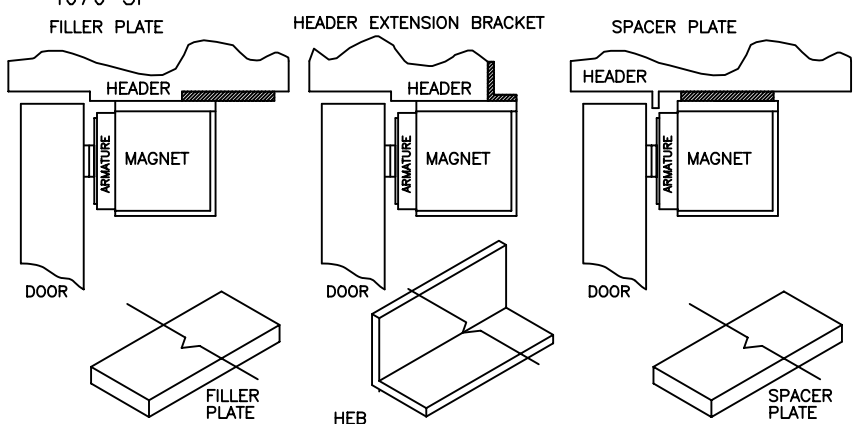
P/N 700251  
11/21/03

4070-1F  
4070-2F  
4070-3F  
4070-4F  
4070-5F

HEB

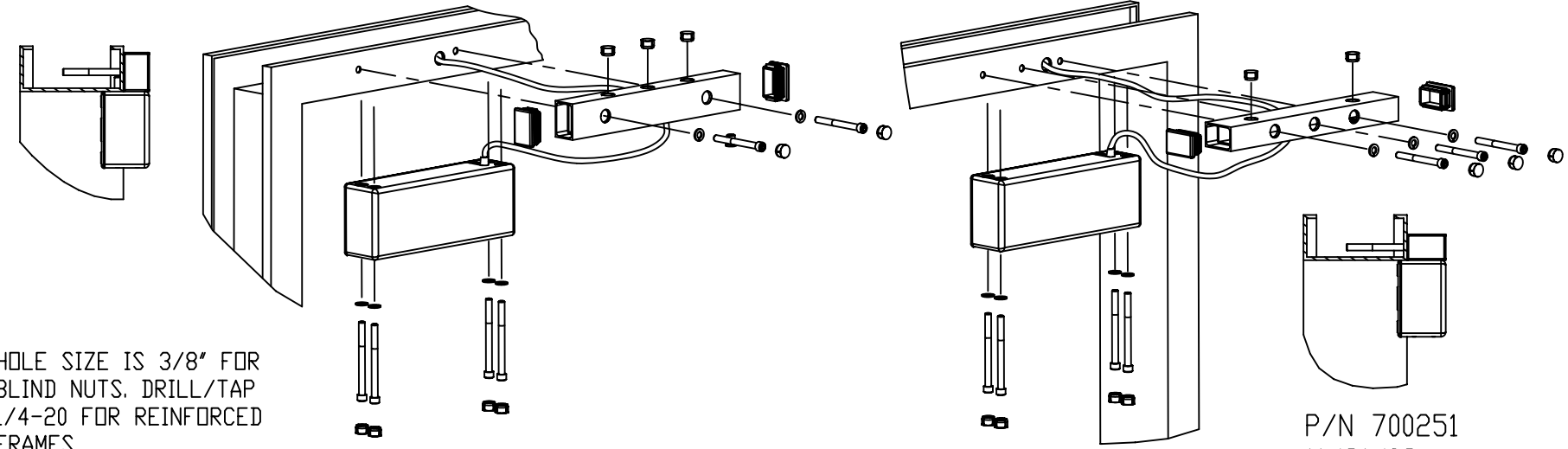
ASB-40  
ASB-70  
FOR BLADE STOP SPACING

CWB-40  
CWB-70 (SHOWN)  
CONCRETE/WOOD BRACKET



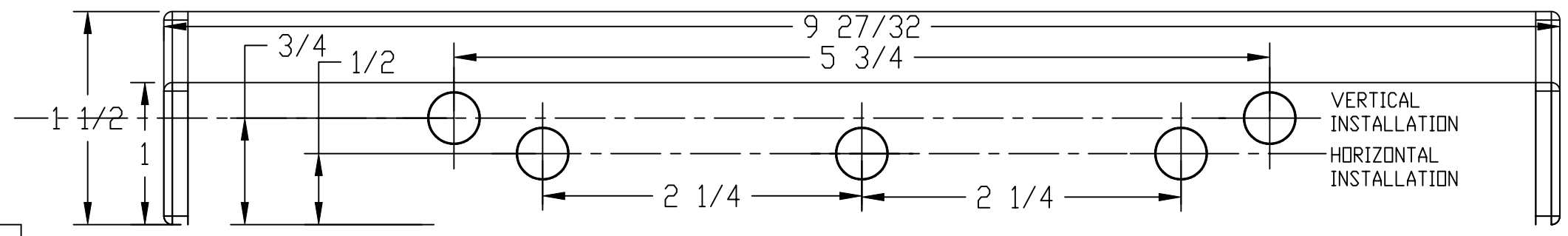
UHB MOUNTED VERTICALLY

UHB MOUNTED HORIZONTALLY



HOLE SIZE IS 3/8" FOR  
BLIND NUTS. DRILL/TAP  
1/4-20 FOR REINFORCED  
FRAMES

P/N 700251  
11/21/03



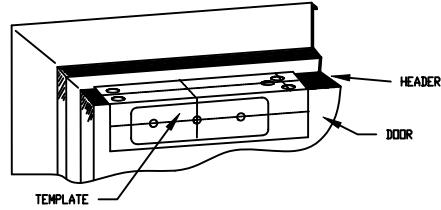
# LOCKNETICS. 70 SERIES MAGNETIC LOCK

## TEMPLATE & INSTALLATION SHEET

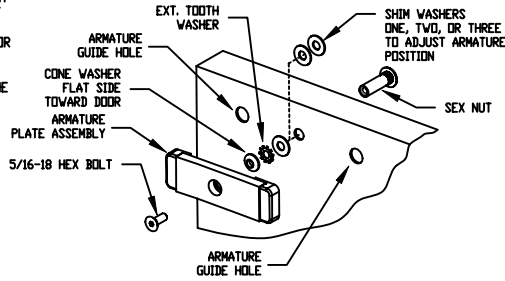
NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED) - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

- 1 PLACE TEMPLATE ON DOOR AND FRAME AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.



- 2 INSTALL ARMATURE PLATE ASSEMBLY. NOTE THAT ARMATURE PLATE ASSEMBLY MUST PIVOT ABOUT THE MOUNTING BOLT. THIS IS TO ALLOW THE MAGNET AND ARMATURE TO MATE WHEN THE DOOR IS CLOSED. IF THE ARMATURE DOES NOT PIVOT CHECK TO SEE THAT THERE IS NO BINDING IN THE 1/2" ARMATURE GUIDE HOLES AND THAT THE HARDWARE IS INSTALLED CORRECTLY.

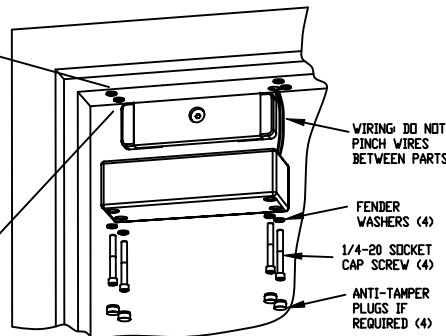
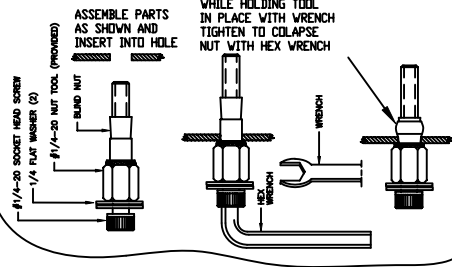


- 3 MAKE WIRING CONNECTIONS

WIRING:	(+)	0.300 AMP @ 12VDC
RED:	(-)	0.150 AMP @ 24VDC
BLACK:		
WHITE:	MBS C	1 AMP MAX.
GREEN:	MBS ND	
ORANGE:	MBS NC	@ 30VDC
YELLOW:	DSM C	0.10 AMP MAX.
BLUE:	DSM ND	
BROWN:	DSM NC	@ 30VDC

- 4 INSTALL MAGNET

INSTALL FOUR BLIND NUTS AS SHOWN

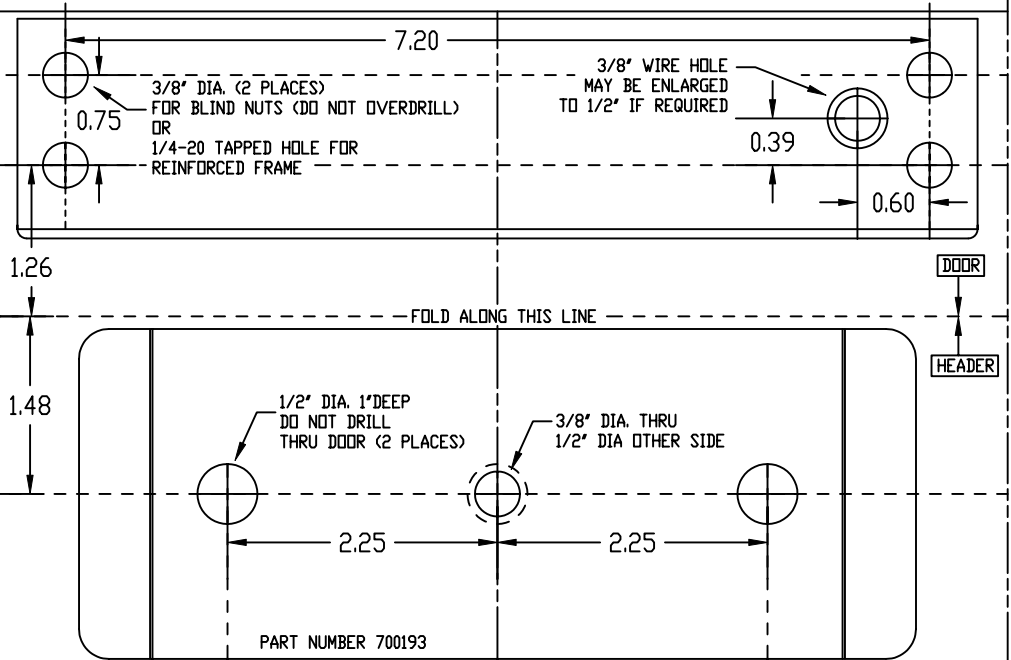
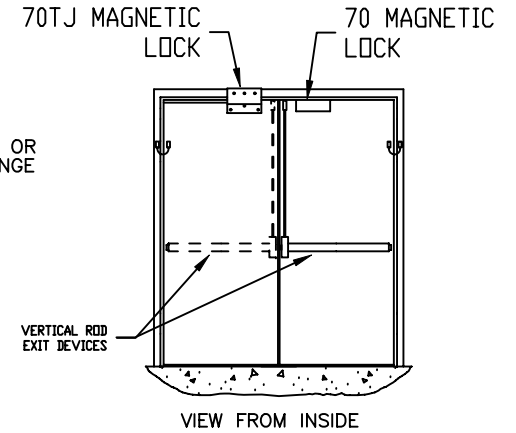
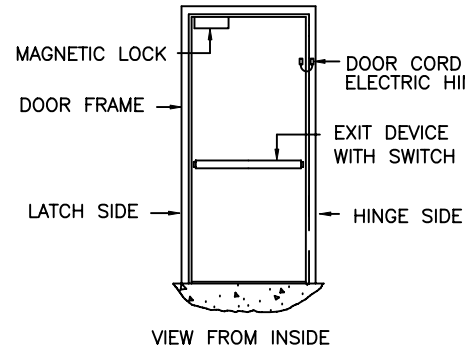


PART NUMBER 700193

### STANDARD SINGLE DOOR

### DOUBLE EGRESS DOOR

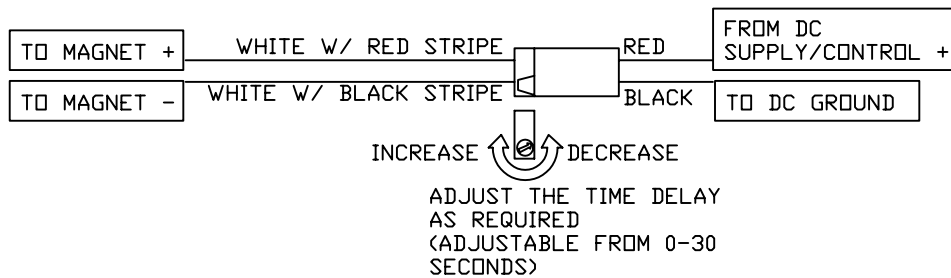
MAGNET IS TYPICALLY LOCATED NEAR THE LATCH SIDE OF THE DOOR FOR MAXIMUM LOCKING POWER. IF CONDITIONS REQUIRE IT THE LOCK CAN BE MOUNTED VERTICALLY. CONSULT LOCAL AUTHORITY HAVING JURISDICTION TO ENSURE COMPLIANCE WITH LOCAL LIFE SAFETY AND ELECTRICAL CODES.



PART NUMBER 700193

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

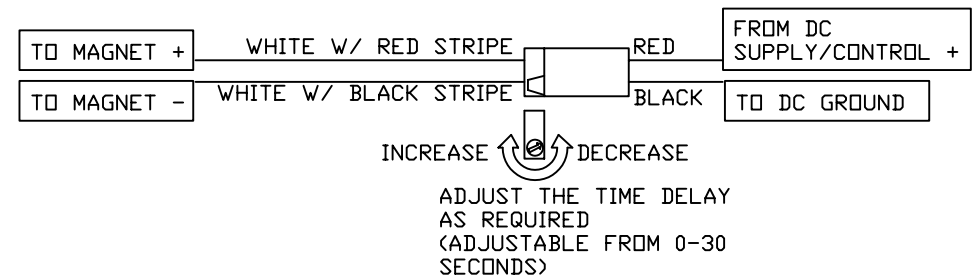


FORM 39476

01-29-2004

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

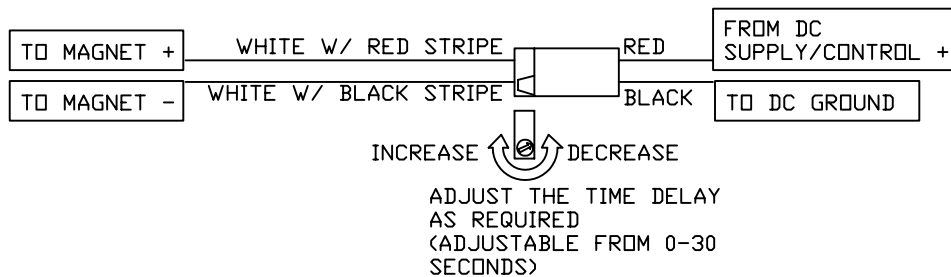


FORM 39476

01-29-2004

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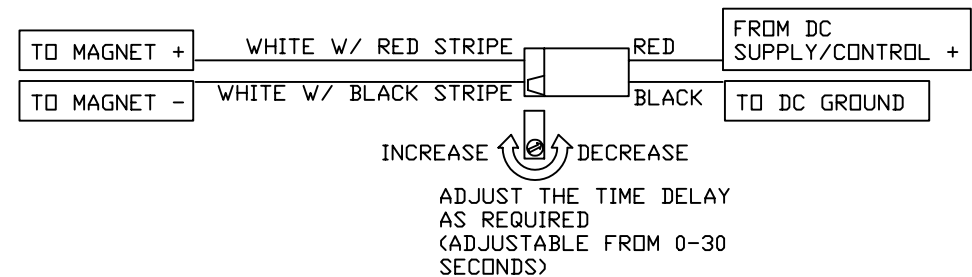


FORM 39476

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# RTD MODULE

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FORM 39476

01-29-2004

# LOCKNETICS.

## 70TJ SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED) - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

# TEMPLATE & INSTALLATION SHEET

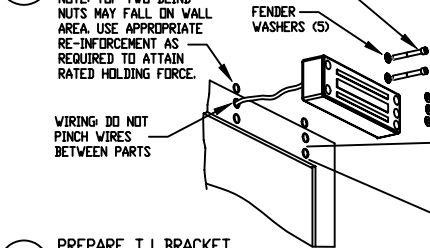
THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

1 PLACE TEMPLATE ON FRAME FACE AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.

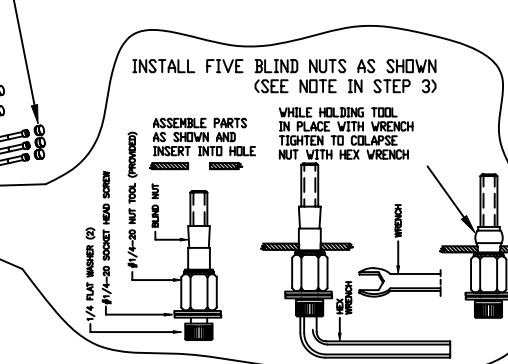
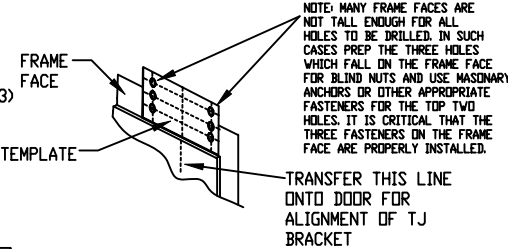
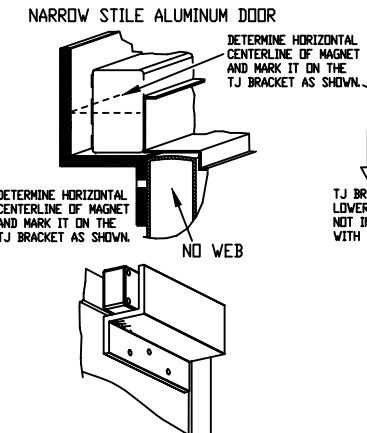
2 MAKE WIRING CONNECTIONS (AFTER INSTALLING BLIND NUTS - SEE STEP 3)

WIRING:		
RED:	(+)	0.300 AMP @ 12VDC
BLACK:	(-)	0.150 AMP @ 24VDC
WHITE:	MBS C	1 AMP MAX. @ 30VDC
GREEN:	MBS ND	
ORANGE:	MBS NC	
YELLOW:	DSM C	0.10 AMP MAX. @ 30VDC
BLUE:	DSM ND	
BROWN:	DSM NC	

3 INSTALL MAGNET  
NOTE: TOP TWO BLIND NUTS MAY FALL ON WALL AREA. USE APPROPRIATE RE-INFORCEMENT AS REQUIRED TO ATTAIN RATED HOLDING FORCE.

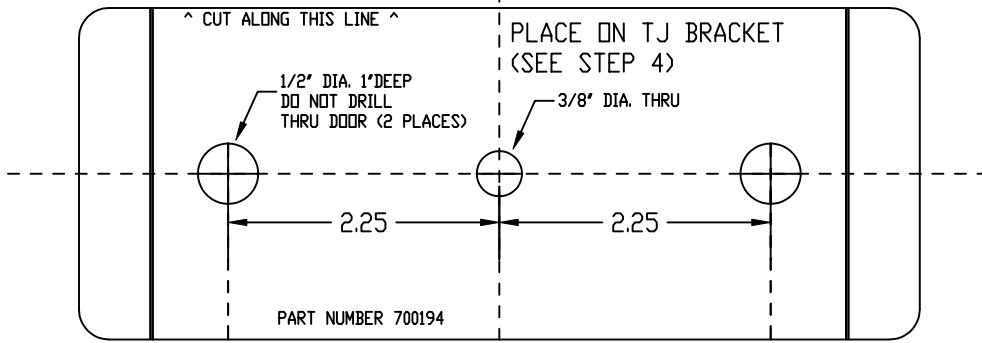
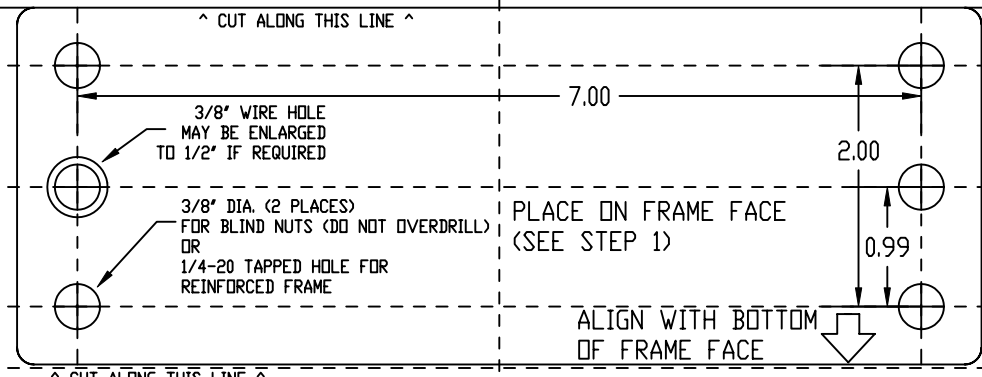
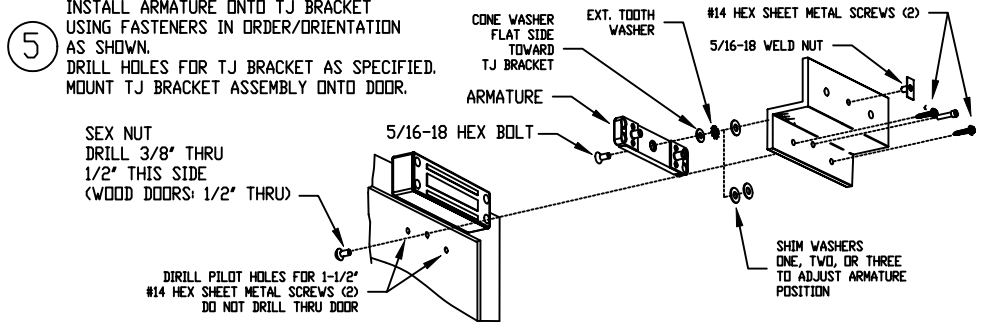


4 PREPARE TJ BRACKET  
DRILL HOLES FOR ARMATURE  
MARK HOLES FOR MOUNTING ARMATURE



5 INSTALL ARMATURE ONTO TJ BRACKET USING FASTENERS IN ORDER/ORIENTATION AS SHOWN.  
DRILL HOLES FOR TJ BRACKET AS SPECIFIED.  
MOUNT TJ BRACKET ASSEMBLY ONTO DOOR.

SEX NUT  
DRILL 3/8" THRU 1/2" THIS SIDE (WOOD DOORS: 1/2" THRU)



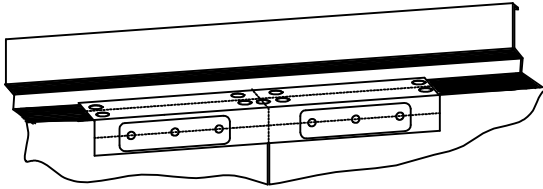
# LOCKNETICS®

## 72 SERIES MAGNETIC LOCK

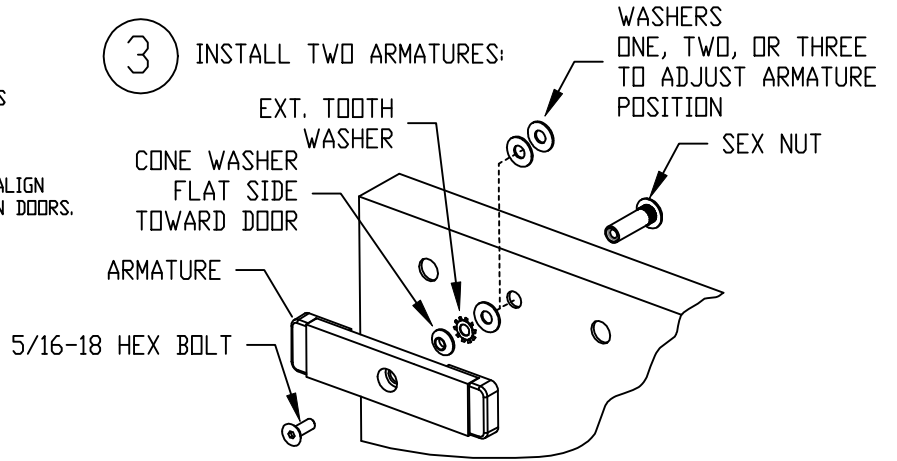
# INSTALLATION SHEET

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING WASHERS.

- 1 PLACE TEMPLATE ON DOOR AND FRAME AS SHOWN. ALIGN CENTER OF TEMPLATE WITH PARTING LINE BETWEEN DOORS. TAPE IN PLACE AND DRILL REQUIRED HOLES.

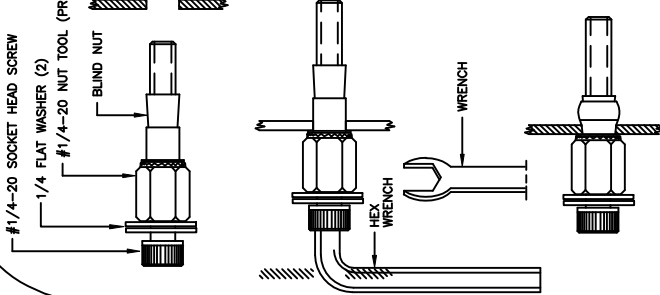


- 3 INSTALL TWO ARMATURES:

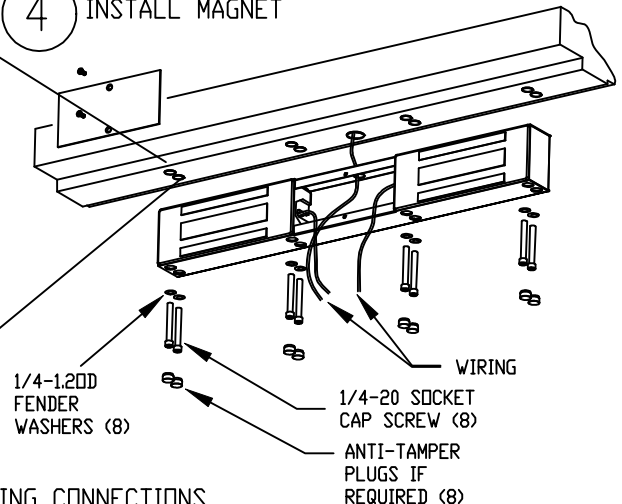


- 2 INSTALL EIGHT BLIND NUTS AS SHOWN

ASSEMBLE PARTS AS SHOWN AND INSERT INTO HOLE WHILE HOLDING TOOL IN PLACE WITH WRENCH TIGHTEN TO COLAPSE NUT WITH HEX WRENCH



- 4 INSTALL MAGNET

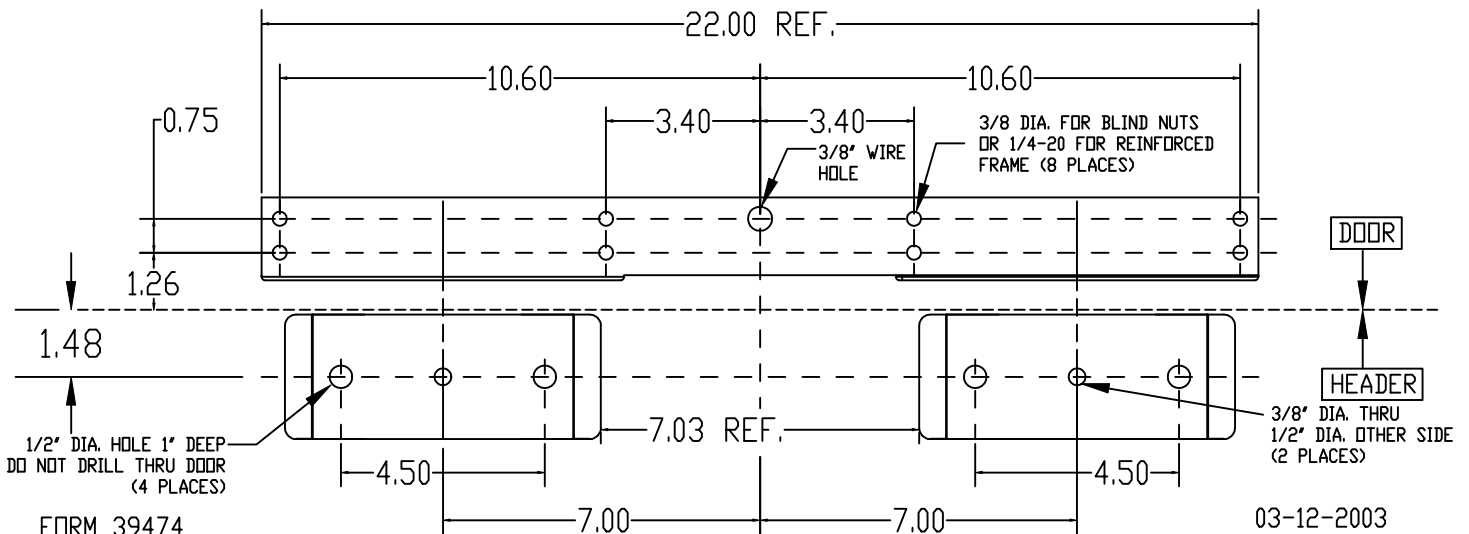


THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

- 5 MAKE WIRING CONNECTIONS AND INSTALL WIRE COVER.

WIRING:	(CURRENT PER MAGNET)
RED:	(+) } 0.300 AMP @ 12VDC
BLACK:	(-) } 0.150 AMP @ 24VDC
WHITE:	MBS C } 1 AMP MAX.
GREEN:	MBS NO } @ 30VDC
ORANGE:	MBS NC } @ 30VDC
YELLOW:	DSM C } 0.10 AMP MAX.
BLUE:	DSM NO } @ 30VDC
BROWN:	DSM NC } @ 30VDC

## 72 TEMPLATE: NOT TO SCALE





30500

# GF3000



## INSTALLATION MANUAL

### Models Covered: Standard, TRD, BRD, SM, and TJ

GF3000 (Standard Model)	GF3000TRD	GF3000BRD
GF3000SM	GF3000TJ	

**Gravity Force Shear Locks:  
Mortise & Surface Mount**

**Customer Service**  
 1-877-671-7011    [www.allegion.com/us](http://www.allegion.com/us)



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 30500 1/15-f

# GF3000 SERIES INSTALLATION MANUAL

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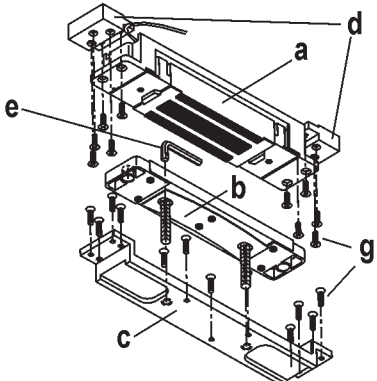
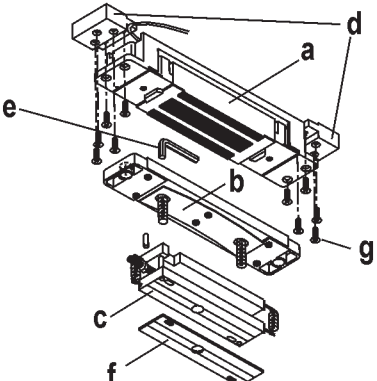
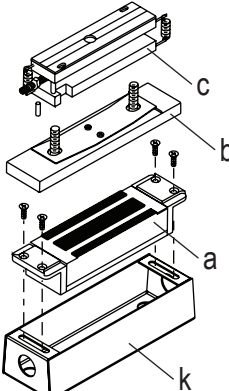
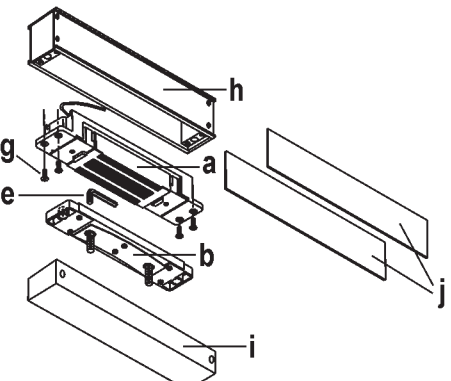
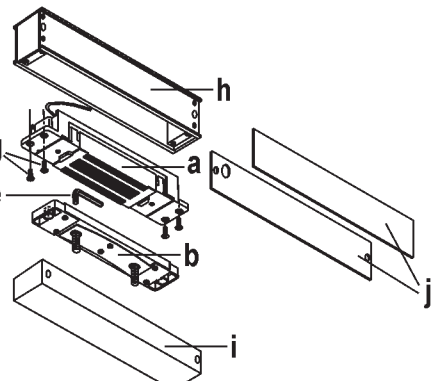
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# GF3000 SERIES INSTALLATION MANUAL

## Confirming the Box Contents

### Confirming the Box Contents

<p>GF3000(STANDARD)</p> 	<p>GF3000TRD</p> 	<p>GF3000BRD</p> 
<p>GF3000SM</p> 	<p>GF3000TJ</p> 	
<p>a - MAGNETIC COIL ASSEMBLY  b - ARMATURE  c - ARMATURE MOUNTING ASSEMBLY  d - MOUNTING TABS  e - HEX WRENCH  f - SHIM PLATE  g - HARDWARE PACK  h - MAGNETIC COIL HOUSING  i - ARMATURE HOUSING  j - FACE PLATES  k - THRESHOLD BOX</p>		

# GF3000 SERIES INSTALLATION MANUAL

## *Introduction / Tools and Materials Needed / Contact Info*

---

### **Introduction**

This manual covers the complete installation and wiring instructions for the following GF3000 Series models:

#### **MORTISE:**

- GF3000 (Standard model)
- GF3000TRD (Top Rail Door)
- GF3000BRD (Bottom Rail Door)

#### **SURFACE MOUNT:**

- GF3000SM (Surface Mount)
- GF3000TJ (Top Jamb)

### **Tools and Materials Needed Not Included in Box**

Whichever model you are installing, you should have all of the following tools on hand:

- Pencil
- Tape Measure
- Hammer
- Center Punch
- Power Drill w/Set of Drill Bits
- Chisel
- Small Sawsall or other metal cutting saw
- Set of Hex (Allen) Wrenches
- Set of Philips Head Screwdrivers
- Electrical Tool Kit (containing: wire cutter/stripper, electrical tape, needle-nose pliers, etc.)

If you are installing a GF3000BRD, you might also need:

- Pavement Breaker or Demolition Hammer

**Contact Information:**      1-877-671-7011

# GF3000 SERIES INSTALLATION MANUAL

## Specifications

---

### Specifications:

#### Electrical

Input Voltage . . . . .	Filtered, regulated 12 or 24 VDC (auto voltage selection)
Input Current . . . . .	0.9 Amps at 12VDC, 0.45 Amps at 24VDC
Adjustable Time Delay (ATD) . . . . .	Adjustable from 2 to 30 seconds. Factory default: expect approx. 3-5 seconds.
Automatic Relock Switch (ARS) . . . . .	Integral magnetic reed switch
Optional Monitoring Outputs (Standard, TRD, SM, and TJ)	
DSM . . . . .	Contact rating - 0.1 Amps maximum at 28VDC
MBS . . . . .	Contact rating - 0.2 Amps maximum at 30VDC
Optional Monitoring Outputs (BRD)	
DSM . . . . .	Contact rating -0.2 Amps maximum @ 30VDC
MBS . . . . .	Contact rating - 0.1 Amps maximum @ 24VDC

#### Mechanical

Mounting Position/Type . . . . .	Horizontally. Mortise and Surface. Non-handed
Shear Holding Force . . . . .	3000 pounds maximum
Door Thickness . . . . .	1-3/4" minimum
Plating . . . . .	Magnetic face and armature; nickel plated to resist corrosion
<u>Warranty</u> . . . . .	Magnetic coil: Lifetime    Electronics: 1 year limited
<u>Certifications/Compliance</u> . . . . .	UL# R12092; MEA# 222-96-E; CSFM# 3774-0544:107
<u>Shipping Weight</u> . . . . .	GF3000 - 6 Pounds;    GF3000TRD & BRD - 8 Pounds
Dimensions - Mortise Mount . . . . .	Magnet - 9.5L x 1.5W x 1.5H Magnet w/Mounting Tabs - 11.56L x 1.5W x 1.5H Armature - 8.38L x 1.38W x 0.5D Armature Bracket - 10.63L x 1.38W x 1.0D
Dimensions - Surface Mount . . . . .	Magnet Housing - 9.81L x 1.25H x 1.5D Armature Housing - 8.38L x 1.38W x 0.5D

### Operation:

A shear lock is designed to rely on the shear strength of steel for holding force. A strong magnet is energized that attracts an armature which overcomes an air gap to engage with the magnet. The magnet and the armature, besides being bonded by magnetic force, are also designed to mechanically interlock. This gives the system 3000 pounds of holding force. Because of this design, precise door and frame preparation is necessary. Also important is that the centerlines of the magnet and armature line up to form a vertical axis. It is also critical that the air gap be adjusted to be as close as possible without interfering with door operation. This ensures the best reliability possible.

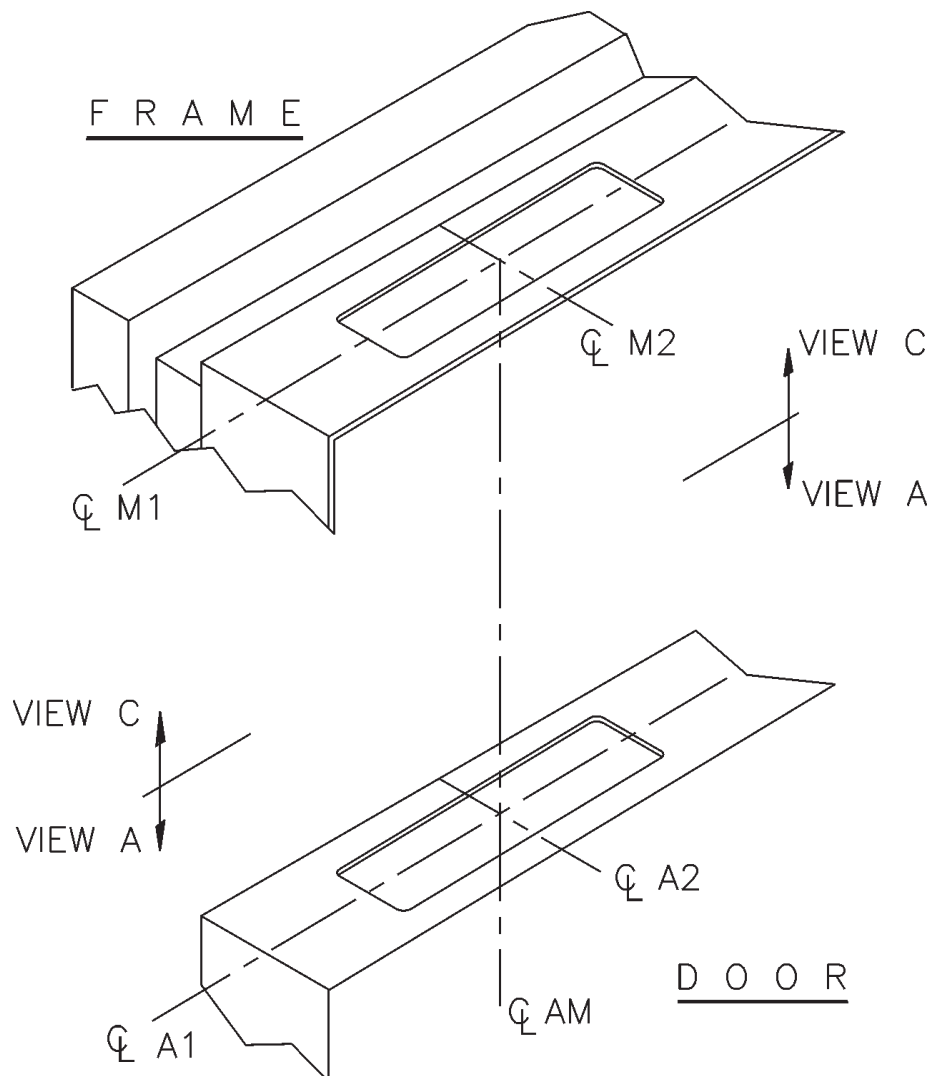
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Preparing the Frame and Door

#### 1) Establish Frame and Door Centerlines (Standard and TRD):

- For proper operation, it's critical to establish centerlines of magnet and armature assembly that line up to form a vertical axis. The figure below shows the centerline scheme for a standard GF3000 and a GF3000TRD. Note that centerlines for magnet (M1 and M2) are directly above centerlines for armature assembly (A1 and A2) thus forming a vertical axis (AM).
- Check door & frame for any structural member or hardware component that might interfere with magnet and armature mounting areas before selecting template location.
- Remove existing hung doors for template application and armature installation.
- The standard model GF3000 can be installed in a horizontal or vertical configuration.
- To achieve maximum resistance to forced entry, position as follows:
  - > Horizontal configuration - position unit closest to the latch side of door.
  - > Vertical configuration - positioning unit closest to the strike plate is recommended.
- In some applications, the door and frame may require reinforcement.

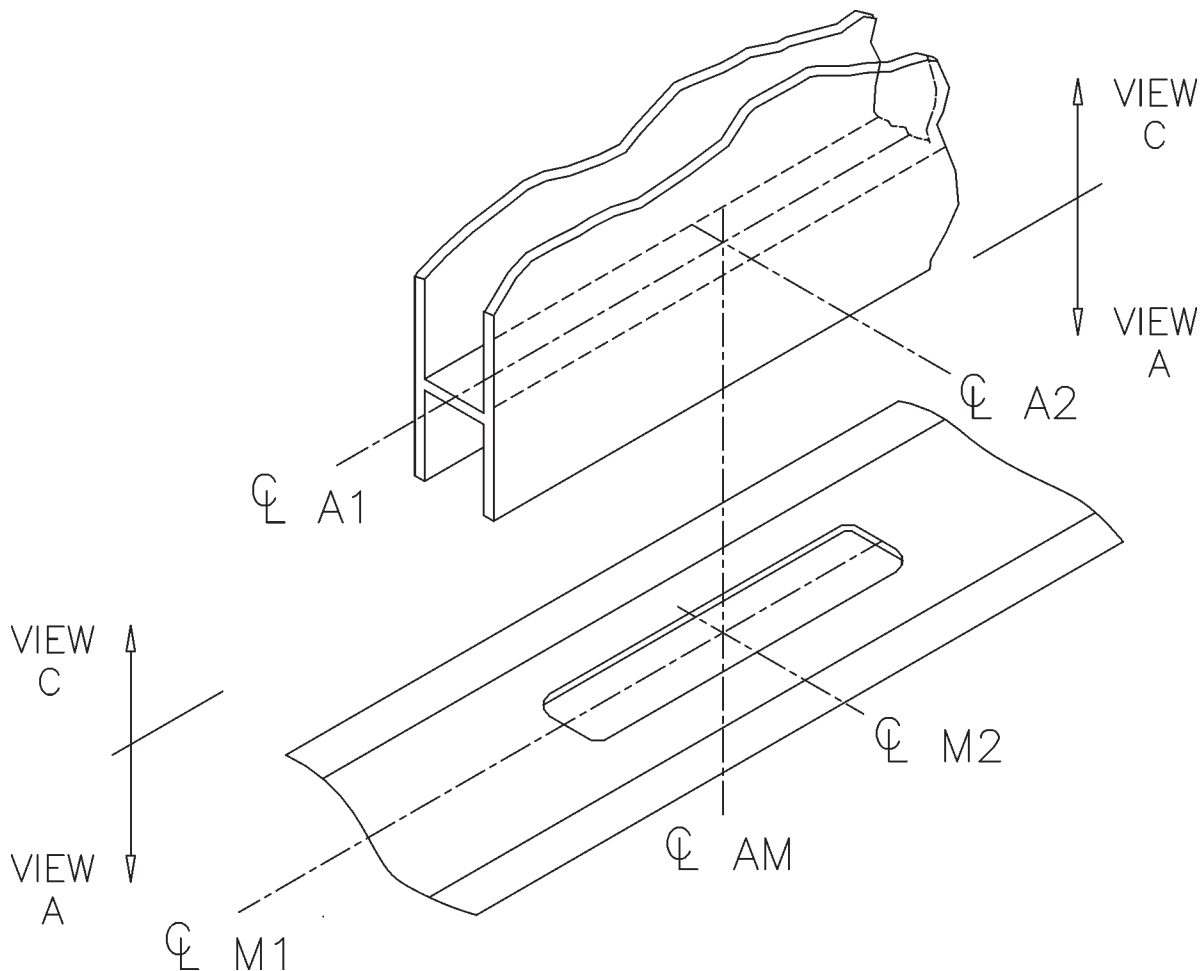


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 1) Establish Frame and Door Centerlines (BRD):

- For proper operation, it's critical to establish centerlines of the magnet and armature assembly that line up to form a vertical axis. The figure below shows the centerline scheme for a GF3000BRD. Note that centerlines for magnet (M1 and M2) are directly below centerlines for armature (A1 and A2) thus forming a vertical axis (AM).
- To achieve maximum resistance to forced entry, position unit closest to latch side of door.
- Adjusting screw must be accessible with a long bladed screwdriver when door is hung.
- Check both door & frame for any structural member or hardware component that might interfere with magnet and armature mounting areas before selecting template location.
- Existing hung doors will normally have to be removed for template application and armature installation.
- In some applications, the door and frame may require reinforcement.



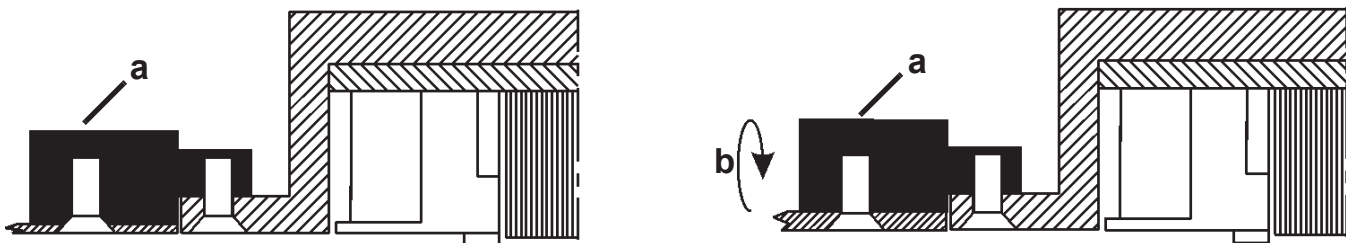
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Installing the Lock - Standard, TRD, TJ, SM

#### 1) Mounting Tabs (Standard, TRD):

Secure two mounting tabs (a) to ends of lock cutout in frame. Mounting tabs can be installed upside-down (b) so that they may be used with 16 gauge hollow metal or 1/8" thick aluminum frames.



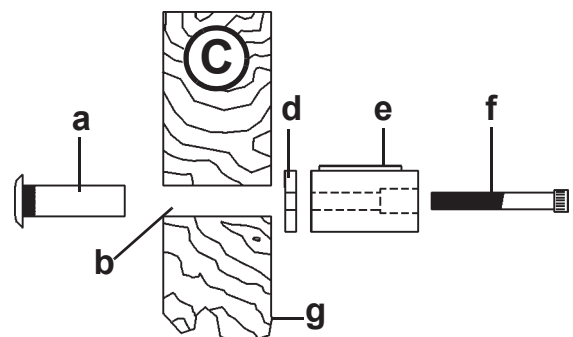
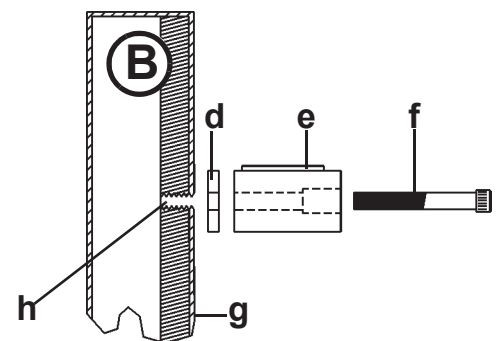
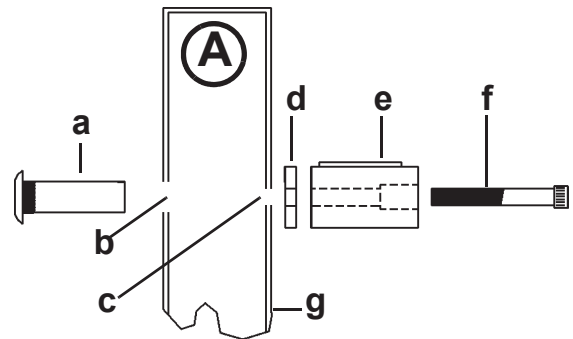
#### 2) Surface Mount Armature Housing Sex Bolt Hole Sizes (TJ, SM):

##### Door Types:

- A = Hollow Metal
- B = Reinforced
- C = Solid Wood

##### Hole Sizes and Parts:

- a = sex bolt
- b = 1/2" hole
- c = 1/4" hole
- d = mounting spacer
- e = armature
- f = 1/4-20 x 2
- g = inside of door
- h = 1/4-20 threaded hole (thru reinforced side of door only)



# GF3000 SERIES INSTALLATION MANUAL

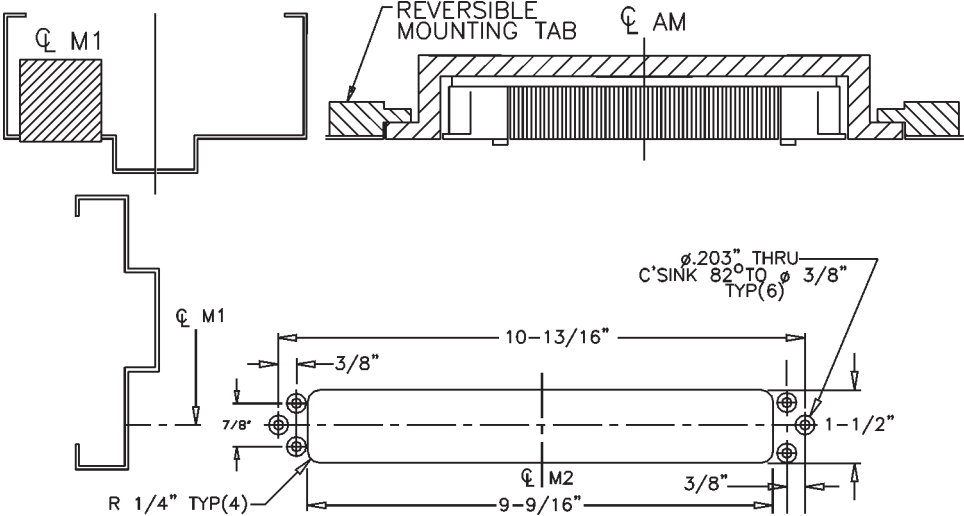
## Installing a GF3000 Series Lock

### • FRAME AND DOOR PREP - Standard, TRD, TJ, SM

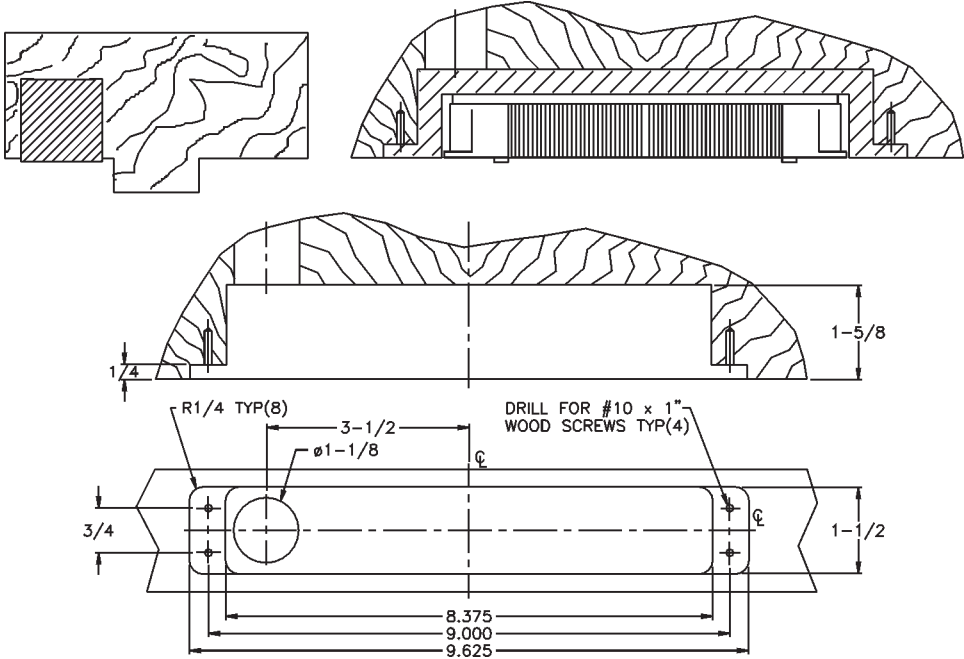
#### 3) Frame Prep (Standard and TRD):

- The frame prep is the same for the Standard and the TRD models. The door prep for the standard model has many options (see - ) depending on the depth of the channel (if any). The TRD model has a specific prep of its own (see - ). The lock should be located as close to the strike side as possible while still allowing room for the mounting tabs and screws.

#### Frame Prep - Hollow Metal or Aluminum



#### Frame Prep - Wood



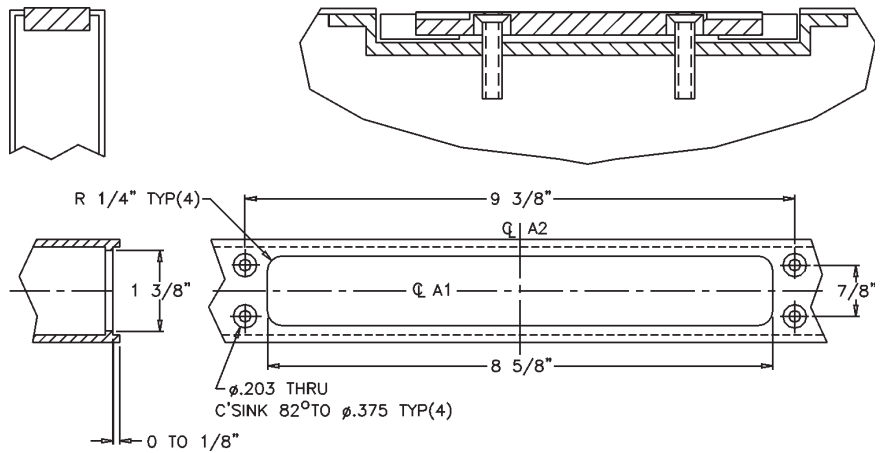
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 4) Door Prep (Standard and TRD):

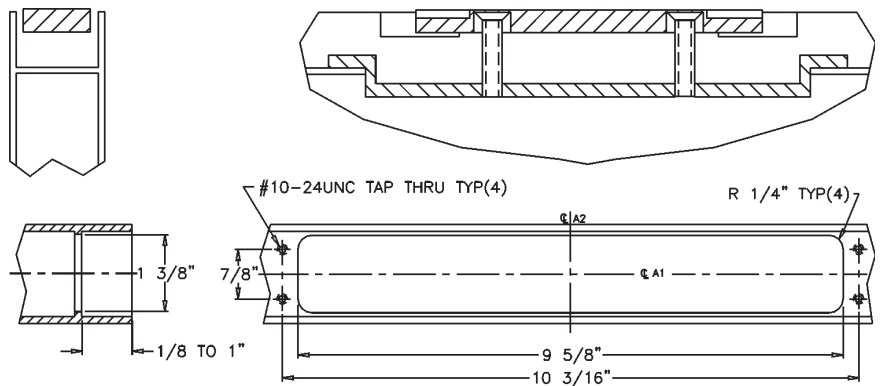
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: flush to 1/4"



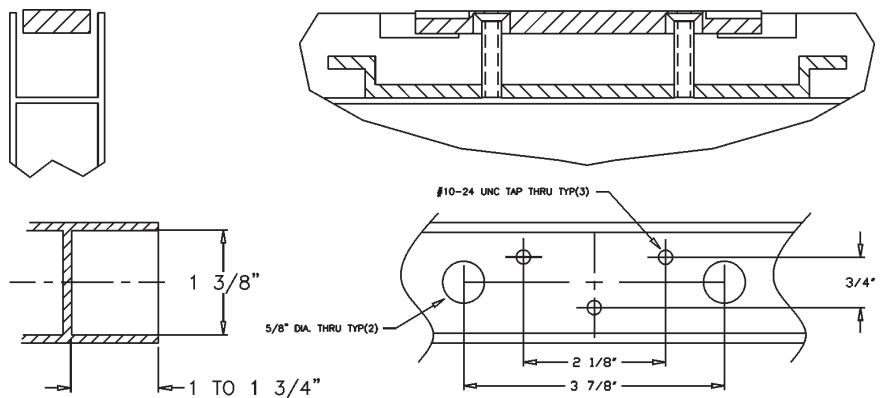
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1/4" to 1"



#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1/4" to 1-3/4"





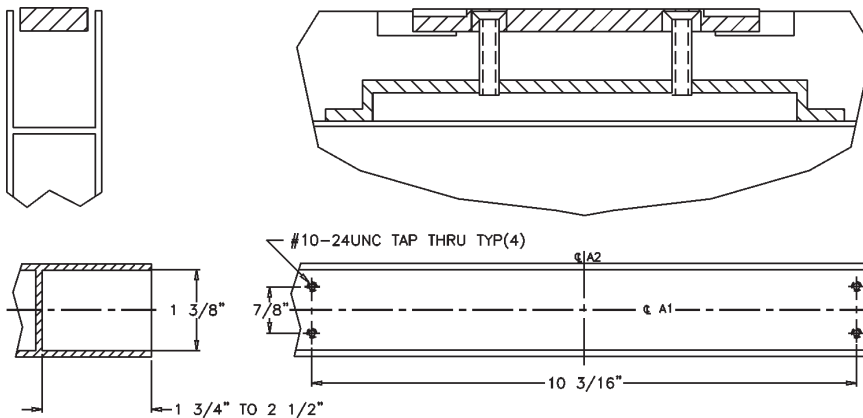
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Standard and TRD Door Prep (continued):

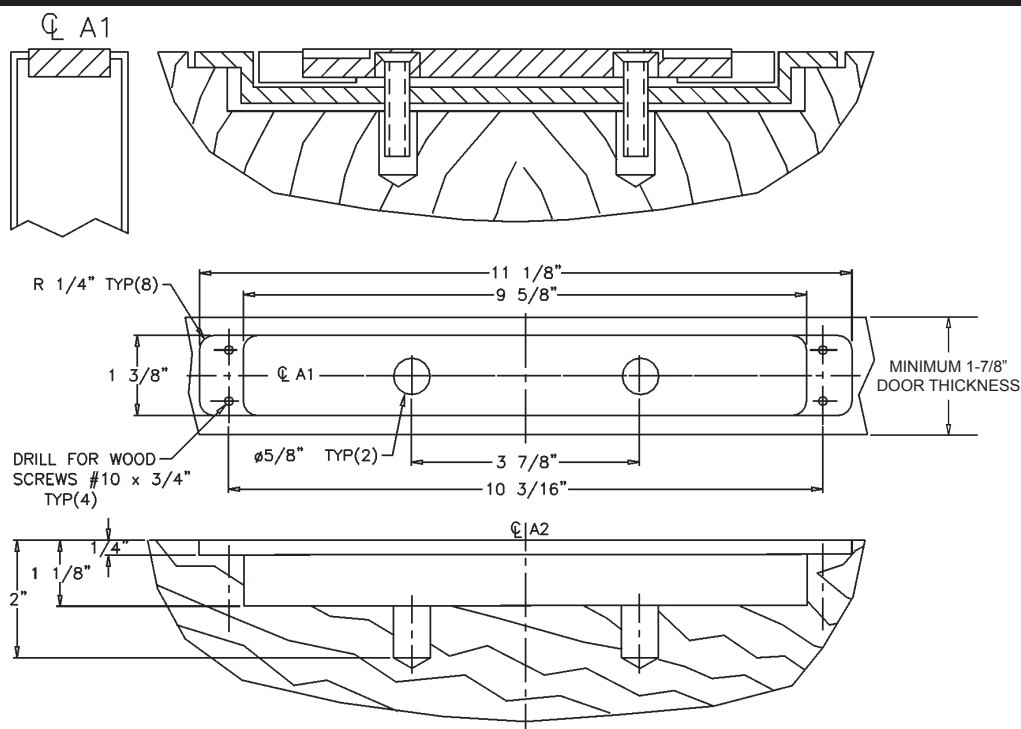
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1-3/4" to 2-1/2"



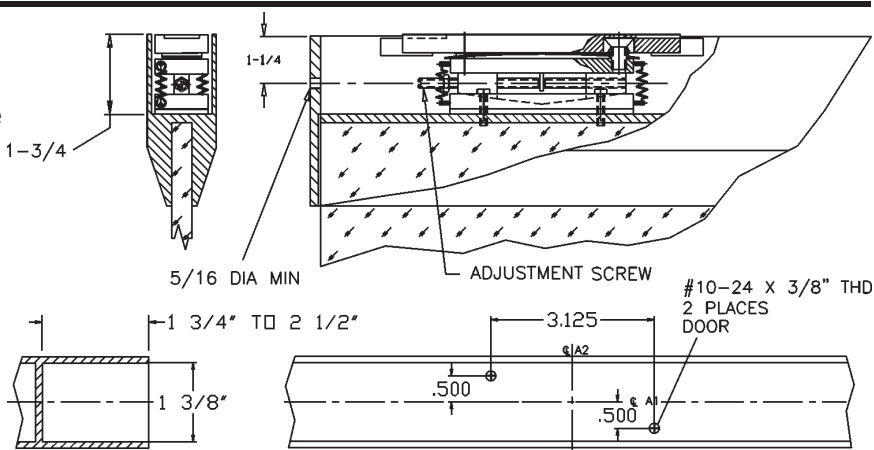
#### DOOR PREP

- Wood



#### DOOR PREP - TRD

- Hollow Metal or Aluminum door where the top adjustment is not accessible.
- Depth: 1-3/4"

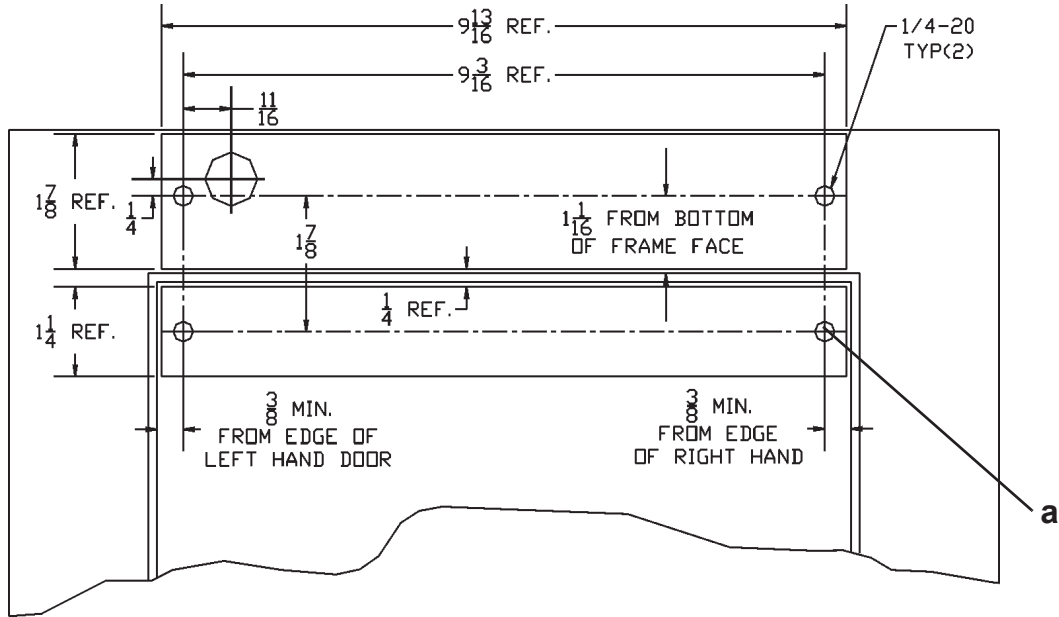


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 5) Template information (TJ):

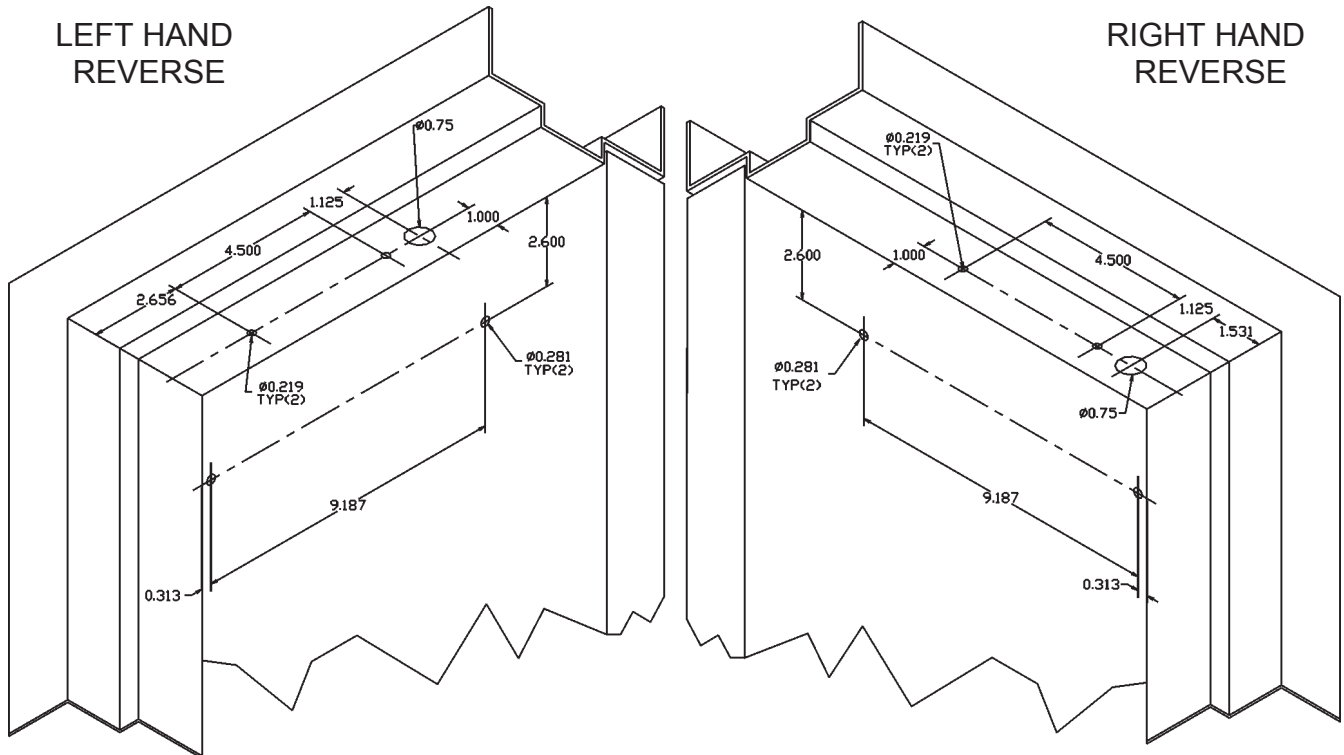
All dimensions in inches.



**NOTE:** Hole (a) - size and type depends on door type and mounting style.

### 6) Template information (SM):

All dimensions in inches.



# GF3000 SERIES INSTALLATION MANUAL

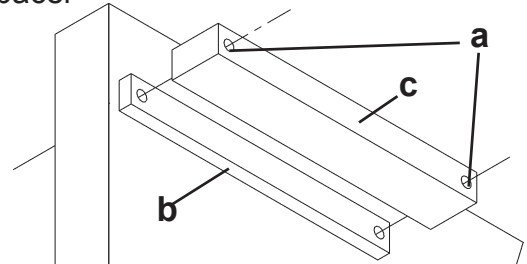
## Installing a GF3000 Series Lock

### Mounting the Lock - Standard, TRD, TJ, SM

After the door and frame have been prepared, do the following:

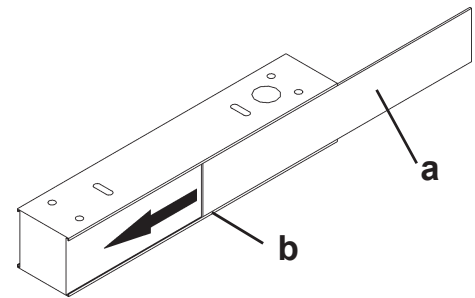
#### 1) Install Armature Mounting Spacer:

- Using two, 1/4 x 20 screws, secure mounting spacer (b) and armature housing (c) onto door.
  - > Use through-holes (a).



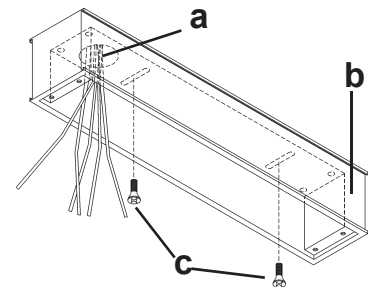
#### 2) Install Faceplate:

- Install faceplate (a) into magnet housing.
- Tighten set screws (b).



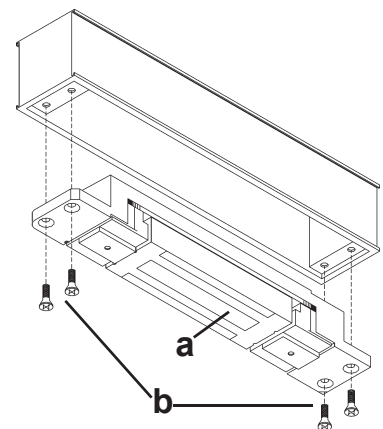
#### 3) Attach Magnet Housing to Frame:

- Carefully feed wires through access hole (a) in magnet housing (b).
- Using either two, 10 x 3/4 sheet metal screws or two, 10 x 1/2 machine screws (c), loosely attach magnet housing to frame.
  - > **DO NOT COMPLETELY TIGHTEN AT THIS TIME**



#### 4) Install Magnet:

- Make final wiring connections (see **Wiring Diagram: on page 21**).
- Insert GF3000 magnet (a) into magnet housing.
- Using four, 10-24 x 1/2 screws (b), secure mounting spacer and armature housing onto door.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Installing the Lock - BRD

#### • INSTALLING THE MAGNET AND ARMATURE

##### 1) Preparing the Floor for the GF3000BRD Magnet:

Since the GF3000BRD magnet is installed in the floor directly below the bottom rail of the door, a threshold box (that will hold the magnet) that is inset into a pocket (a) in the floor, and a trench (b) for the electrical conduit is required.

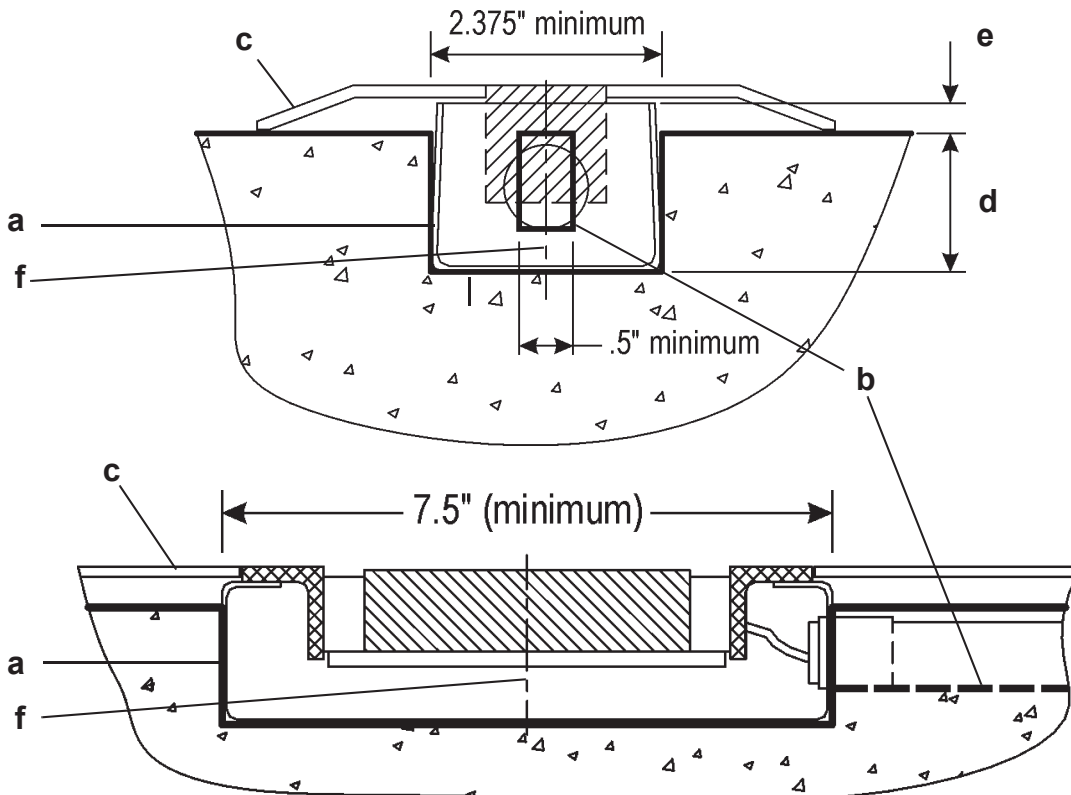
**NOTE: Retrofit Installations - You may find that conditions vary from site to site after the threshold plate (c) is removed. If a cement, stone, or other hard material is encountered, using a pavement breaker or demolition hammer might be useful for chiseling out the pocket and trench in the floor.**

Using tools applicable for conditions found at the site, create a pocket that is at least 2.375" wide x 7.5" long within the threshold area, centered directly below door's bottom rail and furthest away from hinges. Depth of this pocket (d) may vary from site to site. The guiding dimension for depth of the pocket is distance (e). Distance (e) is from top of the threshold box that is inset into the pocket to the underside of the threshold plate. Distance (f) is from centerline of the threshold box to the centerline of the door.

**IMPORTANT: Considerations to keep in mind for position of metal box are:**

- > When magnet and threshold are installed, magnet must not protrude above threshold.
- > You should be able to use box's shim washers to raise and lower magnet to proper level.
- > Box centerline (f) must be placed on centerline of door.

The trench for the conduit should be at least 1/2" wide and deep enough so that the conduit can be easily inserted into the 7/8" hole in end of box. Direction and length of the trench away from the metal box may vary from site to site.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

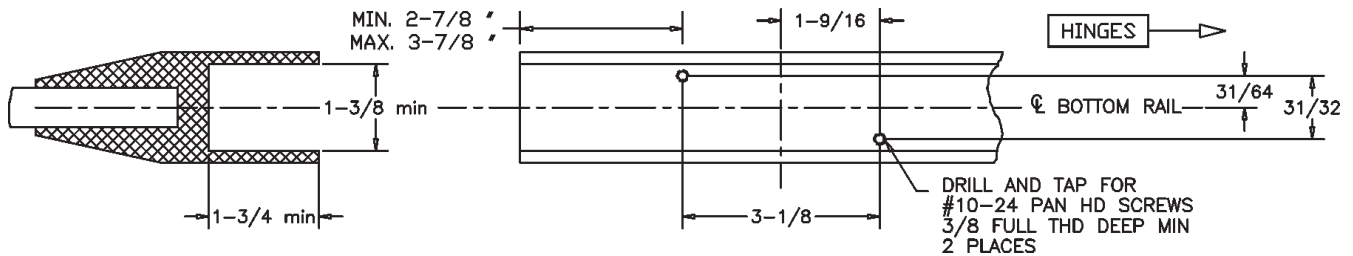
### 2) Installing the GF3000BRD Threshold Box:

After the pocket and trench are created, do the following:

- Feed 1/2" conduit into either 7/8" diameter hole in threshold box.
- Secure conduit with nut.
- Position box in pocket and conduit in trench.
- Pour concrete around threshold box and conduit and allow to cure.

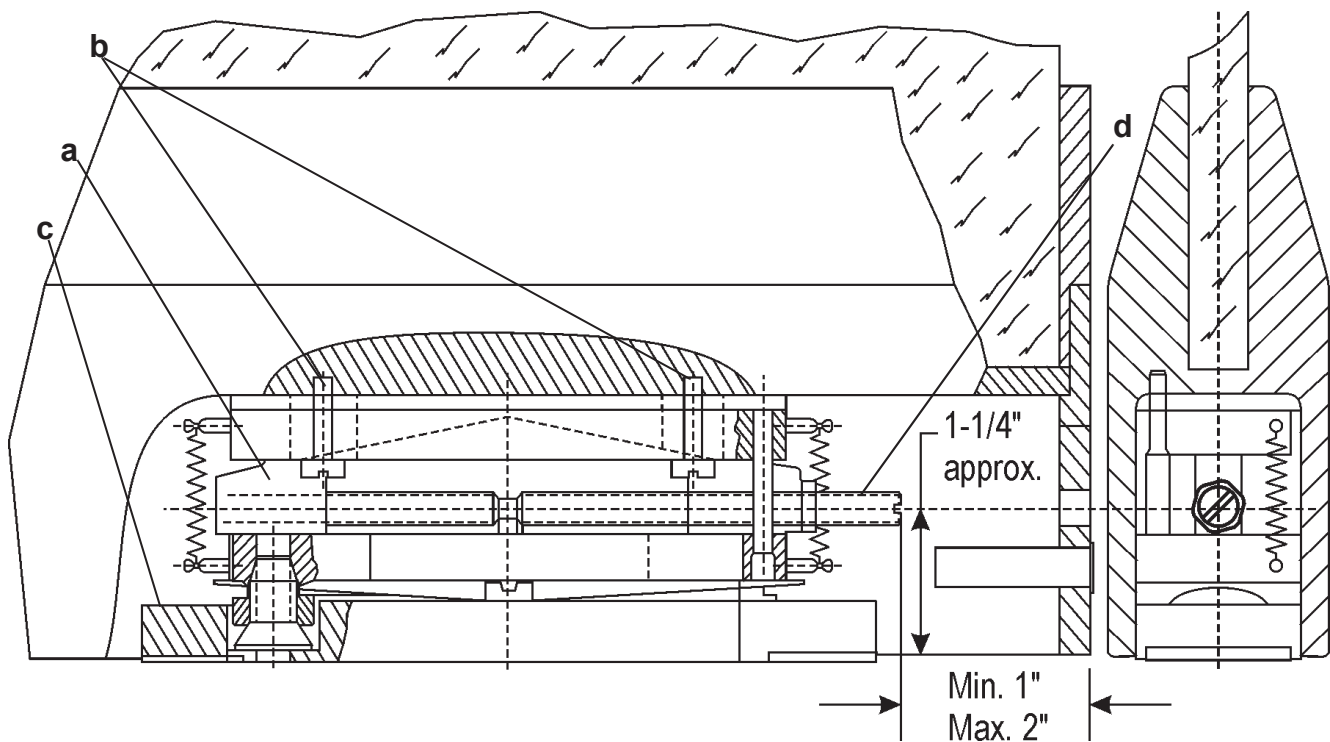
### 3) Preparing the Door for the Armature:

in the Door's Bottom Rail:



### 4) Mounting the GF3000BRD Armature in the Door's Bottom Rail:

- Mount armature mounting bracket assembly (a) to bottom rail using #10-24 x 3/4" Pan head screws (b) supplied.
- Mount armature assembly (c) to armature mounting bracket assembly (a)
- Remove end cap on door to expose adjusting screw (d). If door doesn't have a removable end cap, an access hole will have to be drilled in edge of door according to the approximate dimensions as shown.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

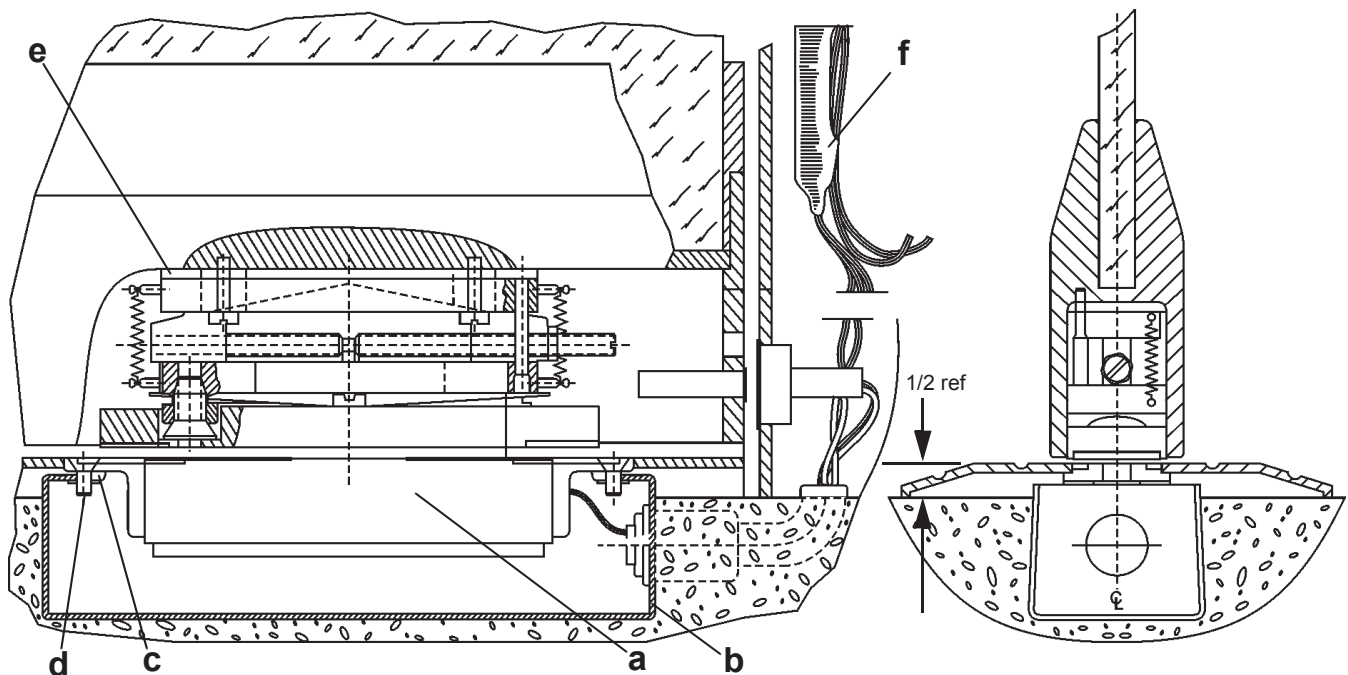
### 5) Mounting the GF3000BRD Magnet Into the Threshold Box:

- Mount magnet (a) to box (b) by placing two speed nuts (c) per slot, side by side in flanges of box.
- Line up magnet over speed nuts. Insert #10-24 x 1/2" flat head screws (d) into magnet brackets and through speed nuts. Align magnet, making sure centerlines of armature are on the centerlines of magnet. Tighten screws.
- If needed, add shims under magnet to bring magnet flush with top of threshold.

**NOTE: Top surface of magnet must not protrude above top surface of threshold.**

- Replace door on hinges.
- Adjust armature, using adjusting screw located in access hole so that the clearance gap of approx. 1/16" between magnet face and armature is achieved. It may be necessary to slightly re-adjust the gap to achieve proper locking action and spring return action when the magnet is de-energized.
- If door's bottom raildepth is greater than 1-3/4", spacers (e) may be needed (one, 1/8" thick spacer is supplied).
- Install door status switch into frame and actuating magnet into door (see **Door Status Monitor (DSM) - GF3000BRD on page 23.**).
- After all magnet adjustments have been completed, it is strongly recommended to fill the magnet box with a spray urethane foam insulation (available from most building supply companies) to keep water out.
- Make final wiring connections (see **Wiring Diagram: on page 22**

**NOTE: Mount Control Module (f) in a remote and dry location, and no more than 15 feet away from lock.**

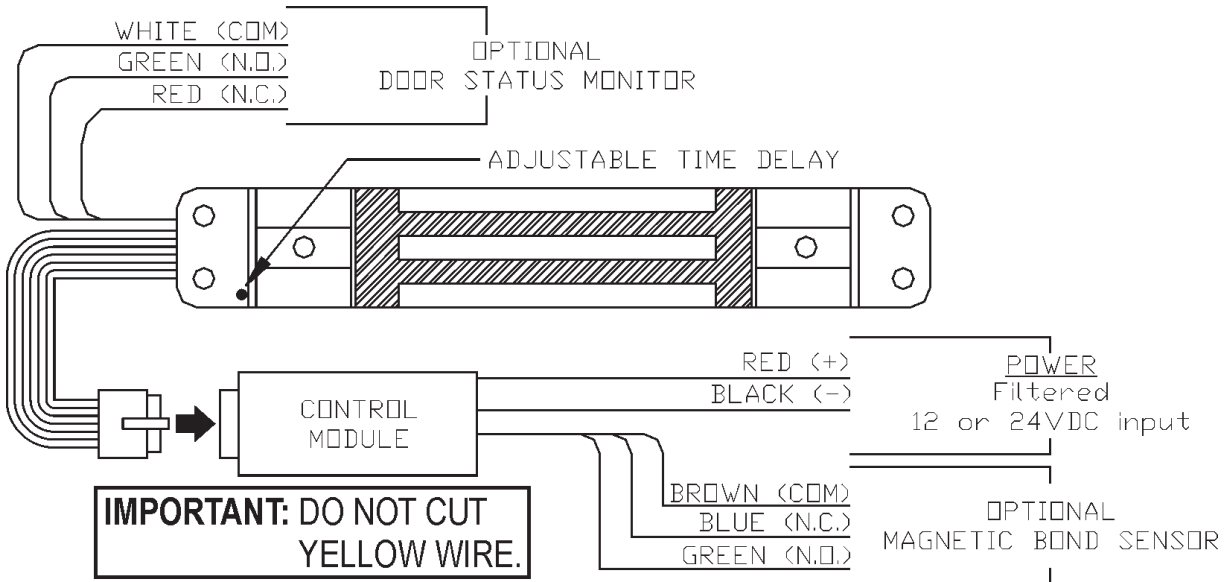


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Wiring the Lock-Standard, TRD, TJ, SM

#### 1) Wiring Diagram:



#### 2) Standard Features:

##### Operating Voltage

The GF3000 will operate only on filtered and regulated 12 or 24 volts DC. Automatic voltage selection circuitry is standard, eliminating the need for a voltage selection switch.

##### Automatic Relock Switch (ARS)

A built-in relock switch requires the door to be in the closed position before the magnet can be energized.

##### Adjustable Time Delay (ATD)

The ATD provides a time delay to relock that is adjustable from 2 to 30 seconds. The unit has been preset at the factory for a 3 second relock delay.

#### 3) To Adjust Relock Time Delay:

- 1) Refer to the wiring diagram above and note location of ATD arrow.
- 2) With door open, apply power.
- 3) Remove 5/64" hex head screw to allow access to recessed momentary pushbutton switch.
- 4) Using the hex wrench provided, depress and release the recessed switch one time for each second of delay required (max. =30 seconds/min.=2 seconds).

Example To set ATD to 5 seconds, depress the recessed switch 5 times.

**NOTE: If a mistake is made, wait 10 seconds, then repeat Step #4.**

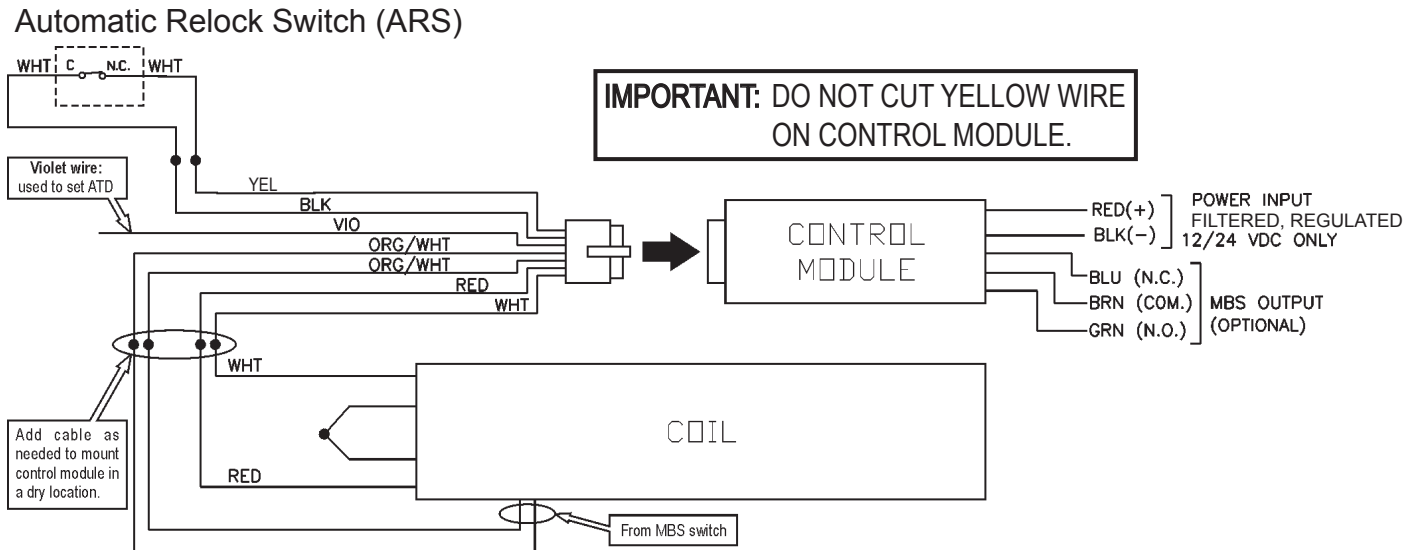
- 5) Reinstall hex head screw, after setting desired relock time delay.
- 6) Close door and verify delay.

# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Wiring the Lock - BRD

#### 1) Wiring Diagram:



#### 2) Standard Features:

##### Operating Voltage

The GF3000BRD will operate only on filtered and regulated 12 or 24 volts DC. Automatic voltage selection circuitry is standard, eliminating the need for a voltage selection switch.

##### Automatic Relock Switch (ARS)

A built-in relock switch requires the door to be in the closed position before the magnet can be energized.

##### Adjustable Time Delay (ATD)

The ATD provides a time delay to relock that is adjustable from 2 to 30 seconds. The unit has been preset at the factory for a 3 second relock delay.

#### 3) To Adjust Relock Time Delay:

- 1) Verify that the exposed yellow wire on the ARS is not shorting against anything.

**IMPORTANT: Do not cut yellow wire.**

- 2) With door open, apply power.
- 3) Touch the violet wire to the black ARS wire one time for each second of delay required (maximum = 30 seconds, minimum = 2 seconds).

Example To set ATD to 5 seconds, touch the violet wire to the black ARS wire 5 times.

**NOTE: If a mistake is made, wait 10 seconds, then repeat Step #4.**

**NOTE: A pushbutton switch may be used if desired.**

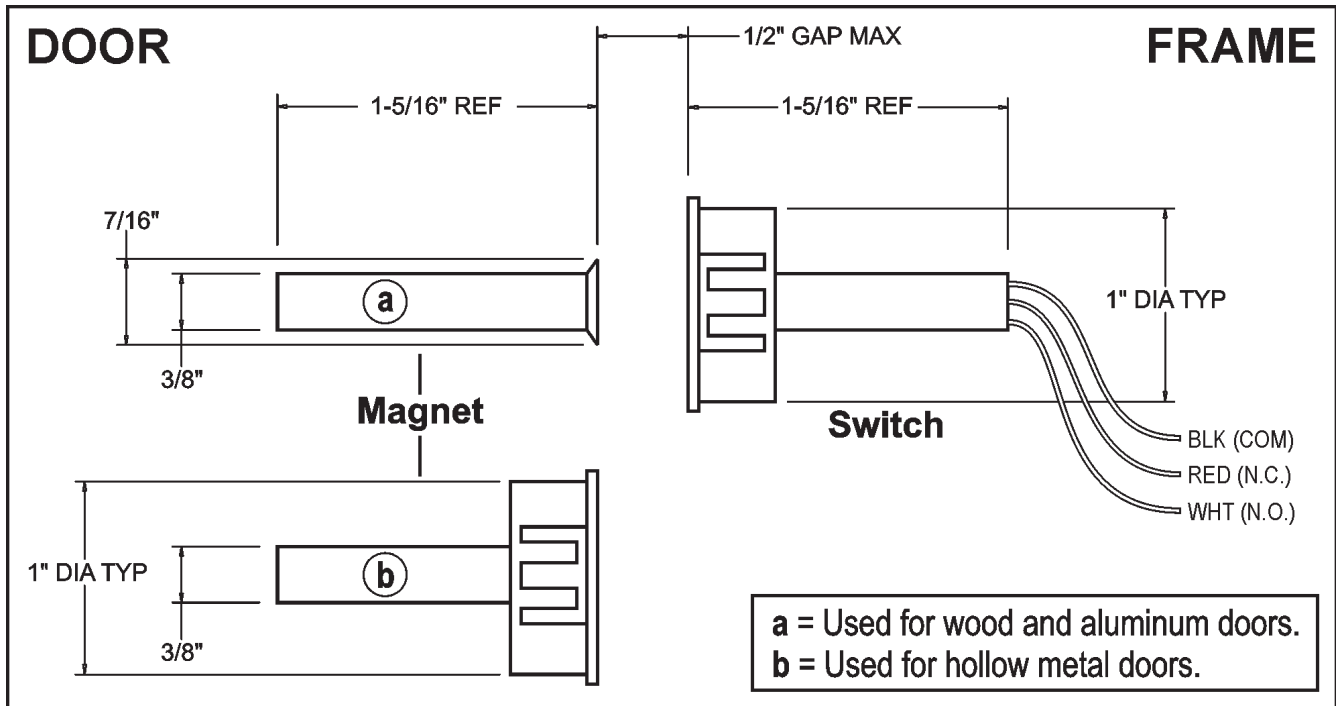
- 4) Properly insulate the violet wire after setting desired relock time delay.
- 5) Close door and verify delay.
- 6) If OK, permanently connect and insulate the yellow wire on the ARS.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Door Status Monitor (DSM) - GF3000BRD



- Hole for switch: 1" diameter in frame.
- Hole for magnet:
  - > (a) Wood or Aluminum doors - 3/8" diameter
  - > (b) Hollow metal doors - 1" diameter
- Installation of magnet and switch must be concentric (common centerline).
- Switch insertion: snap-in fit.
- Magnet insertion:
  - > Wood or aluminum doors - press-in fit
  - > Hollow metal doors - snap-in fit
- If necessary, use epoxy.
- Contact Type: Single Pole/Double Throw (SPDT)
- Contact Rating: 28VDC @ 300 mA (max)
- With door closed, no more than 1/2" air gap is allowed between switch and magnet.

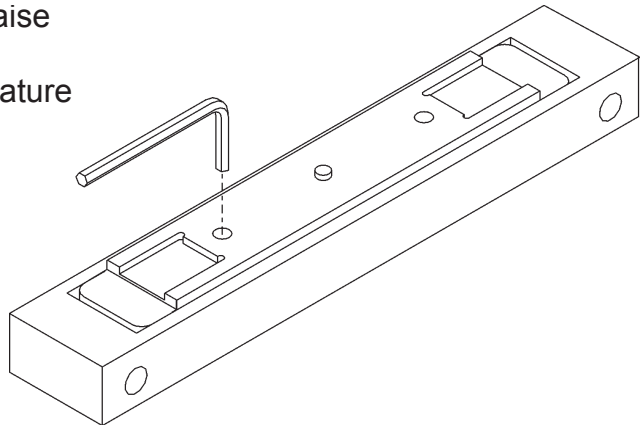
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Air Gap Adjustment

#### 1) Set Armature Height:

- Using the provided 7/32 hex wrench, raise or lower the armature as needed.
  - > Clearance between magnet and armature is recommended to be 1/8", and must be less than 1/4".

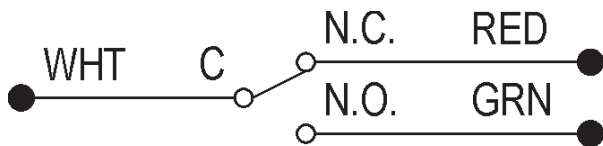


### Options

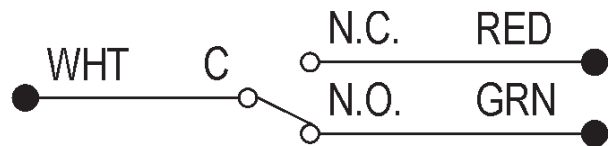
#### 1) Optional Monitoring Outputs:

##### Door Status Monitor (DSM)

The optional DSM provides a dry set of contacts for monitoring “door open” or “door closed” conditions.



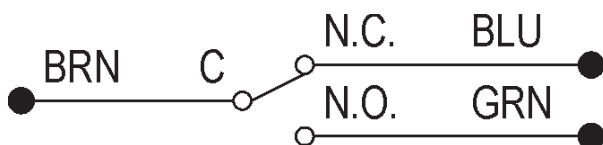
Door Open



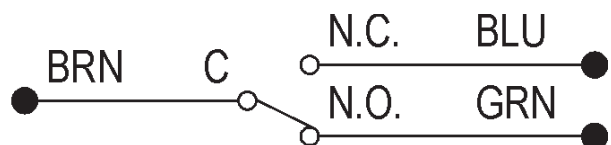
Door Closed

##### Magnetic Bond Sensor (MBS)

The optional MBS provides a dry set of contacts for monitoring “door locked” or “door unlocked” conditions. The MBS measures the magnetic holding force between the armature and the magnetic coil. Poor magnetic bond is the result of low voltage, foreign material between the surfaces of the magnetic coil and armature, or improper alignment of magnet and armature.



Poor Magnetic Bond



Good Magnetic Bond



24200669



# M390RFK ELECTROMAGNETIC LOCK INSTALLATION INSTRUCTIONS

PLEASE DELIVER ALL INSTALLATION INSTRUCTIONS TO THE END-USER UPON COMPLETION OF THE INSTALLATION.

## Pre-Installation Instructions

1. This product must be installed according to all applicable building and life safety codes.
2. Due to the variety of mounting configurations available with this product, a survey and assessment of the physical area in which the product will be installed must be performed.
3. The door frame must be inspected and deemed structurally sound prior to installation of the electromagnetic lock. The structural integrity of the mounting surfaces must be strong enough to meet or exceed the holding force of the product.
4. The product must be protected from potential damage due to intruders or tampering.
5. The product should be installed in a location that will not hinder or create a potential safety hazard to authorized personnel accessing the protected area.
6. Because electromagnetic locks are used in a variety of applications and different door frame configurations, an experienced installer with knowledge of this product must make a determination of the optimal mounting method for this specific application.
7. The components, hardware, installation instructions and mounting template included with this product are intended for use on outswinging doors.
8. Do not install this product on the exterior of buildings.
9. Do not use as a doorstop. This will void warranty.
10. Installation of this product should be done by an experienced installer with knowledge of this product.

**NOTE:** It is highly recommended that thread locking compound be applied to all screws during installation to reduce chance of screws loosening over extended time.

## Mounting Instructions

Installation of this product should be done by an experienced installer with knowledge of this product.

Step 1a) **Read Pre-Installation Instructions.**

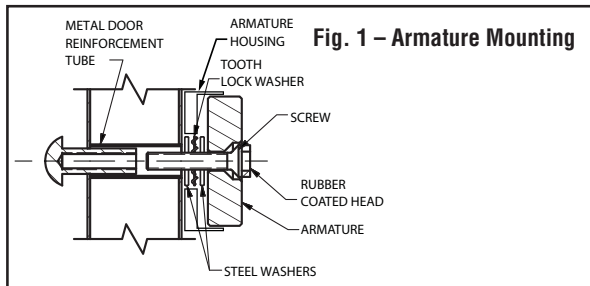
Step 1b) **Prepare Door & Frame (for new installs)**

Place against closed door and header with allowance for Allen key clearance from the edge (1/8" - 1/4").  
Drill the middle hole in the door and 2 holes in the header as indicated. Center mark the two holes to mount armature holder.

**NOTE:** Different hole sizes required for the different materials.  
Do not use as a doorstop. This will void warranty.

Step 1c) **Mount Armature Plate**

Position bolt with rubber head through the armature plate.  
Carefully apply thread locking compound to exposed thread.  
Secure armature plate to door and armature holder by threading into sexnut.



**NOTE:** During the installation of the armature plate to the door it is essential that the armature plate remains movable. The armature plate must be allowed to pivot on the center-mounting bolt to allow proper alignment with the magnet surface. If the plate is not aligned with the magnet surface, the lock may lose holding force or not lock at all.

The head of the armature mounting bolt ships with a rubber washer affixed to it. This washer should project slightly beyond the surface of the armature plate. This is to allow the washer to expand when power is removed and break the air vacuum between the plate and magnet surface. If this washer is removed or trimmed, the lock will appear to have some holding force even when power is removed.

Step 1d) **Mount Electromagnetic Lock**

Remove blocking screws from front of lock.  
Remove electromagnetic lock from mounting bracket by loosening captive screws and sliding off keyholes.

### New Installation:

Attach bracket to header with the 2 panhead machine screws or the self drilling screws provided through the slots.

**NOTE:** Do not over tighten these screws as the bracket may need adjustment.

Slide electromagnetic lock onto mounting bracket keyholes.  
Engage 1 captive screw at each end through bottom to fix lock position on bracket.

Adjust alignment to ensure full contact of magnet with armature plate.

Carefully remove electromagnetic lock without shifting mounting bracket.

Secure mounting bracket in position with either 9 TEK™ screws, or 4 flat counter sunk machine screws.

Drill 3/4 (19mm) wire access hole using mounting bracket as a guide. Tip the electromagnetic lock to expose the 4 captive mounting screws. Carefully apply thread locking compound to exposed threads. Slide the electromagnetic lock onto mounting bracket keyholes.

Secure with 4 captive mounting screws.

### Retrofit Installation:

Attach bracket to header with 9 TEK (tm) screws or 4 flat counter sunk machine screws utilizing holes from previous installation.

Additional TEK screws may be used for added strength.

**Retrofit Installation Continued**

Tip the electromagnetic lock to expose the 4 captive mounting screws.

Carefully apply thread locking compound to exposed threads. Slide the electromagnetic lock onto mounting bracket keyholes. Secure with 4 captive mounting screws.

**WARNING: Improper installation, maintenance, inspection or usage of the product or any related accessories or parts may cause the electromagnetic lock, armature plate and associated hardware to disengage and fall, causing serious bodily injury and property damage. Schlage will not be liable to the installer, purchaser, end user or anyone else for damage or injury to person or property due to improper installation, care, storage, handling, maintenance, inspection, abuse, misuse or act of God or nature involving this product or any related accessories or parts.**

- Route the power supply connecting wire through the door frame and into the wire access hole in the top of the magnet housing. Connecting wire should be of sufficient gauge for the lock being installed and the distance being run. See table on page 4 for current draw specifications and wiring gauge chart.

NOTE: UL LISTED ELECTROMAGNETIC LOCKING DEVICES MUST BE USED WITH UL APPROVED POWER SUPPLIES (SCHLAGE OFFERS A FULL LINE OF POWER SUPPLIES). THIS M390RFK ELECTROMAGNETIC LOCK IS cULus LISTED.

- Once wiring has been routed into the lock cavity, connect wire to terminal blocks as shown in Fig. 3. If Door Status Monitor (DSM) and/or Magnetic Bond Sensor (MBS) features are being used, these can also be wired at this time as shown in Fig. 3.

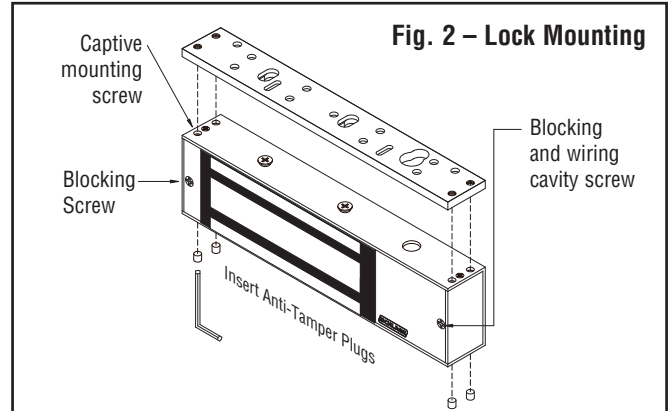
**4. Relocking Time Delay (RTD) Feature -**

The RTD feature can be used to momentarily release the lock and keep it unlocked for a time period from 0 to 110 seconds. The time delay for this feature can be adjusted by carefully turning the potentiometer (RW1) in a clockwise direction to increase delay time. Factory setting is zero seconds.

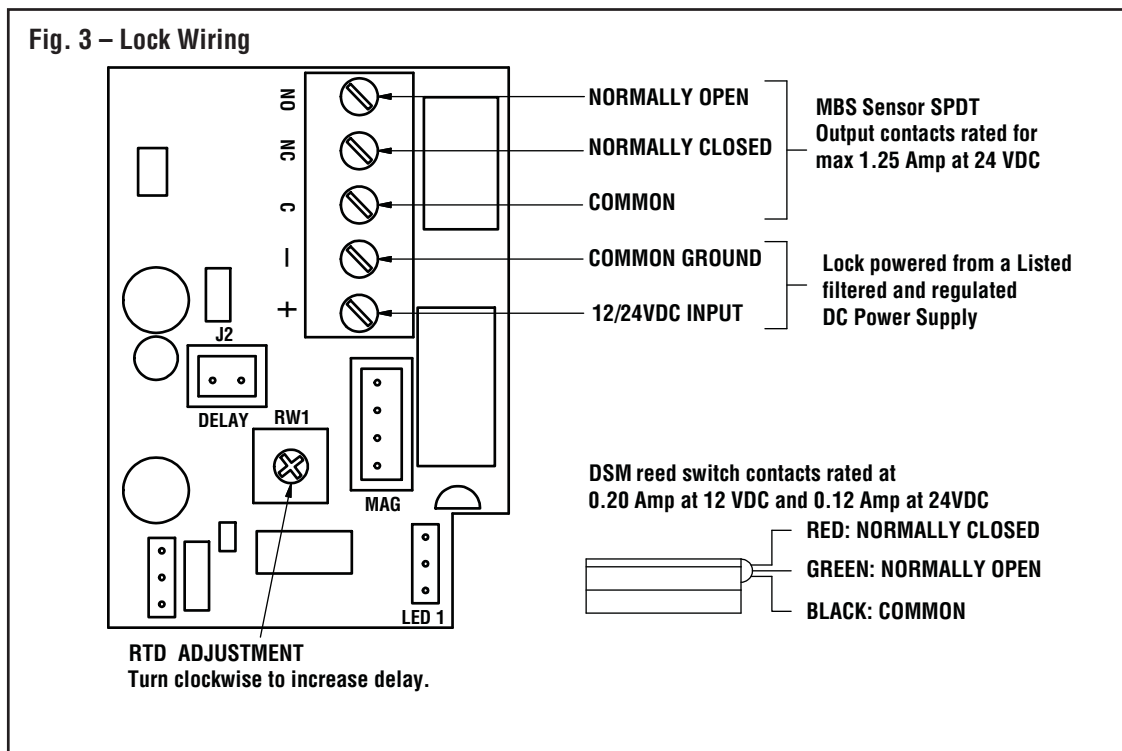
**NOTE:** If RW1 is not set to zero seconds, the lock will enter delayed relock mode each time power is applied.

**5. Anti-Tamper Feature**

Two screws prevent insertion of an Allen wrench into the captive mounting screw opening on the bottom of the lock. Fig. 2 shows their location. One screw also secures the wiring cavity cover. The mounting plate cannot be separated from the lock without removing these two screws.

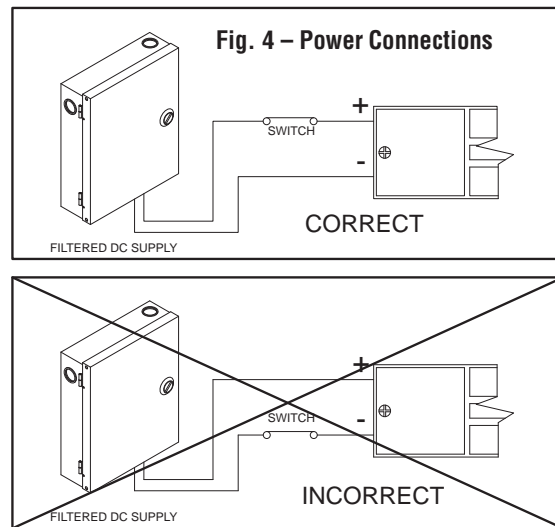


**Fig. 3 – Lock Wiring**



6. **To Ensure Instant Release** All switching devices must be wired in between the DC power source and the positive terminal of the lock in Fig. 4. Switching the negative power supply line will not allow the lock to release immediately.

This Schlage Lock contains TVS for surge suppression and does not require any additional suppression to be added during installation.



## Lock Monitoring Features

The M390RFK lock is equipped with remote indication features that operate as follows. Each of these features will provide indication as to the lock status. See Fig. 3 for wiring diagram.

### MBS – Magnetic Bond Sensor

This feature can detect the quality of the locking bond between the surface of the magnet and the armature plate. The sensitivity of this feature is such that a foreign object with a thickness of .007" (.18mm) is sufficient to allow the sensor to detect a problem.

Due to the sensitivity of this feature and the necessity to maintain a reliable locking bond, these surfaces must be kept free of contaminating materials. Both the lock surface and the armature plate must be cleaned periodically with a non-abrasive cleanser. Alignment of armature plate and magnet is required to ensure proper function of sensor. Status is indicated locally via an LED mounted on the bottom of the lock housing.

### DSM – Door Status Monitor

The DSM feature monitors the position of the door upon which the lock is installed. A SPDT reed switch mounted within the lock cavity eliminates the need for extra sensors to be installed on the door for notification of security or access control systems.

## Listings

These products have been successfully tested and evaluated by UL in two separate categories for use in both the United States and Canada.

Auxiliary Lock. The GWXT fire listing qualifies the M390RFK lock for use with UL Classified fire doors maximum 4' in width and 8' in height, rated up to and including 3 hours.



Component for use in Special Locking Arrangements. Additionally, these products are qualified components for the purpose of locking outward-swinging exit doors against unauthorized egress. They are designed to release automatically in case of a power failure or upon activation of an automatic fire alarm system wired to the power supply fire panel relay.



### The Following Conditions of Acceptability Apply:

- 1) This product is intended for use with Special Locking Arrangements which are installed in accordance with the manufacturer's installation and operation instructions, the Life Safety Code, NFPA 101 of the National Fire Protection Association and the local authority having jurisdiction.
- 2) The power for this unit is to be provided by a Listed (ALVY, ALVY7 FULA, FULA7, FUPPC, UEHX7, APHV or APHV7) Class 2 power supply when designated as a Special Locking Arrangement (FWAX or FWAX7).
- 3) The suitability of the lead wires is to be evaluated per the requirements for the end-use product.
- 4) When this product is installed in conjunction with a fire alarm control panel, the wiring from the control unit to this product device shall be for fail-safe operation.
- 5) For Canadian Installations, this product is to be installed in accordance with the manufacturer's installation and operation instructions, The Canadian Electrical Code C22.1-02, and the local authority having jurisdiction.
- 6) To qualify for use in a delayed-egress locking system, the relock delay must be set to 0 seconds.

**Note:** These locks are not intended or tested for use as a UL Listed Burglar Alarm System Unit.

These models have also been independently tested to the ANSI/BHMA A156.23-2010 American National Standard for Electromechanical Locks.



**Holding Force:** 1500lbf

**Cycle Test:** Grade 1 = 1 million cycles

Power Supply:

Voltage	M390RFK
12VDC	0.65A
24VDC	0.45A

**NOTE:** All Schlage electromagnetic locks must be powered with a Listed filtered and regulated DC power supply such as the Schlage PS900 Series of UL Listed power supplies.

Schlage offers a full line of power supplies and switching devices that are suitable for use with the M390RFK lock.

## Specifications

**MECHANICAL** (Including 1/4" [6.4mm] mounting bracket):

M390RFK Lock Dimensions:

1-5/8"D x 2-7/8"W x 10-1/2"L (41mm x 73mm x 268mm)

Armature Dimensions:

Plate: 5/8"D x 2-3/8"W x 7-7/16"L (16.5mm x 61mm x 190mm)

Housing: 3/4"D x 2-11/16"W x 10-3/8"L

**ENVIRONMENTAL:** Not for use in outdoor environments.

Circuit board operating temperature: 14 to 140°F (-10 to 60°C)

**ELECTRICAL:**

**Voltage:** Auto sensing 12VDC or 24VDC

**Current:** 0.65A at 12VDC

0.45A at 24VDC

**MBS Output Relay\*:** SPDT relay. Contacts rated at 1.25A at 24VDC

**DSM Reed Switch\*:** Magnetically actuated SPDT switch.

Contacts rated for 0.20A at 12VDC and 0.12A at 24VDC

\* Effective for either resistive or inductive loads  
(power factor ≥ 0.6 with inductive loads)

**NOTE:** Specifications may change without notice.

### M390RFK CURRENT REQUIREMENTS:

**12VDC** 650 milliamps

**24VDC** 450 milliamps

	0-100'	200' max	300' max
<b>12VDC</b>	16 Gauge	12 Gauge	12 Gauge
<b>24VDC</b>	18 Gauge	18 Gauge	16 Gauge

\*NOTE: Wire gauges shown reference the load of a single M390RFK electromagnetic lock.

# Inspection and Maintenance

This product must be inspected and maintained on a **quarterly basis**. Contacting surfaces of the electromagnetic lock and armature plate must be kept free of contaminating materials. Surfaces must be cleaned periodically with a non-abrasive cleaner.

PLEASE DELIVER ALL INSTALLATION INSTRUCTIONS TO THE END-USER UPON COMPLETION OF THE INSTALLATION.

All mounting fasteners must be inspected on a **quarterly basis**. When properly installed, the ends of the armature plate allow a slight movement but the plate will feel secure when grasped at the bolt. There should be no movement to the mounting bracket or housing of the electromagnetic lock.

**For product support and additional information, please call or visit:**  
**Toll-Free:** 1.877.671.7011  
[www.schlage.com/support](http://www.schlage.com/support)

For added safety, thread locking compound has been provided for the armature plate bolt and the four captive electromagnetic lock mounting screws.

**WARNING: Improper installation, maintenance, inspection or usage of the product or any related accessories or parts may cause the electromagnetic lock, armature plate and associated hardware to disengage and fall, causing serious bodily injury and property damage.**

## M390RFK Series Troubleshooting Guide

Problem	Solution
Cannot remove the lock mounting bracket from top of magnet for installation.	Remove blocking screw. Insert supplied Allen wrench into mounting bolt holes in the bottom of the lock housing and turn. (See Fig.2)
Lock is installed but has no holding force at all.	Check connections at power supply, connected releasing devices, lock terminals and lock circuit board to magnet core.
Lock has enough holding force to lightly hold a screwdriver or set of pliers but door will not lock.	Check to see that armature plate is correctly aligned with the electromagnetic lock. If there is improper alignment, make a 1/4" turn of the armature plate mounting bolt and check for alignment. <b>CAUTION:</b> The armature plate must remain affixed securely to the door or serious bodily injury or property damage may occur. Bolt should be tight enough to hold the armature plate to the door while still allowing for alignment with the electromagnetic lock.
Lock is operating and locking but the armature plate is "humming" against the surface of the lock.	This generally indicates that the lock is either operating on AC voltage or there is some AC voltage present in the DC supply. A properly filtered and regulated DC power supply is required to achieve optimal operation from the lock.
Lock is not releasing immediately upon removal of power.	Ensure that switching devices are interrupting the DC power and not the AC power supply voltage. Ensure rubber washer on armature plate mounting bolt has not been removed or damaged. Check that switching device interrupts the positive wire and not the negative wire (See Fig. 4). Remove any Diodes or other suppression devices that may be installed.





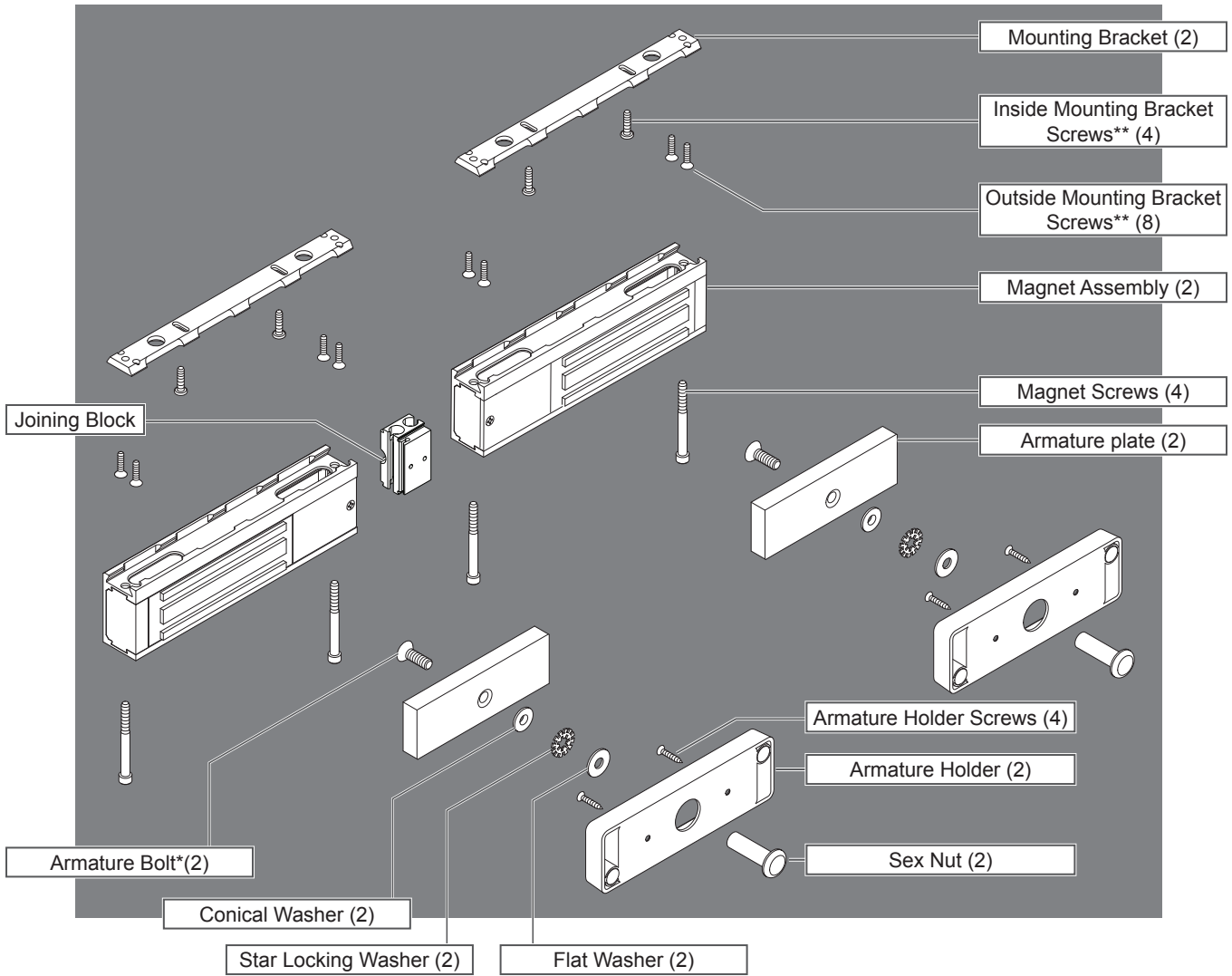
# M400 Series Double Locks



44487304

Double Electromagnetic Locks: M422, M452, M492

Installation Instructions





## Features

### Automatic Voltage Selection (AVS)

Magnet immediately detects 12VDC or 24VDC when power is connected.

### Anti-Tamper Switch (ATS)

An indication is provided should the magnet cover become unsecured from lock.

### Magnetic Bond Sensor (MBS)

Detects proper bond between magnet and armature. It can be monitored remotely and locally with an LED.

### LED

Provides local indication of MBS status.

### Door Position Switch (DPS)

Indicates whether door is open or closed. This feature is used in conjunction with the MBS.

### Relock Time Delay (RTD)

Relock time can be changed. Range is 1 - 30 seconds.

## Models

### M422 (Traffic Control)

UL1034 and 10C/500 lb and 3 hr rating

### M452 (High Security)

UL1034 and 10C/1000 lb and 3 hr rating

### M492 (Max Security)

UL1034 and 10C/1500 lb and 3 hr rating

## Trims

### Basic

Auto Voltage Selection (AVS) for 12 or 24VDC

### Plus

Basic features + Door Position Switch (DPS), Magnetic Bond Sensor (MBS), Relocking Time Delay (RTD), LED Status Indicator (LED) and Anti-Tamper Switch (ATS)

## UL Requirements

- Units shall not impair operation of panic hardware mounted on door.
- Units shall not impair intended operation of an emergency exit.
- Not to be used without UL approved latching hardware.
- Units/Models are intended to be connected to UL Listed Equipment, not intended for Burglar or Fire Alarm Initiating or Indicating Devices.
- Ambient Conditions - "For Indoor Use Only".
- Wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70.
- **This device complies with part 15 of FCC rules.**

Operation is subject to following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including any interference that may cause undesired operation. Changes or modifications not expressly approved by party responsible for compliance could void user's authority to operate equipment.

## Electrical Specifications

Model	Amps (12VDC) Per Lock	Amps (24VDC) Per Lock	Holding Force (lbs) Per Coil
M422	1.500	0.760	500
M452	1.500	0.760	1000
M492	1.300	0.700	1500

## Warnings and Cautions

### ! WARNING

Warnings indicate potentially hazardous conditions, which if not avoided or corrected, may cause death or serious injury.

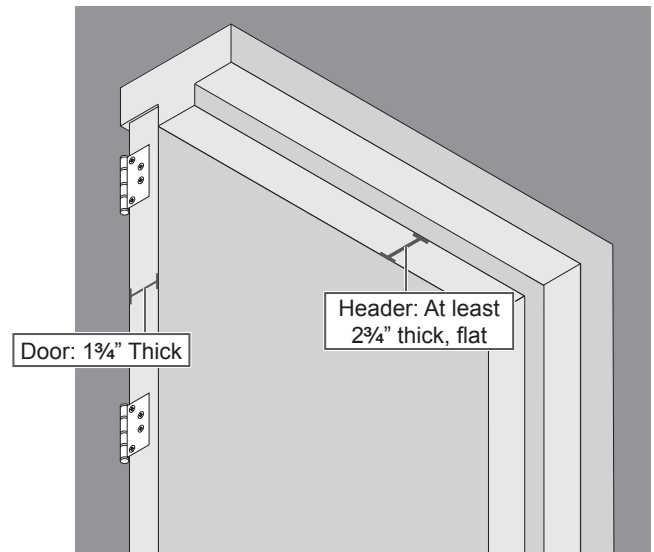
### ! CAUTION

Cautions indicate potentially hazardous conditions, which if not avoided or corrected, may cause minor or moderate injury. Cautions may also warn against unsafe practices.

**Caution:** Cautions indicate a condition that may cause equipment or property damage only.

## Pre-Installation Considerations

- Use ONLY the hardware provided for mounting this product (NOTE: Non-standard Door thickness may require different sex nut hardware - see specific instructions for required hardware).
- Follow the installation procedure as described in this manual.
- Check door thickness. If the door is not 1¾" thick, a different sex nut will be required. Contact customer service at 1-877-671-7011.
- Check door header. A minimum 2¾" thick, flat surface is needed to securely mount all screws for the magnet. If you do not have the required surface, you will need filler plates and/or angle brackets to properly mount the magnet. Contact customer service at 1-877-671-7011.

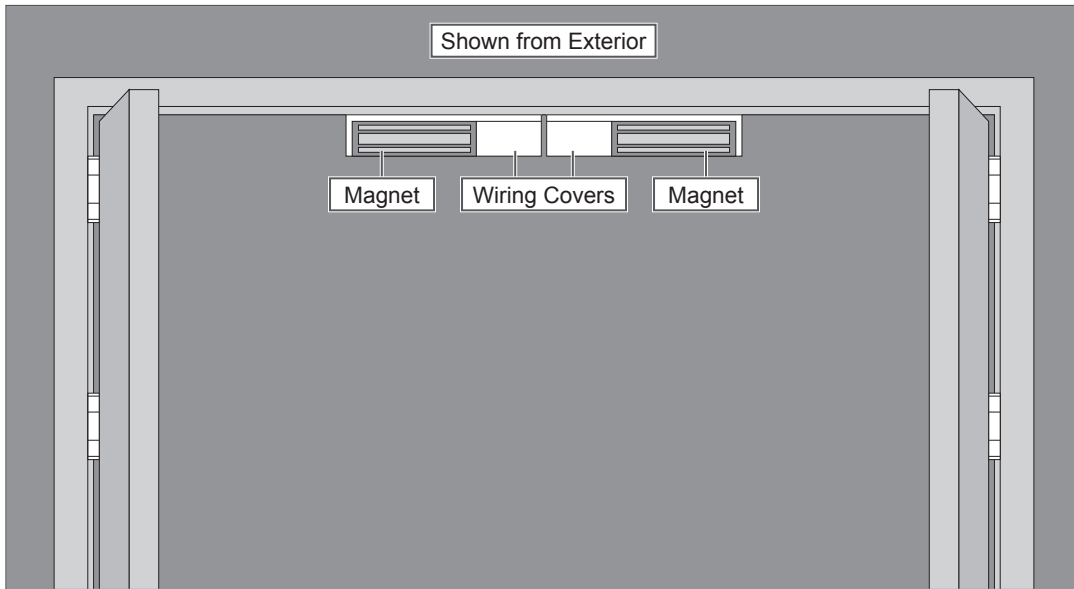


# Lock Installation

## 1 Prepare for installation.

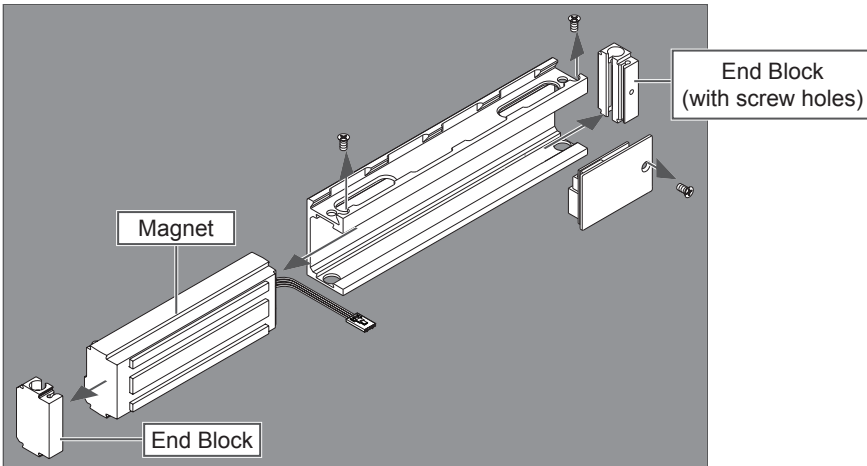
1a Determine proper magnet orientation.

Locks should be installed with wiring covers in the middle, so the magnet in one of the locks must be reoriented.

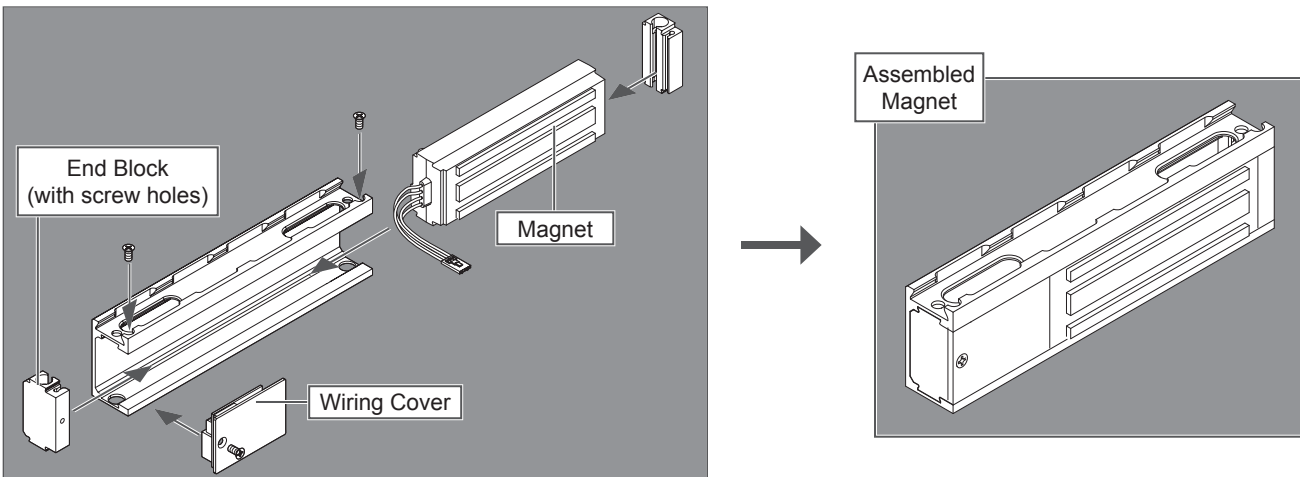


1b Reorient magnet (if necessary).

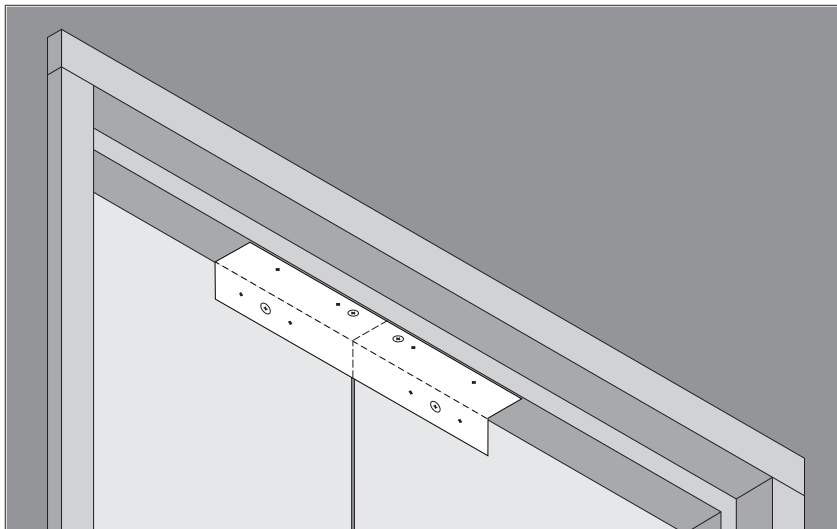
a. Remove screws, wiring cover and end blocks.



b. Rotate magnet, end blocks and wiring cover as shown, then reassemble.

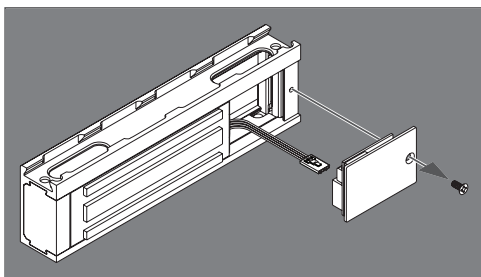


- 1c Place template and mark holes.  
 a. Place template on top centerline of doors.  
 b. Mark holes and prepare them per template.

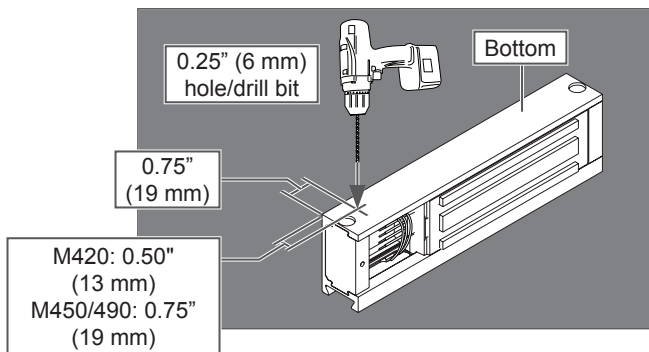


**2** Install MBS indicator (optional, plus models ONLY).

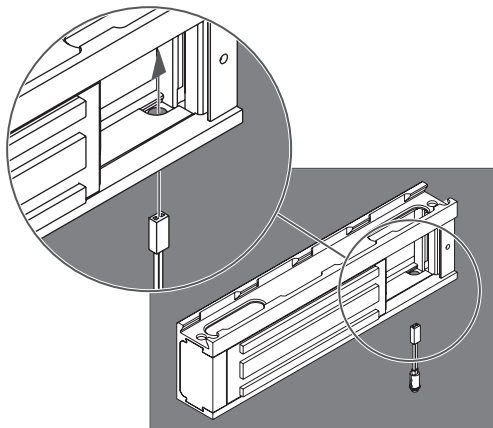
2a Remove cover.



2b Drill hole for MBS indicator.

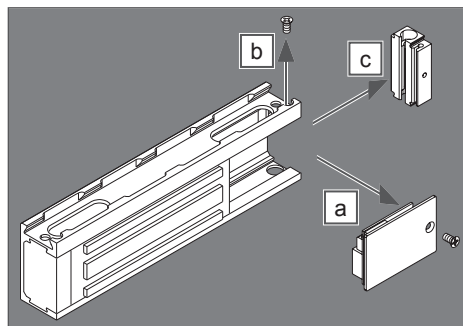


2c Install MBS indicator.

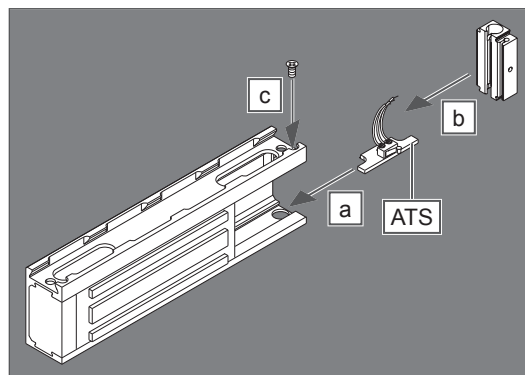


**3** Install ATS (optional, plus models ONLY)

3a Remove end block and wiring cover.

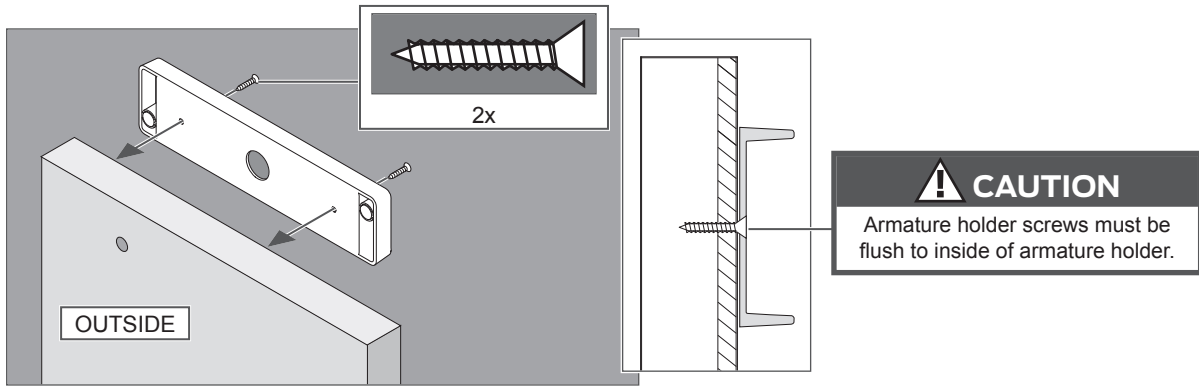


3b Install ATS and Reassemble



## 4 Attach armatures to doors.

### 4a Install armature holder.



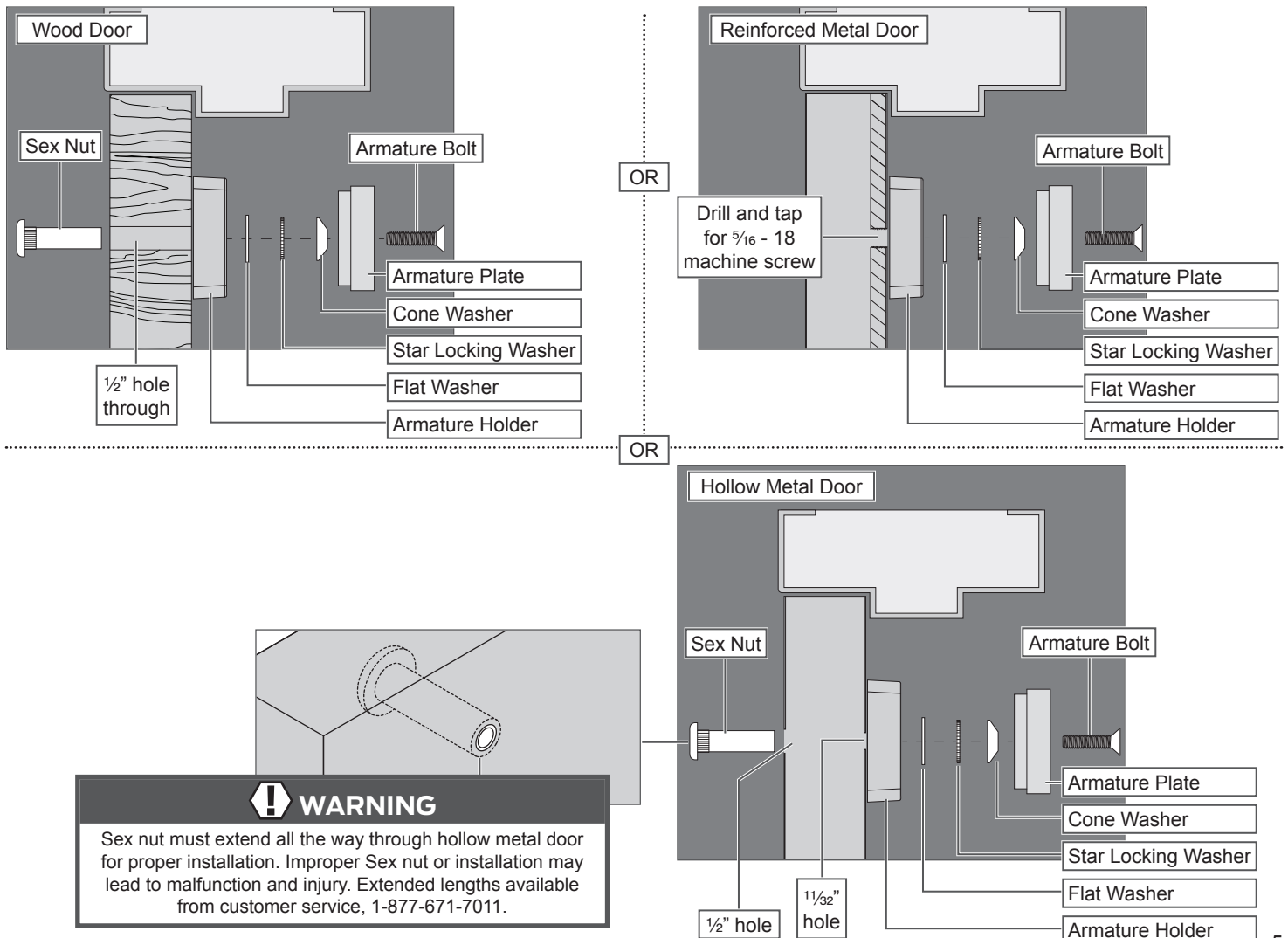
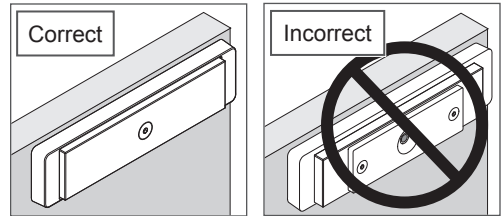
### 4b Install armature plate as shown for door type (M420/M450 shown).

#### WARNING

Armature bolt must be tightened to at least 120 in.-lbs. for all doors except composite wood doors. For composite wood doors, tighten only to tight and flush. 120 in.-lbs. may damage composite wood doors.

DO NOT back off bolt after tightening! Backing off the bolt after tightening will loosen the thread-locking patch, which may allow the bolt to loosen over time.

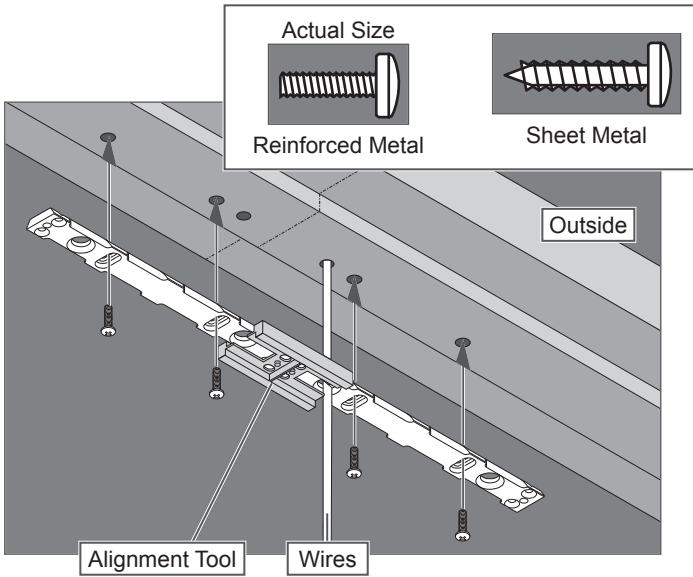
The included sex nut is for 1 $\frac{3}{4}$ " (45 mm) doors ONLY. For other door thicknesses, please contact customer service, 1-877-671-7011. Using the incorrect sex nut for your door thickness will lead to improper function and possible injury.



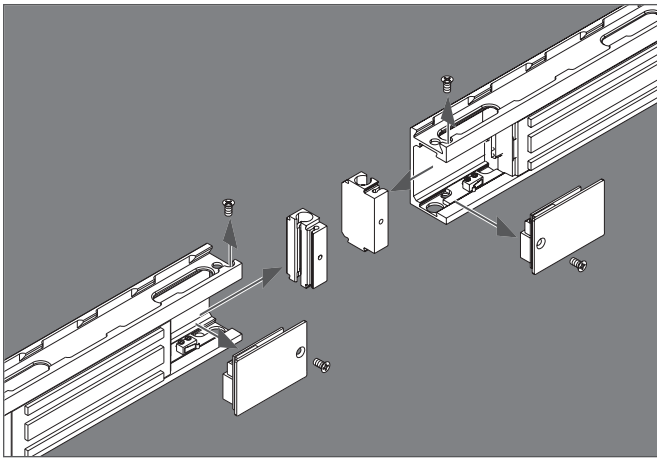
## 5 Install mounting brackets into frame.

5a Attach mounting brackets temporarily.

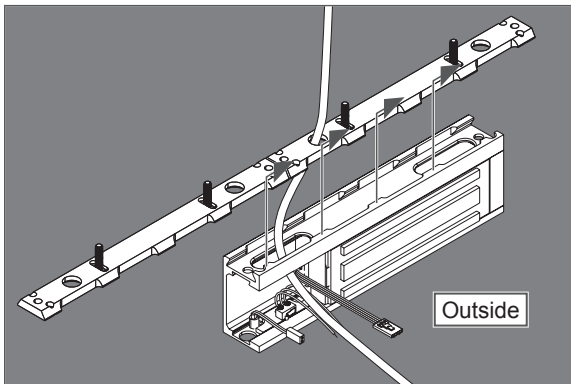
- Install alignment tool onto brackets.
- Install four (4) screws into slotted holes and partially tighten.



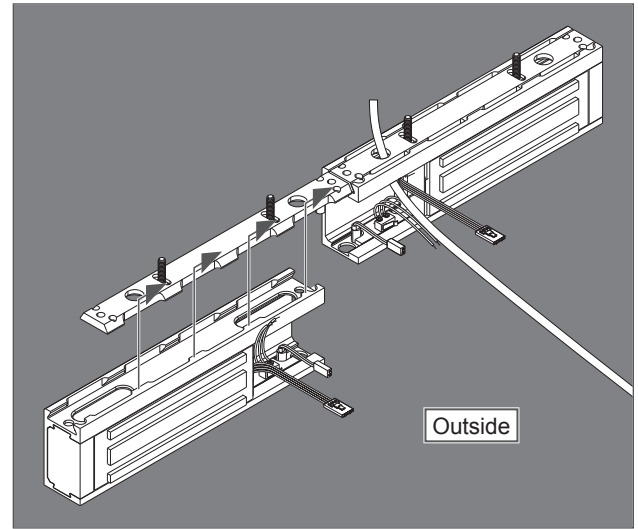
5b Remove wiring covers and end blocks.



5c Slide one magnet onto bracket.

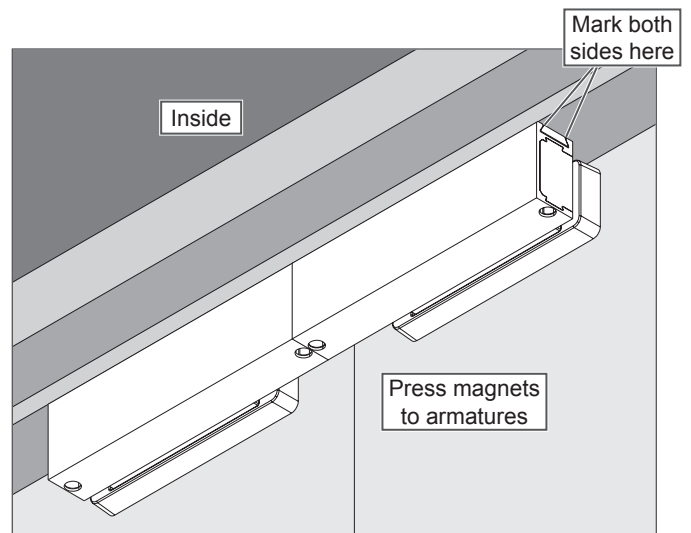


5d Slide second magnet onto bracket.

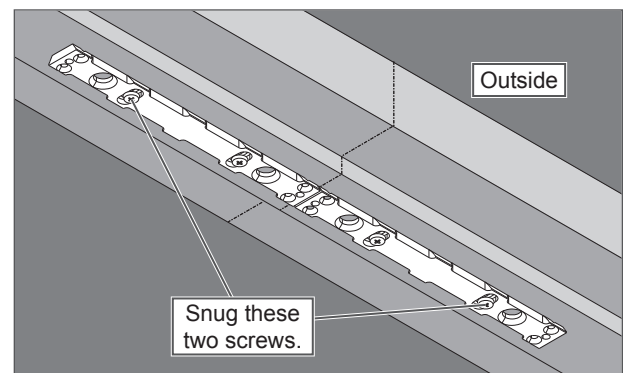


5e Align magnets to armatures

- Close doors.
- Press magnets to fully engage with armatures.
- Mark brackets on ends.

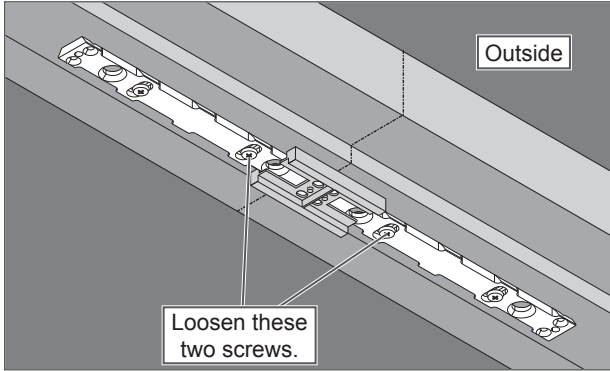


5f Remove magnets and snug two (2) outer screws.



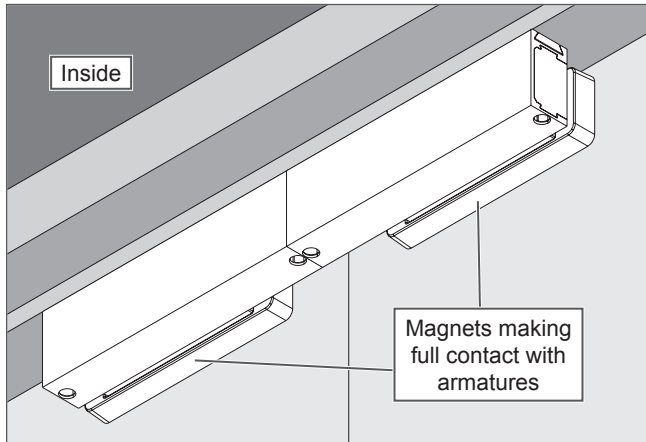
5g Align Center of Brackets Using Alignment Tool

- a. Loosen two (2) innermost screws.
- b. Place alignment tool over brackets.
- c. Tighten all four (4) screws.



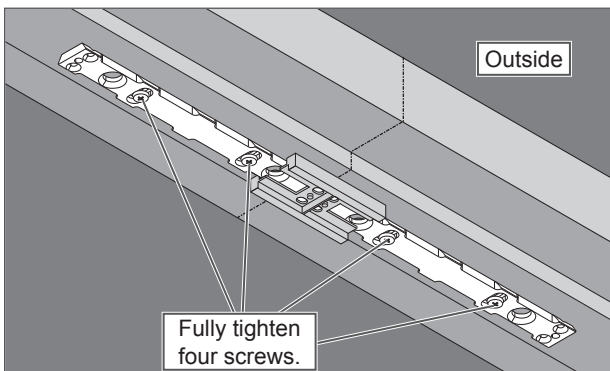
5h Verify magnet adjustment.

- a. Close door and verify magnets make full contact with armatures.
- b. If alignment is satisfactory, go to step 5i.
- c. If further adjustment is required, repeat steps 5e through 5h.



5i Prepare additional holes.

- a. Install alignment tool on brackets.
- b. Fully tighten four (4) screws.
- c. Drill eight (8) remaining holes. Use #10-24 tap if metal is reinforced.



5j Install eight (8) screws

- a. Remove alignment tool.
- b. Install and fully tighten eight (8) screws.

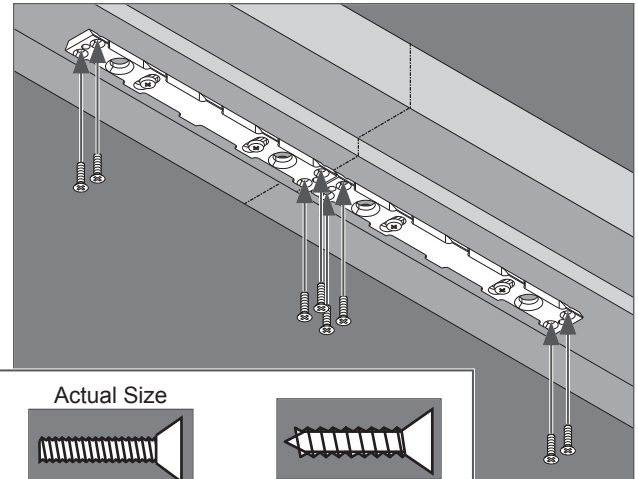
**CAUTION**

All eight screws **MUST** be installed for proper operation and safety!



If you do not have enough room to securely fasten all screws, you will need filler plates and/or angle brackets to properly mount the magnet.

Failure to properly install the screws may lead to injury or property damage.

Contact customer service at 1-877-671-7011.

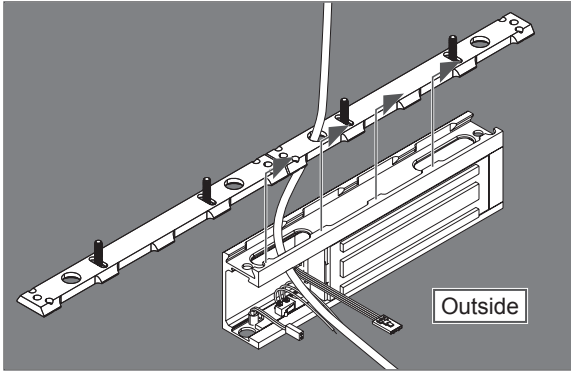


Actual Size

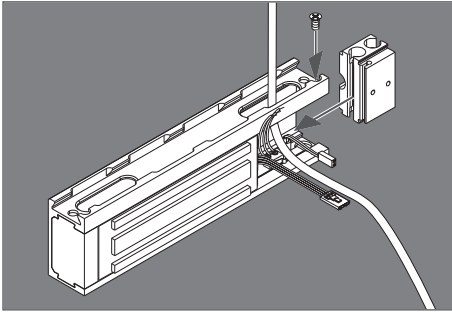
	
Reinforced Metal	Sheet Metal

## 6 Attach magnets to mounting brackets.

6a Slide one magnet onto bracket.

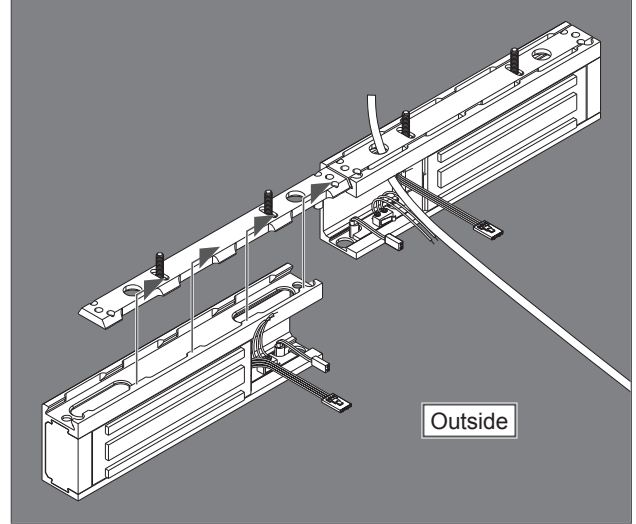


6b Install joining block into magnet.

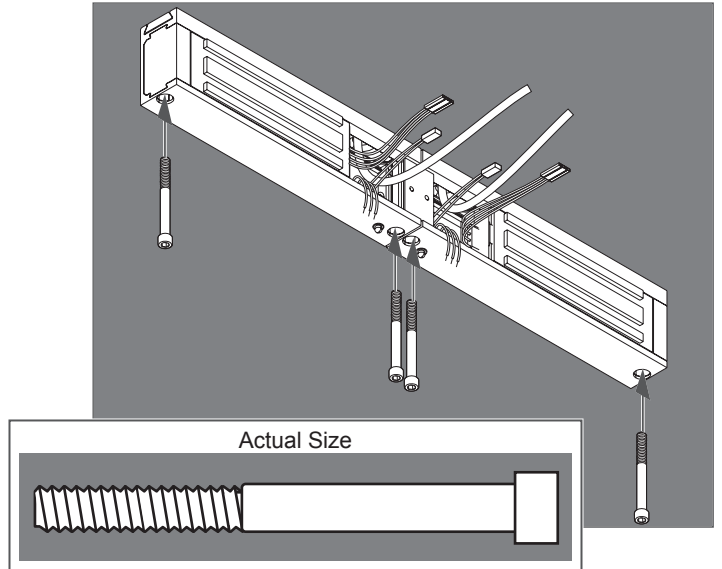


6c Slide second magnet onto bracket.

- Align with joining block.

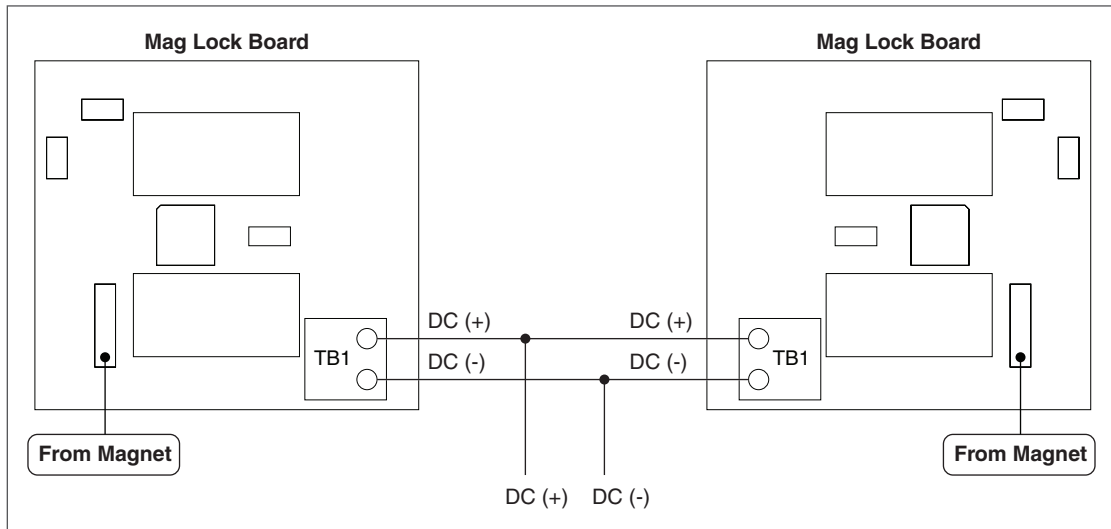


6d Secure locks with four (4) screws

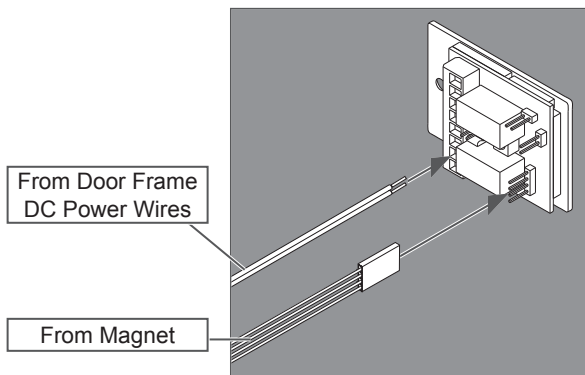


## 7 Correct wiring to board (standard model)

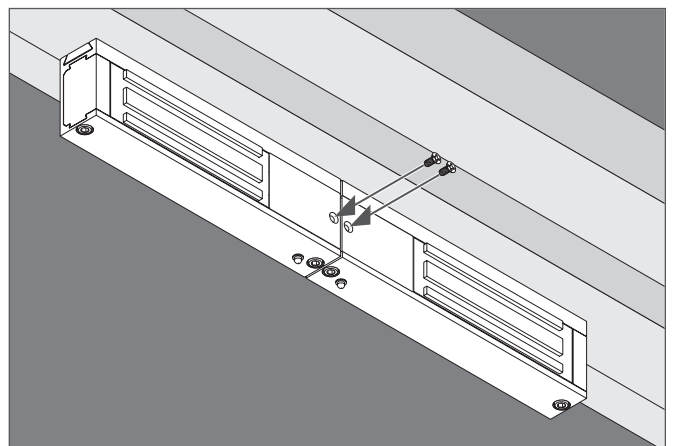
7a Review wiring connections.



7b Connect wires to boards.



7c Install covers.

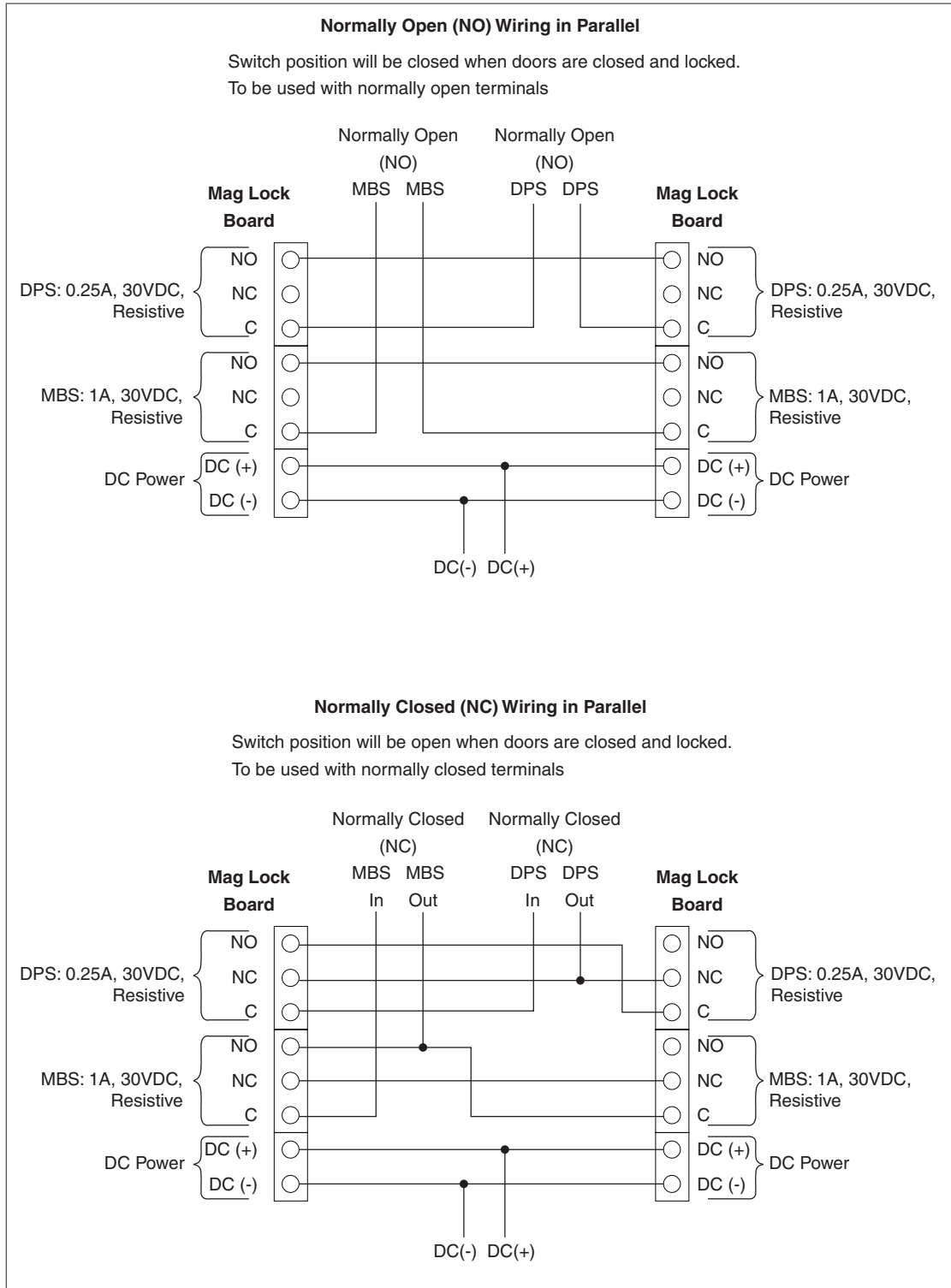




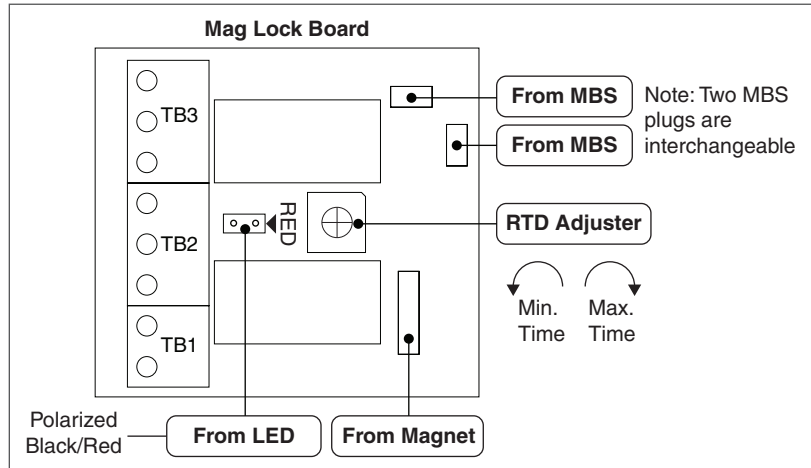
## 8 Connect wiring to board (Plus model)

8a Connect outside wires to boards.

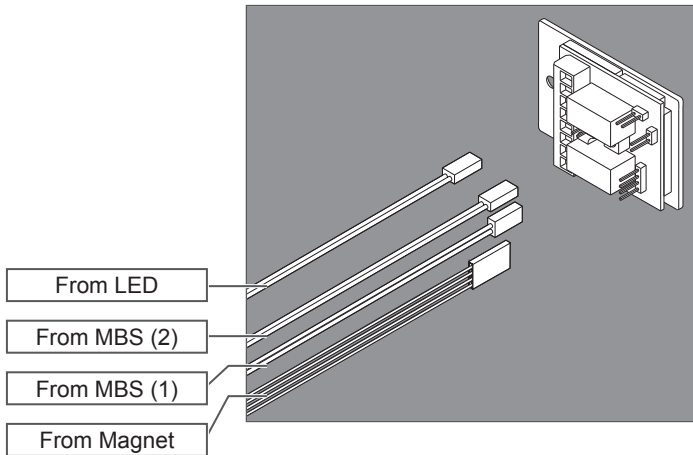
- Choose between NO or NC.



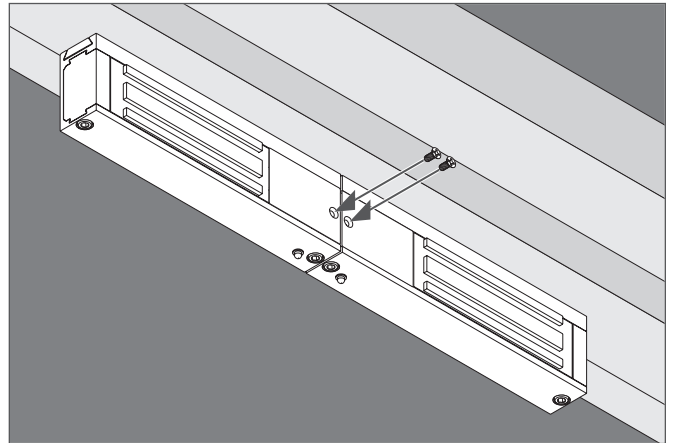
8b Review plug locations.



8c Connect plugs to boards.

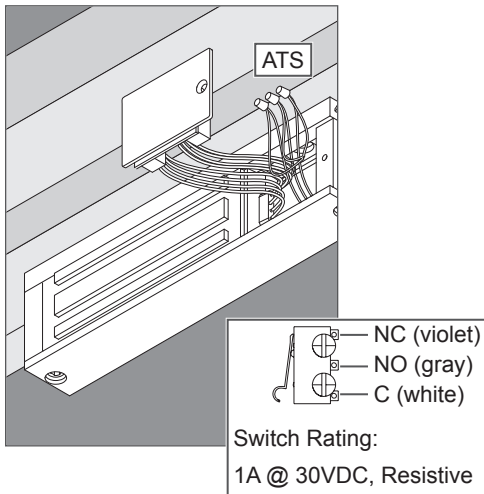


8e Install covers.



**Note:** Some warming of the device under routine operation is normal.

8d Connect ATS wires.



**Customer Service**

1-877-671-7011

[www.allegion.com/us](http://www.allegion.com/us)



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44487304 Rev. 11/15-f



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# HDB



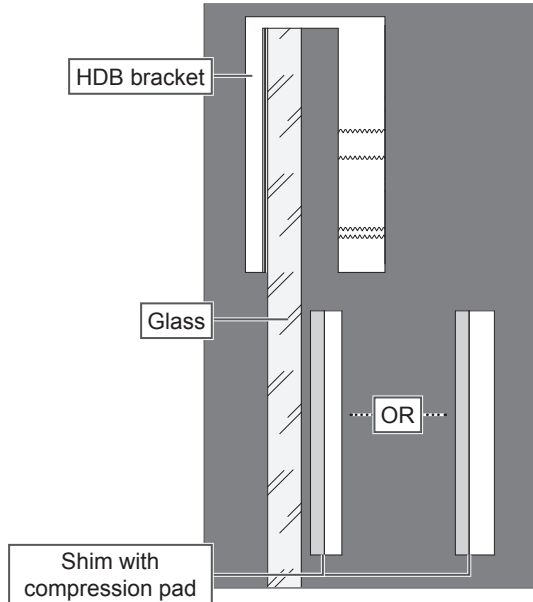
M400 Series Glass Door Kit

Installation Instructions

① **Herculite Door Bracket (HDB) is to be used with 1/2" - 3/4" thick glass doors.**

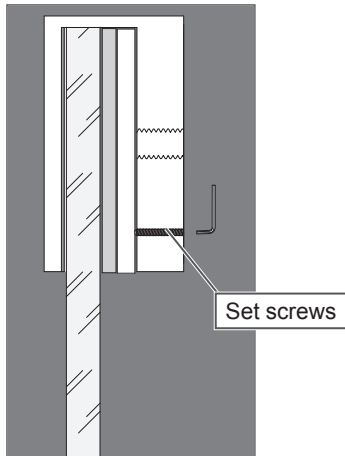
## 1 Install HDB bracket.

1a Select appropriate shim.



1b Install HDB bracket.

- Install appropriate shim (padded side toward glass).
- Tighten set screws (3/32" hex wrench included).

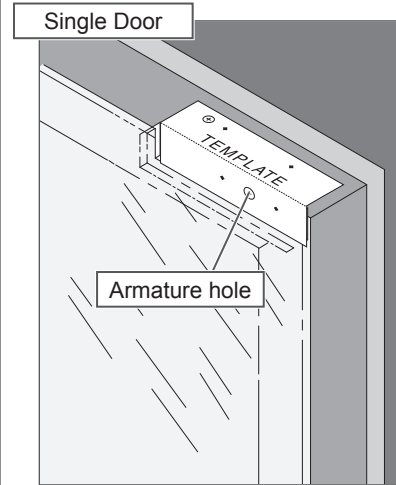


Shim with compression pad to be installed on top of glass opposite the hinge side with the hole for the armature facing toward the "push" side of the opening.

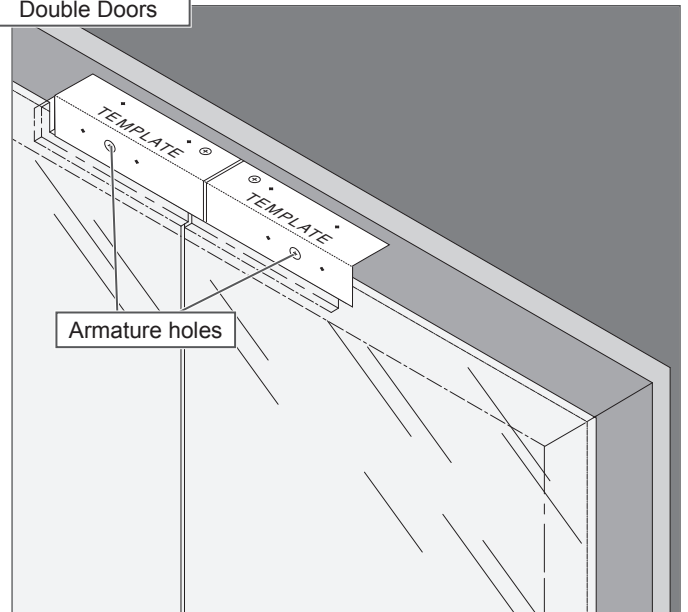
## 2 Prepare frame.

2a Tape template on HDB bracket and frame.

- Align armature hole on template with armature hole in HDB bracket.
- Prepare frame holes per template.

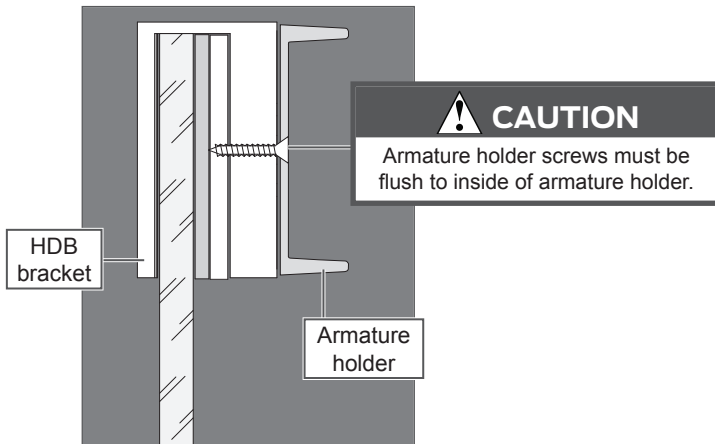
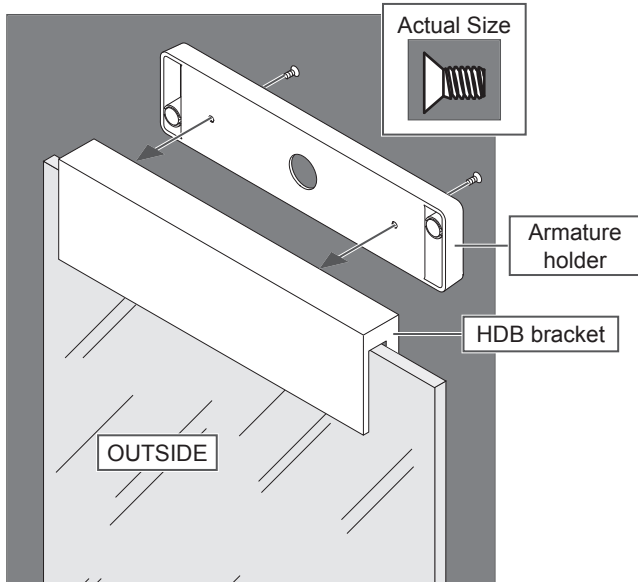


Double Doors

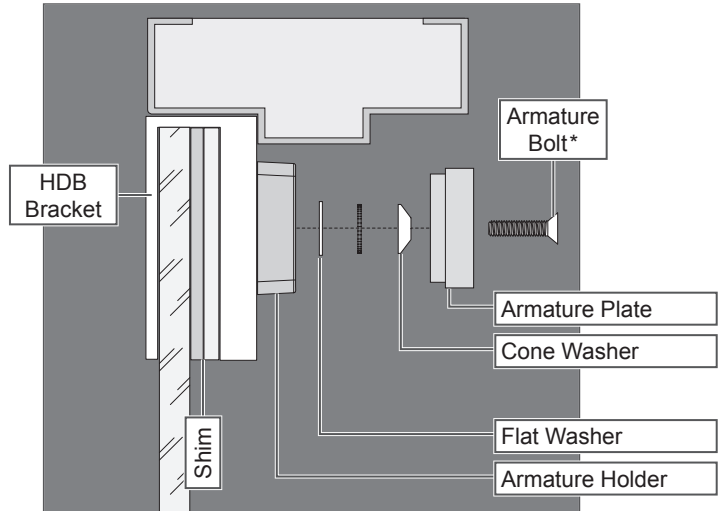


### 3 Install magnetic lock.

3a Attach armature holder to HDB bracket.



3b Install armature plate.



\* Use bolt supplied in HDB kit. M490 armature must be disassembled to replace armature bolt

#### **WARNING**

Armature bolt must be tightened to at least 120 in.-lbs.  
DO NOT back off bolt after tightening! Backing off the bolt after tightening will loosen the thread-locking patch, which may allow the bolt to loosen over time.

ⓘ **Note: Some warming of electromagnetic locks under routine operation is normal.**

3c Continue installation per Magnetic Lock Installation Instructions.

**Customer Service**

1-877-671-7011 [www.allegion.com/us](http://www.allegion.com/us)



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23737901 Rev. 11/15-d



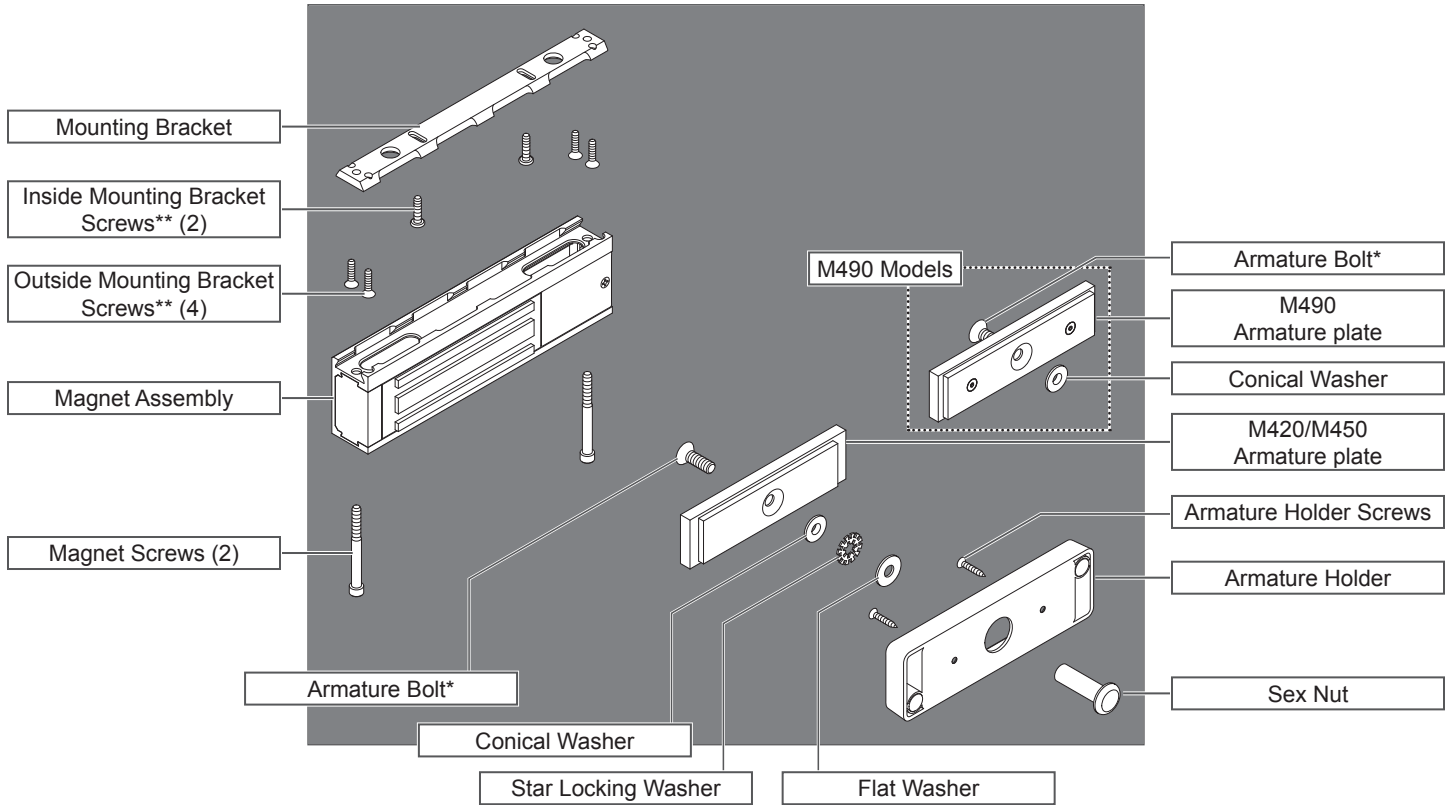
44487296

# M400 Series



Single Electromagnetic Locks: M420, M450, M490

Installation Instructions



\* M490 Models ONLY: Two armature bolts are included in the package, but only one is used. There will be one left over after proper installation.

\*\* Screws for both reinforced metal and sheet metal are included. Some screws will be left over after proper installation. See individual steps for screw identification.

## Features

### Automatic Voltage Selection (AVS)

Magnet immediately detects 12VDC or 24VDC when power is connected.

### Anti-Tamper Switch (ATS)

An indication is provided should the magnet cover become unsecured from lock.

### Magnetic Bond Sensor (MBS)

Detects proper bond between magnet and armature. It can be monitored remotely and locally with an LED.

### LED

Provides local indication of MBS status.

### Door Position Switch (DPS)

Indicates whether door is open or closed. This feature is used in conjunction with the MBS.

### Relock Time Delay (RTD)

Relock time can be changed. Range is 1 - 30 seconds.

## Models

### M420 (Traffic Control)

UL1034 and 10C/500lb and 3hr rating

### M450 (High Security)

UL1034 and 10C/1000lb and 3hr rating

### M490 (Max Security)

UL1034 and 10C/1500lb and 3hr rating

## Trims

### Basic

Auto Voltage Selection (AVS) for 12 or 24VDC

### Plus

Basic features + Door Position Switch (DPS), Magnetic Bond

## UL Requirements

- Units shall not impair operation of panic hardware mounted on door.
- Units shall not impair intended operation of an emergency exit.
- Units/Models are intended to be connected to UL Listed Equipment, not intended for Burglar or Fire Alarm Initiating or Indicating Devices.
- Ambient Conditions - "For Indoor Use Only".
- **This device complies with part 15 of FCC rules.**

Operation is subject to following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including any interference that may cause undesired operation. Changes or modifications not expressly approved by party responsible for compliance could void user's authority to operate equipment.

## Electrical Specifications

Model	Amps (12VDC) Per Lock	Amps (24VDC) Per Lock	Holding Force (lbs) Per Coil
M420	0.750	0.380	500
M450	0.750	0.380	1000
M490	0.650	0.350	1500

## Warnings and Cautions

### ⚠ WARNING

Warnings indicate potentially hazardous conditions, which if not avoided or corrected, may cause death or serious injury.

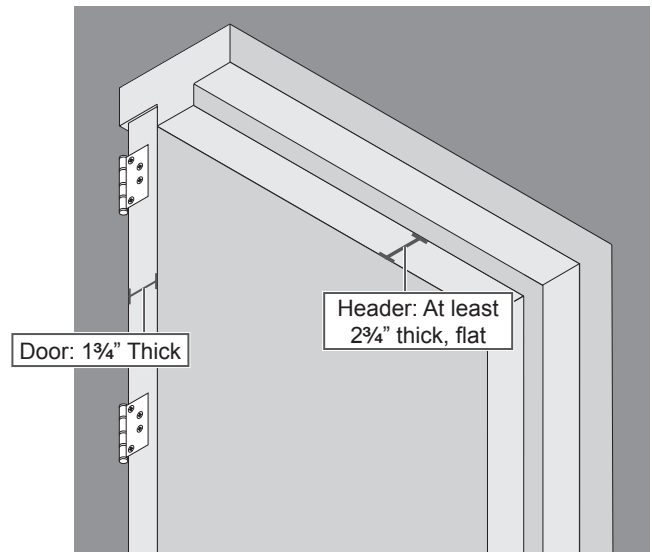
### ⚠ CAUTION

Cautions indicate potentially hazardous conditions, which if not avoided or corrected, may cause minor or moderate injury. Cautions may also warn against unsafe practices.

**Caution:** Cautions indicate a condition that may cause equipment or property damage only.

## Pre-Installation Considerations

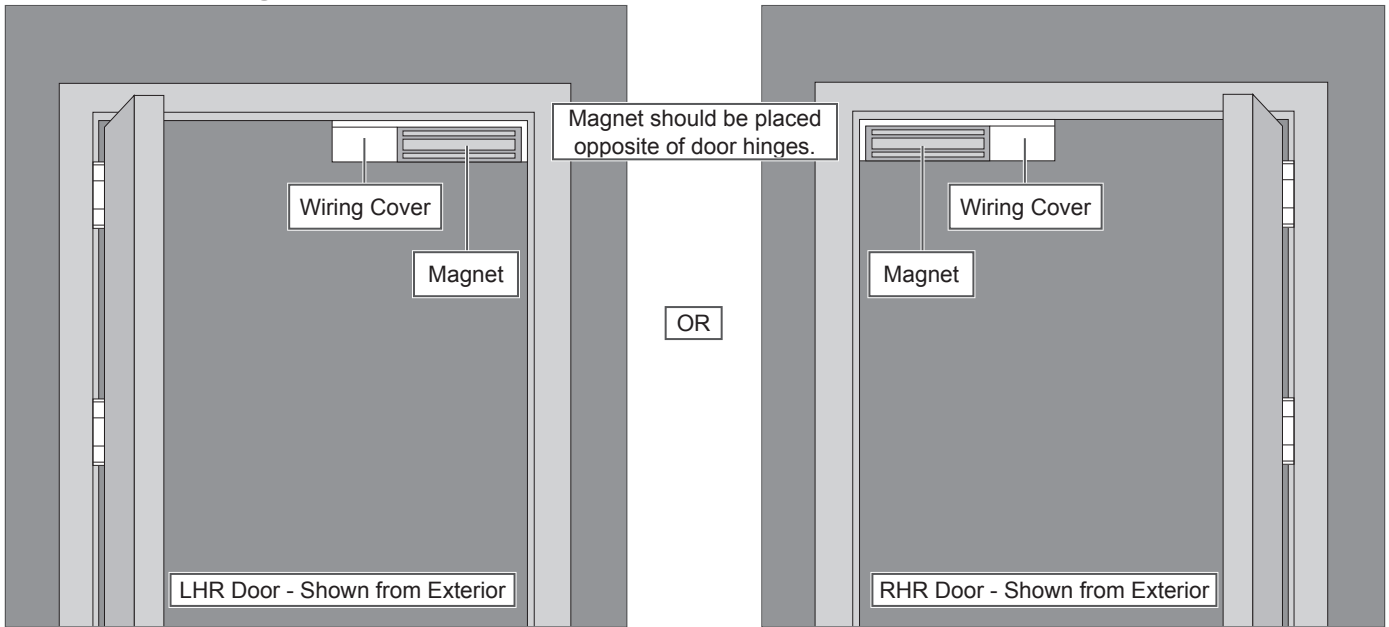
- Use ONLY the hardware provided for mounting this product (NOTE: Non-standard Door thickness may require different sex nut hardware - see specific instructions for required hardware).
- Follow the installation procedure as described in this manual.
- Check door thickness. If the door is not 1 $\frac{3}{4}$ " thick, a different sex nut will be required. Contact customer service at 1-877-671-7011.
- Check door header. A minimum 2 $\frac{3}{4}$ " thick, flat surface is needed to securely mount all screws for the magnet. If you do not have the required surface, you will need filler plates and/or angle brackets to properly mount the magnet. Contact customer service at 1-877-671-7011.



# Lock Installation

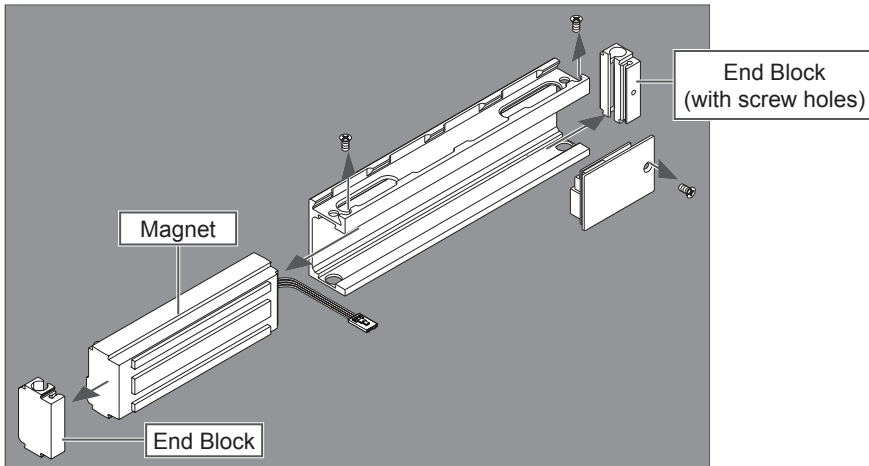
## 1 Prepare for installation.

### 1a Determine proper magnet orientation.

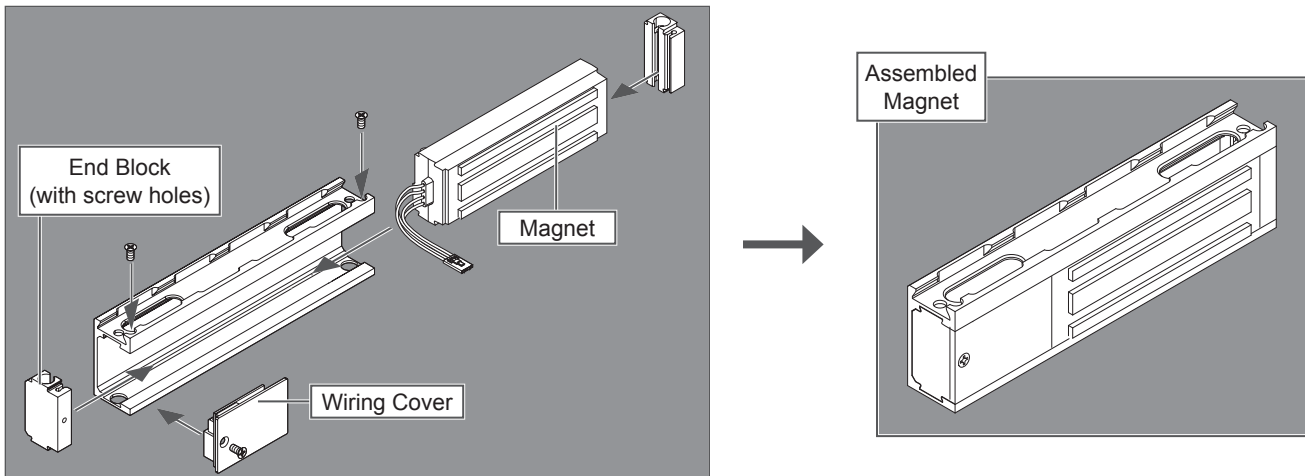


### 1b Reorient magnet (if necessary).

#### a. Remove screws, wiring cover and end blocks.



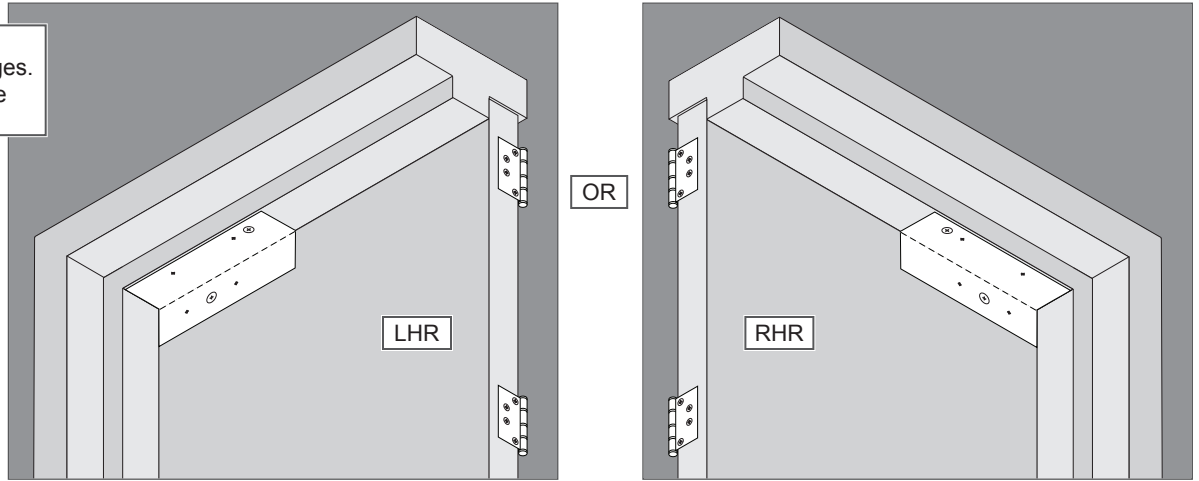
#### b. Rotate magnet, end blocks and wiring cover as shown, then reassemble.





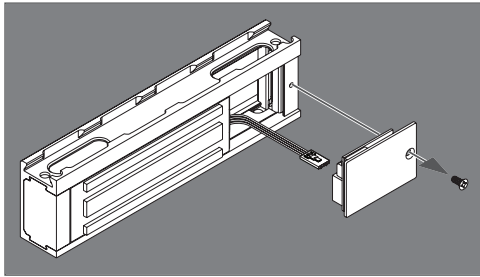
1c Place template and mark holes.

1. Place template on top corner, opposite of hinges.
2. Mark holes and prepare them per template.

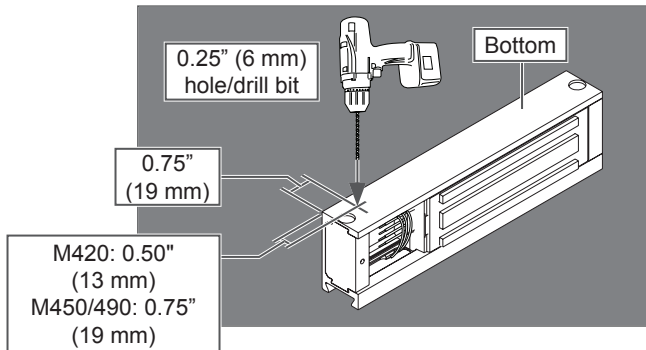


**2** Install MBS indicator (optional, plus models ONLY).

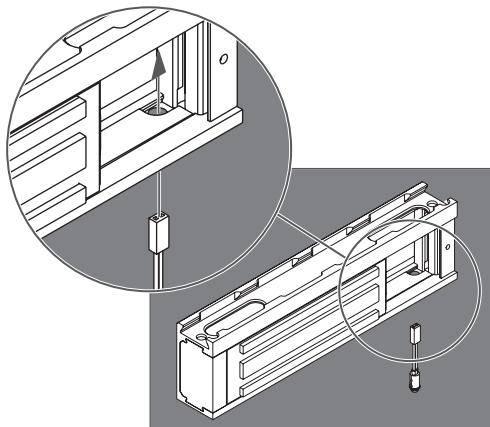
2a Remove cover.



2b Drill hole for MBS indicator.

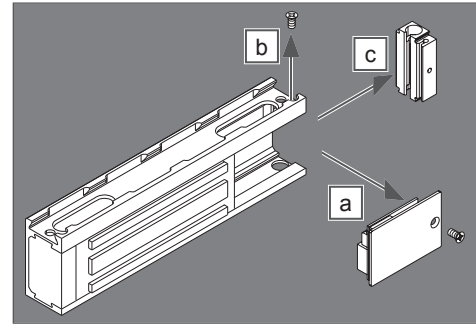


2c Install MBS indicator.

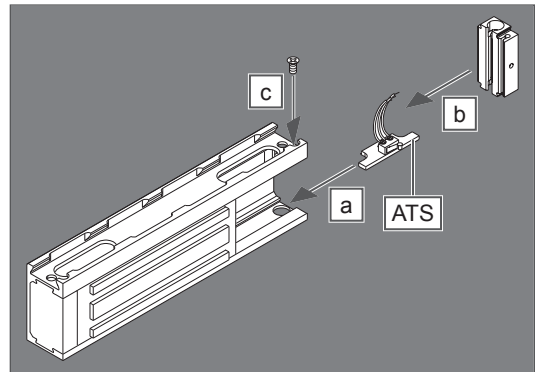


**3** Install ATS (optional, plus models ONLY).

3a Remove end block and wiring cover.

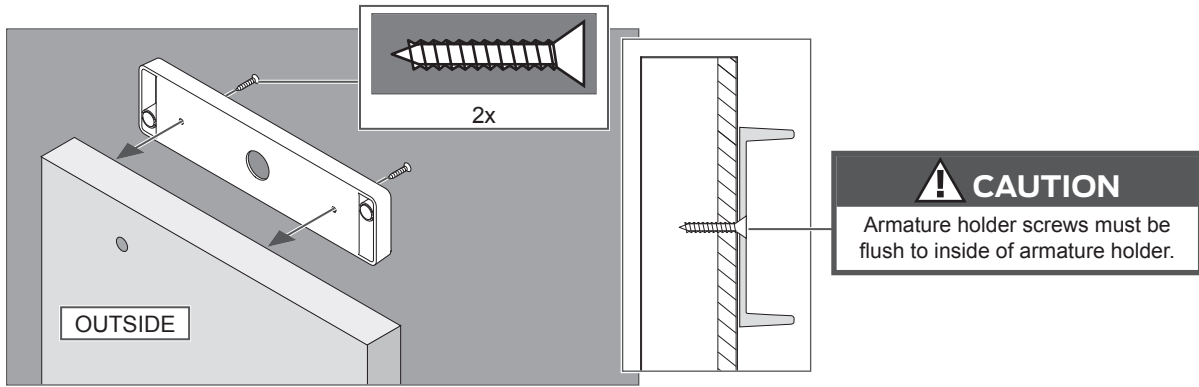


3b Install ATS and Reassemble



## 4 Attach armature to door.

### 4a Install armature holder.



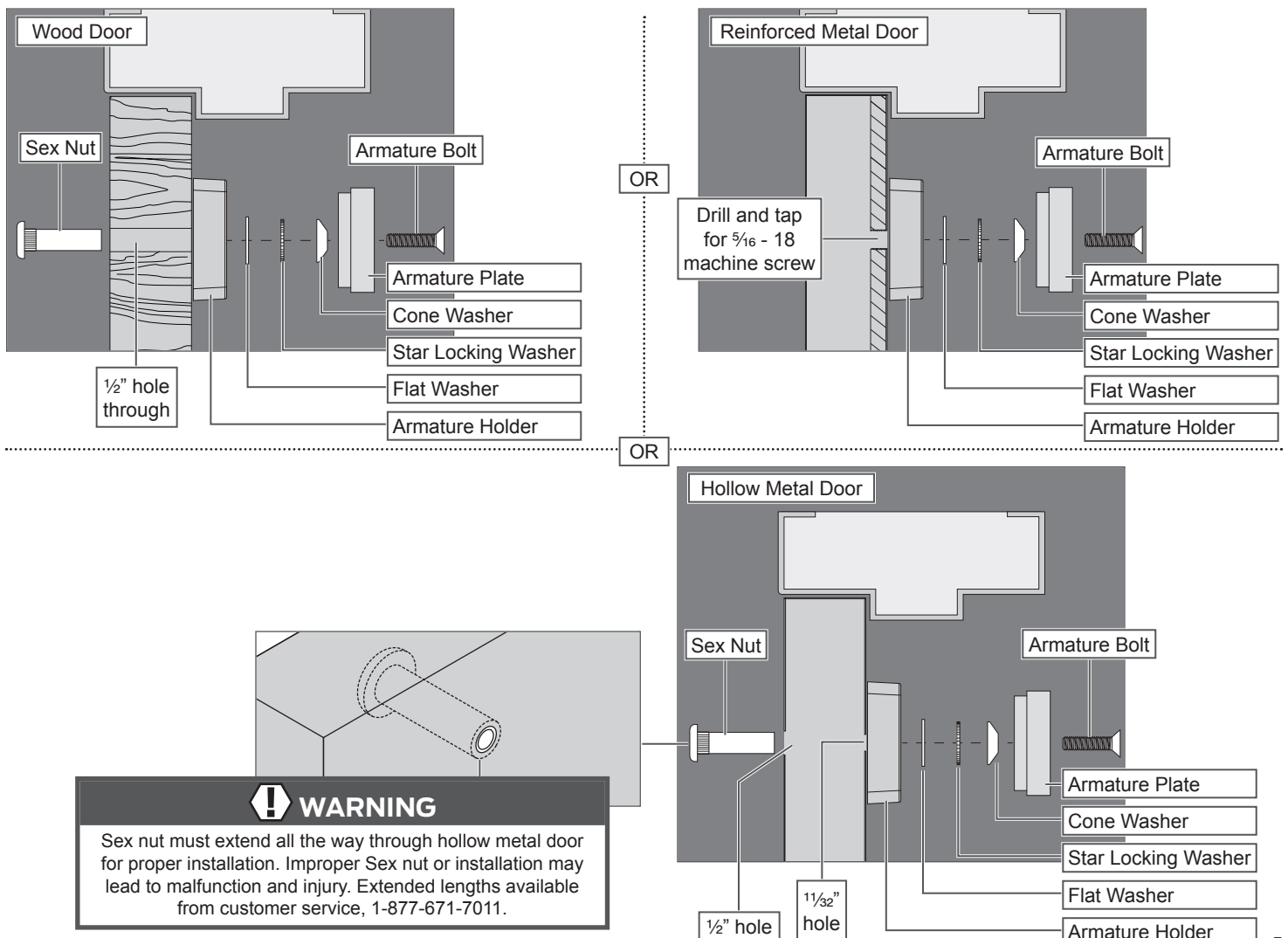
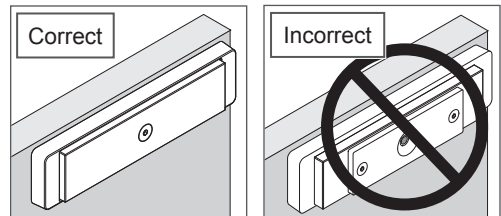
### 4b Install armature plate as shown for door type (M420/M450 shown).

#### WARNING

Armature bolt must be tightened to at least 120 in.-lbs. for all doors except composite wood doors. For composite wood doors, tighten only to tight and flush. 120 in.-lbs. may damage composite wood doors.

DO NOT back off bolt after tightening! Backing off the bolt after tightening will loosen the thread-locking patch, which may allow the bolt to loosen over time.

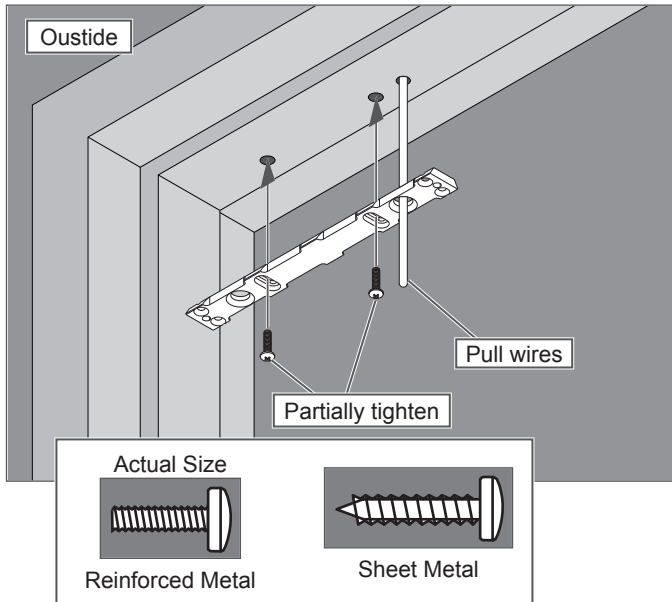
The included sex nut is for 1 3/4" (45 mm) doors ONLY. For other door thicknesses, please contact customer service, 1-877-671-7011. Using the incorrect sex nut for your door thickness will lead to improper function and possible injury.



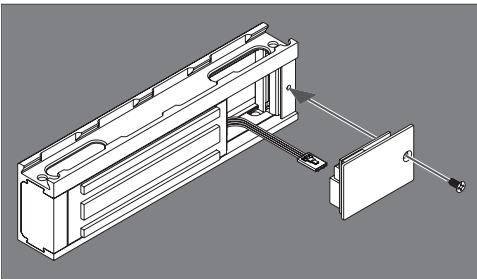
## 5 Install mounting bracket into frame.

5a Attach mounting bracket temporarily

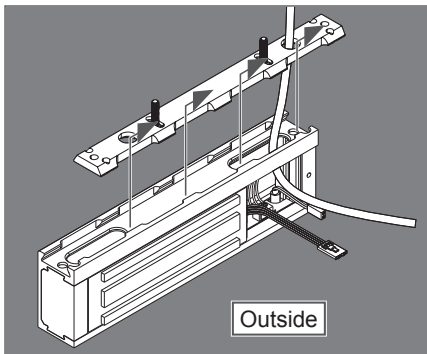
Install two middle screws into slots and partially tighten.



5b Remove wiring cover.

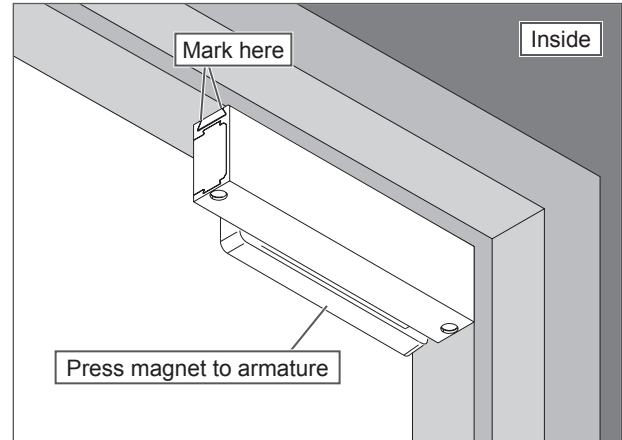


5c Slide magnet onto bracket.



5d Align magnet to armature.

- Close door.
- Press magnet to fully engage with armature.
- Mark bracket location.



5e Fully attach bracket.

- Remove magnet from bracket.
- Check bracket alignment with marks.
- Fully tighten two screws in slotted holes.
- Drill four (4) remaining holes.
- Fully tighten all screws.

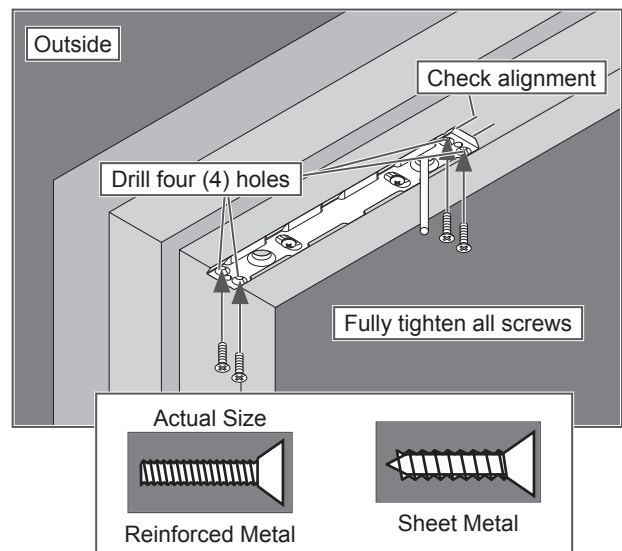
**CAUTION**

All four screws **MUST** be installed for proper operation and safety!

If you do not have enough room to securely fasten all screws, you will need filler plates and/or angle brackets to properly mount the magnet.

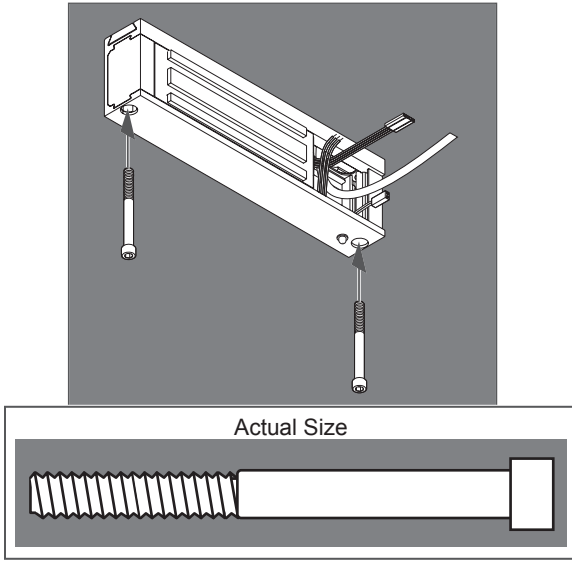
Failure to properly install the screws may lead to injury or property damage.

Contact customer service at 1-877-671-7011.



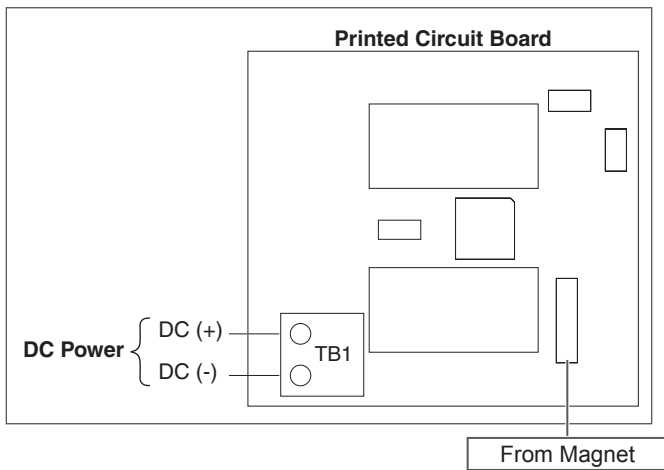
## 6 Install lock

### 6a Install magnet and secure with screws

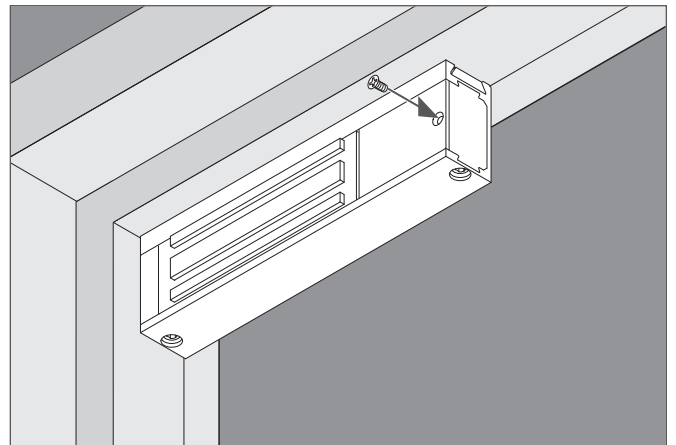


## 7 Connect wiring to board (standard model)

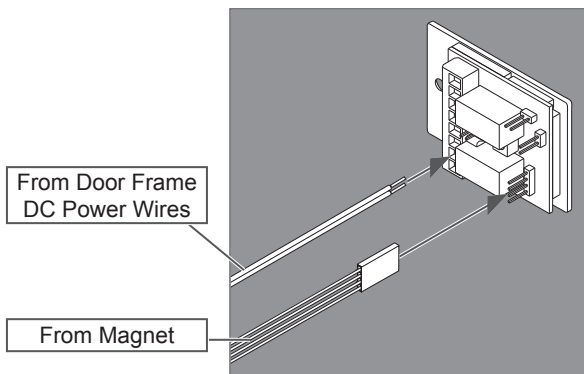
### 7a Review wiring connections



### 7c Install cover.

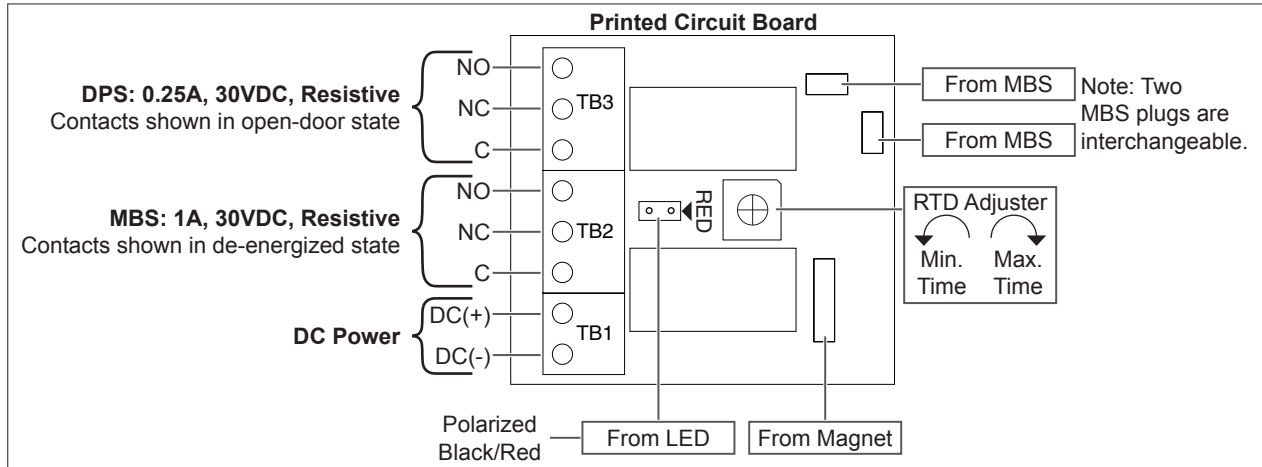


### 7b Connect wires to board

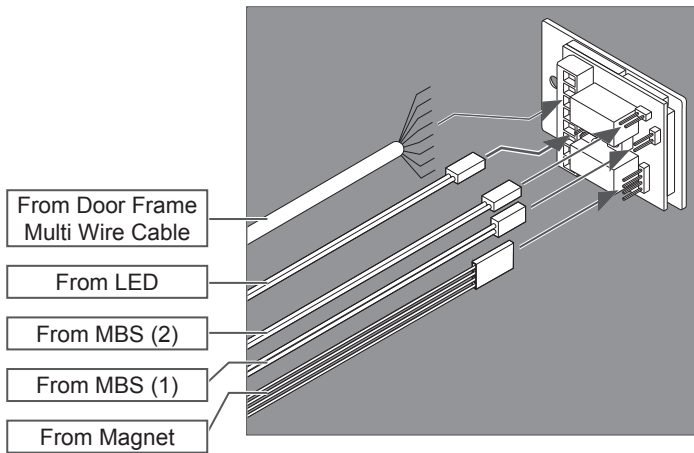


# 8 Connect wiring to board (plus model).

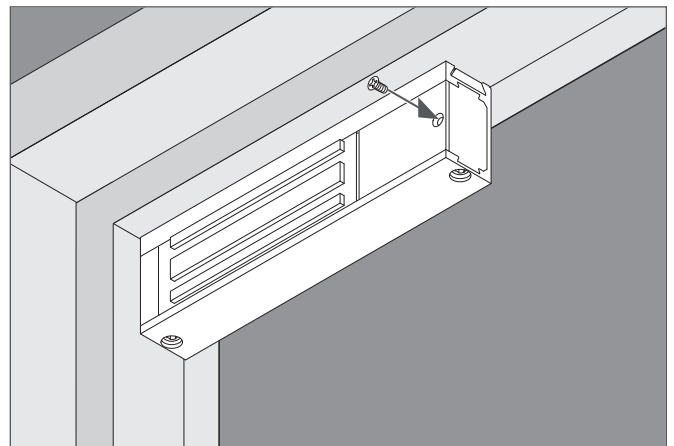
8a Review wiring connections.



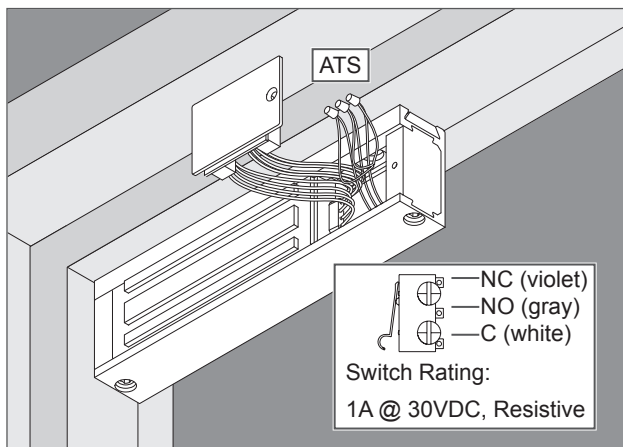
8b Connect wires to board.



8d Install cover.



8c Connect ATS wires.



ⓘ **Note: Some warming of the device under routine operation is normal.**

## Customer Service

1-877-671-7011

[www.allegion.com/us](http://www.allegion.com/us)



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44487312

# M400 Series TJ Locks



Electromagnetic Locks for Inswinging Doors  
M420TJ, M422TJ, M450TJ, M452TJ, M490TJ, M492TJ

Installation Instructions

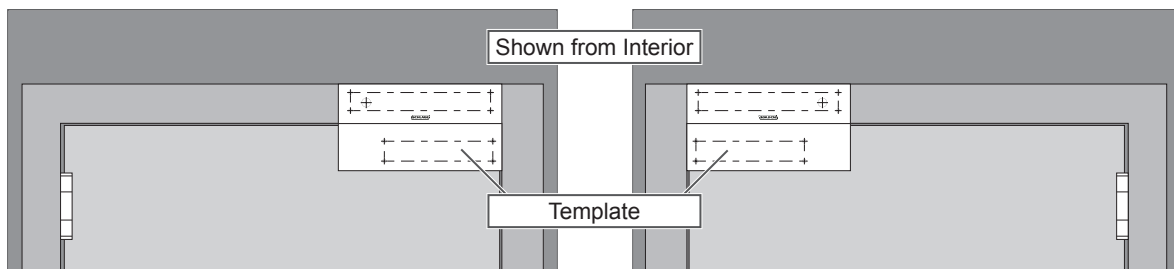
① **These instructions cover only the mounting of the lock(s) using TJ brackets. Before proceeding with installation, see main electromagnetic lock instructions for the following information:**

- Electrical Specifications
- Reorienting the Magnet
- ATS and MBS Indicator Installation
- Connecting Wiring to Board

## 1 Place template and prepare holes.

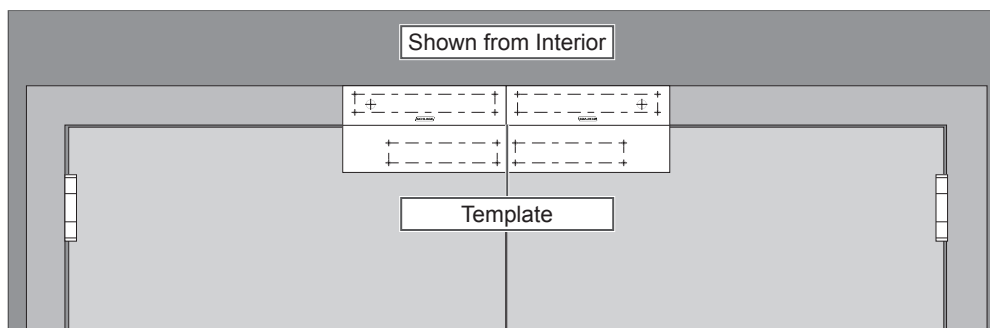
### Single

- Place template on top corner, opposite of hinges.
- Mark holes and prepare them per template.



### Double

- Place template on top centerline of doors.
- Mark holes and prepare them per template.

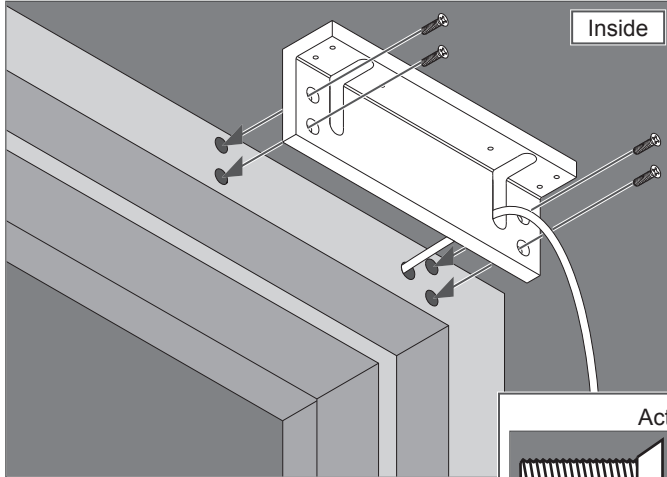


## 2 Reorient the magnet(s)

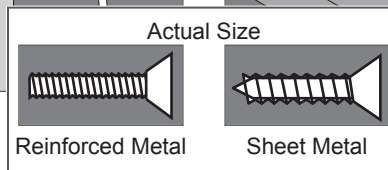
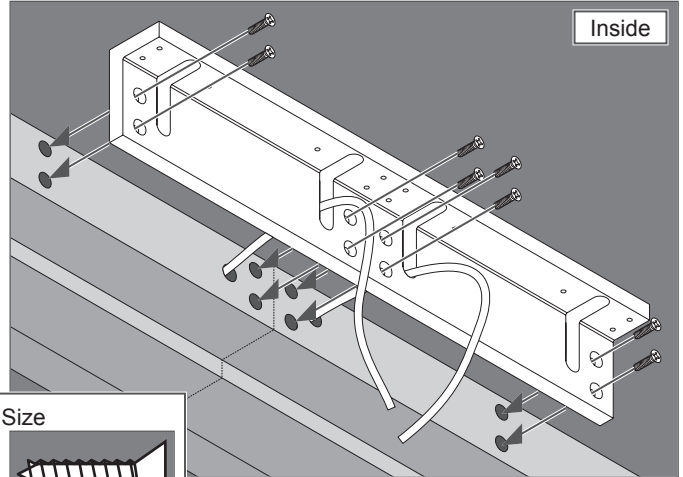
- **SINGLE LOCKS:** The magnet may need to be reoriented before installation, depending on the handing of your door.
- **DOUBLE LOCKS:** The magnet in one of the locks must be reoriented before installation.
- See the instructions that came with your lock(s) for information about magnet orientation.

### 3 Attach frame L-Bracket.

Single



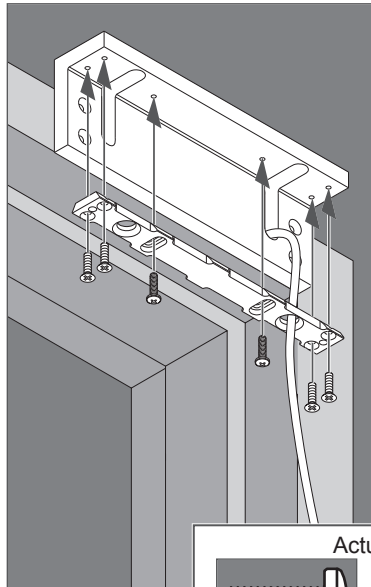
Double



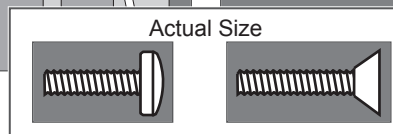
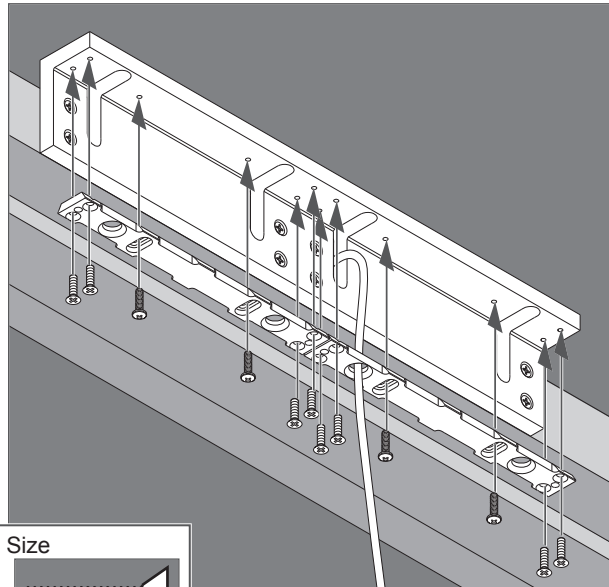
### 4 Attach mounting bracket(s).

- Place template on gate and post surfaces as marked on template.
- Mark holes and prepare them per template.

Single

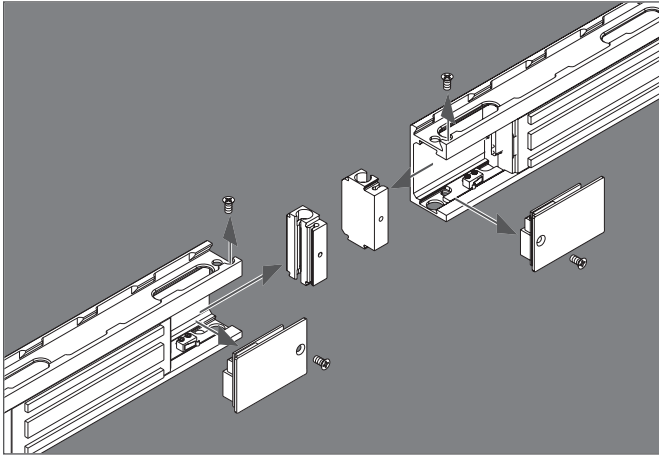


Double

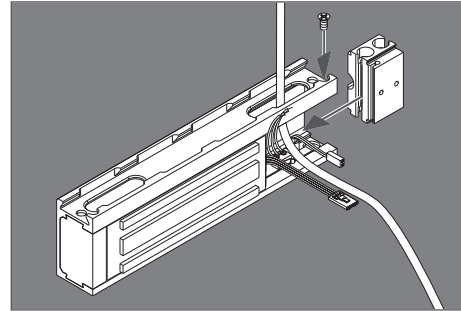


## 5 Double lock ONLY: Install join block.

5a Remove wiring covers and end blocks.

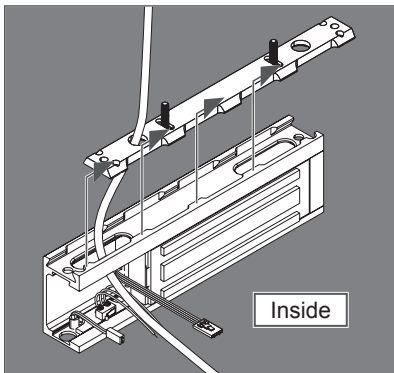


5b Install join block.

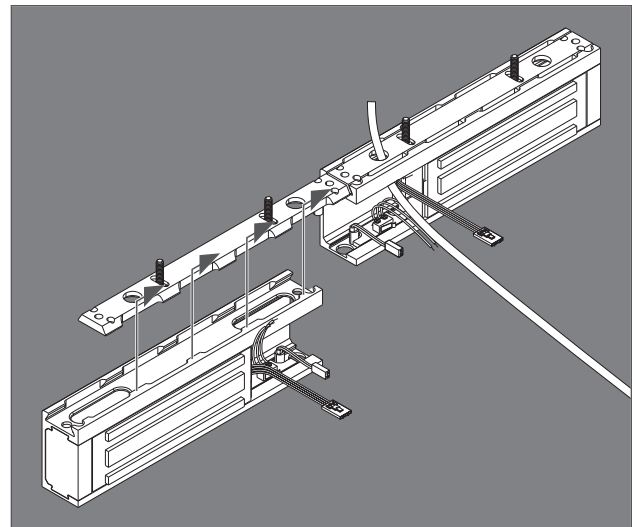


## 6 Install magnet(s).

6a SINGLE AND DOUBLE LOCKS: Slide magnet onto bracket.

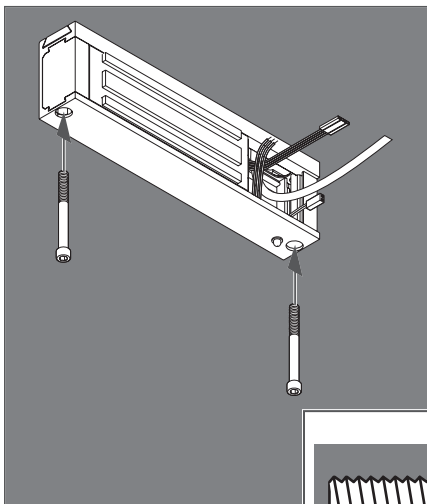


6b DOUBLE LOCK ONLY: Slide second magnet onto bracket. Join block slides into first magnet housing.

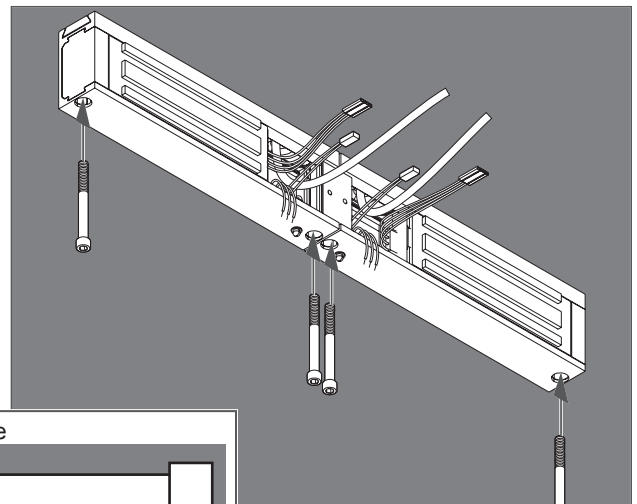


## 7 Secure magnet(s).

7a Single lock.



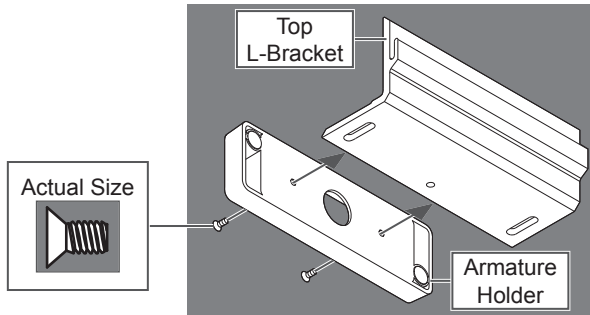
7b Double lock





## 8 Assemble armature

8a Attach armature to top L-Bracket.



8c Attach bottom L-Bracket to door.

### ⚠ WARNING

The included sex nut is for 1¼" (45 mm) doors ONLY. For other door thicknesses, please contact customer service, 1-877-671-7011. Using the incorrect sex nut for your door thickness will lead to improper function and possible injury.

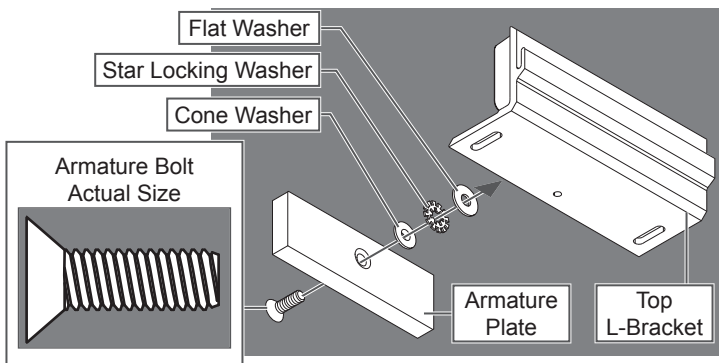
Armature bolt must be tightened to at least 120 in.-lbs. for all doors except composite wood doors. For composite wood doors, tighten only to tight and flush. 120 in.-lbs. may damage composite wood doors.

DO NOT back off bolt after tightening! Backing off the bolt after tightening will loosen the thread-locking patch, which may allow the bolt to loosen over time.

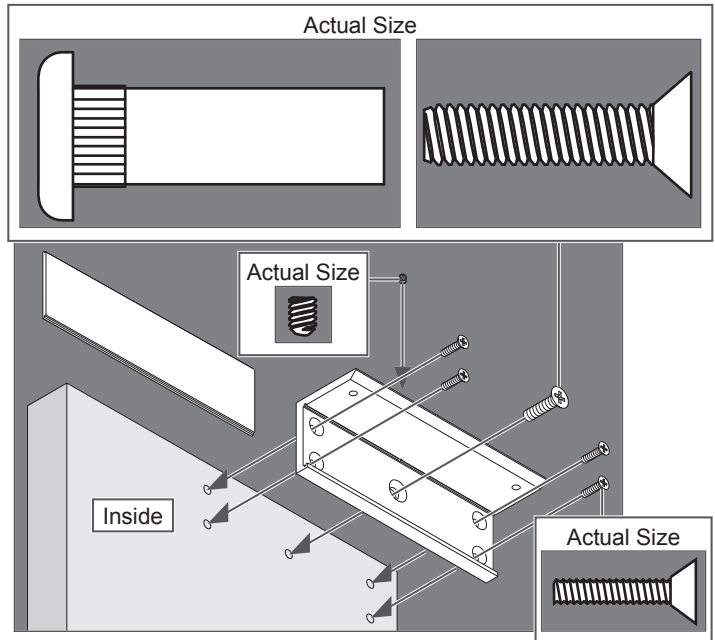
8b Attach armature plate to armature holder.

### ⚠ WARNING

Use bolt from TJ kit.  
M490 armature must be disassembled to replace armature bolt.

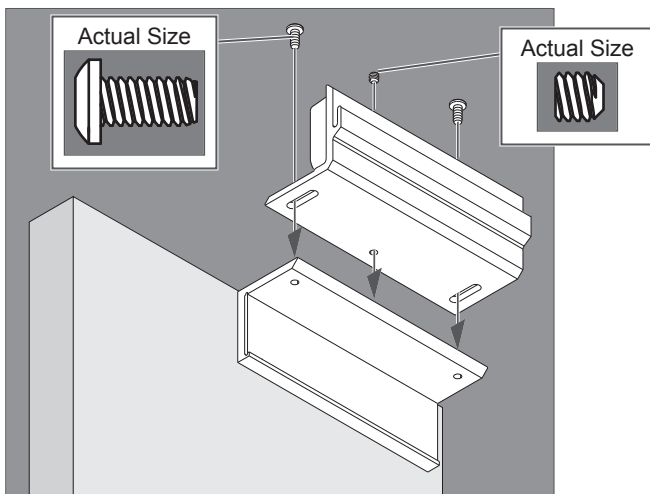


① Use bolt that came with lock.



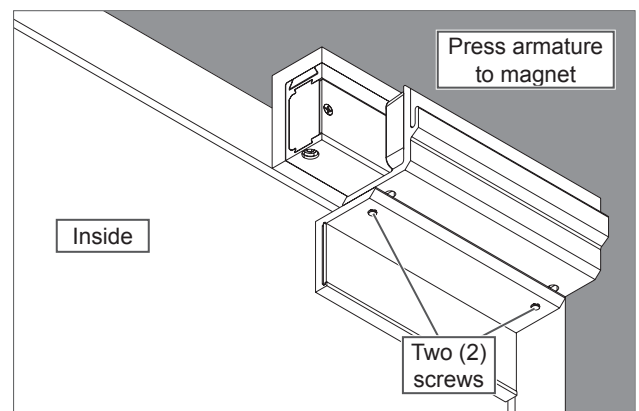
## 9 Attach and adjust armature.

9a Attach armature assembly to bottom L-Bracket



9b Adjust armature

- Close door.
- Press armature to fully engage with magnet.
- Fully tighten two screws and set screw to lock position.
- If double, repeat adjustment process on second door.



### Customer Service

1-877-671-7011 [www.allegion.com/us](http://www.allegion.com/us)



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44487312 Rev. 11/15-d



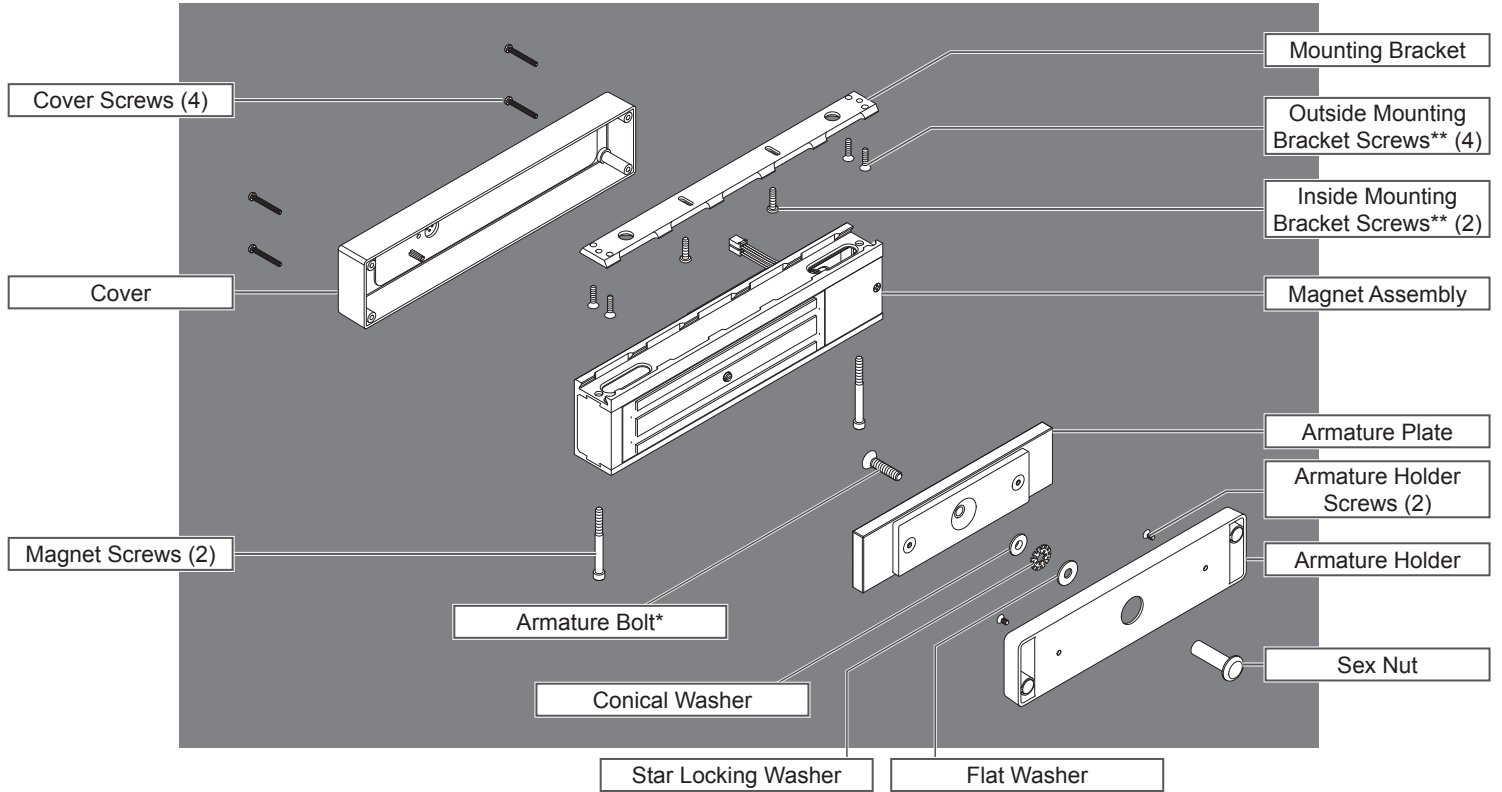
23697279

# M490DE



Electromagnetic Locks

Installation Instructions



\* Two armature bolts may be included in the package, but only one is used. There may be one left over after proper installation.

\*\* Screws for both reinforced metal and sheet metal are included. Some screws will be left over after proper installation. See individual steps for screw identification.

## Features

### Delayed Egress

Unlocking is delayed 15 seconds while an alarm sounds.

### Automatic Voltage Selection

Magnet immediately detects 12VDC or 24VDC when power is connected.

### Fire Unlock

Input from fire system that will unlock the magnet immediately.

### Auxiliary Inputs

Allows use of an auxiliary switch such as an exit device or push button.

### Alarm Output

Activates external alarm, when in alarm state.

### \*Indicators

LED Status and Audible Alarm

### \*Magnetic Bond Sensor (MBS)

Detects proper bond between magnet and armature. It can be monitored remotely and locally with an LED.

### \*Door Position Switch (DPS)

Indicates whether door is open or closed. This feature is used in conjunction with the MBS.

### \*Relock Time Delay

Relock time can be changed. Range is 1 - 30 seconds.

### \*Door Prop Timer

Allows adjustment of the amount of time a door can be propped open before alarm sounds. Range is 0 - 150 seconds.

\* Plus Version Only

## Models

### M490DE (Single Lock Basic)

Delayed Egress, Automatic Voltage Selection

### M490DEP (Single Lock Plus)

Basic features + Magnetic Bond Sensor (MBS), Door Position Switch (DPS), Relock Time Delay, Door Prop Timer, and Indicators

### M490DE-2 (Double Lock Basic)

Double lock with same features as the Basic single lock

### M490DEP-2 (Double Lock Plus)

Double lock with same features as the Plus single lock

### Notes:

- BOCA is a Plus only lock option.
- If BOCA option model is provided, see page 12 for operational description.

## UL Requirements

- Units shall not impair operation of panic hardware mounted on door.
- Units shall not impair intended operation of an emergency exit.
- Not to be used without UL approved latching hardware.
- Units/Models are intended to be connected to UL Listed Equipment, not intended for Burglar or Fire Alarm Initiating or Indicating Devices.
- Ambient Conditions - "For Indoor Use Only".
- Wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70.
- **This device complies with part 15 of FCC rules.**

Operation is subject to following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including any interference that may cause undesired operation. Changes or modifications not expressly approved by party responsible for compliance could void user's authority to operate equipment.

## Electrical Specifications

	Model	
	M490DE M490DEP	M490DE-2 M490DEP-2
Input Current @ 12VDC Input	.75ADC	1.25ADC
Input Current @ 24VDC Input	.45ADC	.76ADC
Holding Force Per Door Leaf	1500 lbs.	1500 lbs.
Size	3" x 12 1/2"	3" x 25 1/16"

## Wire Gauge and Length Specifications

Wire Gauge	Max. Wire Length			
	Single Lock		Double lock	
	12VDC	24VDC	12VDC	24VDC
14	1000 feet	4000 feet	500 feet	2000 feet
18	400 feet	1600 feet	200 feet	800 feet

## Warnings and Cautions

### ⚠ WARNING

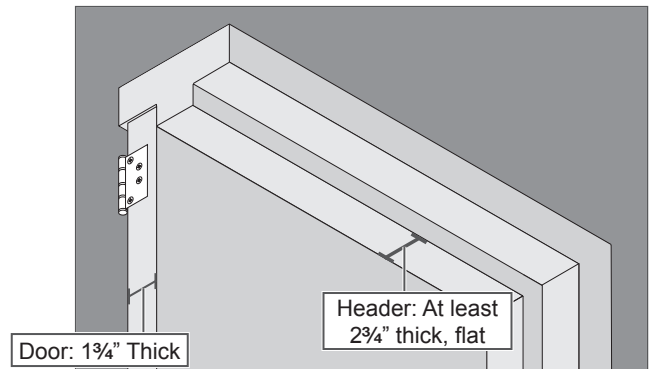
Warnings indicate potentially hazardous conditions, which if not avoided or corrected, may cause death or serious injury.

### ⚠ CAUTION

Cautions indicate potentially hazardous conditions, which if not avoided or corrected, may cause minor or moderate injury. Cautions may also warn against unsafe practices.

## Pre-Installation Considerations

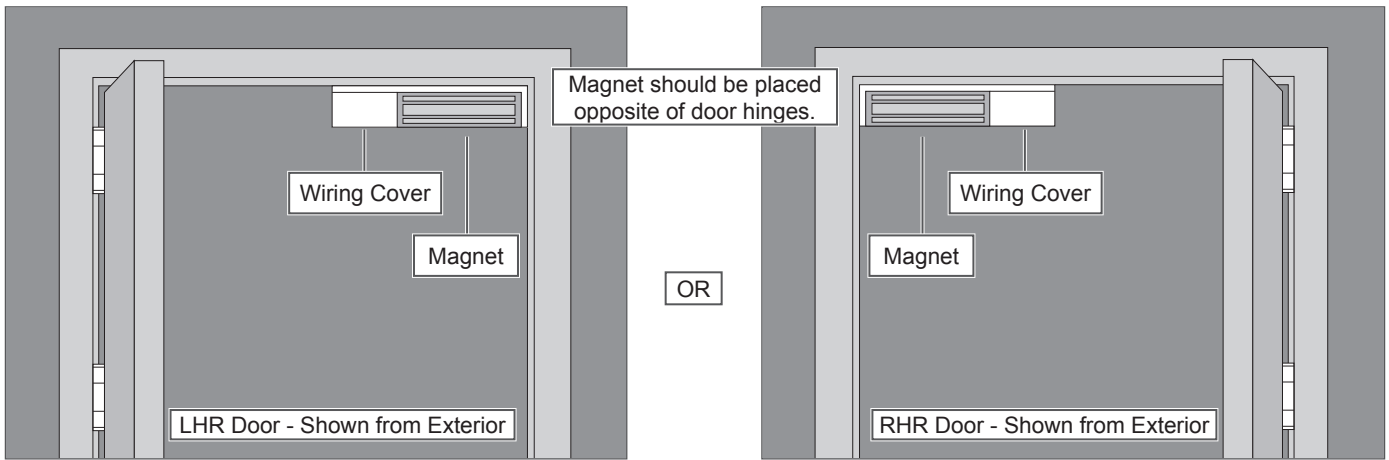
- Use ONLY the hardware provided for mounting this product (NOTE: Non-standard Door thickness may require different sex nut hardware - see specific instructions for required hardware).
- Follow the installation procedure as described in this manual.
- Check door thickness. If the door is not 1 3/4" thick, a different sex nut will be required. Contact customer service at 1-877-671-7011.
- Check door header. A minimum 2 3/4" thick, flat surface is needed to securely mount all screws for the magnet. If you do not have the required surface, you will need filler plates and/or angle brackets to properly mount the magnet. Contact customer service at 1-877-671-7011.



**1** Prepare for installation.

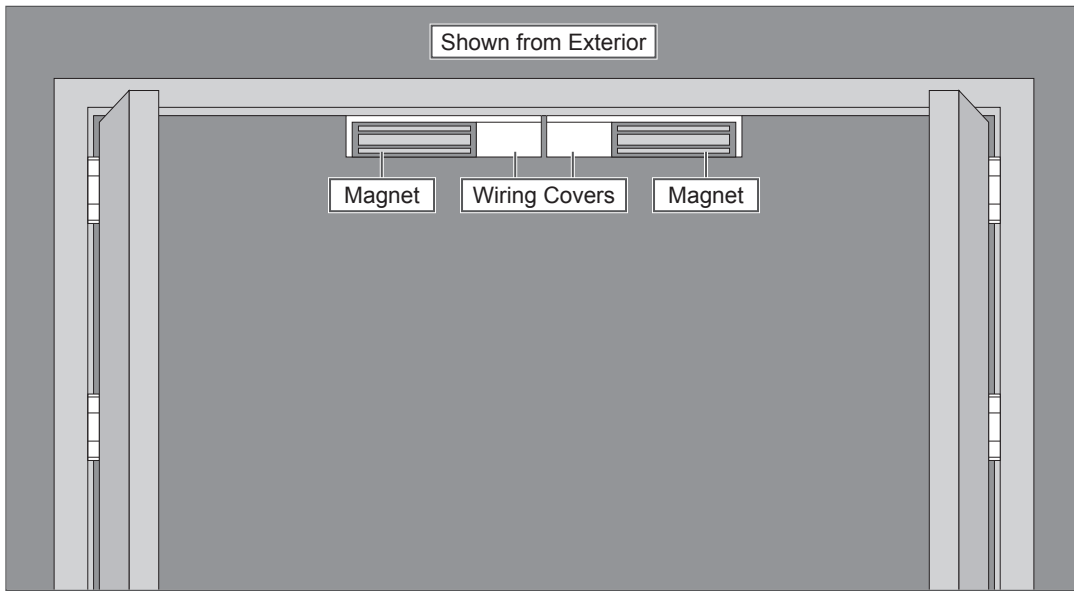
1a Determine proper magnet orientation.

**Single Door**

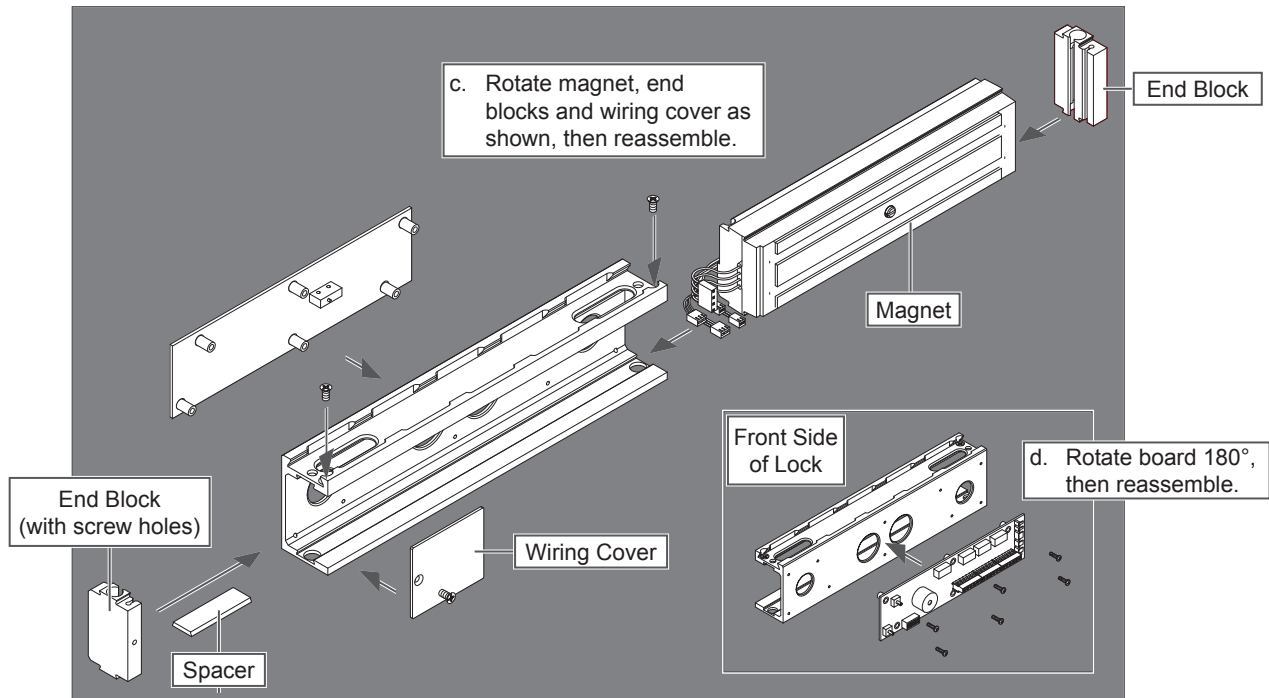
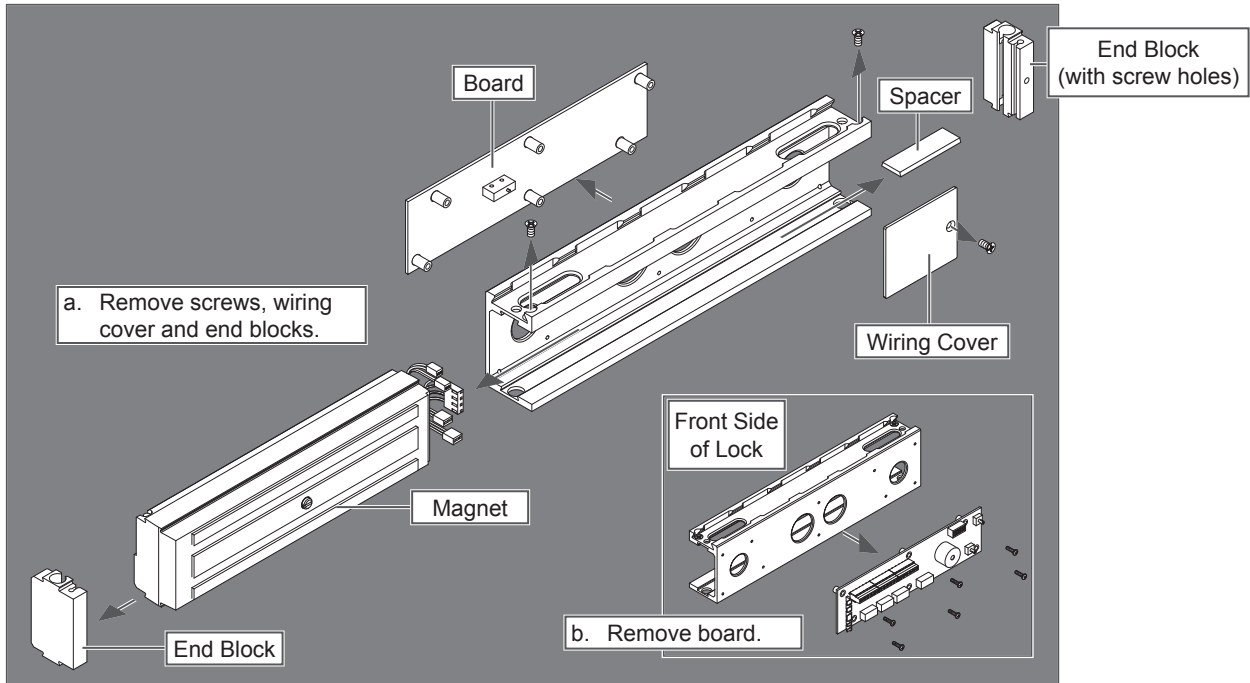


**Double Door**

Locks should be installed with wiring covers in the middle, so the magnet in one of the locks must be reoriented.

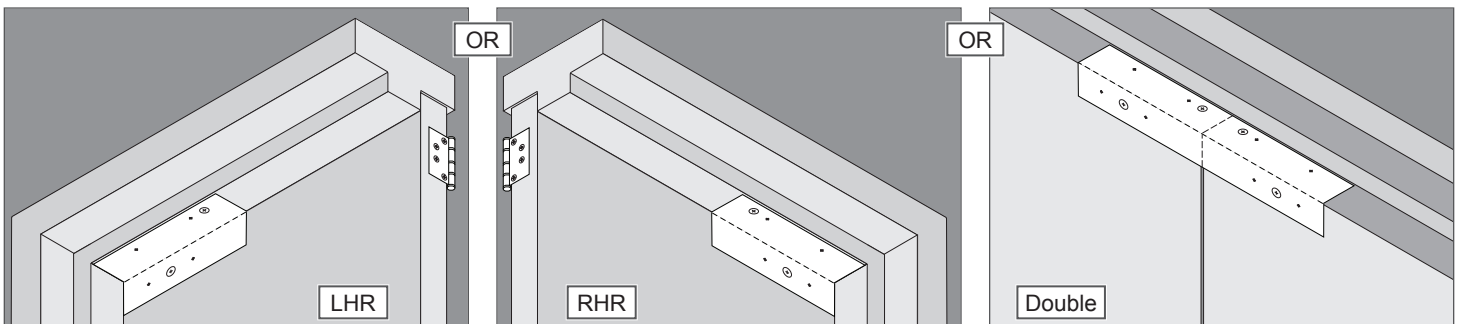


1b Reorient magnet and board (if necessary).



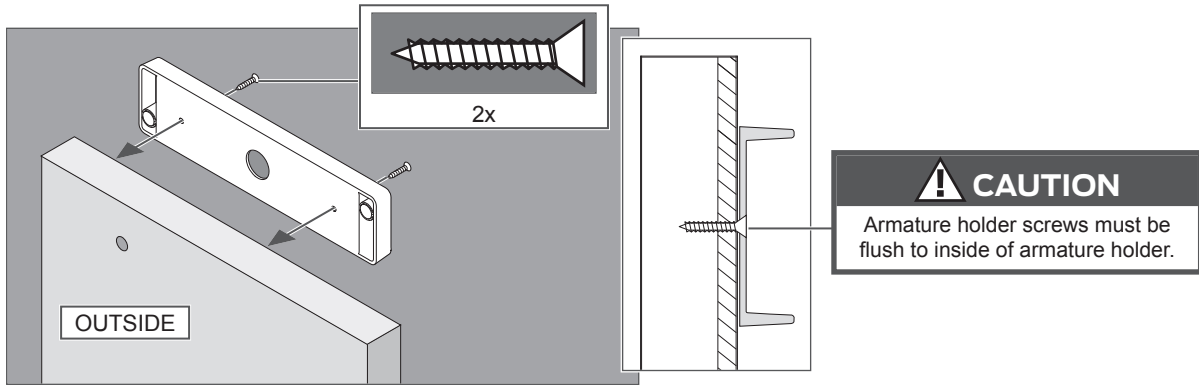
1c Place template and mark holes.

- Place template on top corner, opposite of hinges.
- Mark holes and prepare them per template.



## 2 Attach armature to door.

### 2a Install armature holder.



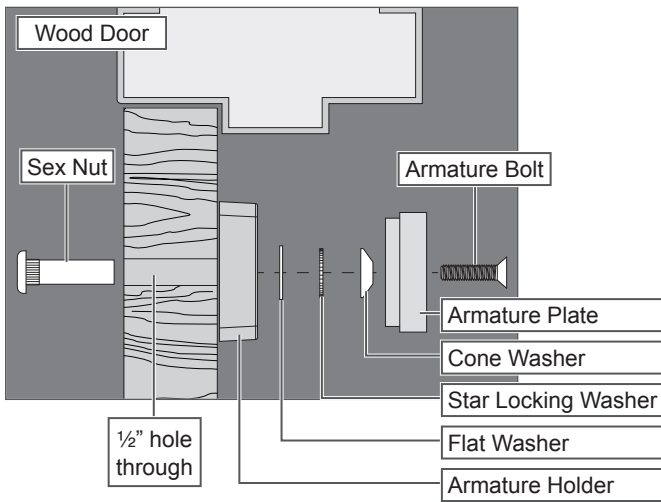
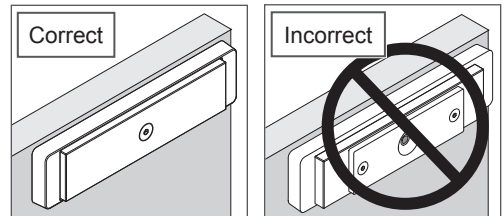
### 2b Install armature plate as shown for door type (M420/M450 shown).

#### **WARNING**

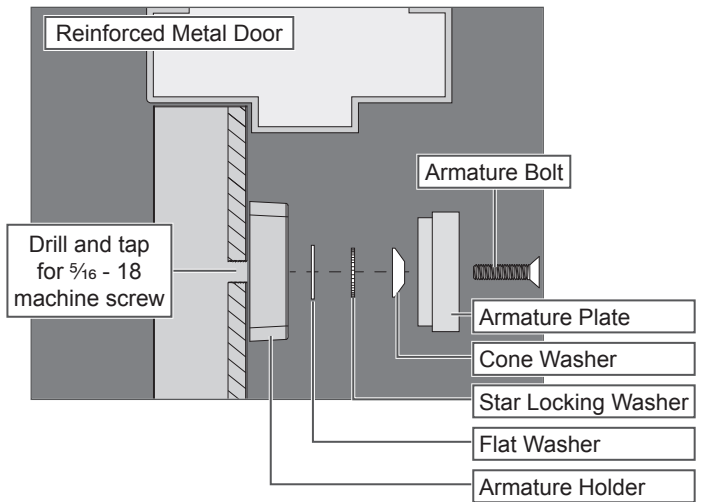
Armature bolt must be tightened to at least 120 in.-lbs. for all doors except composite wood doors. For composite wood doors, tighten only to tight and flush. 120 in.-lbs. may damage composite wood doors.

DO NOT back off bolt after tightening! Backing off the bolt after tightening will loosen the thread-locking patch, which may allow the bolt to loosen over time.

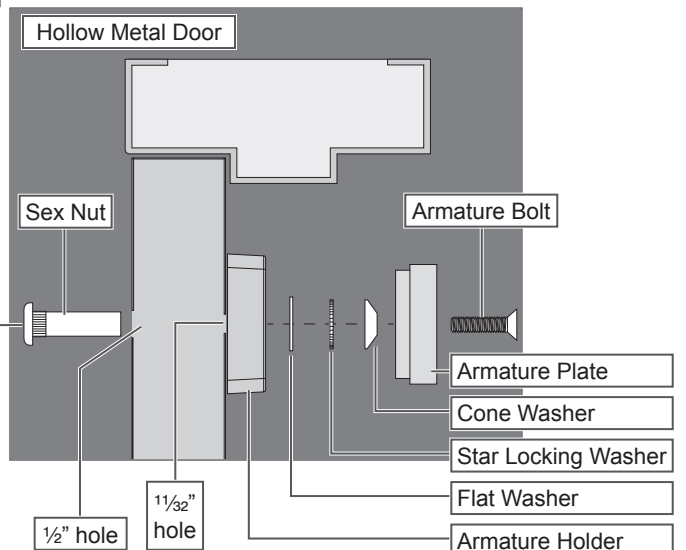
The included sex nut is for 1 3/4" (45 mm) doors ONLY. For other door thicknesses, please contact customer service, 1-877-671-7011. Using the incorrect sex nut for your door thickness will lead to improper function and possible injury.



OR



OR



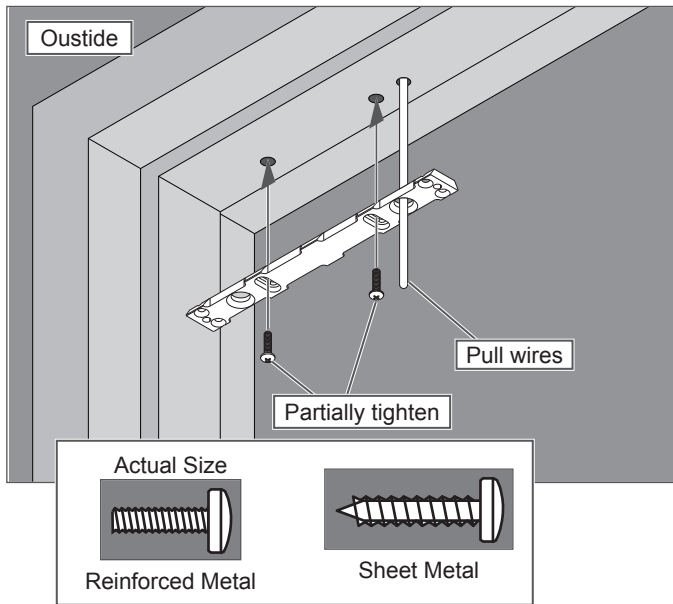
#### **WARNING**

Sex nut must extend all the way through hollow metal door for proper installation. Improper Sex nut or installation may lead to malfunction and injury. Extended lengths available from customer service, 1-877-671-7011.

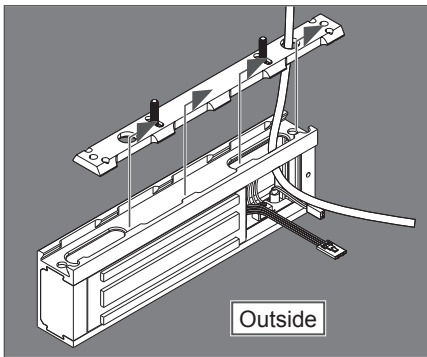
### 3 Install mounting bracket into frame.

3a Attach mounting bracket temporarily.

Install two middle screws into slots and partially tighten.

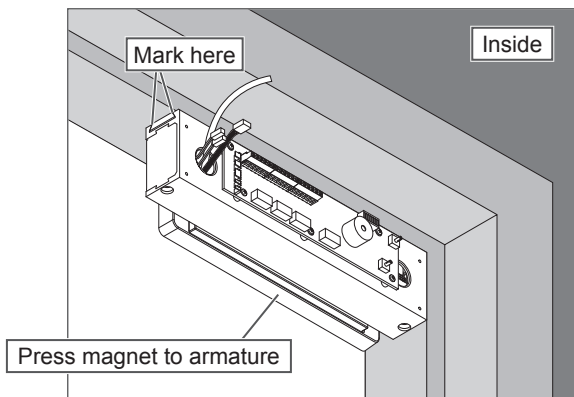


3b Slide magnet onto bracket.

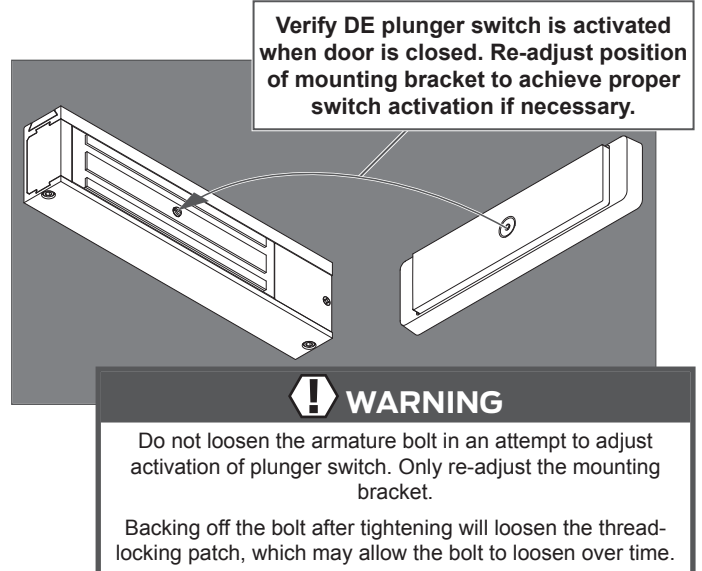


3c Align magnet to armature.

- Close door.
- Press magnet to fully engage with armature.
- Mark bracket location.

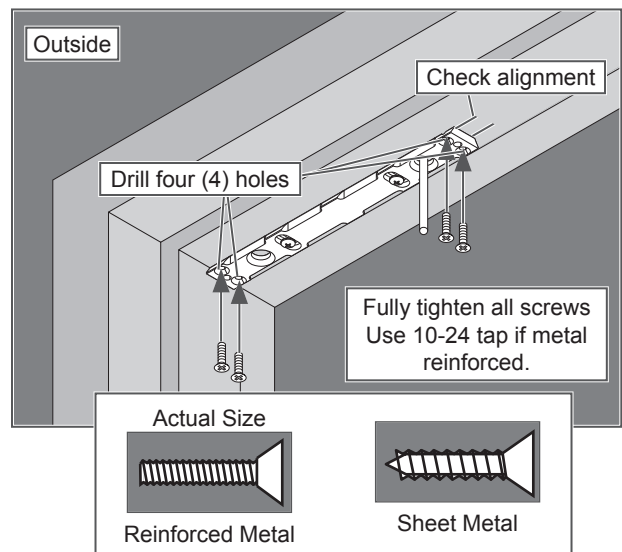


3d Verify that DE plunger aligns with screw head on armature.



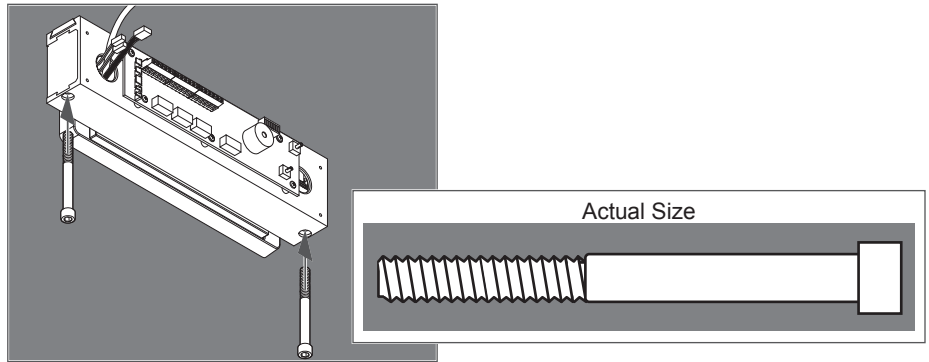
3e Fully attach bracket.

- Remove magnet from bracket.
- Check bracket alignment with marks.
- Fully tighten two screws in slotted holes.
- Drill four (4) remaining holes.
- Fully tighten all screws.



## 4 Install lock

4a Install magnet and secure with screws.



## 5 Connect wiring to board (basic model).

5a Connect plug and wires to board.

**Power Input**  
12/24V DC  
UL 294 Listed, power limited, Class 2, power supply must be used

**Fire Alarm Input**  
Apply a normally closed dry contact or a jumper if not connected to fire alarm.

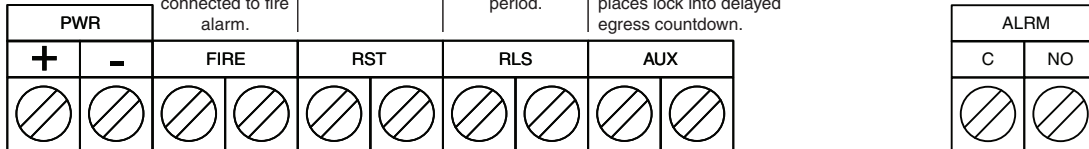
**Reset Input**  
Dry contact closure resets lock in alarm condition.

**Release Input**  
Dry contact closure will release lock for the time delay period.

**Auxiliary Input**  
Apply a normally closed dry contact or a jumper if not using. Opening dry contact places lock into delayed egress countdown.

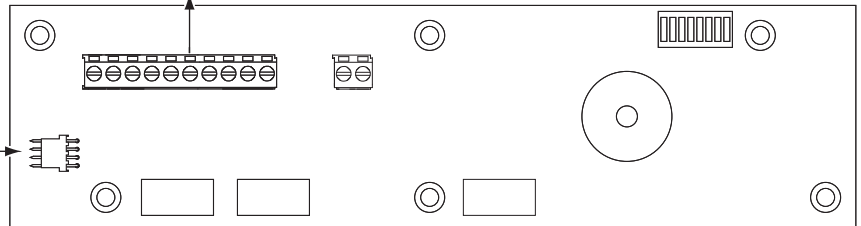
**Alarm Output (Optional)**  
Contacts change state during an alarm condition.

30V @ 1A resistive



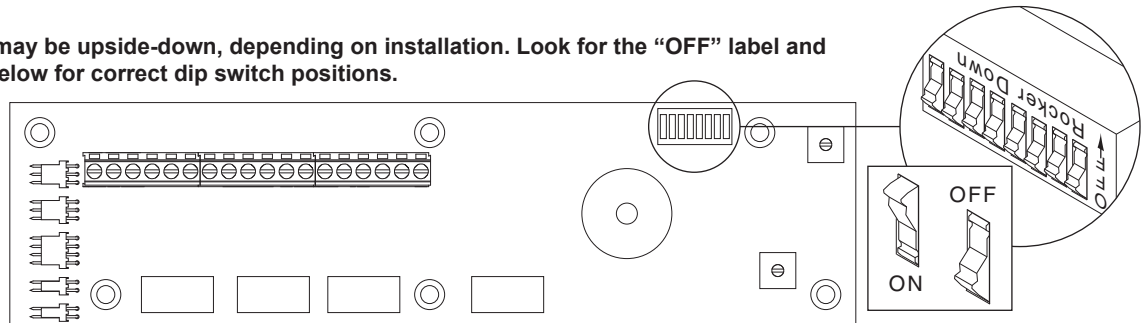
For wire gauge and length specifications, see **"Wire Gauge and Length Specifications"** on page 2.

COILS



5b Set SW2 dip switches.

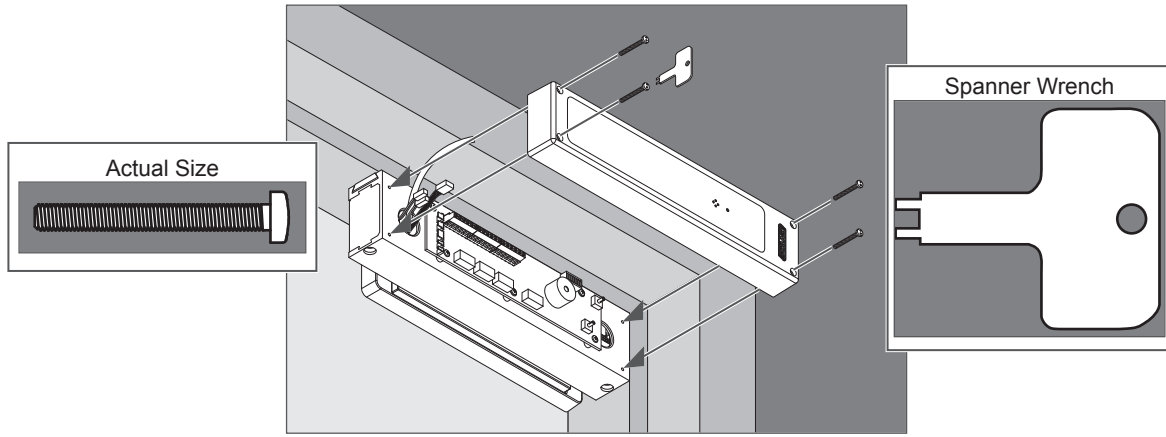
① **NOTE:** Dip switch panel may be upside-down, depending on installation. Look for the "OFF" label and compare to the images below for correct dip switch positions.



Feature	Switch	Setting				Description
Nuisance Delay		0 seconds	1 second	2 seconds	3 seconds	Nuisance delay is the amount of time the door must be pushed or aux input must be pressed before triggering the Delayed Egress Cycle. Programmable to 0-3 seconds.
	1	Off	On	Off	On	
	2	Off	Off	On	On	
Nuisance Alert	3	Off=Disabled		On=Enabled		Causes horn to sound during nuisance delay
Auto Relock	4	Off=Disabled		On=Enabled		When enabled, lock will energize upon regaining power or after a fire alarm condition clears.
Anti-Tailgate (Plus Model Only)	5	Off=Disabled		On=Enabled		Door will relock as soon as it closes – even if the relock time delay has not ended.
Door Propped/Forced (Plus Model Only)	6	Off=Disabled		On=Enabled		Enables door propped and door forced alarms
Unlock Alert	7	Off=Disabled		On=Enabled		Horn sounds whenever door is unlocked and power is still applied to the door
DEL Enabled	8	Off=Disabled		On=Enabled		Enables or disables the DEL plunger switch. Aux Input will always function even if DEL plunger switch is disabled.

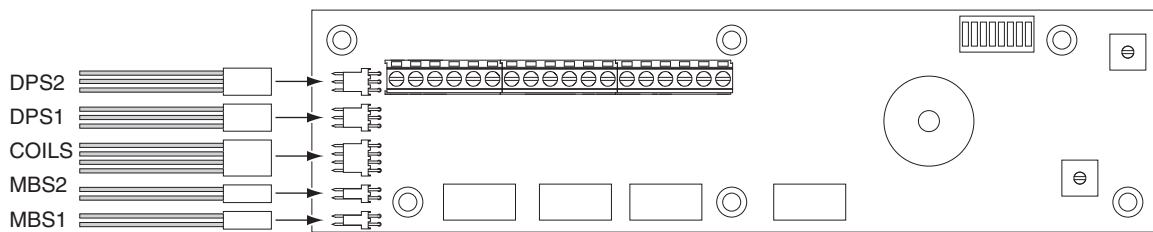


5c Install cover using spanner wrench and security screws.



## 6 Connect wiring to board (plus model).

6a Connect plugs to board.

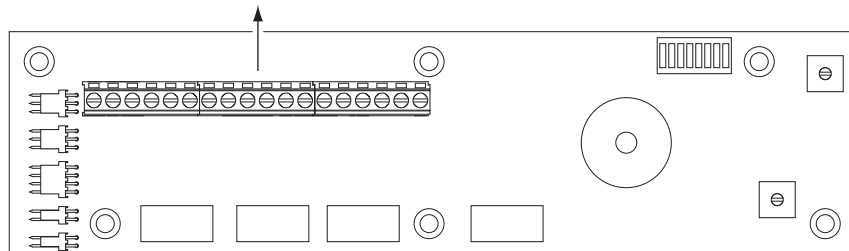


6b Connect wires to board.

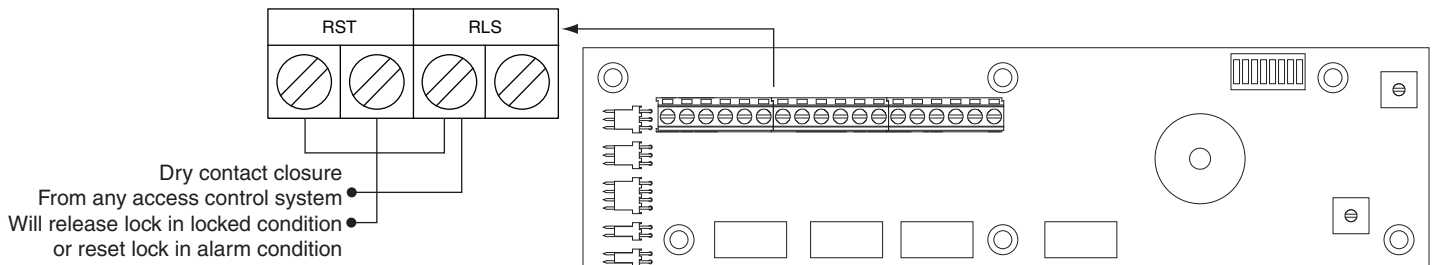
<b>Power Input</b> 12/24V DC  UL 294 Listed, power limited, Class 2, power supply must be used	<b>Fire Alarm Input</b> Apply a normally closed dry contact or a jumper if not connected to fire alarm.	<b>Reset Input</b> Dry contact closure resets lock in alarm condition.	<b>Release Input</b> Dry contact closure will release lock for the time delay period.	<b>Auxiliary Input</b> Apply a normally closed dry contact or a jumper if not using. Opening dry contact places lock into delayed egress countdown.	<b>DPS Output (Optional)</b> Contacts change state when door is closed.  12V @ 200mA 24V @ 100mA resistive	<b>Alarm Output (Optional)</b> Contacts change state during an alarm condition.  30V @ 1A resistive	<b>MBS Output (Optional)</b> Contacts change state when magnet is properly bonded to its armature. Poor bond can be caused by low voltage, misalignment, or damaged mating surfaces.  30V @ 1A resistive
---	--	---	--	--	---	---	--

PWR		FIRE		RST		RLS		AUX		DPS			ALRM		MBS		
+	-									NO	C	NC	C	NO	NO	C	NC

For wire gauge and length specifications, see **"Wire Gauge and Length Specifications"** on page 2.

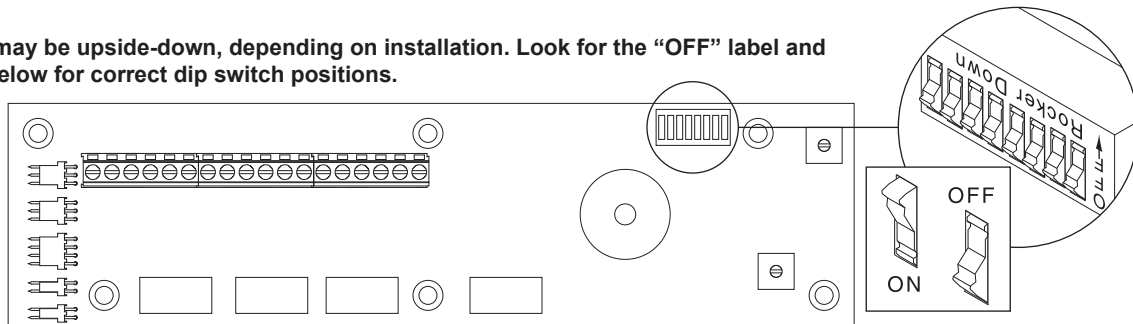


6c (Optional) To use one access control for both Reset and Release, wire as shown.



6d Set SW2 dip switches.

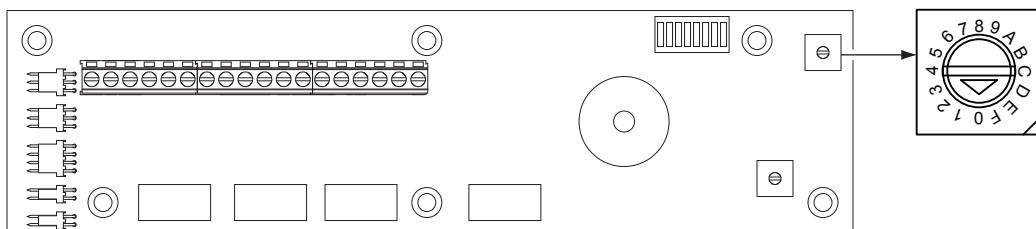
① **NOTE:** Dip switch panel may be upside-down, depending on installation. Look for the “OFF” label and compare to the images below for correct dip switch positions.



Feature	Switch	Setting				Description
Nuisance Delay		0 seconds	1 second	2 seconds	3 seconds	Nuisance delay is the amount of time the door must be pushed or aux input must be pressed before triggering the Delayed Egress Cycle. Programmable to 0-3 seconds.
	1	Off	On	Off	On	
	2	Off	Off	On	On	
Nuisance Alert	3	Off=Disabled		On=Enabled		Causes horn to sound during nuisance delay
Auto Relock	4	Off=Disabled		On=Enabled		When enabled, lock will energize upon regaining power or after a fire alarm condition clears.
Anti-Tailgate	5	Off=Disabled		On=Enabled		Door will relock as soon as it closes – even if the relock time delay has not ended.
Door Propped/Forced	6	Off=Disabled		On=Enabled		Enables door propped and door forced alarms
Unlock Alert	7	Off=Disabled		On=Enabled		Horn sounds whenever door is unlocked and power is still applied to the door
DEL Enabled	8	Off=Disabled		On=Enabled		Enables or disables the DEL plunger switch. Aux Input will always function even if DEL plunger switch is disabled.

6e Set relock time - SW4.

Relock time is the amount of time the lock is de-energized after a valid release. If auto relock is enabled, it also controls the amount of time the lock is unlocked before it automatically relocks after a power-on or fire alarm reset. Programmable 0-30 seconds in 2 second increments.



Setting	Delay in Seconds
0	0
1	2
2	4
3	6

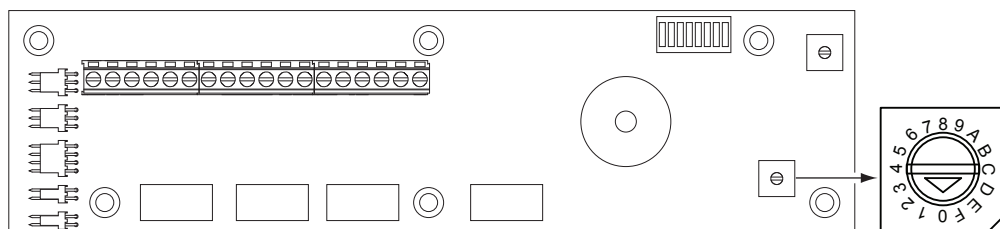
Setting	Delay in Seconds
4	8
5	10
6	12
7	14

Setting	Delay in Seconds
8	16
9	18
A	20
B	22

Setting	Delay in Seconds
C	24
D	26
E	28
F	30

6f Set door prop time - SW3.

The amount of time the door must be propped open (after normal release time delay has ended) before triggering the alarm. The alarm will clear as soon as the door closes again. Programmable 0-150 seconds in 10 second increments.



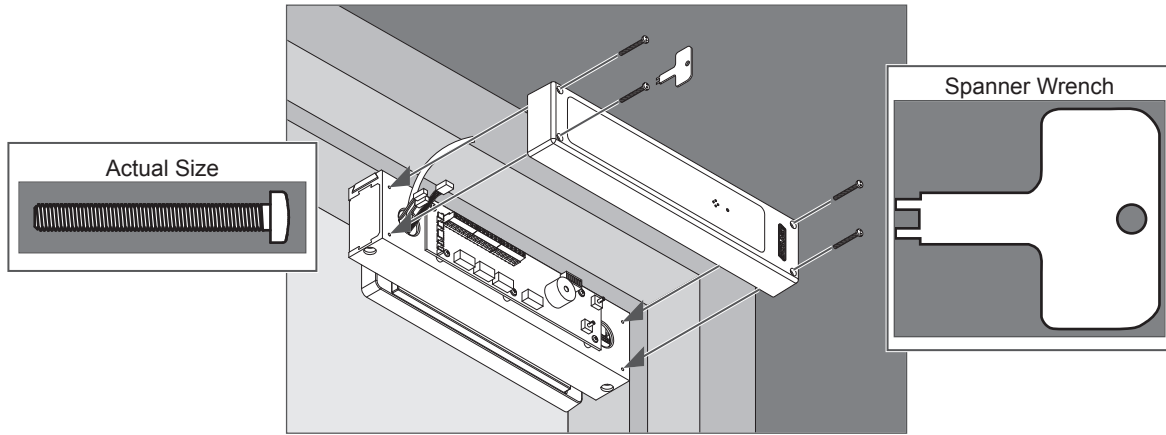
Setting	Delay in Seconds
0	0
1	10
2	20
3	30

Setting	Delay in Seconds
4	40
5	50
6	60
7	70

Setting	Delay in Seconds
8	80
9	90
A	100
B	110

Setting	Delay in Seconds
C	120
D	130
E	140
F	150

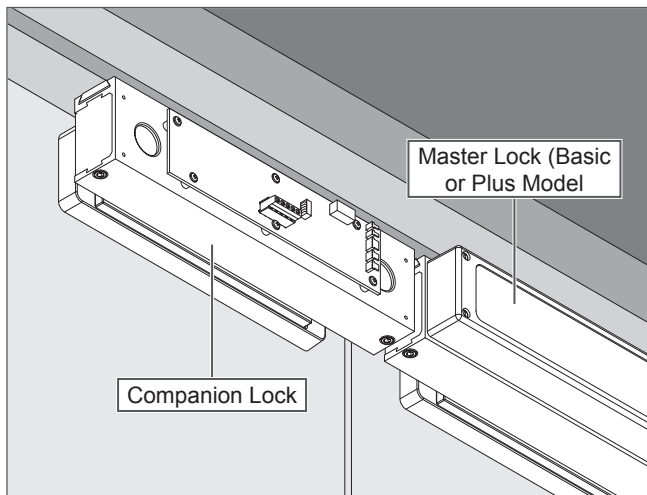
6g Install cover.



**7** If double door, install second lock (M490DE-2 or M490DEP-2).

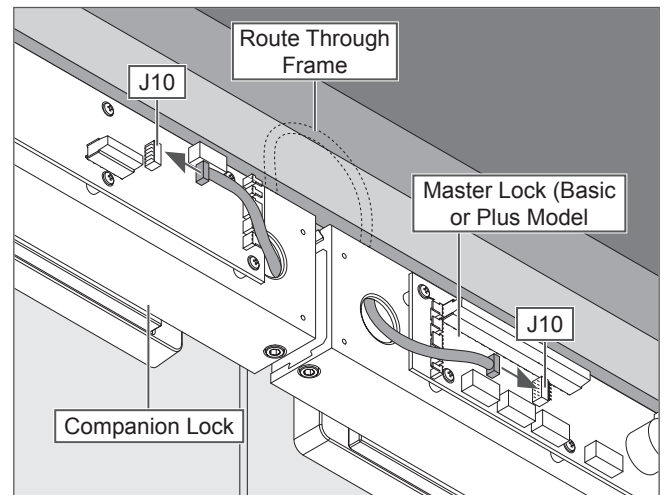
7a Install second lock.

- a. Reorient as needed as shown in step 1b.
- b. Install lock as shown in steps 2-4.

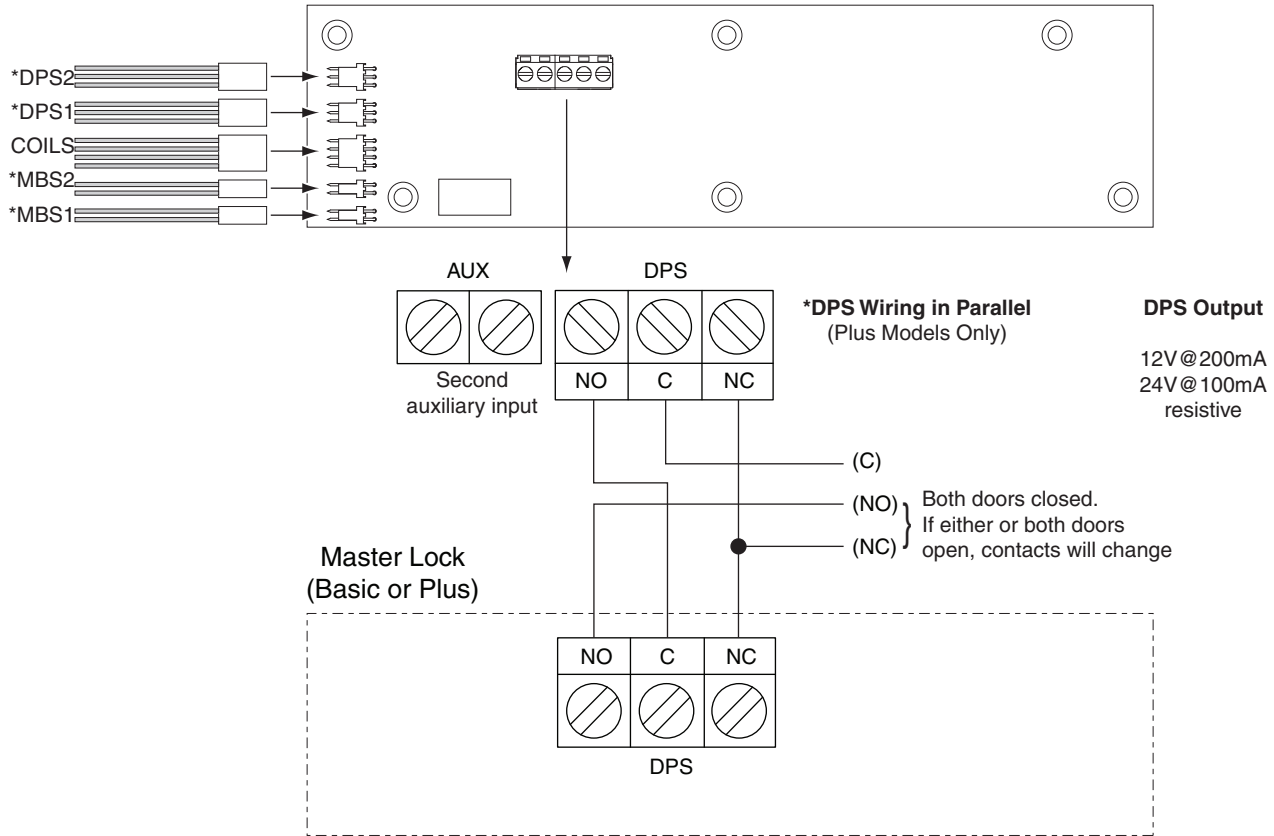


7b Install communication cable.

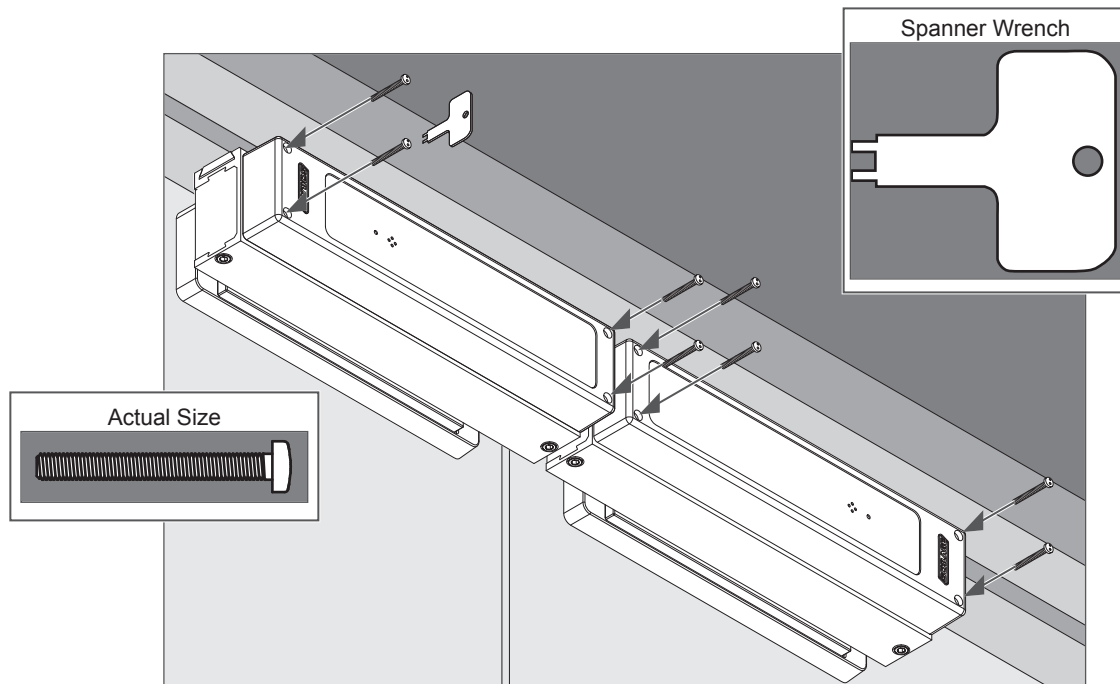
- a. Route cable (supplied) through frame.
- b. Connect cable to each lock.



7c Connect wiring to second lock.



7d Install covers.



① Note: Some warming of the device under routine operation is normal.

## Indicator Table

Condition	LED Indicator	Audible	Alarm Relay State
<b>Standard Features</b>			
Lock Secure	Off	Off	Open
Authorized Release Input	Steady Green	Off	Open
During Nuisance Delay	Steady Red	Off (Default) Set by SW2-3	Open
During Fire Alarm	Steady Green	Off	Closed
During Delayed Egress	Flashing Red	Beeping	Closed
After Delayed Egress	Steady Green	Steady Tone	Closed
<b>Switch Selectable Features</b>			
SW2-7 "ON" = Unlock Alert whenever lock is unlocked	Steady Green	Steady Tone	Open
SW2-3 "ON" = Horn will sound during nuisance alert	Steady Red	Steady Tone	Open
<b>Optional Switch Selectable Features - Plus Model Required</b>			
Door Propped Open Alarm	Flashing Green	Beeping	Closed
Door Forced Open Alarm	Flashing Red	Steady Tone	Closed
Door Forced Open Alarm followed by Delayed Egress Input	Steady Green + Flashing Red	Steady Tone	Closed

## Troubleshooting

Condition	LED Indicator
Lock has power but won't lock. LED (on lock) is Green.	Fire alarm not connected or open connection. SW4-7 not ON (set switch, remove and re-apply power).
Won't go into delayed egress.	Check dipswitch settings
	Armature washers not installed properly
	Magnet not properly aligned with armature.
Goes into delayed egress upon powerup.	Armature washers not installed properly
	Improper gap between magnet and armature
Lock can be pushed open with minimal resistance.	Magnet/Armature/washers not installed properly
Lock "hums" or vibrates noisily when energized.	Magnet/Armature/washers not installed properly
LED(s) flash once quickly.	Relock delay set to 0 sec.
	Keypad not initialized
MBS doesn't change state when locked.	Low voltage. Mechanical misalignment. Debris between lock and armature. Armature/magnet not installed properly
DPS option not working properly.	Armature holder not aligned with DPS switch.
	Switch not plugged into correct jack

## BOCA Operational Description

- ① **BOCA Option is Applicable in United States Jurisdictions Only**
- Lock the door and start the release process by pushing on the actuating bar (or door if no actuating bar provided) for at least 1 second. The door will release within 15 seconds.
  - The door will not relock until the door has been opened, and returned to the closed position for not less than 30 seconds. Any reopening of the door during this time will restart the 30 second relocking cycle.
  - A 30 second release time delay may be provided with code official approval.

### Customer Service

1-877-671-7011      www.allegion.com/us



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23697279 Rev. 11/15-f



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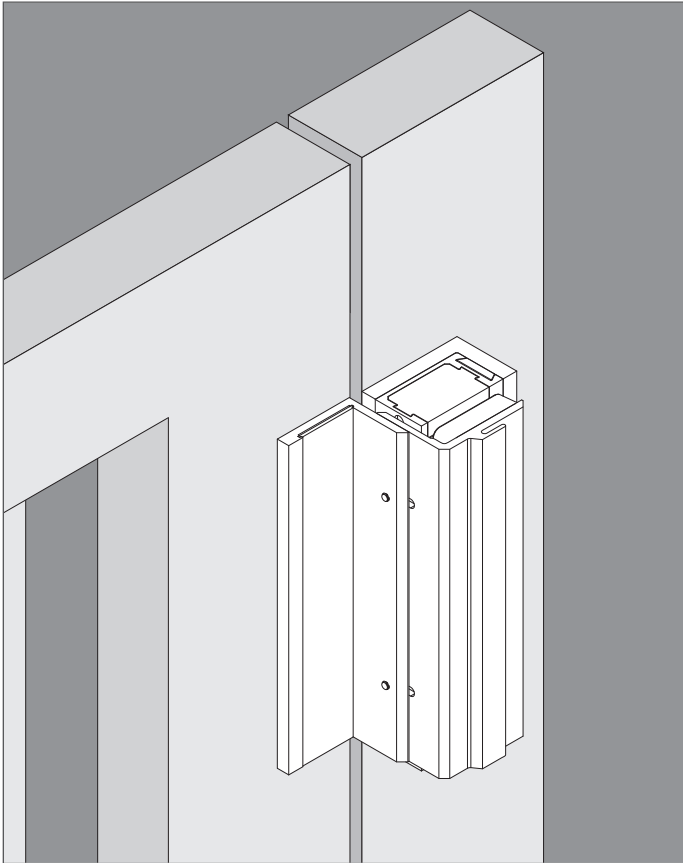
# M490G



Electromagnetic Locks

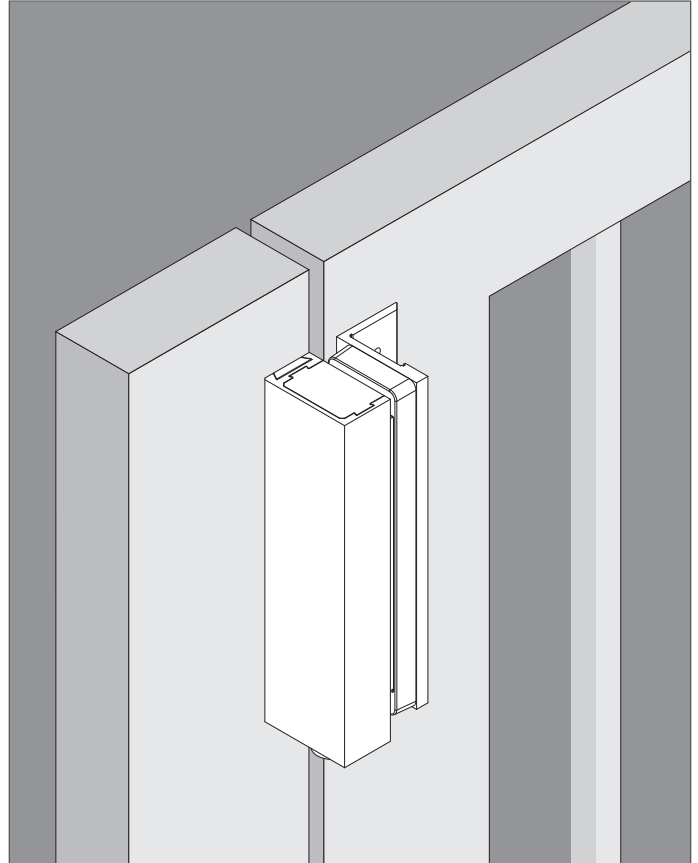
Installation Instructions

## Swinging Application



For swinging application, go to page 3.

## Sliding Application



For sliding application, go to page 5.

## Features

### Magnetic Bond Sensor (MBS)

Detects proper bond between magnet and armature. It can be monitored remotely.

### Door Position Switch (DPS)

Indicates whether door is open or closed. This feature is used in conjunction with the MBS.

## Electrical Specifications

Model	Amps (12VDC) Per Lock	Amps (24VDC) Per Lock	Holding Force (lbs) Per Lock
M490G	0.650	0.350	1500

## Warnings and Cautions

### **WARNING**

Warnings indicate potentially hazardous conditions, which if not avoided or corrected, may cause death or serious injury.

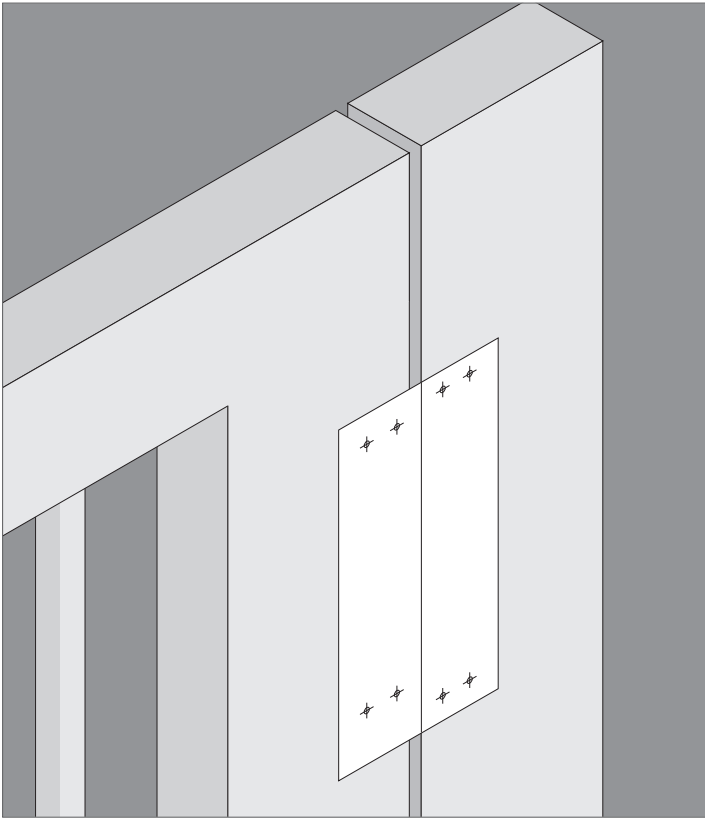
## Pre-Installation Considerations

- Use **ONLY** the hardware provided for mounting this product.
- Follow the installation procedure as described in this manual.
- Operational temperature range is -31°F to 151°F (-35°C to 66°C).

# Swinging Lock Installation

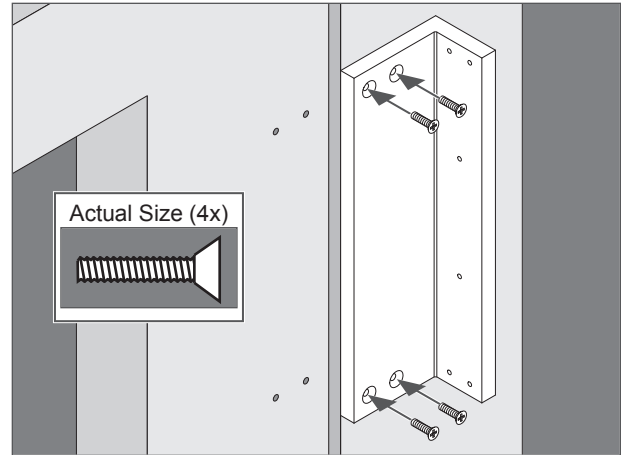
## 1 Place template and mark holes.

- a. Place template on gate and post surfaces as marked on template.
- b. Mark holes and prepare them per template.

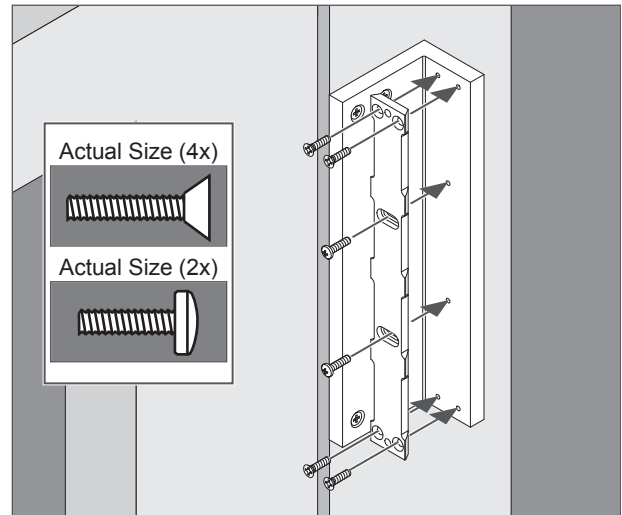


## 2 Install magnet assembly to non-moving post.

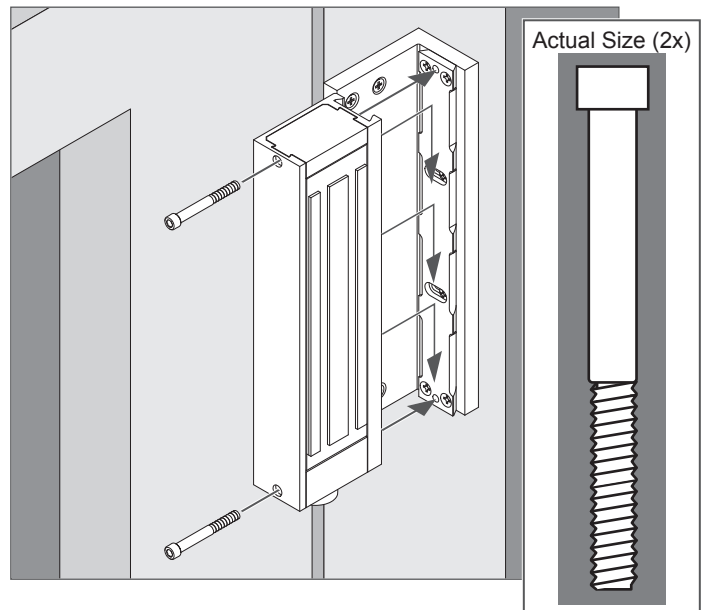
### 2a Attach L-Bracket to gate.



### 2b Attach mounting bracket to L-Bracket.



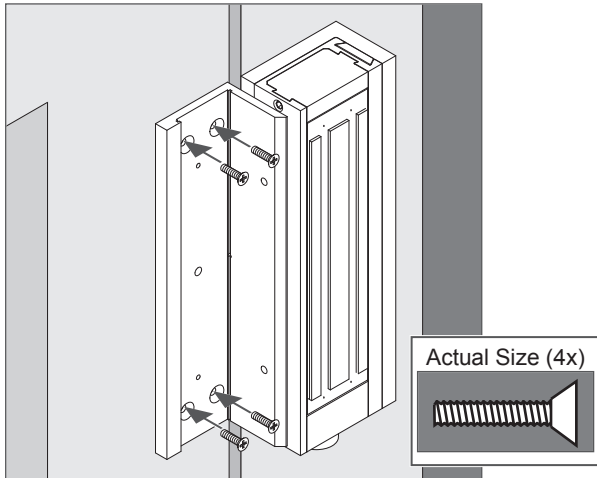
### 2c Attach magnet to bracket.



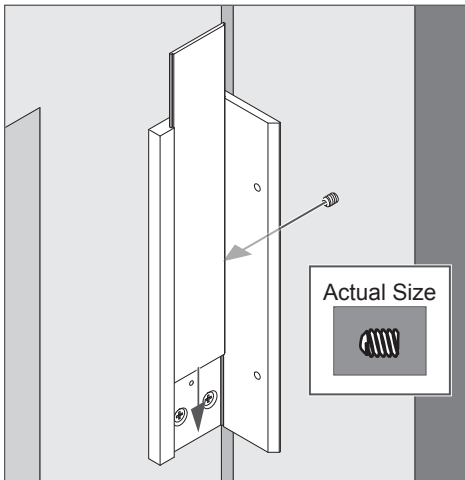


### 3 Install armature to moving part of gate.

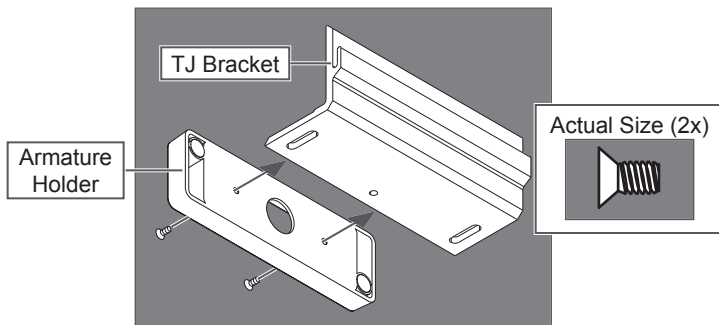
3a Attach TJ bracket to gate.



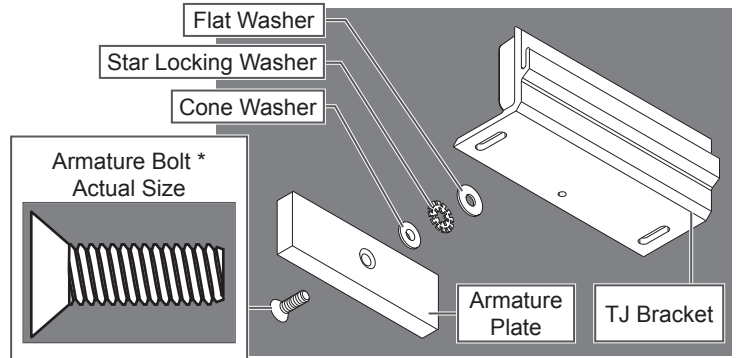
3b Install cover plate.  
 a. Slide cover plate onto bracket.  
 b. Install set screw.



3c Attach armature holder to second TJ bracket.



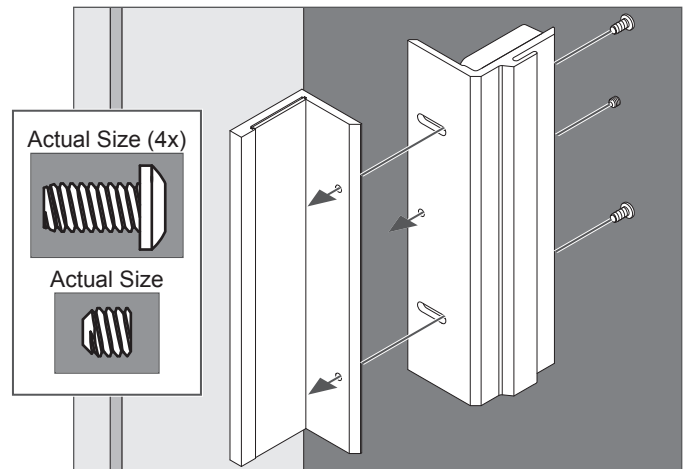
3d Attach armature plate to armature holder.



\* Armature bolt must be tightened to 120 in-lbs. Replace with bolt in Gate kit. M490 armature must be disassembled to replace armature bolt.

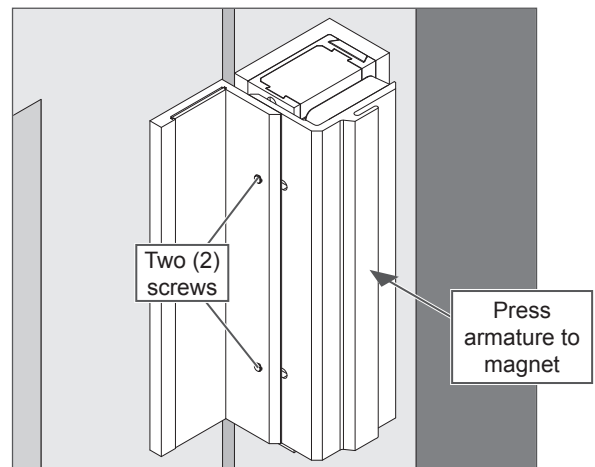
**⚠ WARNING**  
 Backing off the bolt after tightening will loosen the thread-locking patch, which may allow the bolt to loosen over time.

3e Attach two TJ brackets together.



3f Align magnet to armature.

- Close gate.
- Press magnet to fully engage with armature.
- Fully tighten two screws and set screw to lock position.



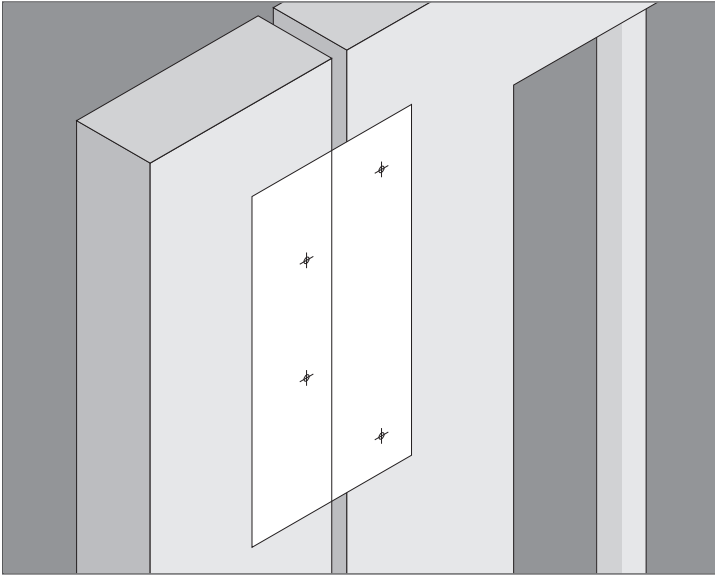
For Wiring Installation, see page 8.

ⓘ **Note:** Some warming of the device under routine operation is normal.

# Sliding Lock Installation

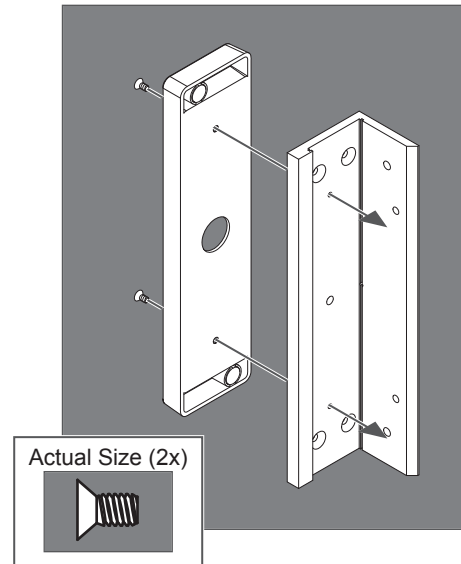
## 1 Place template and mark holes.

1. Place template on gate and post surfaces as marked on template.
2. Mark holes and prepare them per template.

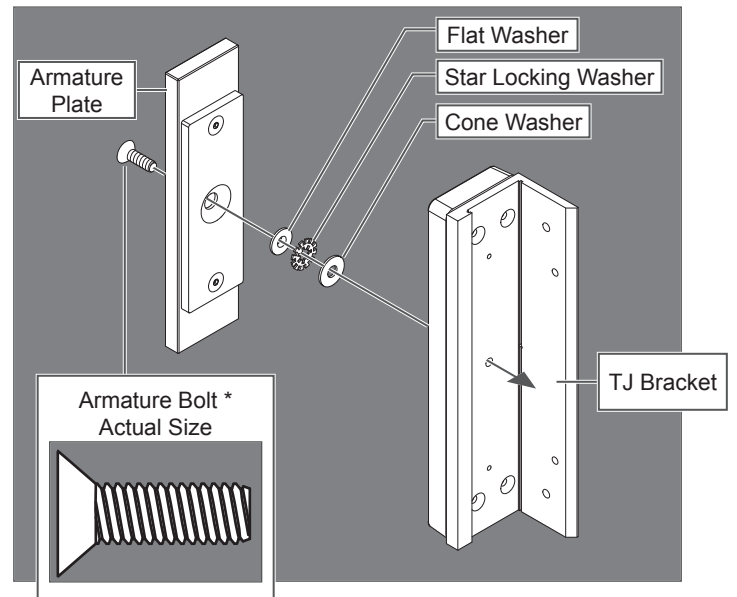


## 2 Install armature to moving part of gate.

- 2a Attach armature holder to TJ bracket.



- 2b Attach armature plate to armature holder.

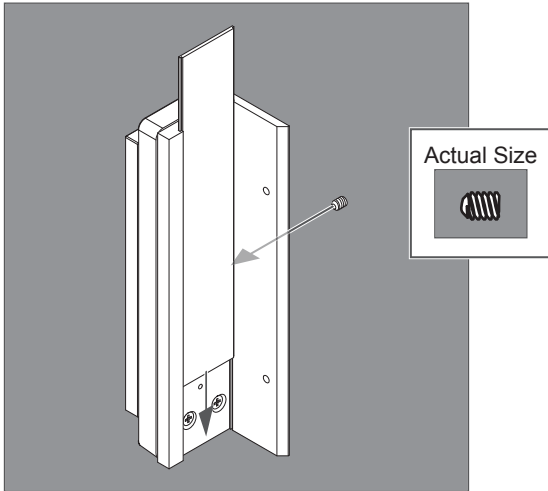


- \* Armature bolt must be tightened to 120 in-lbs. Replace with bolt in Gate kit. M490 armature must be disassembled to replace armature bolt.

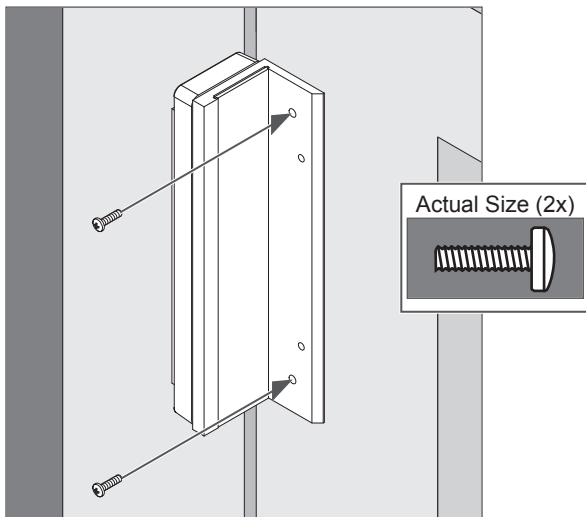
### **WARNING**

Backing off the bolt after tightening will loosen the thread-locking patch, which may allow the bolt to loosen over time.

2c Install cover plate.

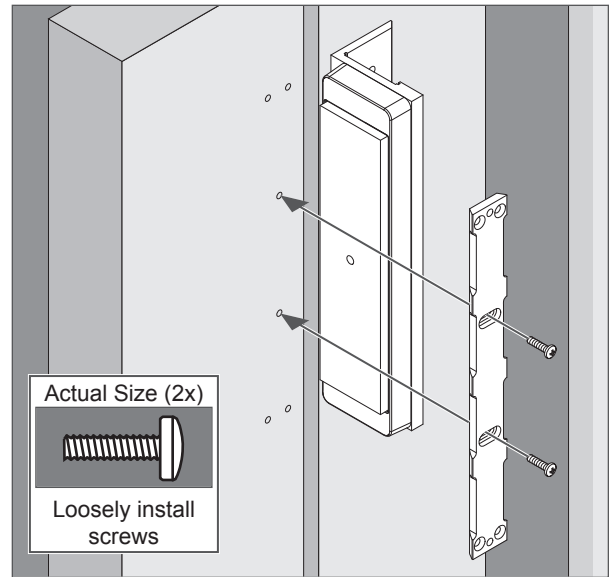


2d Attach Armature Assembly to moving part of gate.

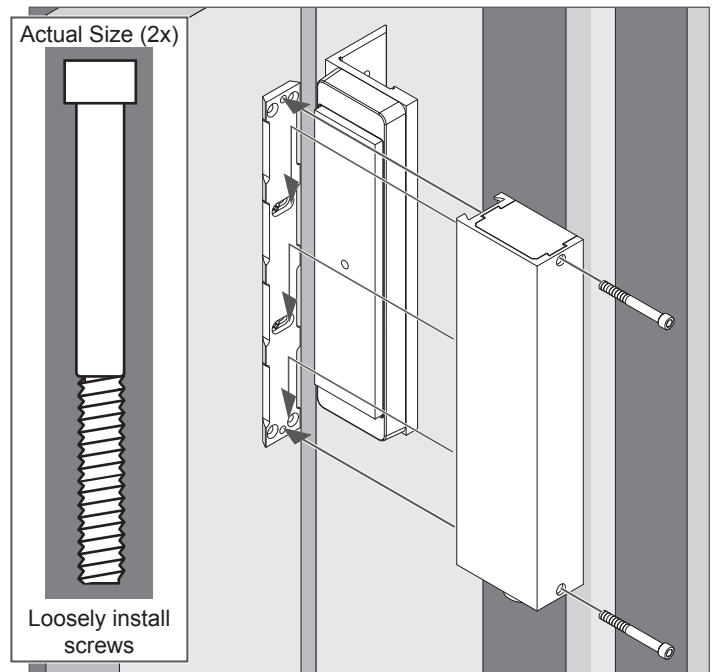


### 3 Install magnet assembly to non-moving post.

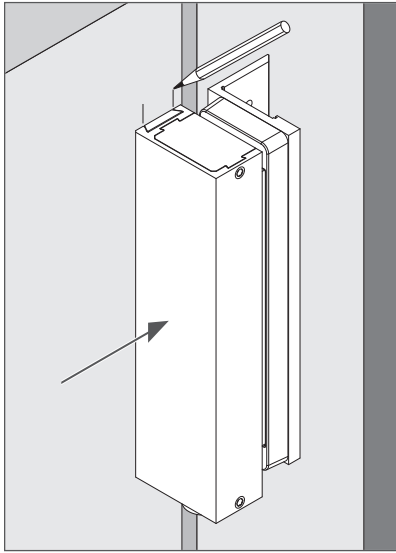
- 3a Attach mounting bracket to post.
- Attach bracket with two screws through two slotted holes.
  - Leave screws loose so that bracket can be adjusted.



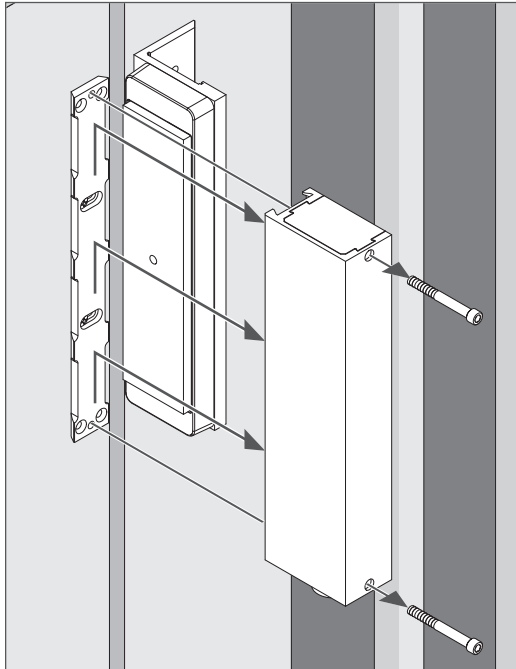
- 3b Attach magnet to bracket.
- Slide magnet assembly onto mounting bracket.
  - Secure magnet with two screws.



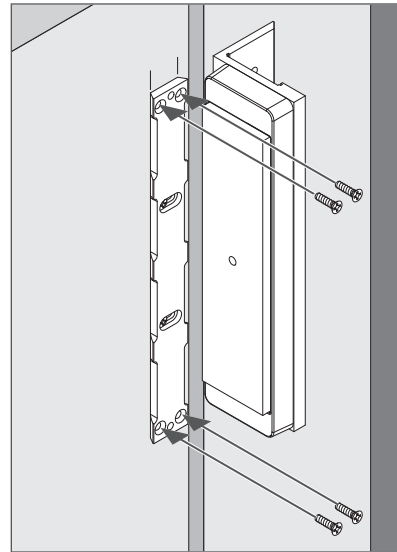
- 3c Align magnet to armature.  
 a. Press magnet to fully engage with armature.  
 b. Mark bracket location.



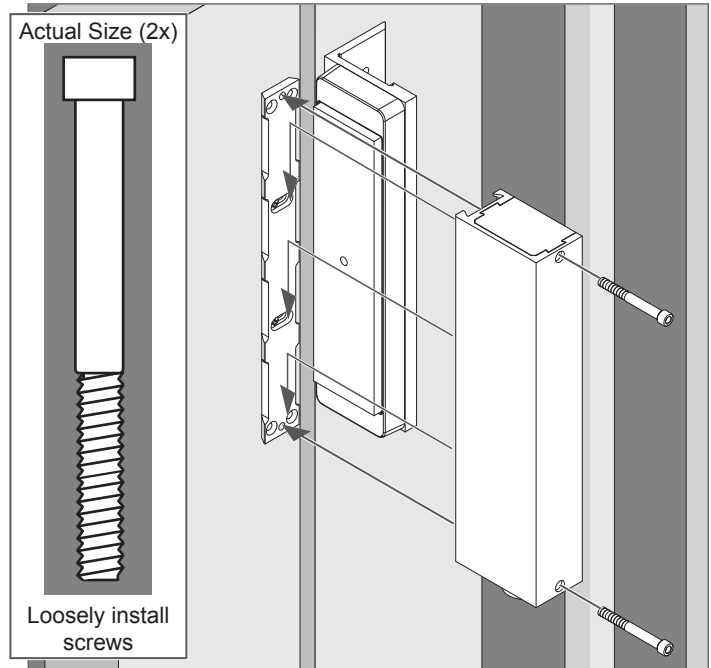
- 3d Remove magnet.



- 3e Fully attach bracket.  
 a. Check bracket alignment with marks.  
 b. Fully tighten two screws in slotted holes.  
 c. Drill and tap four (4) remaining holes for #10-24 screws.  
 d. Fully tighten all screws.



- 3f Reinstall magnet and secure with two screws.

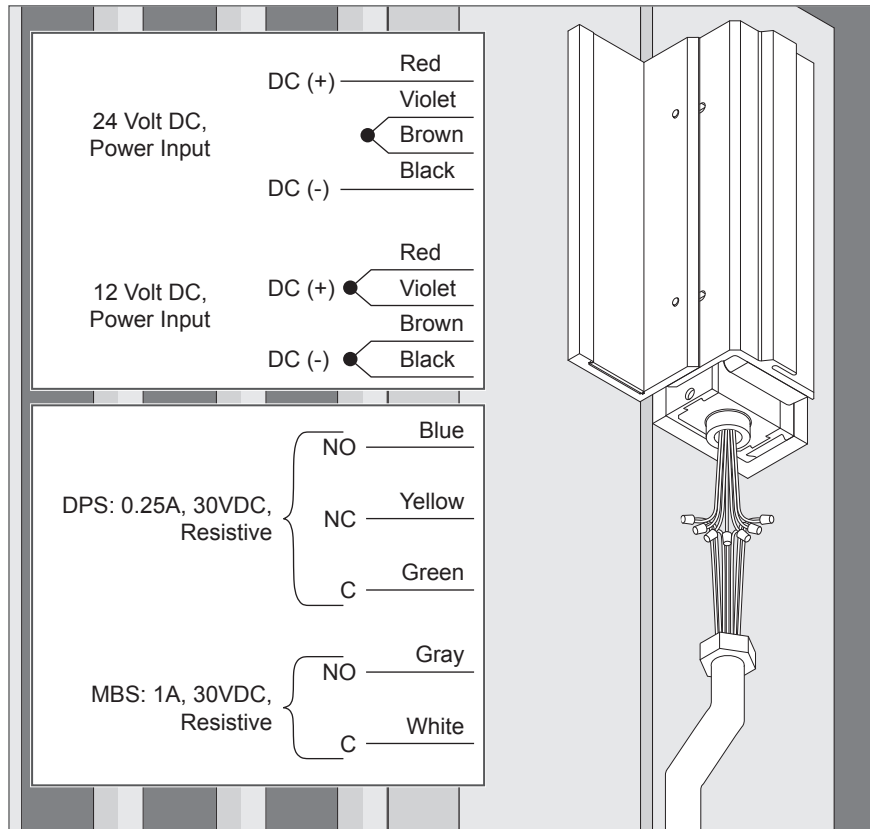


For Wiring Installation, see page 8.

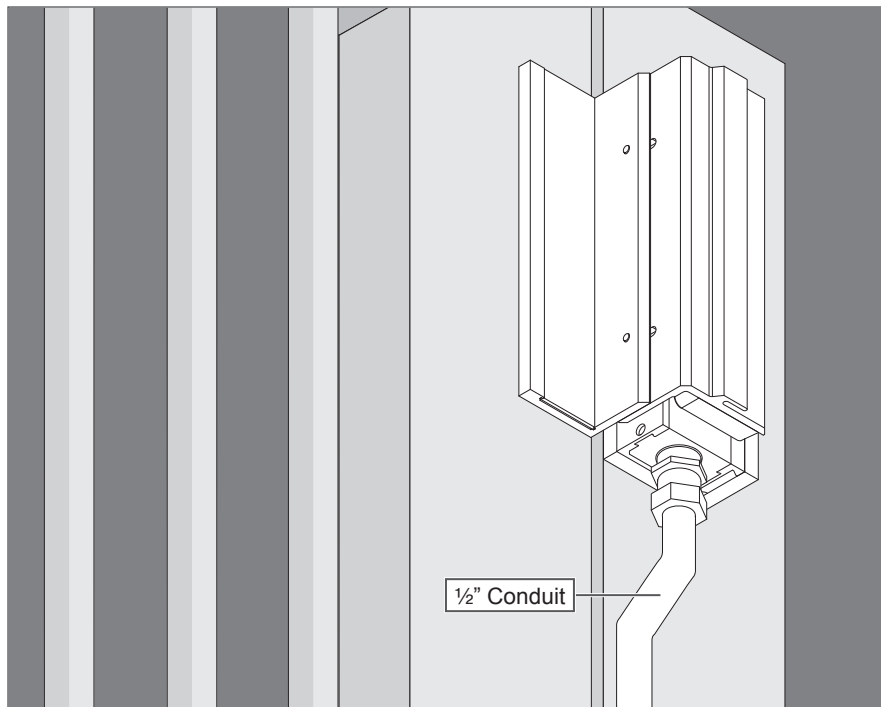
- ⓘ **Note:** Some warming of the device under routine operation is normal.

# Wiring Installation

1 Attach wiring per information shown.



2 Connect conduit to lock.



## Customer Service

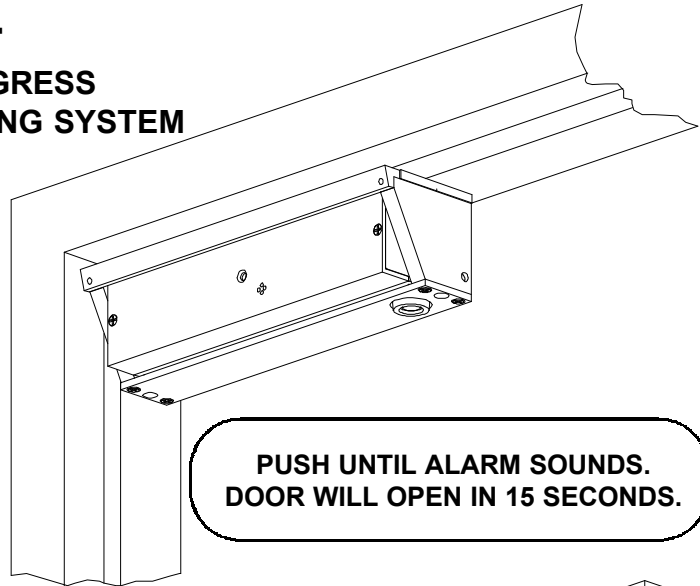
1-877-671-7011

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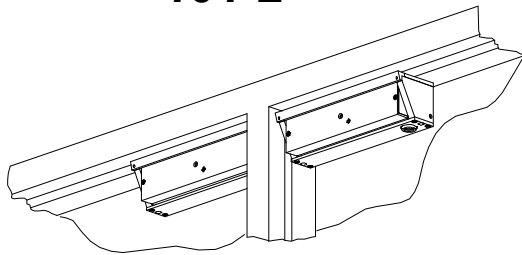


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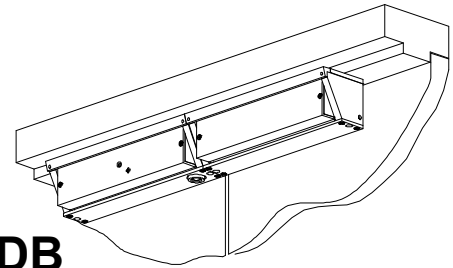
### 101+ DELAYED EGRESS MAGNETIC LOCKING SYSTEM



### 101-2+



### 101+DB



General Description.....	2	Door Propped Delay(SEC).....	14
Technical Specifications.....	2	Erasing Memory.....	14
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**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK.**

HANDLE THE EQUIPMENT CAREFULLY, DAMAGING THE MATING SURFACES OF THE ELECTROMAGNET OR THE ARMATURE MAY REDUCE LOCKING EFFICIENCY.

**IMPORTANT!** This manual is intended to be kept for programming, maintenance, and trouble shooting purposes. *Do not dispose of this manual after installation.* Please present this manual to the facility manager upon completion of installation.



**GENERAL DESCRIPTION:** The electromagnet mounts rigidly to the door frame header. The armature mounts to the door. The armature is designed to pivot about its center compensating for door misalignment. When the door is closed the energized magnet will bond with the armature, providing auxiliary locking force. If the opening is fire rated, the door must be secured positively with a mechanical latching device, in addition to the magnetic lock, in accordance with local authority having jurisdiction. Locknetics manufactures fire rated mechanical latching devices. The electronically controlled 101+ series magnetic locks described in this manual share the same access control circuitry in all models. With optional access control input devices (SelectEntry keypads or TouchEntry Key readers) the locks can hold up to 150 codes standard for access, toggle, lockout, or special function keys. Dry contact inputs allow for fire alarm tie in and remote release/reset capabilities. This manual covers the mechanical installation, wiring, and manual programming aspects of the locks. For computer programming, see information provided with the software package you will be using.

**THIS MANUAL COVERS THE FOLLOWING MODELS:**

**101+**  
Delayed Egress magnet. Delayed egress is initiated by a rocker switch which is actuated by pushing on the door. By setting dipswitches, an auxiliary switch, such as an exit device or pushbutton, can be used as well. (See dipswitch/terminal layout on page 9.) The nuisance delay can be set from 0-3 seconds in the standard unit (fixed at 1 second in the BOCA unit). The delay time is generally fixed at 15 seconds, but, with approval of the local authority having jurisdiction, can be set to 30 seconds in the standard unit.

**101-2+**  
Delayed Egress magnet for double doors. Two locks with separate housings, used in applications involving vertical rods or a mullion. This unit has the same features as the 101+ but one magnet houses a complete controller (master unit) while the other unit has a small interface board for connection to the master unit (slave unit.)

**101DB**  
Delayed Egress magnet for double doors. Two locks in one housing, used in applications involving double doors without vertical rods or a mullion. This unit has the same features as the 101+.

**DESCRIPTION OF OPTIONS:**

**ATR:** Audit Trail Retrieval uses computer programming and interrogation of the lock to store and retrieve time-stamped events such as access, alarm, and reset functions and the time that they occur. 100 events standard (500 with the MX500 option).

**BOCA:** Some areas adhere to this life safety code for delayed egress. The nuisance delay is fixed at one second and the delayed egress time at 15 seconds. After delayed egress has been initiated and the door opened, the alarm will automatically reset after 30 seconds. If the door is opened within the 30 seconds the timer will restart.

**DSM:** Door Status Monitor will provide status of door with or without power applied. It works by a small permanent magnet, attached to the armature plate (inside an aluminum block) activates a reed switch located inside the magnetic lock. It is important that the template information be followed carefully to ensure good alignment between the magnet and the switch.

**MBS:** Magnetic Bond Sensor will provide status of the lock (locked or unlocked) with or without power applied. It works by way of a factory-calibrated reed switch located inside the magnetic lock which senses the strength of the magnetic field. If the voltage is too low or there is some kind of foreign material between the magnet and armature the MBS output will show a poor bond (even though it may not be possible to force the door open by hand). It is important that the template information be followed carefully as poor alignment between the magnetic lock and the armature can cause a poor bond.

**MX500:** Allows the storage of up to 500 TouchEntry Keys. Will also store the last 500 audit trail events.

**PWM:** "Power Miser" option. The magnetic lock uses significantly less current so more locks can be loaded onto a power supply. There is a reduction of holding force to 1200 lbs. as a result of the different magnetic coil used. PWM models can only be operated at 12 volts.

**SEC:** Security Alarm will sound the onboard horn and close alarm relay contacts if the door is forced open. It will require a manual reset to silence the alarm. If the door is propped open, or after it is propped open for a selectable time period the lock will sound the onboard horn and close alarm relay contacts. When the door closes again, the horn will become silent and the alarm will return to its normal (N.O.) state. Anti tailgate is also in effect: the door will relock as soon as it closes, even if the relock time delay has not yet transpired.

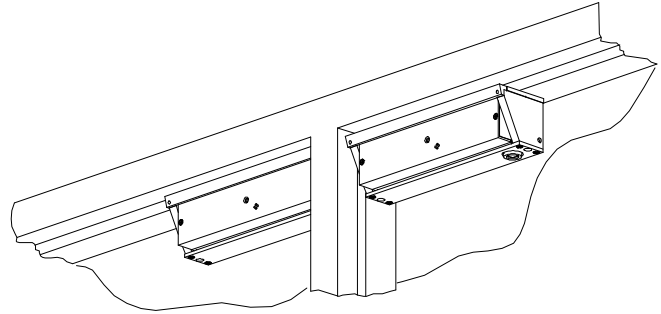
**TECHNICAL SPECIFICATIONS:**

STANDARD MODELS:		PWM MODELS:
<b>Dual Voltage:</b>	12 or 24 volts AC or DC (Automatic Selection)	12 volts AC or DC (Automatic Selection)
<b>Max. Current:</b>	0.8 Amps @ 12 Volts (DC) 0.5 Amps @ 24 Volts (DC)	0.4 Amps @ 12 Volts (DC) ONLY
<b>Outputs:</b>		<b>101-2+ and 101+DB MODELS:</b>
<b>Alarm:</b> (standard) N.O.	1.0 Amp resistive load at 30V	12 volts AC or DC (Automatic Selection)
<b>DSM:</b> (optional) SPDT	200mA@12V, 100mA@24V	0.8 Amps (total for both magnets) @ 12 Volts (DC) ONLY
<b>MBS:</b> (optional) SPDT	1.0 Amp resistive load at 30V	<b>Alarm:</b> (standard) N.O. 1.0 Amp resistive load at 30V
<b>Audible:</b> 91 dB @ 2 feet		<b>DSM:</b> (optional) SPDT 200mA@12V, 100mA@24V
<b>Mechanical Holding Force:</b>	1500 pounds	<b>MBS:</b> (optional) SPDT 1.0 Amp resistive load at 30V
<b>Listings:</b>	UL SA8954 Special Locking Arrangements UL R12092 Builders Hardware - Auxiliary Locks	1200 pounds MEA 100-99-E, 113-94-E CSFM 3774-0544:105

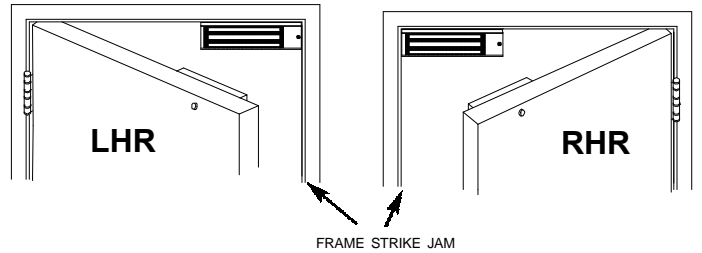
## PRE-INSTALLATION CONSIDERATIONS

**USE OF DELAYED EGRESS LOCKS:** Local codes generally require the signage, provided with the product, to be posted on or near the door. Consult local authority having jurisdiction prior to any installation involving the use of delayed egress products to ensure life safety compliance.

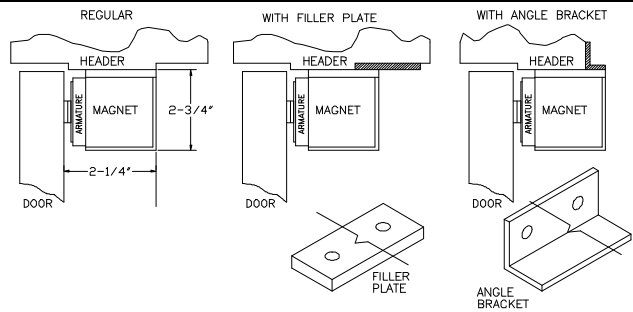
**101-2+:** When installing 101-2+ models, it does not matter which magnet (master or slave) gets installed on which leaf of the opening. It will be necessary to run at least four conductors between the two. Approximately 24" of wire is included as built by the factory. If it is necessary to extend the wires be sure that a good connection is made.



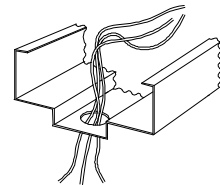
The electromagnet should be mounted as near to the frame strike jamb as possible to provide maximum holding force. EXCEPTION: If there is other equipment such as flush bolt(s) or vertical rod exit device(s) the magnetic lock and its armature can be shifted accordingly. It should, however, be mounted as close to the strike side jamb as possible without interfering with the operation of the other equipment. Visually check the mounting location to assure that the unit will mount without interference.



Frame conditions may require the use of filler plates and/or angle brackets. These items are available from Locknetics. In some cases it may be necessary to fabricate custom brackets or filler plates to make a secure installation.



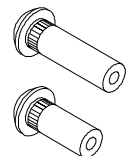
Wiring for the electromagnet must enter the top of the unit through the wire access hole drilled in the frame header (see template). Be certain provisions can be made to bring the wire through the header into the top of the unit.



Use proper mounting screws for your door frame. For light-gauge metal door frames, self tapping screws may be used. If the door frame is heavy-gauge metal, machine screws may be necessary and the holes will have to be tapped. *Caution: It is very important to make sure that magnet is secured to the structure of the opening. It is the responsibility of the installer to provide structural reinforcement sufficient to ensure a safe installation.*

	PAN HEAD	FLAT HEAD
MACHINE SCREWS		
SELF-TAPPING SCREWS		

Armature mounting hardware is for door thickness of 1-3/4 inches. Sex nuts for thicker doors are available from your distributor. For reinforced metal doors the sex nut is not required. Note that it is very important that the hardware used in mounting the armature is installed correctly. The instructions show clearly how this must be done. If not done properly, the lock will not function as designed.





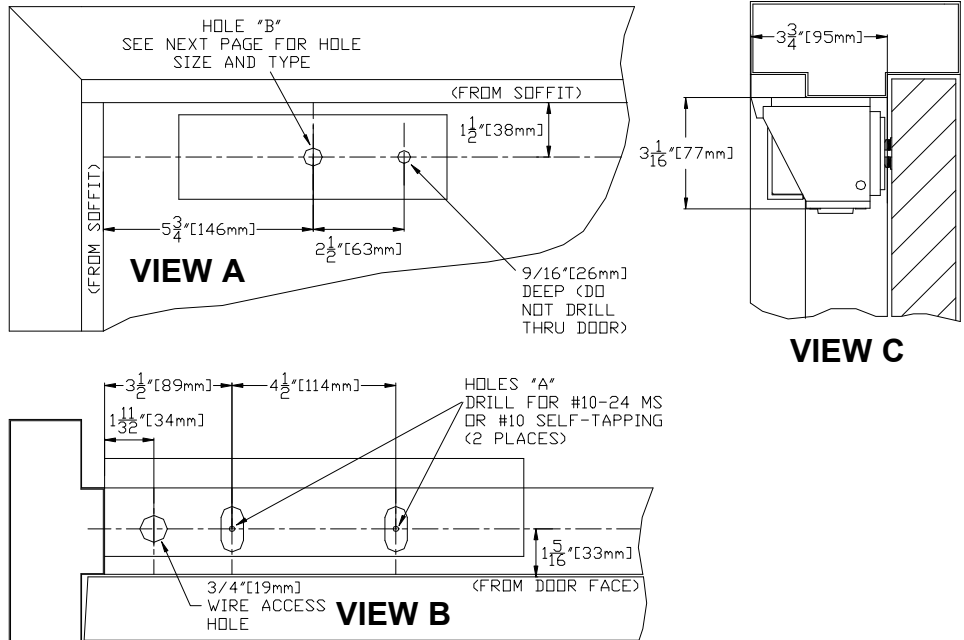
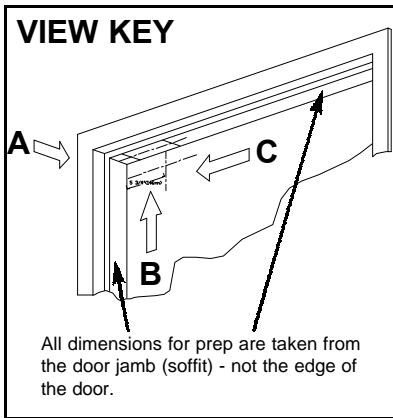
## INSTALLATION PROCEDURE

### 1. PREP DOOR AND FRAME (FOR STANDARD AND 101-2+ UNITS):

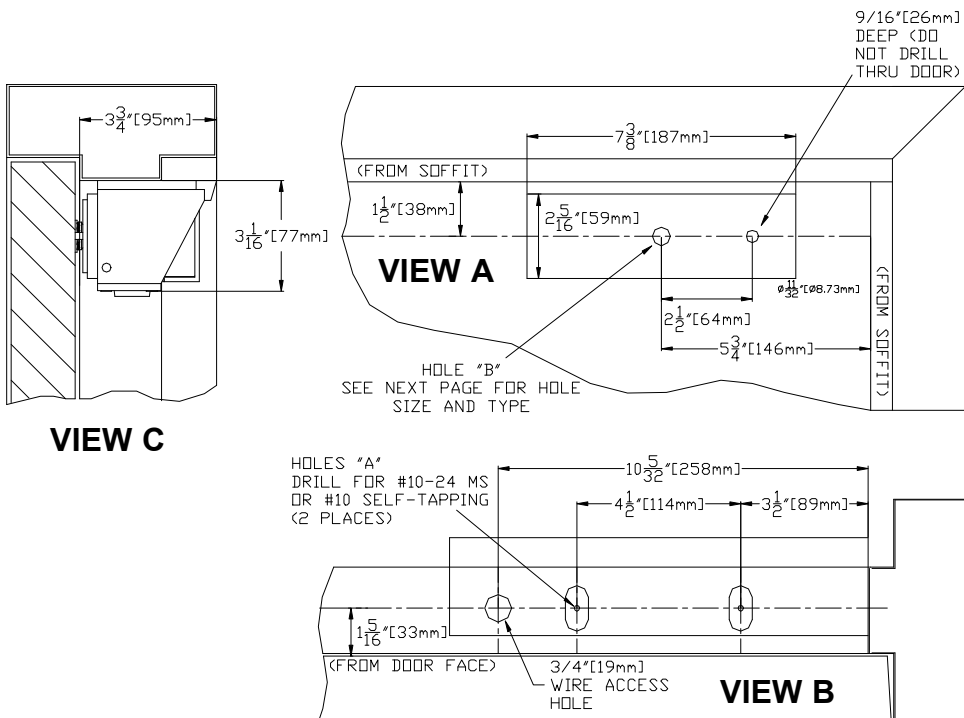
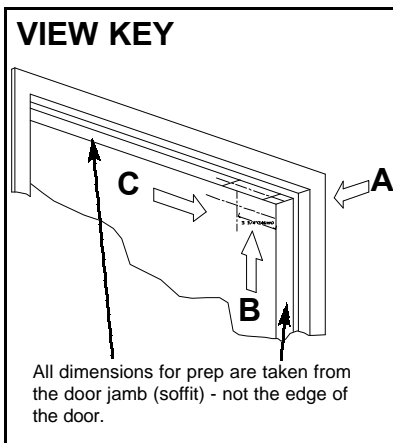
The paper template is the preferable way to prepare the door and frame. If for any reason it is not available, use the dimensions shown below to mark the centerlines of the holes. *Note that the layout is not symmetrical with respect to the centerline of the armature.* For 101-2+ units, it does not matter which (master or slave) magnet is installed on which door. Make sure that wiring can be pulled from one magnet to another. Prep may be shifted to accommodate vertical rod exit devices if necessary.

- The door should be closed and latched. You should be at the "push" side. Locate the paper template and fold it along the perforated line with the printed sides facing each other. Place the template against the frame stop and the door. Tape template in place.
- On the frame stop mark the location of holes "A" from the template. For heavy gauge or reinforced frames, drill and tap for #10-24 thread. For standard frames, drill 5/32" dia. for #10 self tapping screws. Locate and drill the 3/4" dia. wire hole. (The 3/4" dia. hole is oversized to the 5/8" dia. mounting plate hole to allow the full range of adjustability.)
- On the doors, mark the locations of all holes. Drill (2) 1/4" dia. holes per template for armature guide pins. Armature mounting hole "B" is determined by the door type (see below).

### LH or RHR

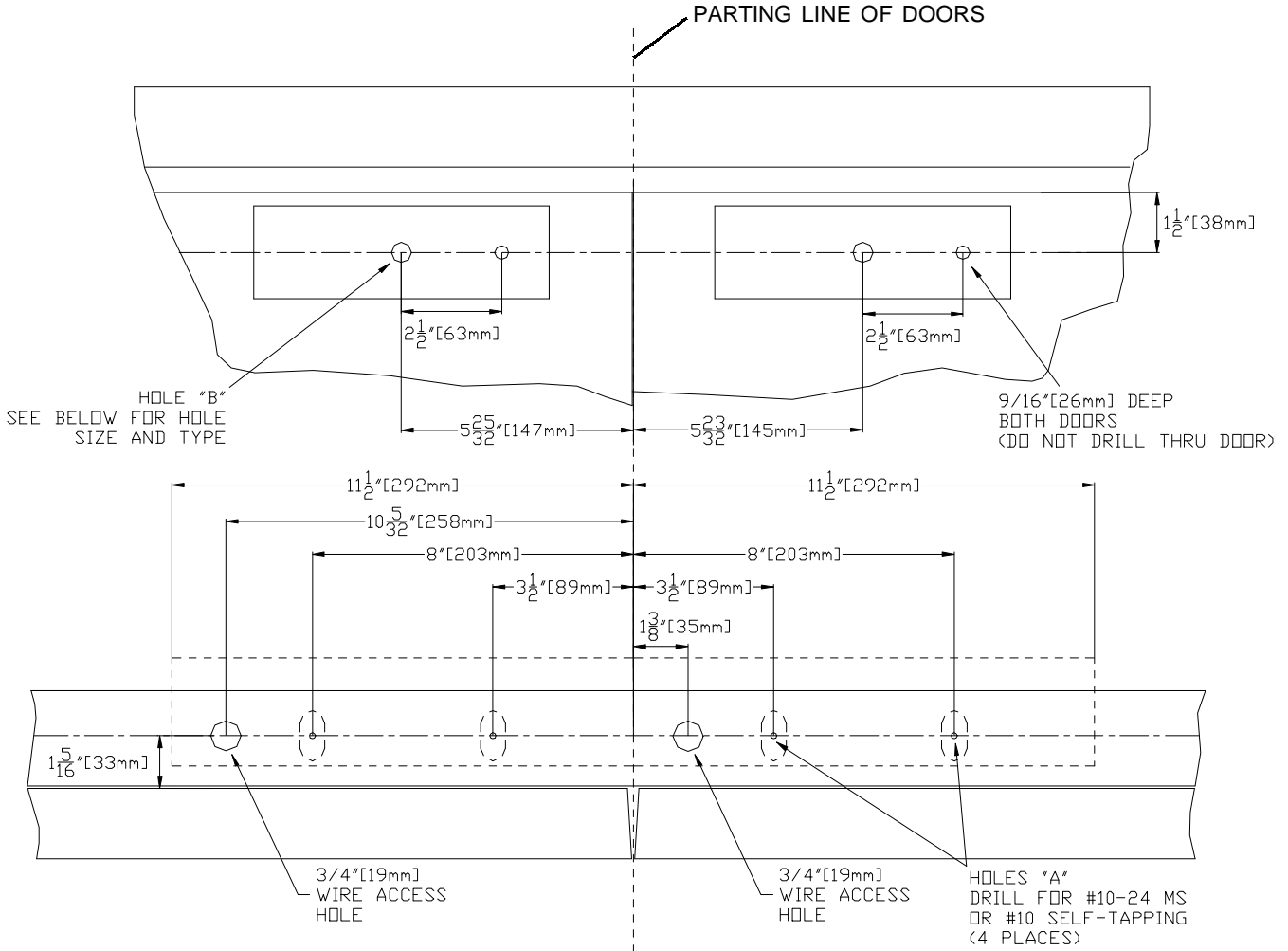


### RH or LHR



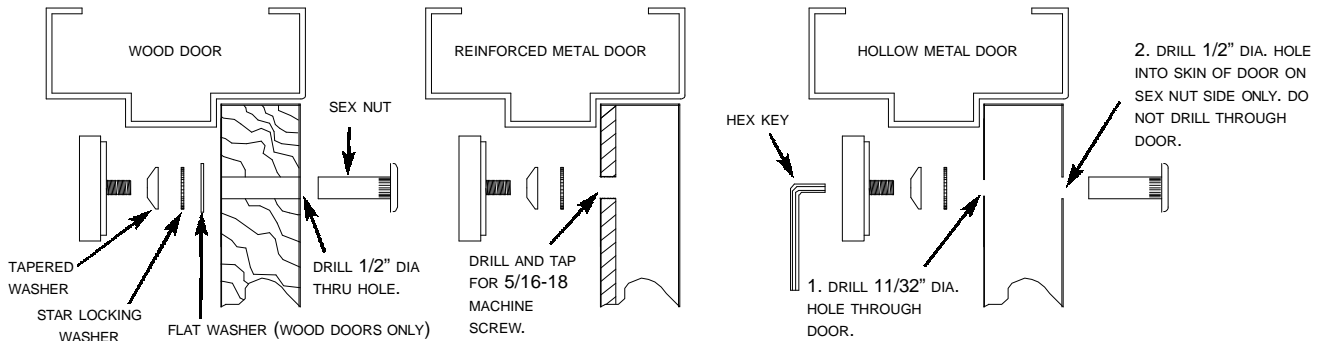
## 1. PREP DOOR AND FRAME (FOR 101+DB UNITS):

The paper template is the preferable way to prepare the door and frame. If for any reason it is not available, use the dimensions shown below to mark the centerlines of the holes. Note that the layout is not symmetrical with respect to the centerline of the armature. The parting centerline of the doors should be used as the center of the door and frame prep.



## ARMATURE MOUNTING HOLE INFORMATION (ALL MODELS):

### HOLE "B" FOR MOUNTING ARMATURE IS DETERMINED BY DOOR TYPE:

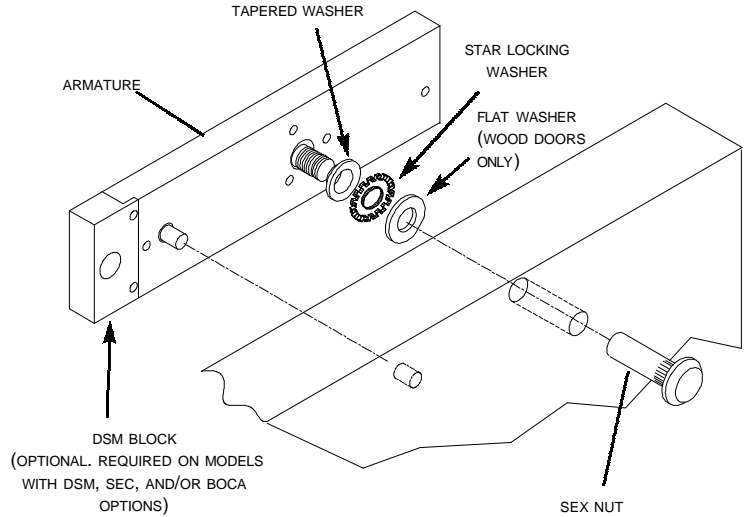


### 2. MOUNT ARMATURE TO DOOR

Assemble using hardware provided in the order shown. All hardware shown must be used except where noted. Note that the tapered washer must be placed with the pointed side facing away from the door and toward the armature. It **MUST** be used for proper operation. Use hex key to tighten the armature mounting bolt. For solid core and hollow metal doors, gently tap sex nut into position with a rubber mallet before mounting armature assembly. Proper use of hardware will allow armature to pivot slightly after securely tightening the mounting screw. This is normal, and necessary to allow armature to mate properly with magnet.

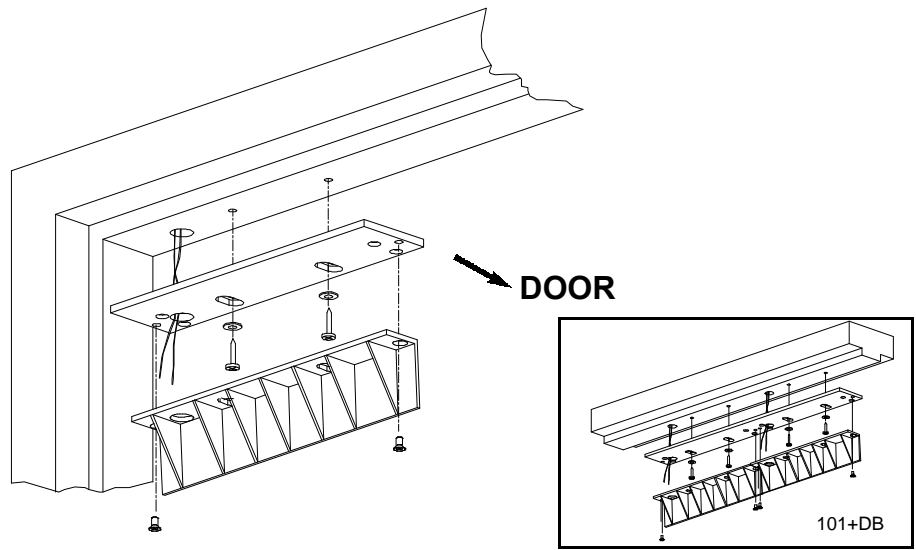
**CAUTION:**

Failure to secure armature to door may result in serious injury to door user. For proper operation, safety and security, sex nut / bolt assembly, washers and spacers must be assembled in the order illustrated and securely tightened 1/8 to 1/4 turn past hand tight.



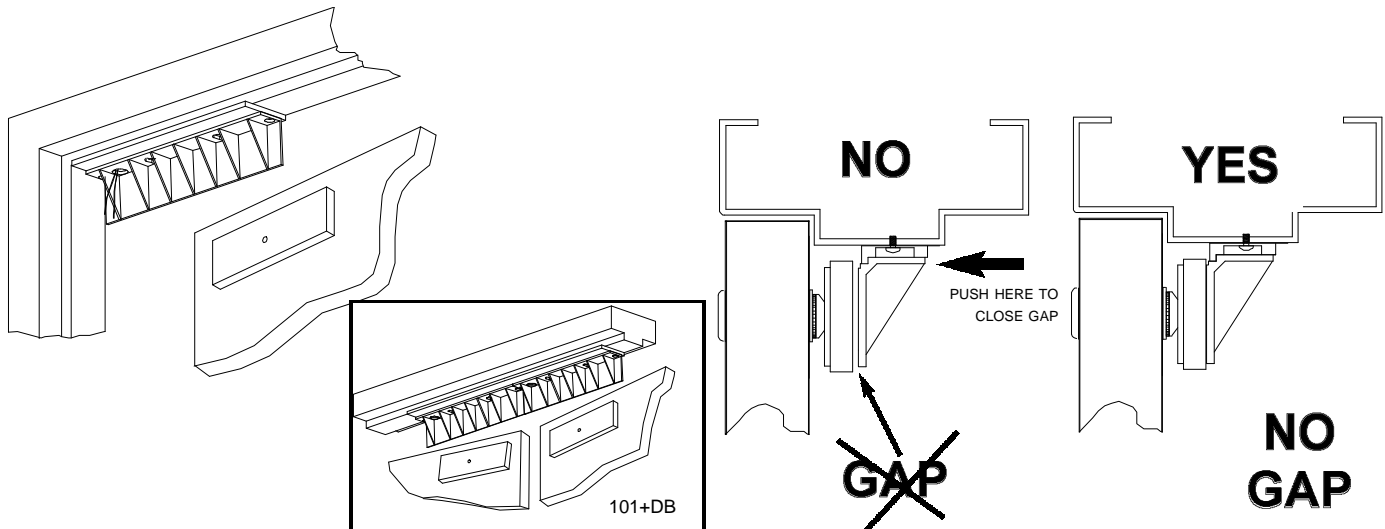
### 3. ATTACH MOUNTING PLATE AND ALIGNING TEMPLATE TO HEADER

Slotted holes and counterbore should face downward. Mount to the frame using (2) #10-24 x 1/2" pan head machine screws, or (2) #10 x 3/4" pan head self-tapping screws, and #10 flat washers. Tighten screws just tight enough to allow shifting the plate during adjustment. Install plastic aligning template onto mounting plate using flat head machine screws. Note the direction of the door face.



### 4. ALIGN PLATE TO ARMATURE USING PLASTIC ALIGNING TEMPLATE

Close door. Push template/mounting plate assembly toward door until it comes against the armature leaving no gap. Tighten pan head screws completely. Mark the position of the mounting plate. Remove plastic alignment template from the mounting plate without moving the mounting plate. Remove plastic template.



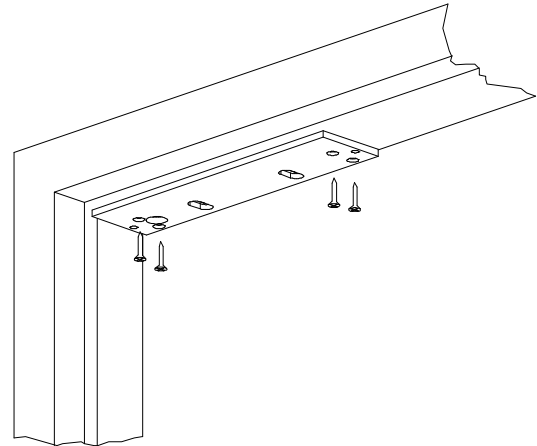
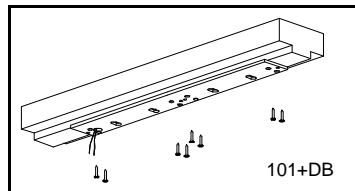
### 5. SECURE MOUNTING PLATE

Using the Mounting Plate as a template, drill the four (or eight for 101+DB) remaining mounting holes.

If using #10 self-tapping, flat-head screws drill  $5/32"$  dia. holes and drive four screws tight.

If using #10-24 flat head machine screws, drill and tap for #10-24 threads and tighten four screws.

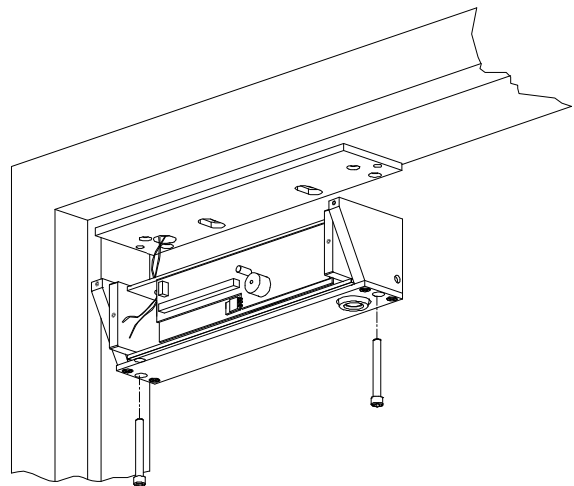
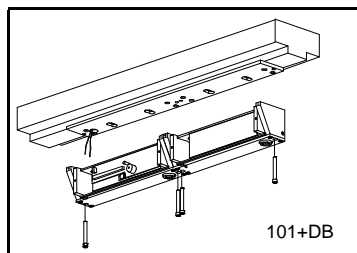
**CAUTION:** If the frame is wood it is critical that the screws used secure the mounting plate to the *structure* of the frame. It is the responsibility of the installer to provide sufficient reinforcement for a safe installation.



### 6. SECURE MAGNET TO MOUNTING PLATE

Install the electromagnet to the mounting plate using the two  $1/4-20 \times 2"$  socket head cap screws with a hex key. Firmly tighten the screws. Pass wiring through hole in top of magnet and through access hole on circuit board side of magnet as shown below. Drive in anti-tamper plugs using a rubber mallet. (It is advisable to wait until the magnet is wired and tested before installing anti-tamper plugs in case the magnet position must be adjusted.)

NOTE: For 101-2+ see wiring information on page 11 to wire between units.



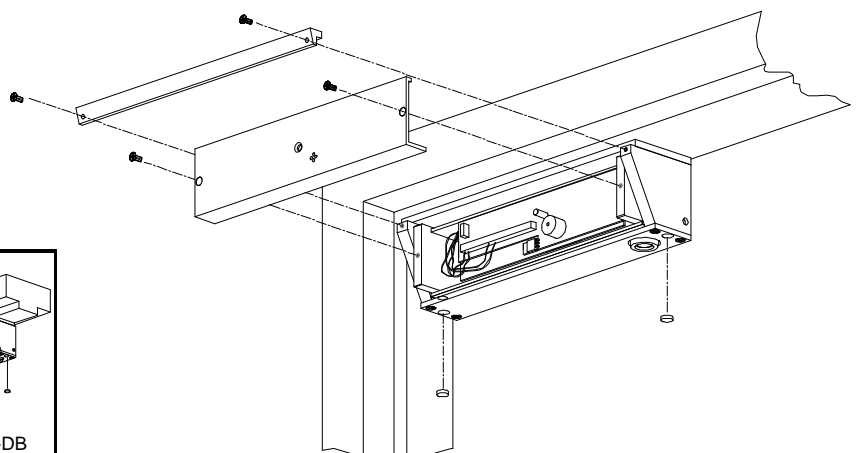
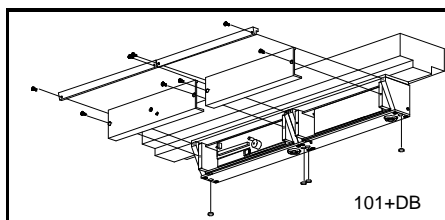
### 7. MAKE FINAL WIRING CONNECTIONS, SET DIPSWITCHES, AND PROGRAM LOCK

(SEE WIRING AND PROGRAMMING BEGINNING ON PAGE 8)

Refer to the wiring and programming section of this manual. If wiring and programming is to be done by someone else (besides the person doing the mechanical installation) please make sure that this manual is given to that person. DO NOT DISCARD THIS MANUAL. IT IS IMPORTANT THAT IT BE GIVEN TO THE OWNER OR BUILDING MAINTENANCE MANAGER FOR REFERENCE AFTER INSTALLATION.

### 8. FASTEN ELECTRONICS COVER AND LOCK GUARD

After wiring and programming (or if it is to be done later) fasten the electronics cover(s) and lock guard(s) to the magnet. After verifying that the unit works correctly install anti-tamper plugs, if desired. Note that they will need to be drilled out if the lock must be removed or adjusted.

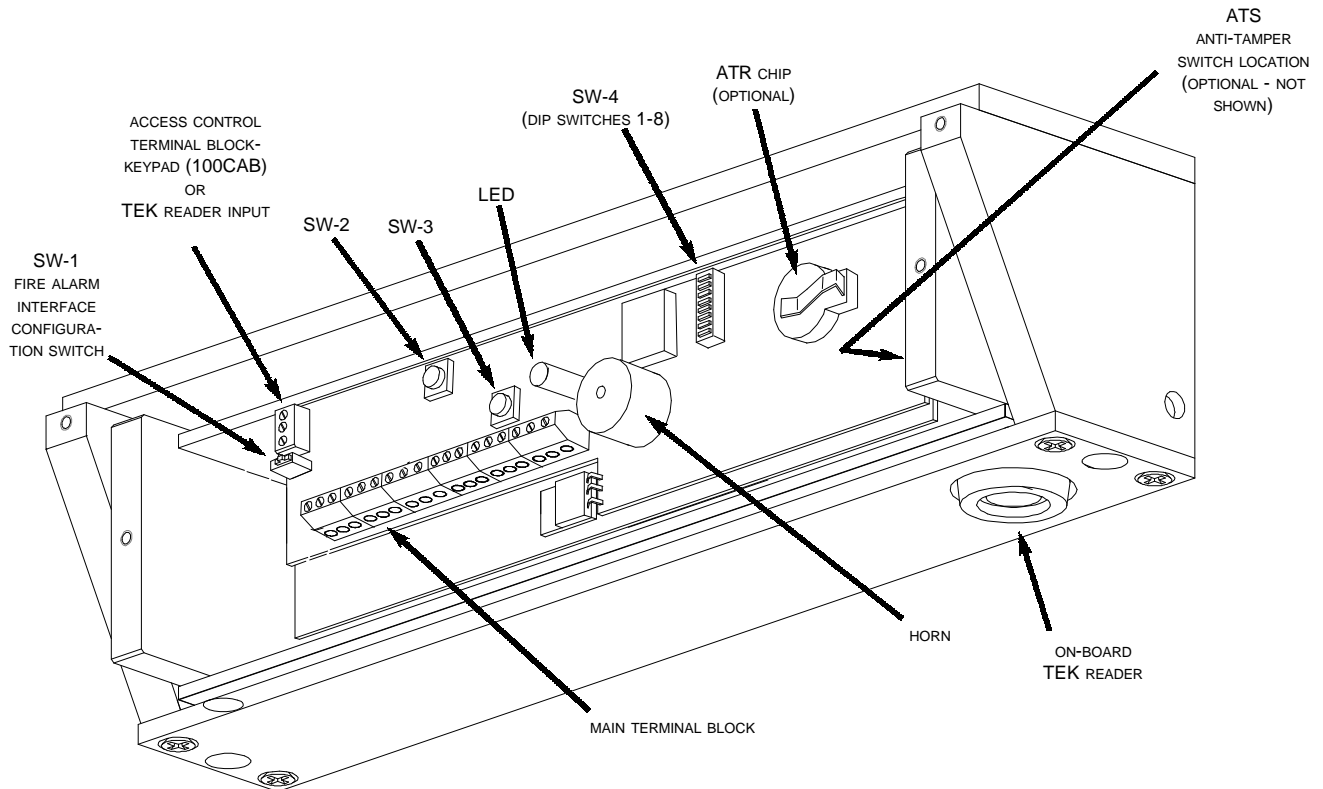


## PC BOARD LAYOUT AND FEATURES:

Connect wiring to main terminal strip. If the unit is to be used with a KP70+ series keypad or TR83/84 TouchEntry Key reader (and the required 100CAB adapter cable) or a TR80 or TR81 see the wiring information on page 12 and the programming information starting on page 14. After wiring, time delay setting, initialization and programming have been completed, secure the cover onto the lock.

See next page (9) for terminal layouts and dipswitch settings. Not all terminals will be used in all cases. Note that to get the correct outputs the correct options must have been ordered and the dipswitches set properly.

**IMPORTANT: DO NOT APPLY POWER UNTIL ALL CONNECTIONS HAVE BEEN MADE AND DIPSWITCHES SET AND VERIFIED.**



**SW-1** Fire Alarm Interface dipswitch. Configures whether there is a normally open or a normally closed input from the fire panel (see next page for setting dipswitches).

**SW-2/SW-3** These switches are used to set the various time delays and for memory reset. (See "Time delay settings" on page 14.)

**SW-4** This bank of 8 dipswitches is used to configure various features of the system. See next page for setting dipswitches. Note that they are numbered from 1 (on the bottom) to 8 (on the top) and Left is ON and right is OFF.

**Main Terminal Block** This terminal block has 18 screw terminals. See page 10 for description of terminal functions and wiring information.

**Access Control Terminal Block** Used to interface Locknetics 3-wire cable/keypad system (100CAB adapter cable with keypad) or to hook up a TR80 or TR81 TouchEntry Key reader.

**Horn** Provides local audible indication of alarm status and programming signals. (See chart on page 20 "Table of Outputs".)

**LED** Tri-color LED (red, yellow, green) used to provide local visual indication of alarm status. (See chart on page 20 "Table of Outputs".)

**On-Board TEK reader** If TouchEntry keys are to be used for egress control and alarm reset the on-board TEK reader is provided.

**ATR chip/socket** (Requires computer management) The ATR option provides a record of past access, alarm, and reset events along with the time and person. If the chip must be added in the field, it must be installed in the socket with the larger side facing away from the PC board. Once installed, memory will need to be erased before the lock will recognize the chip. See page 14 for memory reset information.

**ATS (Anti-Tamper Switch)** The ATS option monitors the status of the electronics cover. When the cover is removed the unit goes into alarm. It must be reset by entering a valid code or TEK, or by entering a reset input into terminals 17 & 18. (NOTE: on 101+DB and 101-2+ models the ATS on the slave unit is not wired directly into the PC board, rather, it has form C contacts with flying leads.)

### CONFIGURE FIRE ALARM INTERFACE DIPSWITCH (SW-1) FOR CORRECT TYPE OF INPUT.

A dry contact is required. It can be normally open or normally closed. If no direct connection is to be made, configure the input for normally open (SW-1 to RIGHT).

<b>SW-1 FIRE ALARM INPUT:</b> To configure interface to terminals 3&4 on main terminal block.	<b>SW-1 TO RIGHT FOR N.O. OR NO CONNECTION:</b>	<b>SW-1</b>		<b>X</b>
	<b>SW-1 TO LEFT FOR N.C. CONNECTION:</b>		<b>X</b>	

### CONFIGURE THE SW-4 DIPSWITCHES TO SET THE FUNCTIONS OF THE SYSTEM.

Power should not be applied at this time. Note that dipswitches 4 and 6 are specifically for the SEC option. Also note that dipswitch 7 must be "on" for the lock to automatically lock when powered up, or after a fire alarm condition. If it is off, the lock will remain unlocked, with the LED green, when power is applied. In order to lock it, a reset input or valid code or TEK will be required after power up or after a fire alarm condition.



SW-4 DIPSWITCH SETTINGS		SWITCH #	ON	OFF
<b>NUISANCE ALERT:</b> Horn sounds when door pushed to alert people that door is armed. Avoids false alarms.		<b>8</b>	ENABLED	DISABLED
<b>AUTOMATIC RELOCK:</b> Door locks upon power up or after fire alarm. If set to OFF: manual reset required.		<b>7</b>	ENABLED	DISABLED
<b>DOOR FORCED / DOOR PROPPED ALARM (SEC OPTION ONLY)</b>		<b>6</b>	ENABLED	DISABLED
<b>UNLOCK ALERT:</b> Horn sounds whenever door is unlocked (and still has power applied to it).		<b>5</b>	ENABLED	DISABLED
<b>ANTI-TAILGATE (SEC OPTION ONLY):</b> When door closes it immediately relocks (cancels time delay).		<b>4</b>	ENABLED	DISABLED

<b>CONFIGURE HOW THE DELAYED EGRESS EVENT IS TO BE TRIGGERED, USING DIPSWITCHES 2 &amp; 3</b>	<b>BY ON-BOARD ROCKER SWITCH ONLY (DEFAULT)</b>	<b>3</b>		<b>X</b>
		<b>2</b>		<b>X</b>
	<b>BY ROCKER SWITCH <u>OR</u> AUXILIARY INPUT</b>	<b>3</b>	<b>X</b>	
		<b>2</b>		<b>X</b>
	<b>BY ROCKER SWITCH <u>AND</u> AUXILIARY INPUT</b>	<b>3</b>		<b>X</b>
		<b>2</b>	<b>X</b>	
<b>DELAYED EGRESS DISABLED.</b>	<b>3</b>	<b>X</b>		
	<b>2</b>	<b>X</b>		

<b>EGRESS DELAY TIME:</b> This is the time that the door will remain locked and in alarm before it unlocks.	<b>1</b>	<b>30 SEC.</b>	<b>15 SEC.</b>
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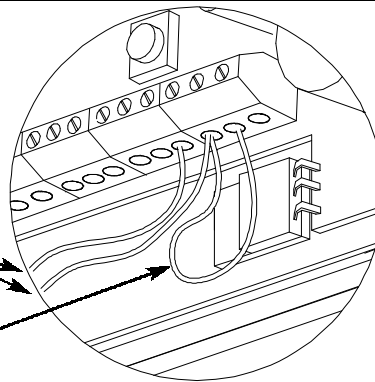
## MAIN TERMINAL BLOCK:

- 1**      **POWER INPUT:** Apply 12 or 24 volts (AC or DC). The lock will adjust for input.  
IMPORTANT NOTES:
- 2**      a. PWM and double units (101-2+ and 101+DB can ONLY accept 12 volts)  
b. Polarity does not matter in this case
- 3**      **FIRE ALARM INPUT:** Apply a normally closed or normally open dry contact from fire panel or other emergency system. Be sure that the wiring complies with authority having jurisdiction. Note that SW-1 (located on PC board) may have to be configured for proper operation. (See page 9)
- 4**      **IMPORTANT! DO NOT APPLY POWER TO TERMINALS 3 & 4 OR DAMAGE MAY RESULT.**
- 5**      **AUXILIARY INPUT:** This terminal is used in cases where it is desired that an additional device (such as an exit device) be used in addition to or instead of the on-board rocker switch to initiate the delayed egress cycle. Apply a normally open dry contact to terminals 5 & 6 which closes when activated, thereby shorting 5 to 6. The SW-4 dipswitches 2 & 3 will need to be set for proper operation. (See page 9).
- 6**      **IMPORTANT! DO NOT APPLY POWER TO TERMINALS 5 & 6 OR DAMAGE MAY RESULT.**
- 7 (C)**    **ALARM OUTPUT:** Terminals 7 & 8 close when an alarm condition exists. The following conditions will close the output: delayed egress alarm condition, fire alarm condition, 20 wrong keypad entries, delete (user) with alarm, door forced (SEC only), door propped (SEC only). Note that during the nuisance delay (grace period before the delayed egress cycle begins) the alarm contacts do not change state, even if the on-board horn is sounding.
- 8 (NO)**
- 9 (NO)**    **DSM OUTPUT (REQUIRES DSM OPTION):** Door Status Monitor. "Normal" refers to the door being open. When the door is closed, the contacts change state.
- 10 (C)**
- 11 (NC)**
- 12 (NO)**    **MBS OUTPUT (REQUIRES MBS OPTION):** "Normal" here refers to the magnet being unlocked. When the magnet is properly locked, the contacts change state. If they do not, there are several possible causes: low voltage, dirt or debris between the magnet and armature, damage to the mating surfaces, or improper alignment between the armature and magnet.
- 13 (C)**
- 14 (NC)**
- 15**      **REQUEST TO EXIT INPUT:** Apply a normally open dry contact which closes, shorting 15 and 16, when activated. When the request to exit device is released, the lock will relock after the relock time delay (See page 14 to adjust).
- 16**      **IMPORTANT! DO NOT APPLY POWER TO TERMINALS 15 & 16 OR DAMAGE MAY RESULT.**
- 17**      **ALARM CONDITION RESET INPUT:** Apply a normally open, momentary, dry contact which closes, shorting 17 and 18, when activated. This input will reset an alarm condition (except for a fire alarm condition, which is controlled by the status of the input on terminals 3 & 4). If the lock is in delayed egress alarm (but before it actually unlocks) and a reset input is entered, it will cancel the remaining delayed egress time and unlock but still remain in alarm. An additional contact closure event will be required in this case in order to reset the lock back to the locked condition and cancel the alarm condition. This is because delayed egress is required to be an irreversible sequence of events resulting in the door becoming unlocked. Once the door unlocks the alarm condition can be reset to the locked position.
- 18**      **IMPORTANT! DO NOT APPLY POWER TO TERMINALS 17 & 18 OR DAMAGE MAY RESULT.**

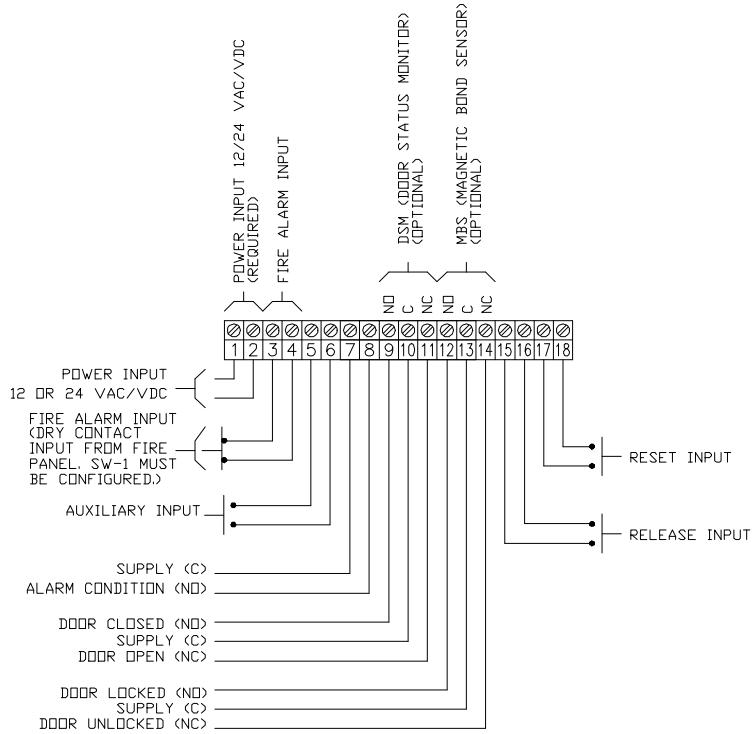
**WIRING TRICK:** if using a keyswitch, card reader or other dry-contact input device where there is only one set of contacts available, the following trick can be used: place a jumper across terminals 16 and 17 and put the N.O. input across terminals 15 & 16. This will allow one set of input contacts to both release and reset the lock, depending on the condition.

N.O. INPUT FROM CARD  
READER, BUTTON, ETC.  
ON TERMINALS 15 & 16

JUMPER ON  
TERMINALS 16 & 17

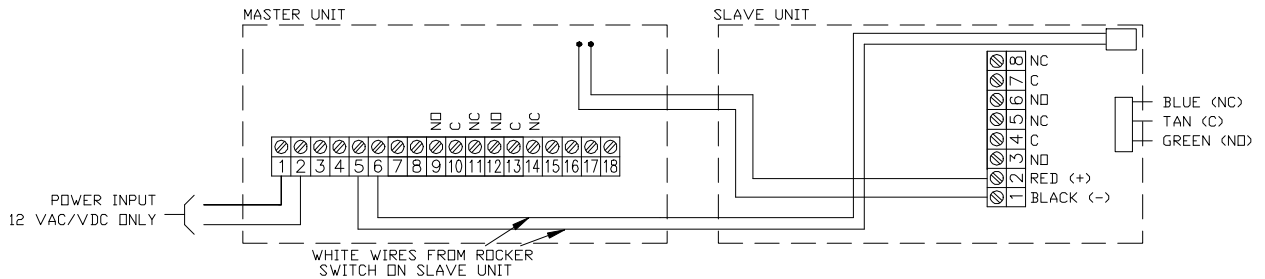


## 101+ BASIC WIRING:

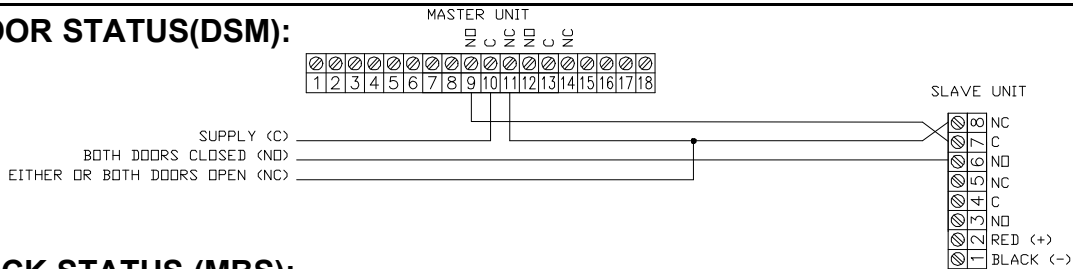


## 101-2+ and 101+DB REQUIRED WIRING:

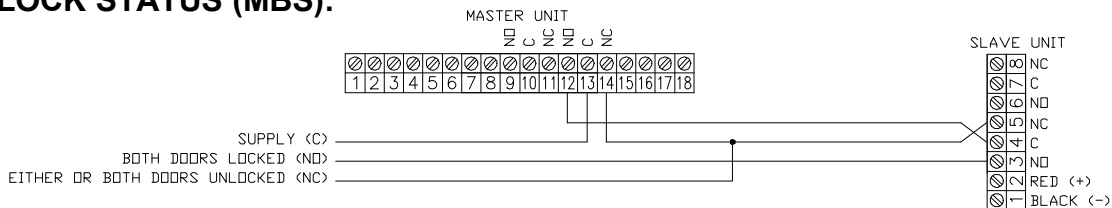
On the 101-2+ model the flying leads provided for wiring between units can be extended as required. Make sure that a good connection is made. The anti-tamper switch(ATS option) for the slave unit has flying leads whereas the ATS for the master unit is wired directly to the PC board and will sound the on-board alarm.  
On 101+DB units, do not change or modify the factory-installed wiring.



## 101-2+ DOOR STATUS(DSM):



## 101-2+ LOCK STATUS (MBS):



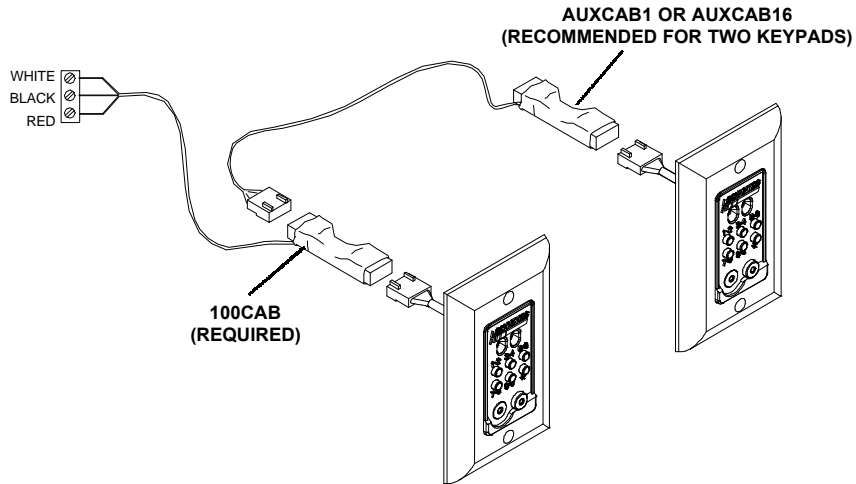


## WIRING OF LOCKNETICS KEYPADS/TOUCHENTRY KEY READERS

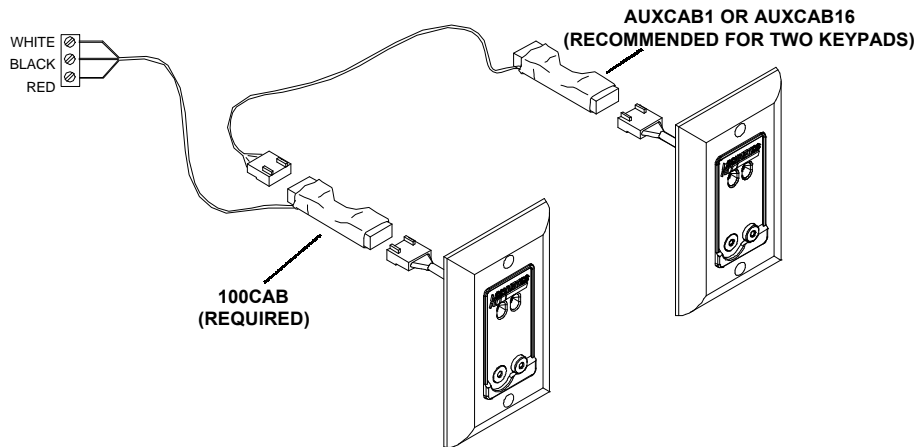
Up to two Locknetics keypads or TouchEntry Key readers can be hooked up to a 101+ or 101-2+ system for access control and alarm reset input. Any keypad or TR83/TR84 hook up requires a 100CAB adapter cable. The three-wire 100CAB allows the keypad to be initialized to the lock or allows the TR83/TR84 to be properly connected. Using the 770CAB (a Locknetics 12-wire adapter cable) does not work! Only one 100CAB can be used. Two keypads or TR83/TR84 readers can be plugged into a single 100CAB. If the installation requires more distance between the two keypads/readers, an AUXCAB1 or AUXCAB16 can be used to extend the keypad/reader cables.

If the installation involves TR80 or TR81 TouchEntry Key readers then the two readers must be wired in parallel. 80CAB adapter cables can be used.

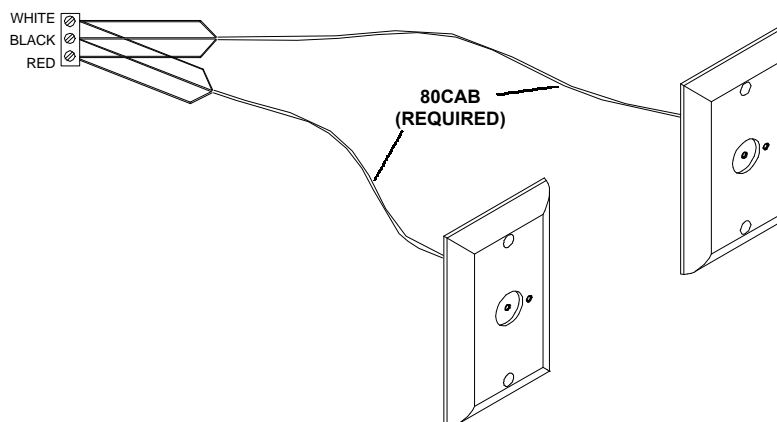
### KP70+ HOOK-UP



### TR83/TR84 HOOK-UP



### TR80/TR81 HOOK-UP



NOTES:

---

**MANUAL PROGRAMMING OF TIME DELAYS:**

---

**RELOCK TIME DELAY (factory default: 8 seconds)**

The amount of time the lock is de-energized after release by entering a valid code/TEK or Programmable 1-30 seconds.

- A. Set SW4 dipswitch #6 to OFF (if it is on).
- B. Press and release SW2. The LED will begin flashing GREEN .
- C. Thereafter, press SW3 once for each second of relock delay desired.  
(ex. 3 presses equals 3 seconds-15 presses equals 15 seconds-Up to 30 seconds)  
Each SW3 activation will cause the LED to flash RED and the horn to beep .
- D. Press SW2 and the relock delay will be stored in non-volatile memory.
- E. Return SW4 dipswitch #6 to its original position (if you moved it in step A).

- NOTES:**
1. Not pressing SW3 between pressing SW2 will set the relock time delay to zero seconds. This will cause the lock not to unlock with a momentary contact closure or valid code or TEK. A TIME DELAY OF MORE THAN ONE SECOND IS RECOMMENDED.
  2. Models with the SEC option include the anti-tailgate feature. If SW4-4 is on, the lock will relock immediately when the door closes even if the time delay has not yet expired.

---

**NUISANCE DELAY (factory default: 3 seconds)**

The amount of time the door must be pushed before triggering the *DELAYED EGRESS CYCLE*  
Programmable 0 - 3 seconds. (BOCA Units are fixed at 1 second.)

- A. Press and release SW3, the LED will begin flashing RED.
- B. Thereafter, press SW2 once for each second of nuisance delay desired, up to 3 seconds maximum.  
Each SW2 activation will cause the LED to flash GREEN and the horn to beep .
- C. Press SW3 and the nuisance delay will be stored in non-volatile memory.

- NOTES:**
1. To program nuisance delay to zero, eliminate Step B.
  2. Setting nuisance delay to zero will allow the lock to go into delayed egress the instant the door is pushed. This may prove inconvenient in some applications.

---

**DOOR PROPPED DELAY (factory default: 60 seconds)**

The amount of time the door must be propped open (after normal release time delay has ended) before triggering the alarm. The alarm will clear as soon as the door closes again. Programmable 0 - 120 seconds.

- A. Set SW4-6 to ON (if it is off).
- B. Press and release SW2, the LED will begin flashing YELLOW.
- C. Thereafter, press SW3 once for each second of propped delay desired, up to 120 seconds maximum.  
Each SW3 activation will cause the GREEN LED to flash and the horn to beep .
- D. Press SW2 and the door prop delay will be stored in non-volatile memory.
- E. Leave SW4-6 ON to enable door propped alarm.

- NOTES:**
1. To program door propped delay to zero, eliminate Step B.
  2. Setting the door propped delay to zero will cause the lock to go into alarm the instant that the normal time delay has ended, if the door is still open.

---

**ERASE MEMORY (MEMORY RESET)**

Memory may be erased to conveniently return to default time delay settings or if an error was made.

- A. Press and hold SW2 until a single beep is heard. Release SW2.
- B. Quickly press SW2 three times, three beeps will sound.
- C. Another 3 beeps will sound in about 10 seconds indicating the memory is erased.

- NOTES:**
1. All programmed codes and keys will be erased. Factory default codes and time settings will be restored.
  2. Keypads using a 100CAB (for direct connection to 101+ lock) will need to be initialized again.

## TO CREATE MASTER TEK (FOR USE WITH COMPUTER PROGRAMMING)

The master TEK is used to initialize programming (like a password to access programming mode).

- A. Set SW4 dipswitch #1 to ON (if it is off).
- B. Press and hold SW3 until two beeps are heard.
- C. Touch a TEK key to the reader within ten seconds. The lock will indicate acceptance with two beeps. This will be the Master TEK.
- D. Return SW4, #1 to its original position.

### NOTES:

1. Refer to instructions included with the programmer/software that you will use to program for more information regarding programming.
2. The Master TEK is used for initiating programming. It will not unlock the door.
3. Unlike some other Locknetics products, creating a master TEK will not delete the factory default codes. They must be manually deleted.

## “SYSTEM 7” PROGRAMMING:

This procedure will allow up to seven TouchEntry Keys to be programmed into a lock equipped with a TouchEntry Key reader of SelectEntry Keypad. Keys will be of the Normal Access type and will unlock the unit for the relock time delay. The TEKs will also reset the lock if it is in an alarm condition.

- A. Set SW4-1 to OFF (if it is on)
- B. Press and hold SW3 until you hear two beeps. Release SW3.
- C. Touch each of the TEKs to the reader. Two quick beeps will sound each time a key has been accepted.
- D. After entering up to seven TEKs wait 10 seconds for programming to end. One quick beep will indicate that programming has ended.
- E. Return SW4-1 to its original position, if required.

**NOTE:** Whenever new “System 7” TEKs are entered, the old ones are erased. Also, whenever computer programming is done, or memory is erased, all “System 7” TEKs are erased.

## KEYPAD/100CAB INITIALIZATION (REQUIRED TO ENABLE KEYPAD TO FUNCTION)

It is necessary to initialize the keypad/100CAB any time that the memory is erased.

- A. Set SW4 dipswitch #1 to ON.
- B. Press and hold switch SW3 for two quick beeps of the audible..
- C. Push each button in order, starting with the 1-2 button, and including the \*.
  - \* Wait for LEDs to stop flashing before pushing next button.
  - \* Waiting for longer than 7 seconds will terminate initialization.
- D. After the last button is pressed, the audible will beep three times and the LEDs will flash indicating that programming has ended.
- E. Return SW4 dipswitch #1 to its original position.

## DEFINITION OF CODE/TEK FUNCTIONS AND FACTORY DEFAULTS:

FACTORY DEFAULT	
MASTER	97531
NORMAL ACCESS	13579
TOGGLE	135135
LOCKOUT	9115

Allows access to programming functions. Will not release lock.

Unlocks lock for relock time delay. Will reset lock in alarm condition.

Unlocks the lock until same or another Toggle Code is entered.

“Freezes” the lock in its present condition, either locked or unlocked, until the same or another Lockout Code/TEK is entered.

### ONE-TIME ACCESS

No factory default. This type of code/TEK will allow access only once. It will then become deleted from memory.

### SUPERVISED ACCESS

No factory default. This type of code/TEK allows access only when used with another Supervised Access Code/TEK. The second code/TEK must be entered within five seconds of the first one. The order that they are entered does not matter.

**MANUAL PROGRAMMING - KEYPAD**

When manually programming the 101+ model lock, using a keypad, the keypad must first be initialized. It is recommended that the factory default Master Code be changed. Doing so will delete all factory default codes and ensure the security of the system. After entering the Master code the LEDs on the keypad will flash. They will also flash each time that \* is entered. Wait for the LED to stop flashing before entering the next sequence.

**TO CHANGE MASTER CODE**

Master Code \*...7 \*...New Master Code (5-8 digits)\*...New Master Code \*

**TO ADD NORMAL ACCESS CODES** - Will unlock door for relock time delay period. Will also reset lock after an alarm condition.

Master Code \*...3 \*...New Code (3-5 digits) \*...\* (to end)

UP TO 150 NEW CODES CAN BE  
ADDED BY RETURNING HERE.

**TO CHANGE CODES**

Master Code \*...1 \*...Old Code\*...New Code (3-8 digits) \*...\* (to end)

MORE CODES CAN BE CHANGED  
BY RETURNING HERE.

**TO DELETE CODES**

Master Code \*...5 \*...Old Code \*...\* (to end)

MORE CODES CAN BE DELETED  
BY RETURNING HERE.

**TO DELETE CODES WITH ALARM/ATR NOTICE:**

Codes will not be allowed to function but will remain in memory. When the code is used, the lock will go into alarm, the alarm relay will close, the audible will sound and the LED will illuminate red. The door will not unlock. It will stay in alarm until a valid user code, TouchEntry Key or reset input will silence the alarm. If the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master Code \*...55 \*...Old Code \*...\* (to end)

MORE CODES CAN BE DELETED  
BY RETURNING HERE.

**TO ADD TOGGLE CODES** (Note that a three digit function code '131' sets the function of the user code)

UP TO 150 NEW CODES CAN BE ADDED BY RETURNING HERE.

Master Code \*...33\*...131\*...New Access Code (3-8 digits) \* ...\* (to end)

**TO ADD LOCKOUT CODES** (Note that a three digit function code '115' sets the function of the user code)

UP TO 150 NEW CODES CAN BE ADDED BY RETURNING HERE.

Master Code \*...33\*...115\*...New Access Code (3-8 digits) \* ...\* (to end)

**TO ADD ONE-TIME ACCESS CODES** (Note that a three digit function code '113' sets the function of the user code)

UP TO 150 NEW CODES CAN BE ADDED BY RETURNING HERE.

Master Code \*...33\*...113\*...New Access Code (3-8 digits) \* ...\* (to end)

**TO ADD SUPERVISED ACCESS CODES** (Note that a three digit function code '117' sets the function of the user code)

UP TO 150 NEW CODES CAN BE ADDED BY RETURNING HERE.

Master Code \*...33\*...117\*...New Access Code (3-8 digits) \* ...\* (to end)

**TO CHANGE FUNCTION/CODES**

Master Code \*...11\*...Old Code \*... X Y Z \*...New(or same) Code (3-8 digits) \*...\* (to end)

New or Same  
3-digit function  
code. See above.

## MANUAL PROGRAMMING - TOUCHENTRY

When manually programming the 101+ model lock for TouchEntry Keys, a programmer (either the TEP1 or TEP2) must first be initialized. Only one programmer can be initialized to a particular lock. A Master TEK must also be initialized at the same time as the programmer and will be used to enter the programming mode. See steps below. After entering the Master TEK the green LED on the TouchEntry Key reader will flash. It will also flash each time that \* is entered. Wait for the LED to stop flashing before entering the next sequence. The TEP1 and TEP2 programmers are intended to simulate a keypad.

## PROGRAMMER INITIALIZATION TEP1 AND TEP2

- A. Set SW4 dipswitch #1 to ON.
- B. Press and hold switch SW2 for two quick beeps of the audible..
- C. Touch a TEK key up to the reader. (This TEK will be initialized as a MASTER TEK.)
- D. Touch each TEK of the TEP1 to the reader in the following order(two beeps of the audible will sound indicating acceptance of each key.)  
(For TEP2 plug communication plugs into ports and push each button in order)
  - \* Wait for LEDs to stop flashing before touching next key or pushing next button.
  - \* Waiting for longer than 7 seconds will terminate initialization.
- E. After the last key/button is entered, the audible will beep three times and the LEDs will flash indicating that programming has ended.
- F. Return SW4 dipswitch #1 to its original position.

**TO ADD NORMAL ACCESS TEKS** - Will unlock door for relock time delay period. Will also reset lock after an alarm condition.

Master TEK...3 \* ...New PIN(3-8 digits)\* ...New Access TEK...\* (to complete)

UP TO 150 NEW TEKS CAN BE  
ADDED BY RETURNING HERE.

## TO DELETE TEKS

Master TEK...5 \* ...Old PIN\*...\* (to end)

MORE TEKS CAN BE DELETED BY  
RETURNING HERE.

## TO DELETE TEKS (WITH ALARM/ATR NOTICE):

TEKS will be not be allowed to function but will remain in memory. When the TEK is used, the lock will go into alarm, the alarm relay will close, the audible will sound and the LED will illuminate red. The door will not unlock. It will stay in alarm until a valid user code, TouchEntry Key or reset input will silence the alarm. If the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master TEK...55 \* ...Old PIN\*...\* (to complete)

MORE TEKS CAN BE DELETED  
BY RETURNING HERE.

**TO ADD TOGGLE TEKS** (Note that a three digit function code '131' sets the function of the user TEK)

UP TO 150 NEW TEKS CAN BE ADDED BY RETURNING HERE.

Master TEK ...33\*...131\*...New PIN(3-8 digits)\*...New *Toggle* TEK ...\* (to end)

**TO ADD LOCKOUT TEKS** (Note that a three digit function code '115' sets the function of the user TEK)

UP TO 150 NEW TEKS CAN BE ADDED BY RETURNING HERE.

Master TEK ...33\*...115\*...New PIN(3-8 digits)\*...New *Lockout* TEK ...\* (to end)

**TO ADD ONE-TIME ACCESS TEKS** (Note that a three digit function code '113' sets the function of the user TEK)

UP TO 150 NEW TEKS CAN BE ADDED BY RETURNING HERE.

Master TEK ...33\*...113\*...New PIN(3-8 digits)\*...New *One-time Access* TEK ...\* (to end)

**TO ADD ONE-TIME ACCESS TEKS** (Note that a three digit function code '117' sets the function of the user TEK)

UP TO 150 NEW TEKS CAN BE ADDED BY RETURNING HERE.

Master TEK ...33\*...117\*...New PIN(3-8 digits)\*...New *One-time Access* TEK ...\* (to end)

**TO CHANGE FUNCTION AND/OR PIN**

Master TEK ...11\*...Old PIN\*... X Y Z \*...New(or same) PIN (3-8 digits) \*...\* (to end)

New or Same  
3-digit function  
code. See above.



### TABLE OF INDICATORS (LED/AUDIBLE)

The table below is intended to provide all possible indications and states which can be encountered under normal operation. Note that some conditions or features are only available on certain models or when certain options are included.

DESCRIPTION OF INDICATORS			
CONDITION	LED INDICATOR	AUDIBLE	ALARM RELAY STATE (TERM.7&8)
<b>STANDARD FEATURES</b>			
LOCK SECURE	OFF	OFF	OPEN
LEGAL RELEASE INPUT	STEADY GREEN	OFF	OPEN
LOW INPUT VOLTAGE	OFF	SLOW BEEP	OPEN
DURING NUISANCE DELAY	STEADY YELLOW	OFF(DEFAULT) (SET BY SW4-8)	OPEN
DURING DELAYED EGRESS	FLASHING RED	BEEPING	CLOSED
AFTER DELAYED EGRESS	STEADY GREEN	STEADY TONE	CLOSED
ANTI-TAMPER ALARM IF LOCK COVER IS REMOVED (ON MASTER UNIT ONLY – SLAVE ATS HAS FLYING LEADS)	STEADY RED	STEADY TONE	CLOSED
<b>SWITCH SELECTABLE FEATURES</b>			
SW4-5 "ON" =UNLOCK ALARM WHENEVER LOCK IS UNLOCKED	STEADY GREEN	STEADY TONE	OPEN
SW4-8 "ON" = HORN WILL SOUND DURING NUISANCE ALERT	STEADY YELLOW	ON	OPEN
<b>OPTIONAL SWITCH SELECTABLE FEATURES SEC (SECURITY ALARM OPTION) REQUIRED</b>			
SW4-6 "ON" DOOR PROPPED OPEN ALARM DOOR IS HELD OPEN PAST RELOCK TIME	FLASHING GREEN	BEEPING	CLOSED
SW4-6 "ON" DOOR FORCED OPEN ALARM DOOR OPENED WITHOUT VALID RELEASE SIGNAL	FLASHING RED	BEEPING	CLOSED
<b>PROGRAMMING INDICATIONS</b>			
RELOCK DELAY PROGRAMMING ACTIVE	FLASHING GREEN	OFF	OPEN
DOOR PROPPED OPEN DELAY	FLASHING YELLOW	OFF	OPEN
WHILE PRESSING SW3 OR SW2 TO SET RELOCK AND DOOR PROPPED DELAYS	RED	CHIRP	OPEN
NUISANCE DELAY PROGRAMMING ACTIVE	FLASHING RED	OFF	OPEN
WHILE PRESSING SW2 TO SET NUISANCE DELAY	GREEN	CHIRP	OPEN

## ERROR CODES:

If an error is made while manually programming a lock, an error code indication will be indicated at the TouchEntry Key reader or keypad. The LED(s) will flash several times. Count the number of flashes and refer to the chart below for diagnosis.

ERROR CODES			
NUMBER OF FLASHES	ERROR	NUMBER OF FLASHES	ERROR
2	Code entered too long. Code length cannot exceed 8 digits.	6	Invalid command.
3	Memory full – too many codes/TEKs entered	7	Code does not exist. (For “Delete With Alarm/ATR” only)
4	Master code cannot be deleted, only changed.	8	Code too short. Minimum master code 5 digits. Minimum user code 3 digits.
5	Second entry of master code does not match first. Master code not changed.	9	Not a unique code/TEK.

## TROUBLE SHOOTING:

Some common problems associated with the installation of the 101+ series can be easily recognized and corrected:

### Problem:

Lock has power but won't lock.

### Possible Solution:

Fire alarm not connected or dipswitch SW-1 not in correct position.  
SW4-7 not ON (set switch, LED (on lock) is Green. Remove and re-apply power). (See page 9)

Lock won't go into delayed egress.

Check dipswitch settings (p.9). Armature washers not installed properly (p.5)  
Magnet not properly aligned with armature. (p.6)  
Wrong screws used to secure mounting bracket. (Check if magnet can pivot.)

Goes into delayed egress upon powerup.

Armature washers not installed properly (p.5)  
Improper alignment between magnet and armature (p.6)

Lock can be pushed open with minimal resistance.

Magnet/Armature/washers not installed properly (p.5-6).

Lock “hums” or vibrates noisily when energized.

Magnet/Armature/washers not installed properly (p.5-6).

Lock “beeps” every several seconds.

Low voltage alert. Check voltage at terminals 1&2. It must be at least 12.00 volts or 24.00 volts or slightly higher.

Lock won't accept programmed codes/TEKs. LED(s) flash once quickly.

Relock time delay set to 0 sec. (p.10)  
Keypad not initialized (p.12).

MBS doesn't change state when locked.

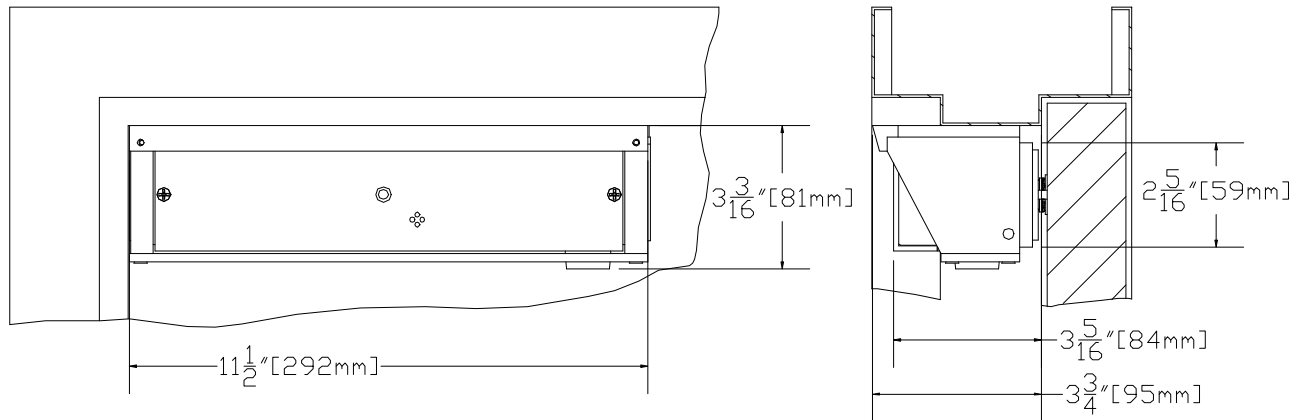
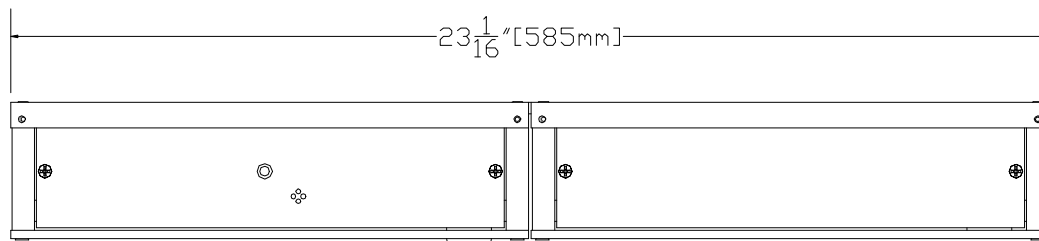
Low voltage. Mechanical misalignment. Debris between lock and armature. Armature/magnet not installed properly (p.5-6).

DSM/SEC option not working properly.

End-Block on armature not aligned with DSM/SEC switch(s).

## MAINTENANCE

It is not recommended that the magnet be painted (unless ordered with in iridite primer). If the unit must be painted it is important that the mating surfaces of the magnet and armature not be painted. The TouchEntry Key reader, and LED must not be painted either. The electromagnet and armature are plated for corrosion resistance and require little maintenance. For maximum performance the following service should be done to both the armature and electromagnet as required: Clean the mating surfaces of the electromagnet and armature with a non-abrasive cleaning pad, apply a light coating of silicon lubricant and wipe with a clean dry cloth.

**OVERALL DIMENSIONS****101+  
101-2+****101+DB**



## 280+ CONTROL MODULE INSTALLATION INSTRUCTIONS

### HOW THE 280+ SHEARLOCK WORKS

A shearlock relies on the shear strength of steel for holding force.

An armature, when attracted by an energized magnet, will move towards it. This action overcomes a narrow air gap that is necessary for the door to swing open and closed without interference when the door is unlocked.

Once engaged, the shape of the parts interlock and gives the system a holding force in excess of 2700 pounds.

Because of system design, door and frame preparation must be done very accurately. Therefore, it is important that the magnet and armature center-lines align to form a vertical axis (see top of page 2). For best reliability, it is also critical that the air gap is adjusted to be as close as possible without interfering with door operation.

A minimum of 2 seconds after power is applied, the electronic module has a very strong magnetic field, which allows the armature to reliably overcome the air gap and ensure positive engagement.

### SPECIFICATIONS

#### Electrical

Input Voltage	<b><i>Filtered, Regulated 12 to 24 VDC</i></b> (automatic voltage selection)
Input Current	0.9 Amps at 12V, 0.45 Amps at 24V (max.)
Adjustable Time Delay (ATD)	Adjustable from 2 to 30 seconds. Factory default: 3 seconds
Automatic Relock Switch (ARS)	External magnetic reed switch (required for proper operation)
Optional Monitoring Output MBS	Contact rating - 1 Amp maximum at 30VDC

#### Mechanical

Mounting Type	Mortise mounted horizontal or vertical. Non-handed
Shear Holding Force	2700 lbs.
Door Thickness	1 3/4 " Minimum (except for HD models)
Plating	Magnetic face and armature; nickel plated to resist corrosion

#### Warranty

Magnetic coil: Lifetime      Electronics: 1 year limited

#### Certifications/Compliance

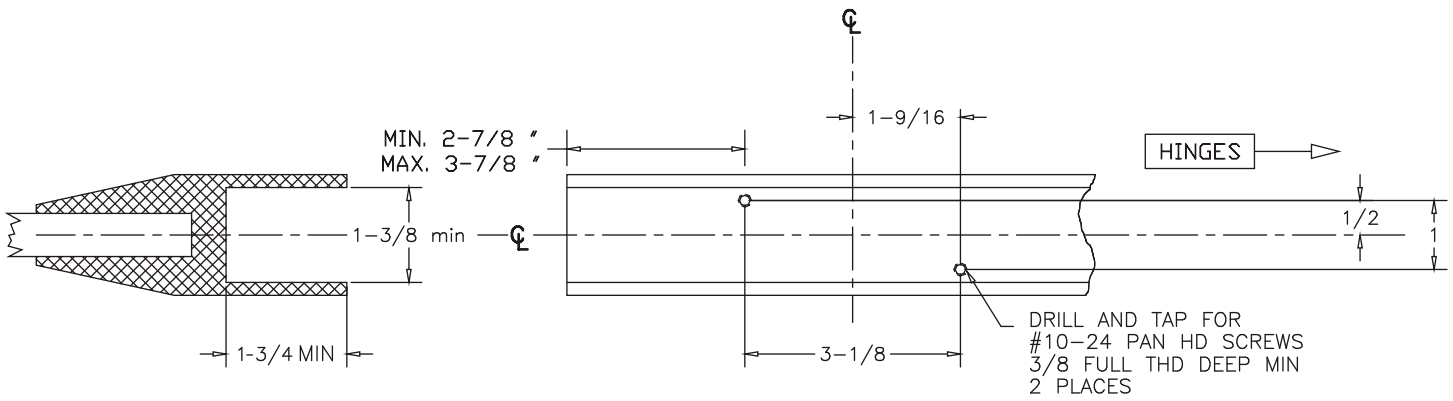
UL# R12092; MEA# 222-96-E; CSFM# 3774-0544:107

#### Shipping Weight

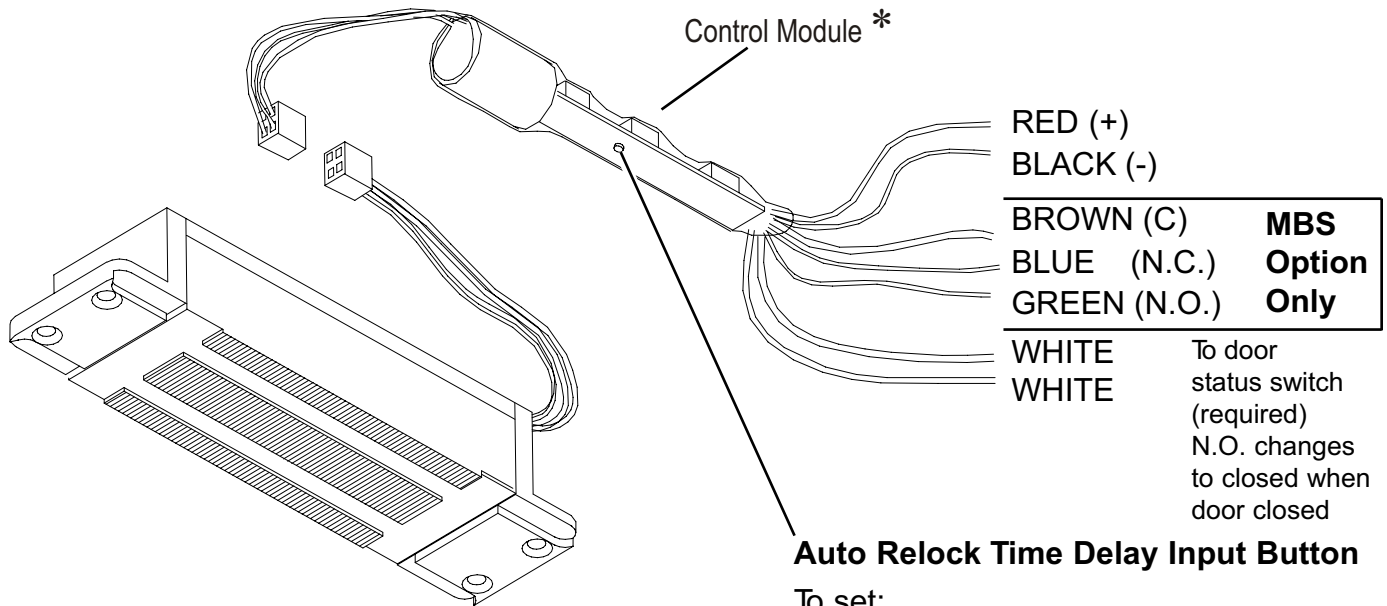
280+ - 6 Pounds; 280+TRD/BRD - 8 Pounds



**TOP RAIL DOOR (TRD) MODEL TEMPLATE INFORMATION:**



**WIRING AND TIME DELAY SETTING:**



**Auto Relock Time Delay Input Button**

To set:

1. With door open, apply power.
2. Within 5 seconds, push the time delay pushbutton once for each second of time delay desired. (Up to 30).
3. Close the door and verify the delay; minimum delay achievable is 2 seconds due to nature of module.

**Note:** the set delay is stored at the door closing and will repeat itself at the subsequent applications of power.

**\* IMPORTANT:**

Control Module to be mounted in a remote and dry location, and no farther than 15 feet away from lock. DO NOT CUT YELLOW WIRE.

**Schlage Lock Company**

575 Birch Street  
Forestville, CT 06010  
technical support: 866-322-1237  
fax: 860-584-2136  
web: <http://www.irsupport.net>

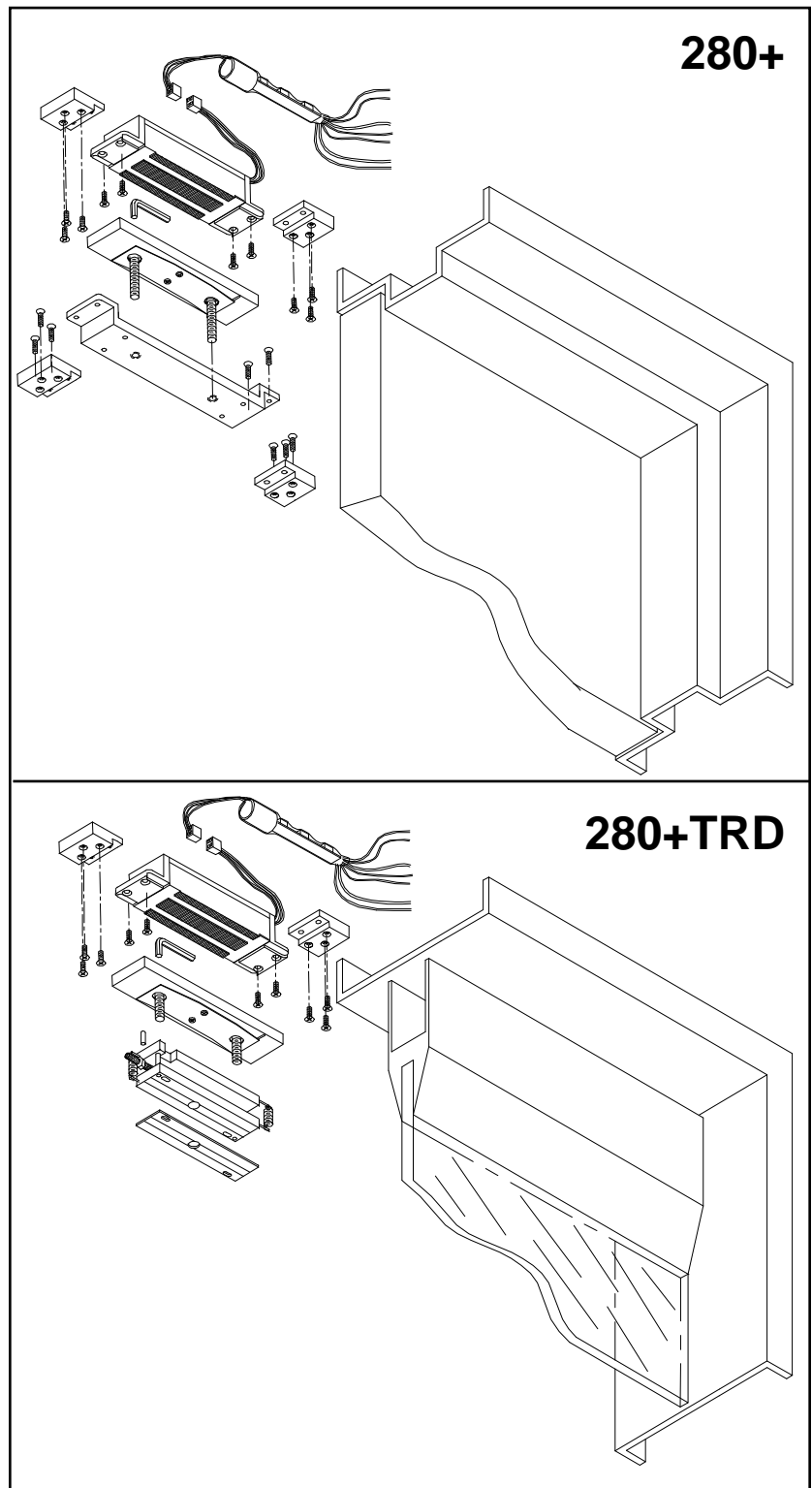


# 280+ SHEARLOCK INSTALLATION AND WIRING

MODELS: 280+ and 280+TRD

**280+** Standard model is a concealed electromagnetic shear lock designed to fit standard hollow metal doors and frames. In cases where the top of the door is accessible for adjustment, this lock can be used on top rail type doors. The gap between the armature (in the door) and the magnet (in the frame) is adjusted from the armature with a hex wrench. It can be mounted either horizontally (typical) or vertically for certain applications. Reversible mounting tabs (included) allow for a variety of metal door and frame thickness.

**280+ TRD** model is a concealed electromagnetic shear lock designed to fit a Aluminum top rail glass doors and open channel hollow metal doors and hollow metal or aluminum frames. It is generally used in cases where the top of the door is not accessible for adjustment. The gap between the armature (in the door) and the magnet (in the frame) is adjusted from the edge of the top rail, through an access hole, with a nut driver or standard screwdriver.



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web: www.irsupport.net





### HOW THE 280+ SHEARLOCK WORKS:

A shearlock is designed to rely on the sheer strength of steel for holding force. When energized, the magnet attracts the armature, which moves toward it, overcoming an air gap which allows the door to open without interference. The parts, once engaged, interlock mechanically because of their shape. This gives the system tremendous holding force (in excess of 2700 pounds). Because of the design, door and frame preparation must be done very accurately. It is important that centerlines of the magnet and armature line up to form a vertical axis. (See diagram at top of page 4.) It is also critical that the air gap be adjusted to be as close as possible without interfering with door operation. This will ensure the best possible reliability. The electronic module is designed to have a very strong initial magnetic field, a minimum of 2 seconds after power is reapplied. This will allow the armature to reliably overcome the air gap and ensure positive engagement.

### Specifications

#### Electrical

Input Voltage	<b><i>Filtered, Regulated 12 to 24 VDC</i></b> (automatic voltage selection)
Input Current	0.65 Amps Nominal @ 12VDC (Inrush: 2.0 Amps @ 12VDC) 0.20 Amps Nominal @ 24VDC (Inrush: 1.5 Amps @ 24VDC)
Adjustable Time Delay (ATD)	Adjustable from 2 to 30 seconds. Factory default: 3 seconds
Automatic Relock Switch (ARS)	External magnetic reed switch (required for proper operation)
Optional Monitoring Output MBS	Contact rating - 1 Amp maximum at 30VDC

#### Mechanical

Mounting Type	Mortise mounted horizontal or vertical. Non-handed
Shear Holding Force	2700 lbs.
Door Thickness	1 3/4 " Minimum (except for HD models)
Plating	Magnetic face and armature; nickel plated to resist corrosion

#### Warranty

#### Certifications/Compliance

#### Shipping Weight

Magnetic coil: Lifetime	Electronics: 1 year limited
UL# R12092; MEA# 222-96-E; CSFM# 3774-0544:107	
280+ - 6 Pounds; 280+TRD/BRD - 8 Pounds	

**DOOR AND FRAME CENTERLINE IDENTIFICATION:**

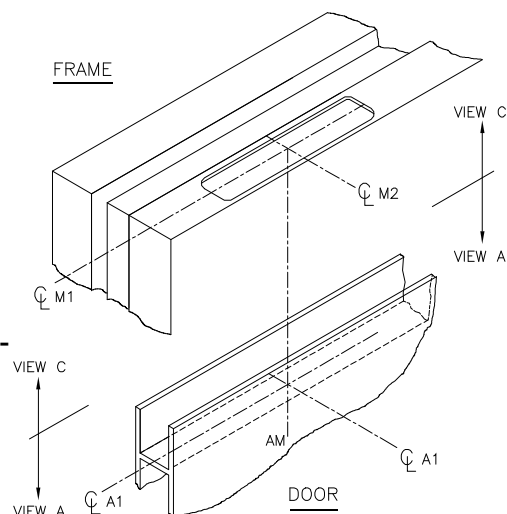
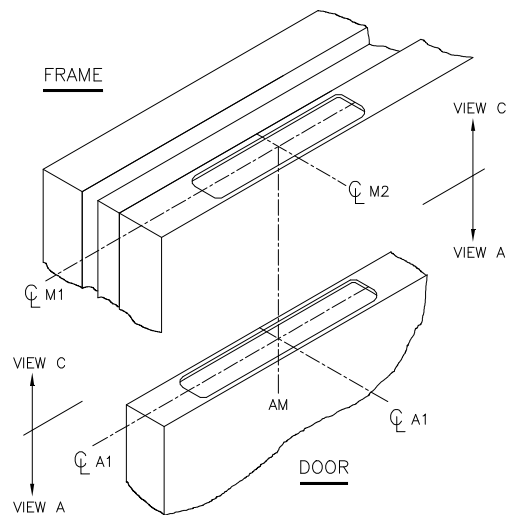
♦ For proper operation, it is critical that the centerlines of the magnet and armature assembly line up to form a vertical axis. The figure at right shows the centerline scheme for a standard 280+. Note that the centerlines of the magnet (M1 and M2) are directly above the centerlines of the armature assembly (A1 and A2) so that they form a vertical axis (AM).

- ♦ The location of the magnet and armature relative to the latch side is not critical but a minimum of 7 inches from the edge of the door is recommended.
- ♦ The standard model 280+ can be installed in a horizontal or vertical configuration.

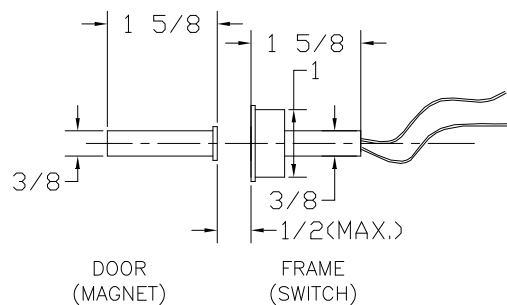
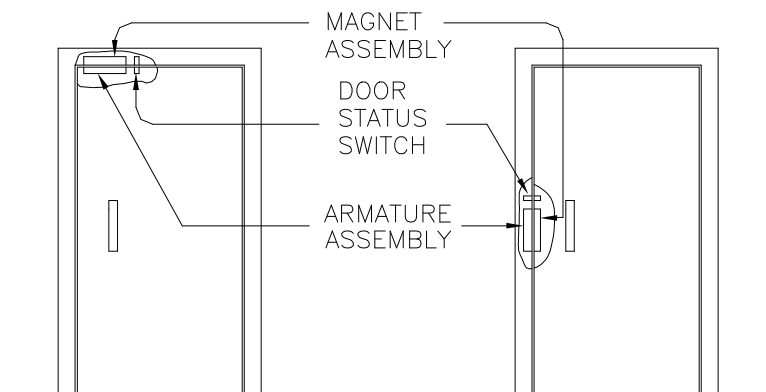
♦ To achieve maximum resistance to forced entry, position as follows:

- *Horizontal configuration* - position unit close to the latch side of door jamb.
- *Vertical configuration* - position unit close to the strike plate.

♦ In some applications the door and frame may require reinforcement.



**DOOR STATUS SWITCH:** This MUST be installed for proper operation. It is best installed as close to the latch side (opposite the hinge side) as possible. The switch indicates to the module that the door is in the closed position so it can lock and engage properly.

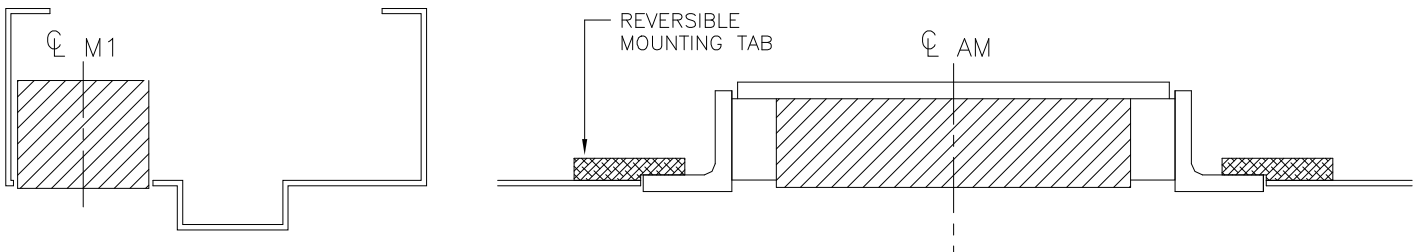
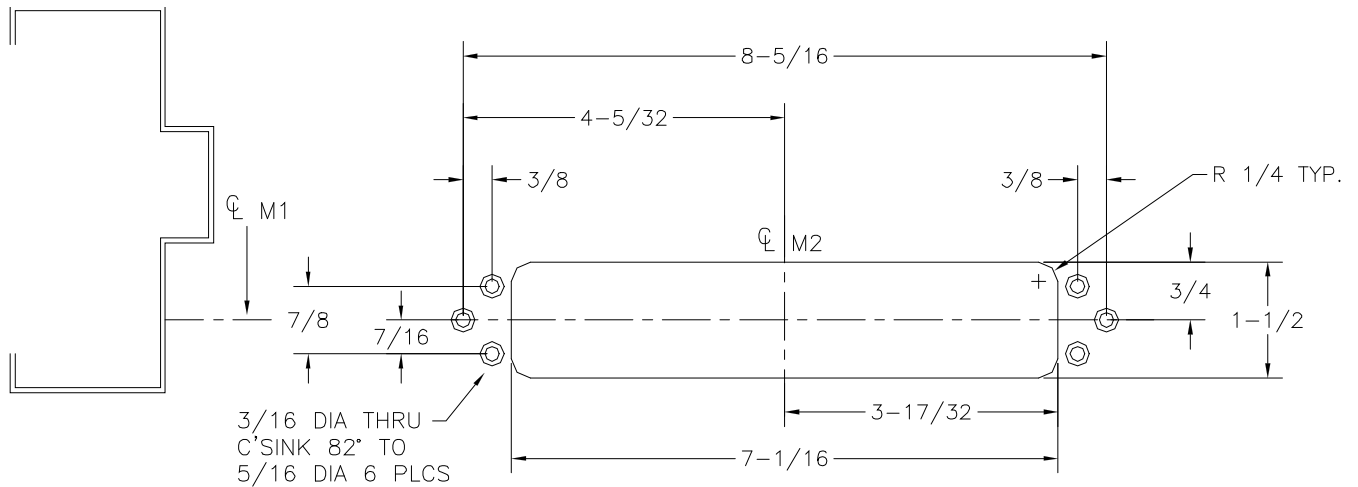




## FRAME PREP:

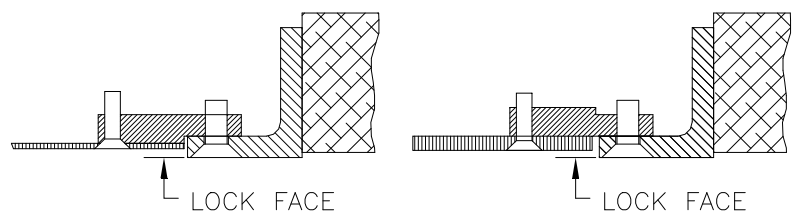
The tabs used for metal frame mounting can be inverted to accommodate different gages of metal. It is very important that the centerlines of the door and frame prep line up to form a vertical axis. The standard paper template (included) is useful in laying out the door and frame prep.

## HOLLOW METAL OR ALUMINUM FRAME PREP

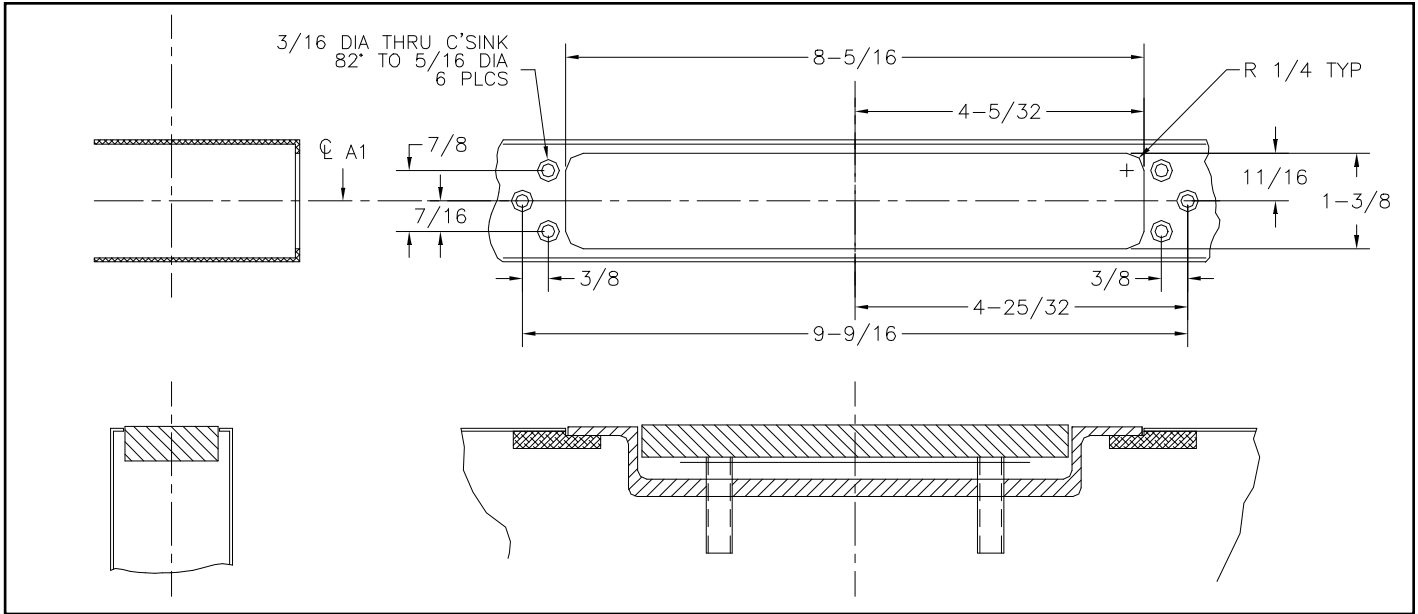


### Mounting Tabs

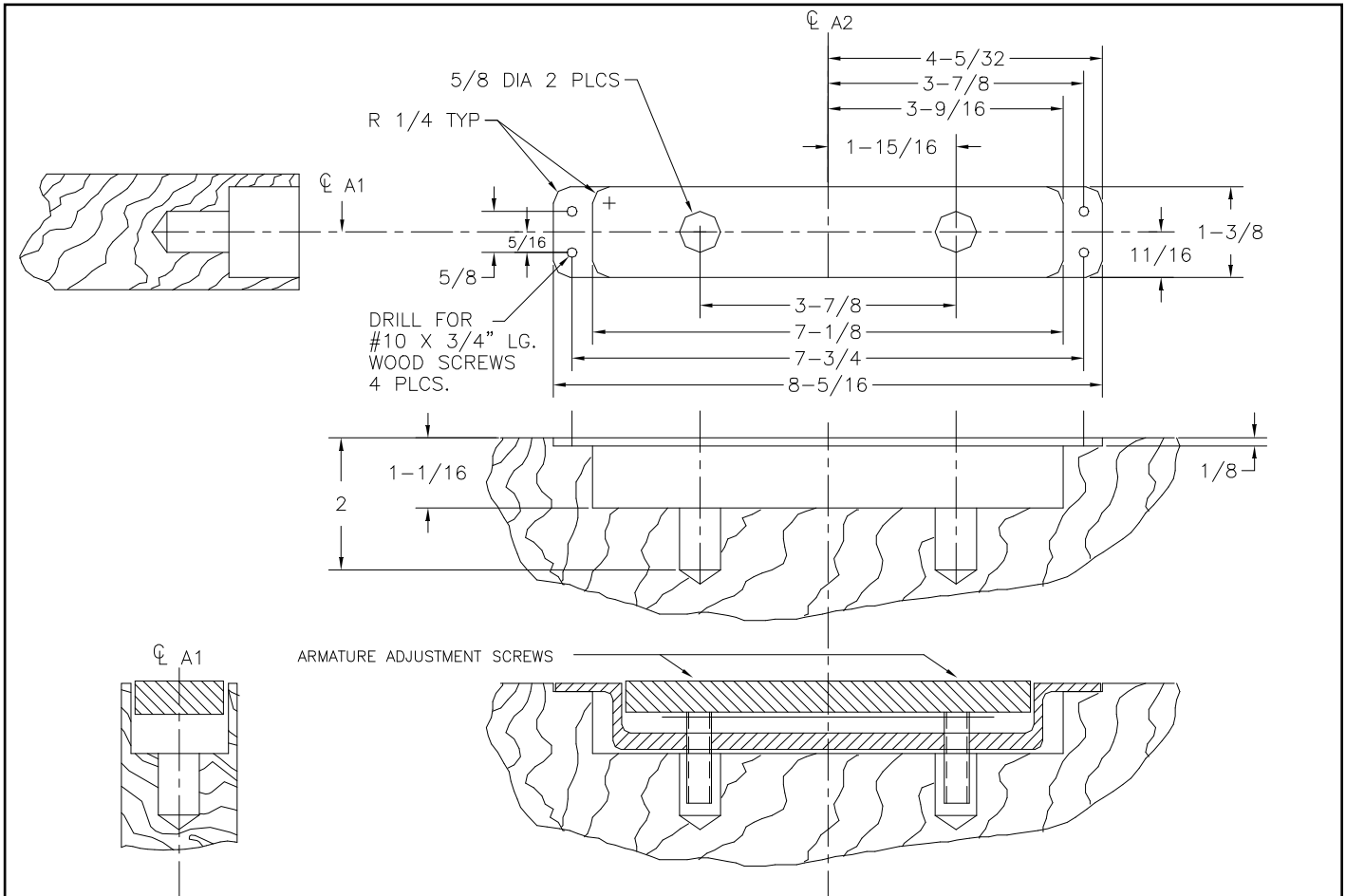
Mounting tabs are reversible so that they may be used with 16 gage hollow metal or 1/8" thick aluminum frames. Observe the correct orientation of reversible tabs as shown.



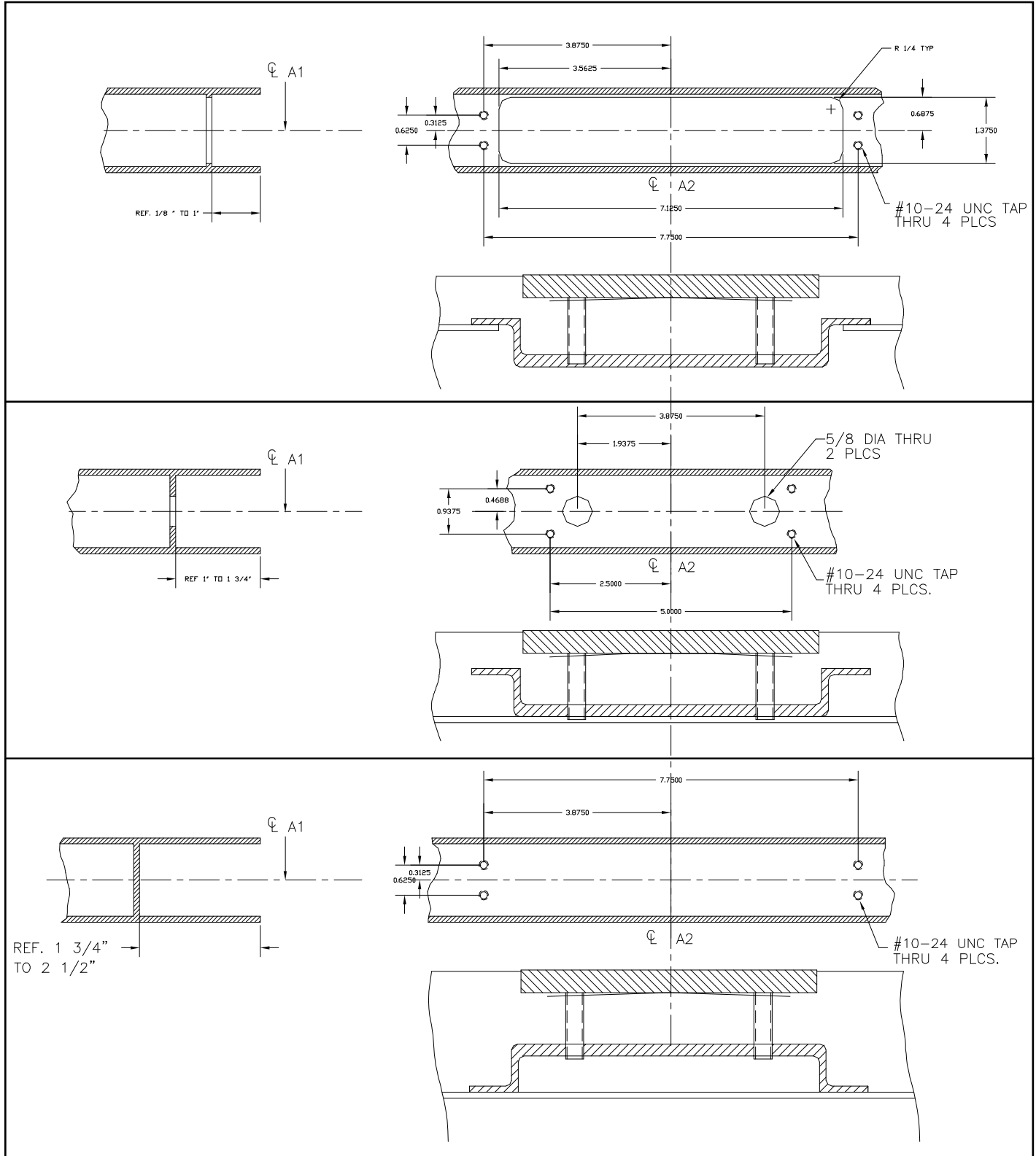
HOLLOW METAL DOOR, CLOSED CHANNEL CONSTRUCTION TEMPLATE INFORMATION:



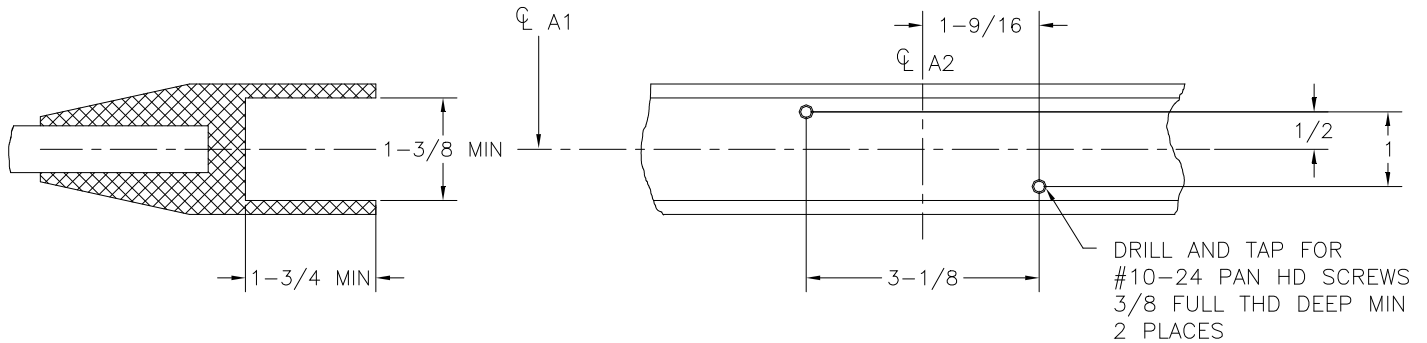
SOLID CORE DOOR TEMPLATE INFORMATION:



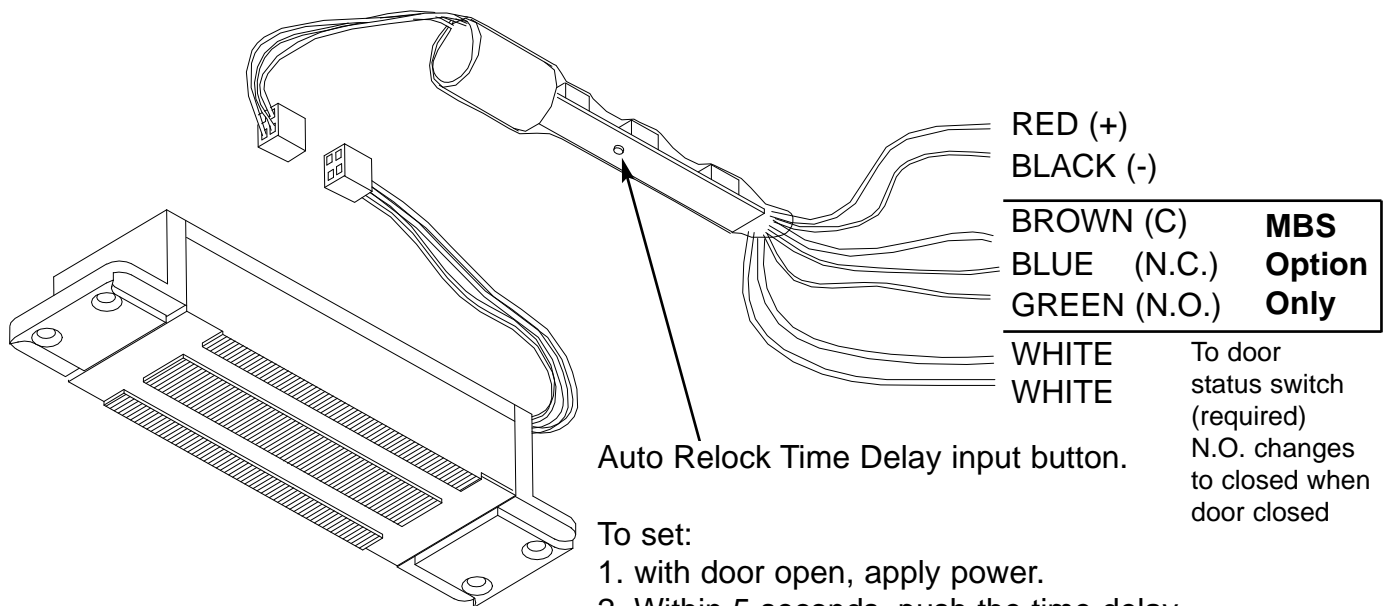
**HOLLOW METAL DOOR, OPEN CHANNEL CONSTRUCTION OR TOP RAIL DOOR USING  
STANDARD MODEL LOCK TEMPLATE INFORMATION:**



TOP RAIL DOOR (TRD) MODEL TEMPLATE INFORMATION:



WIRING AND TIME DELAY SETTING:



- To set:
1. with door open, apply power.
  2. Within 5 seconds, push the time delay pushbutton once for each second of time delay desired. (Up to 30).
  3. Close the door and verify the delay; minimum delay achievable is 2 seconds due to nature of module.
- Note: the set delay is stored at the door closing and will repeat itself at the subsequent applications of power.



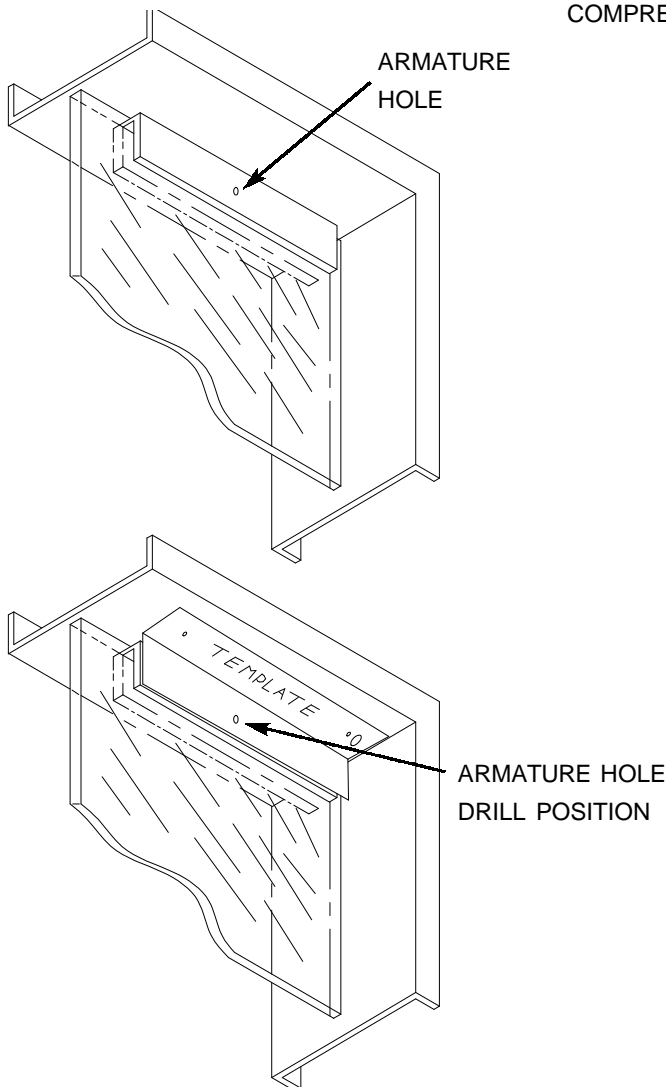
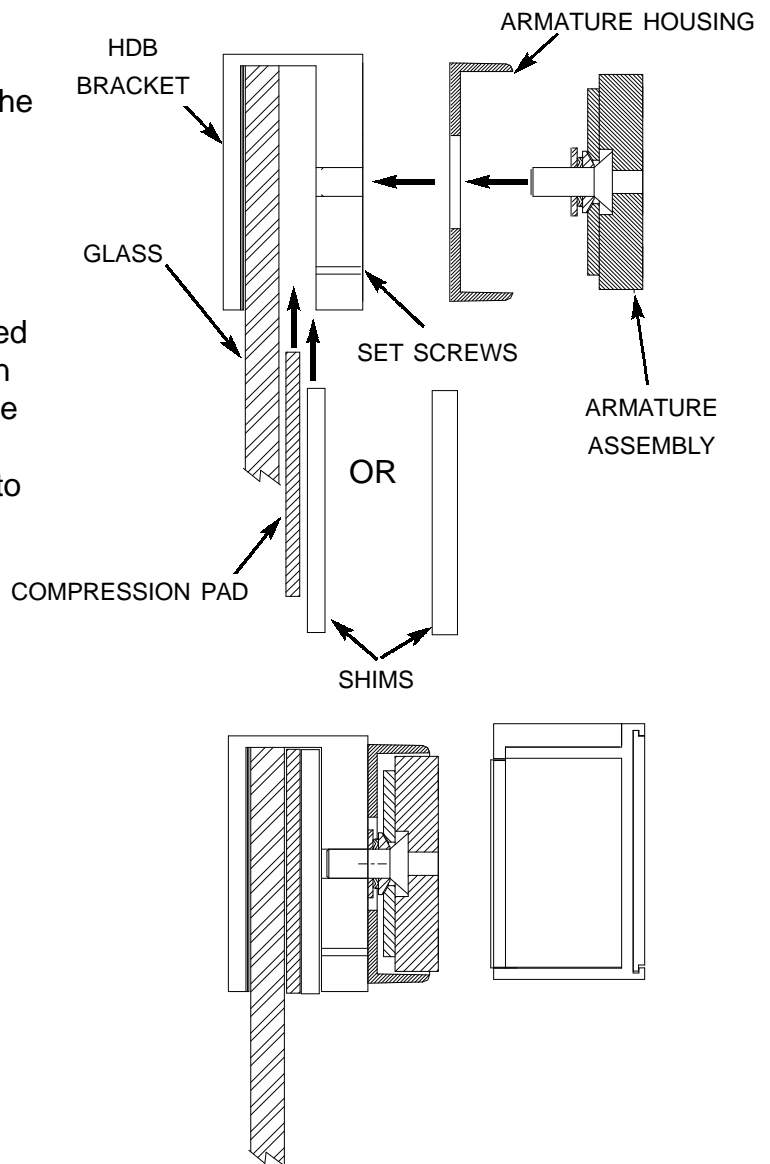
## NOTES

# HDB INSTALLATION SUPPLEMENT

575 Birch Street, Forestville, CT 06010  
Phone (860) 584-9158 Fax (860) 584-2136  
[WWW.LOCKNETICS.COM](http://WWW.LOCKNETICS.COM)

The HDB kits are intended to be installed with the 320+, 350+, and 390+ series outswinging single and double magnetic locks.

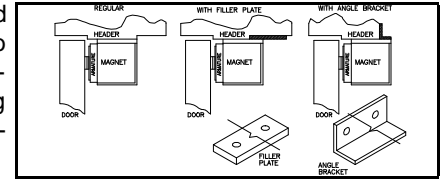
Select the appropriate shim for the thickness of glass. Use the compression pad, installed between the glass and the shim (with the padded side toward the glass). Install in desired position on glass (on top of glass opposite the hinge side with the hole for the armature facing toward the "push" side of the opening). Tighten set screws to trap compression pad and shim into place.



Place standard template on HDB bracket with the armature hole drill position (on template) over the armature hole in the HDB bracket. Tape the template in place. Mark and drill required holes in frame. Follow installation instructions for the model being installed.

**Double Units:** Use the standard template to mark the vertical centerlines of the armature holes on the glass with a wax crayon. Position the HDB brackets on these lines with the armature holes lining up with the marked vertical centerlines.

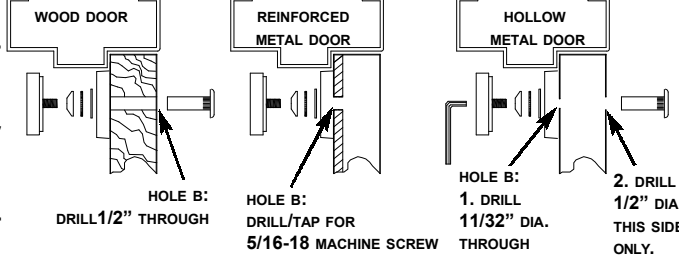
**Pre-Installation Considerations:** It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. It may be necessary to use a filler plate or angle bracket for adequate mounting surface area. See illustration (right). Locknetics offers many sizes of each. Herculite door brackets are also available for glass doors. Consult your distributor.



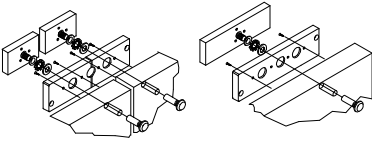
1. Prep door and frame according to the template provided for the correct model you are installing.

**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

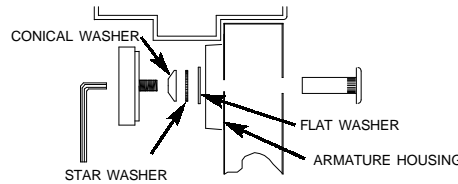
Holes "A" (on frame), referenced to on template, are to be for #10-24 machine screws on reinforced metal frames or #10 self tapping screws on sheet (hollow) metal or aluminum. Hole(s) "B" are for sex nut(s) and depend on door type (see illustration to right for correct application.)



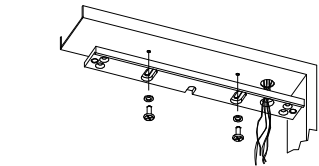
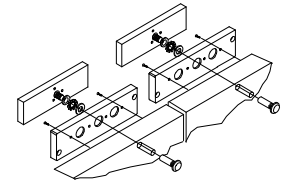
### SINGLE/SPLIT ARMATURE UNITS:



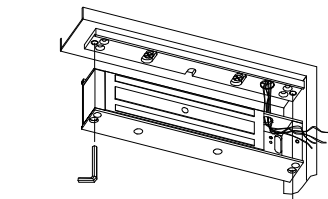
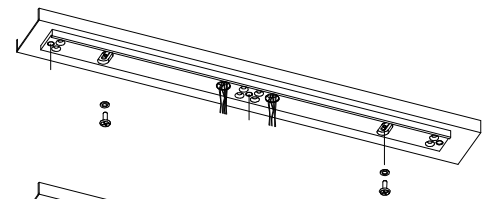
2. Mount armature(s), housing(s) and armature using appropriate hardware as shown.



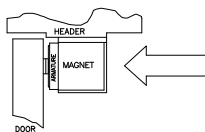
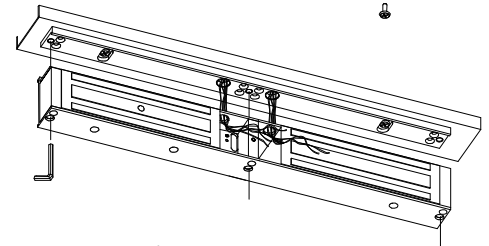
### DOUBLE UNITS:



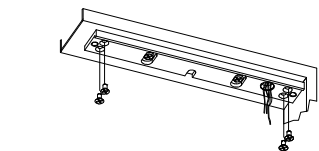
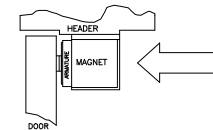
3. Pass control/monitoring wiring through wire access hole in frame and through wire hole in mounting bracket. Mount bracket using pan head screws and flat washers. Do not completely tighten screws - it will be necessary to adjust the position of the bracket in step 5.



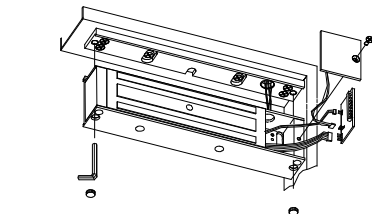
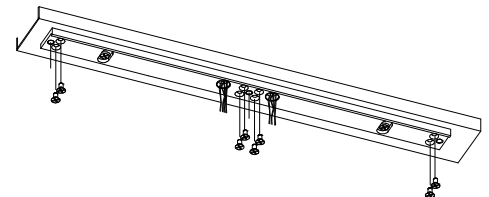
4. Install magnet assembly to mounting bracket.



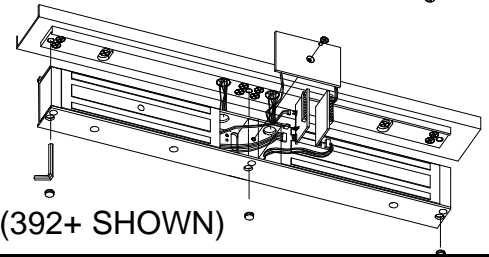
5. Close and latch door. Push the magnet assembly toward armature(s) on door(s) until they are pressed together. When possible, apply power to magnet to set final position. Mark position of mounting bracket and remove magnet assembly.



6. Tighten pan head screws to firmly hold mounting plate to frame. Drill mounting holes for #10 sheet metal/machine screws and secure mounting plate to frame. Make sure all fasteners shown are installed.



7. Install magnet to mounting bracket. Make wiring connections (see wiring instructions on next page). Install circuit board(s) (if used), wire and wire access cover. Do not pinch wires between parts. Install antitamper plugs, using a rubber mallet, if desired.



(390+ SHOWN)

(392+ SHOWN)

**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

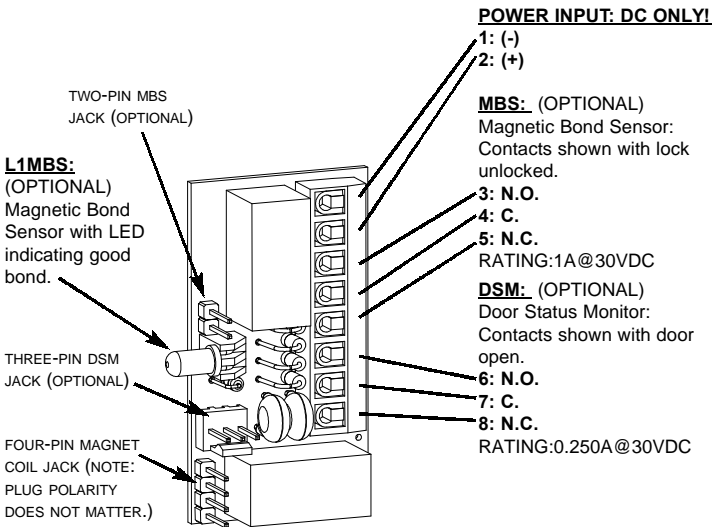
## “+” MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

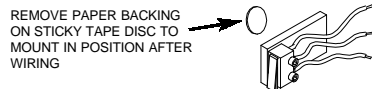
**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

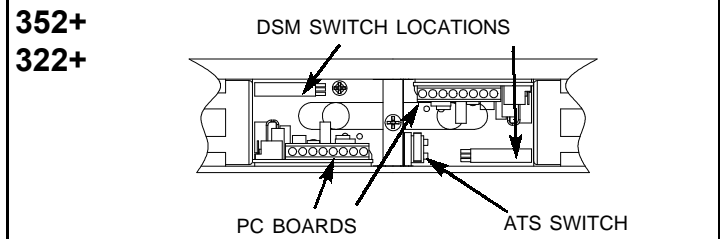
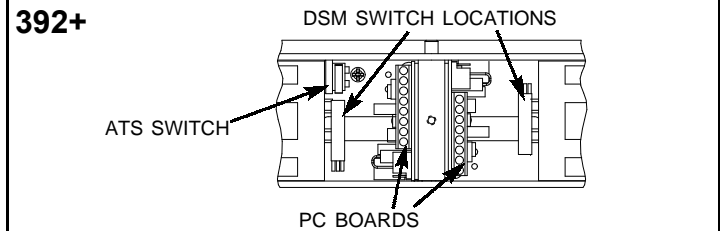
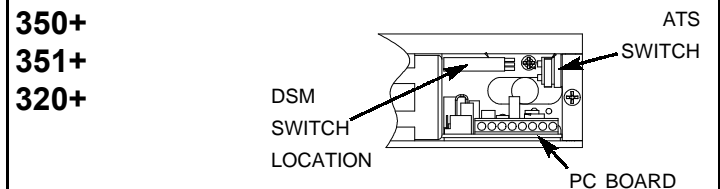
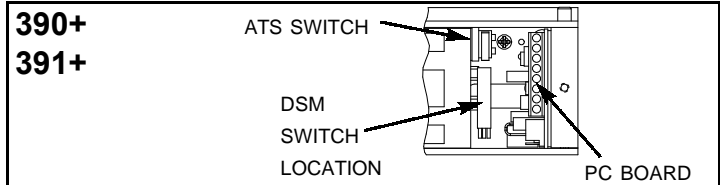


**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING: 1A @ 30VDC



## WIRING CAVITY COMPONENT LOCATION:

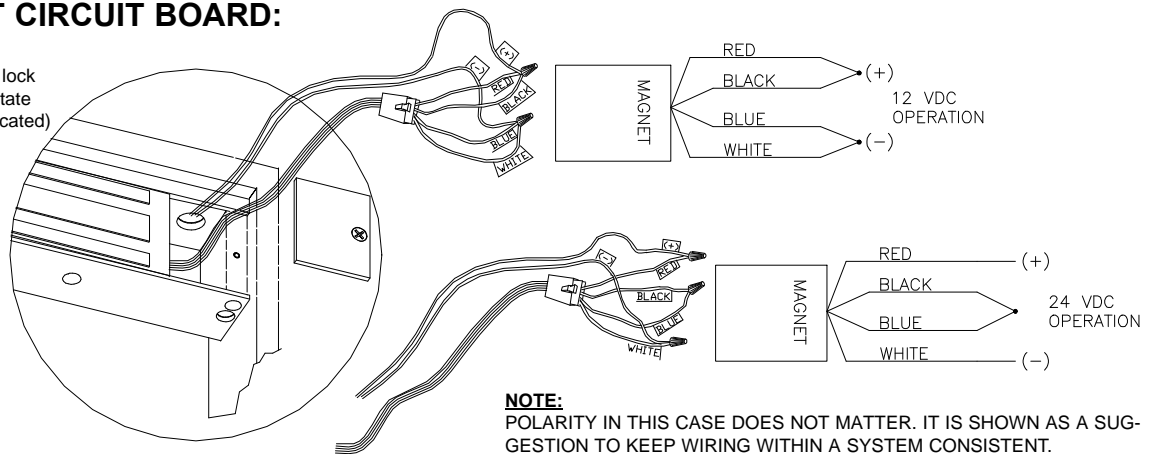


## MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING: 0.250A @ 30VDC)

**DSM:**  
(Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING: 0.250A @ 30VDC)

IMPORTANT! DSM SWITCH POSITIONS ARE THE SAME. SEE DIAGRAMS ABOVE.

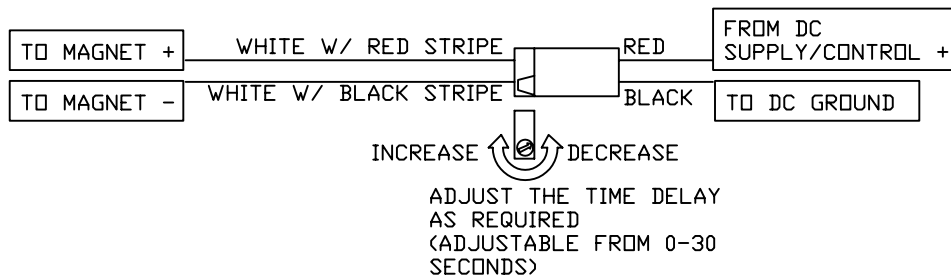


**NOTE:**  
POLARITY IN THIS CASE DOES NOT MATTER. IT IS SHOWN AS A SUGGESTION TO KEEP WIRING WITHIN A SYSTEM CONSISTENT.



# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

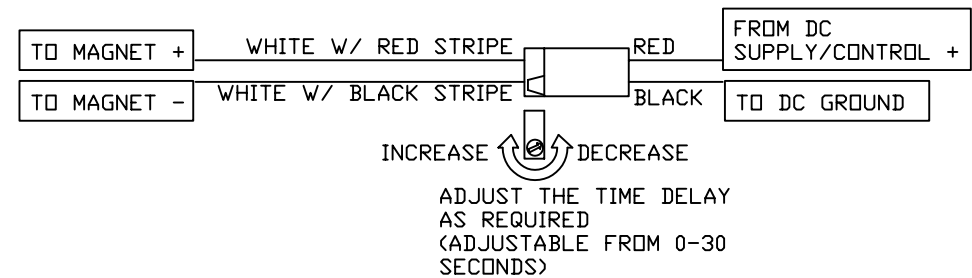


FORM 39476

01-29-2004

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

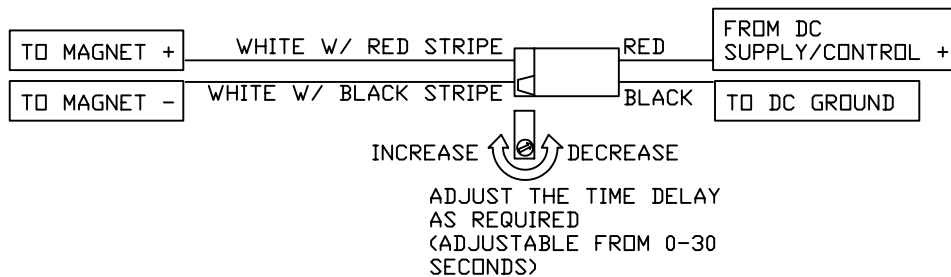


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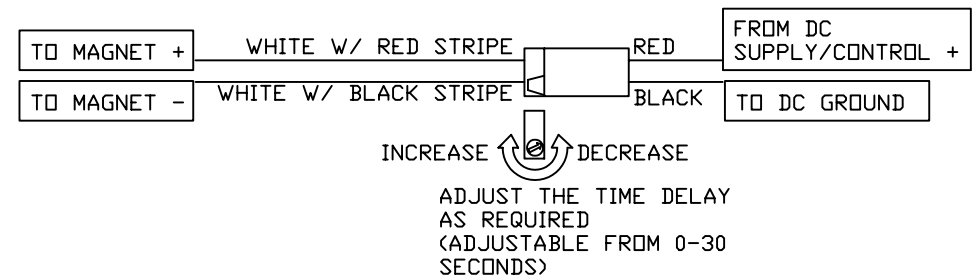


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01-29-2004

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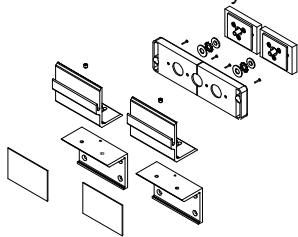
FORM 39476

01-29-2004

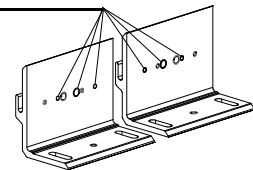
### Pre Installation Considerations:

It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. The TJ type of magnetic lock is intended for use on inswinging doors. It is not intended to be installed on the exterior of buildings.

**SPLIT ARMATURE MODELS:** These models (e.g. 391, etc.) are used for double doors with one magnet and two armature assemblies. Therefore, there are two of each of these parts. The installation is essentially the same.

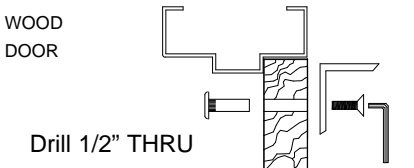
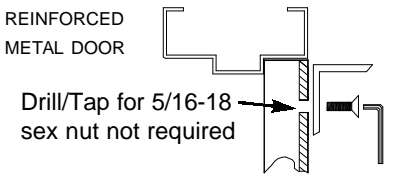
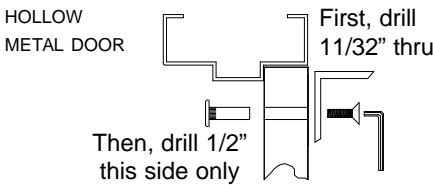


**NOTE:** There are two sets of holes on each TJ bracket. Use sets of holes which are closer to the parting line.



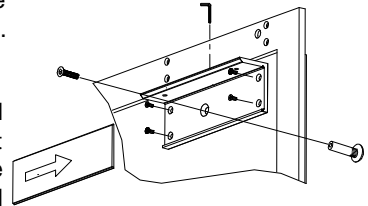
**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. **DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.**

### SEX NUT PREP FOR TJ BRACKETS

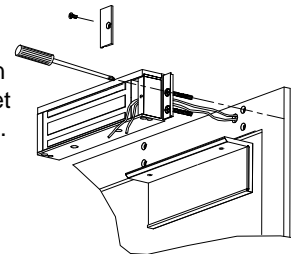


**1.** Prep door and frame according to the template provided for the correct model you are installing.

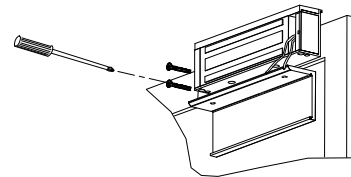
**2.** Install lower TJ bracket(s) using sheet metal screws as shown and sex nut flat head socket screw. Slide the TJ dress plate(s) into the lower TJ bracket(s) as shown. Center and secure position using allen set screw(s).



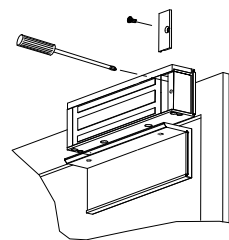
**3.** Remove wire access cover from magnet. Loosen set screw located inside wire cavity. Slide magnet to left just enough to expose two mounting holes. Pull control wiring through wire access hole. Install magnet to frame with two sheet metal or machine screws through exposed holes.



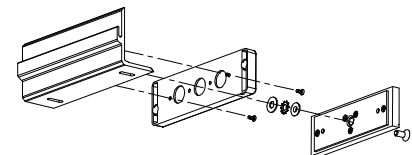
**4.** Slide magnet to right just enough to expose two holes on left. Secure magnet with two screws on left. **IMPORTANT! Do not slide the magnet too far or wiring could be severed or damaged.**



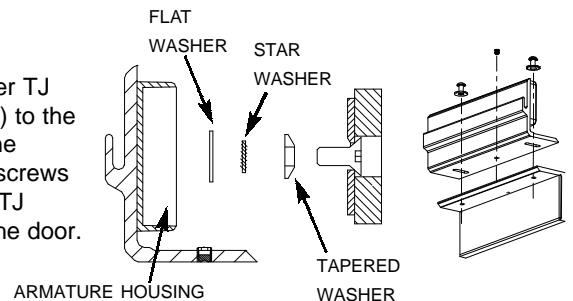
**5.** Center the magnet on the mounting bracket and secure by tightening position set screw with a phillips screw driver. Make wiring connections (refer to other side of this sheet). Tuck wiring into cavity and install cover.



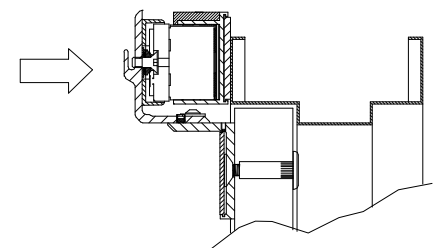
**6.** Install the armature(s) and armature housing(s) onto the upper TJ bracket(s) using the hardware provided as shown. **IMPORTANT! Hardware must be assembled in the correct order, as shown, for proper operation.**



**7.** Open door(s) and install the upper TJ bracket assembly (or assemblies) to the lower TJ bracket(s) using machine screws and washers. Leave the screws just loose enough to slide upper TJ bracket(s) toward or away from the door.



**8.** Close and latch door. Push (each) upper TJ armature/bracket assembly toward magnet until mated against it. Open door slowly and tighten machine screws and set screw(s) into position.



**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

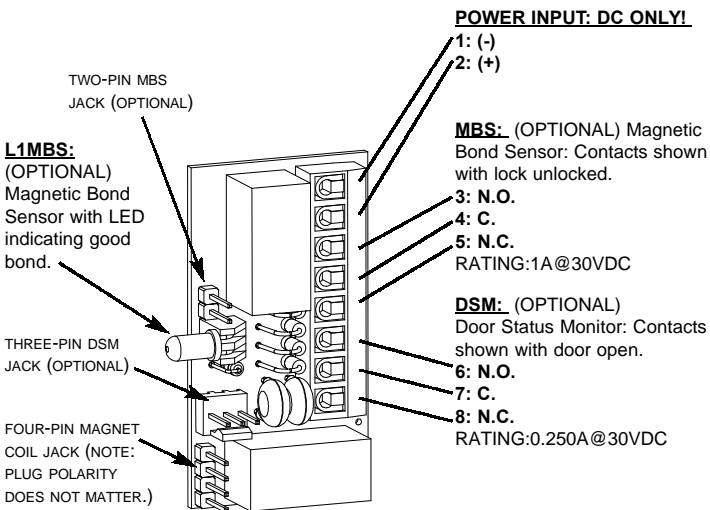
### "+" MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

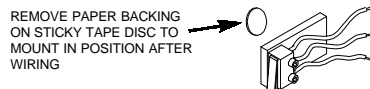
**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

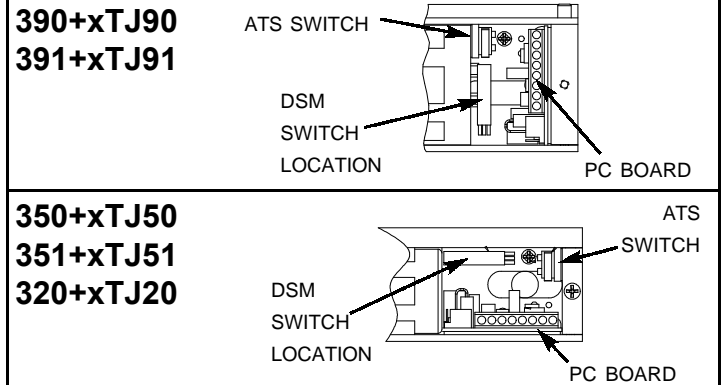


**ATS:** (OPTIONAL) Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING: 1A@30VDC



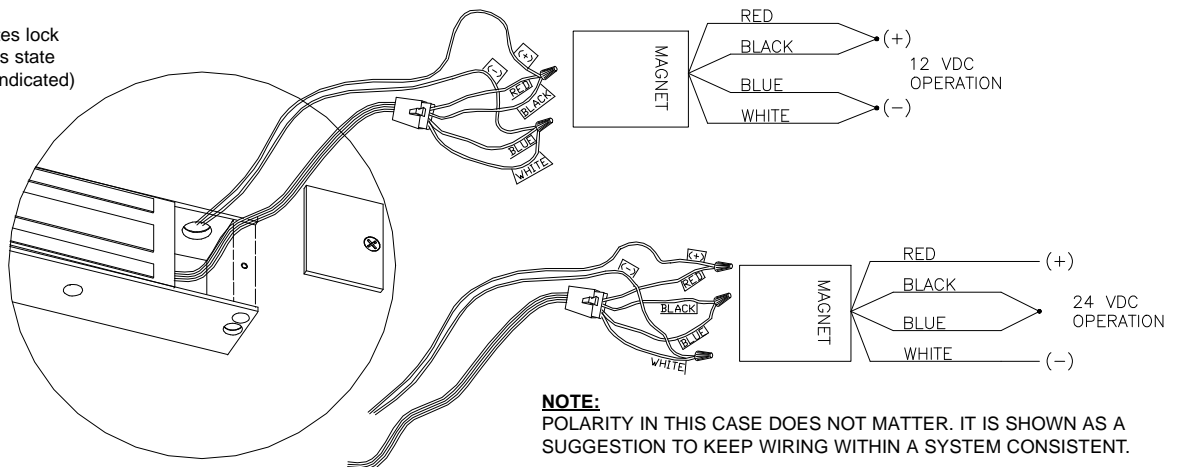
### WIRING CAVITY COMPONENT LOCATION:



### MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING: 0.250A@30VDC)

**DSM:**  
(Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING: 0.250A@30VDC)



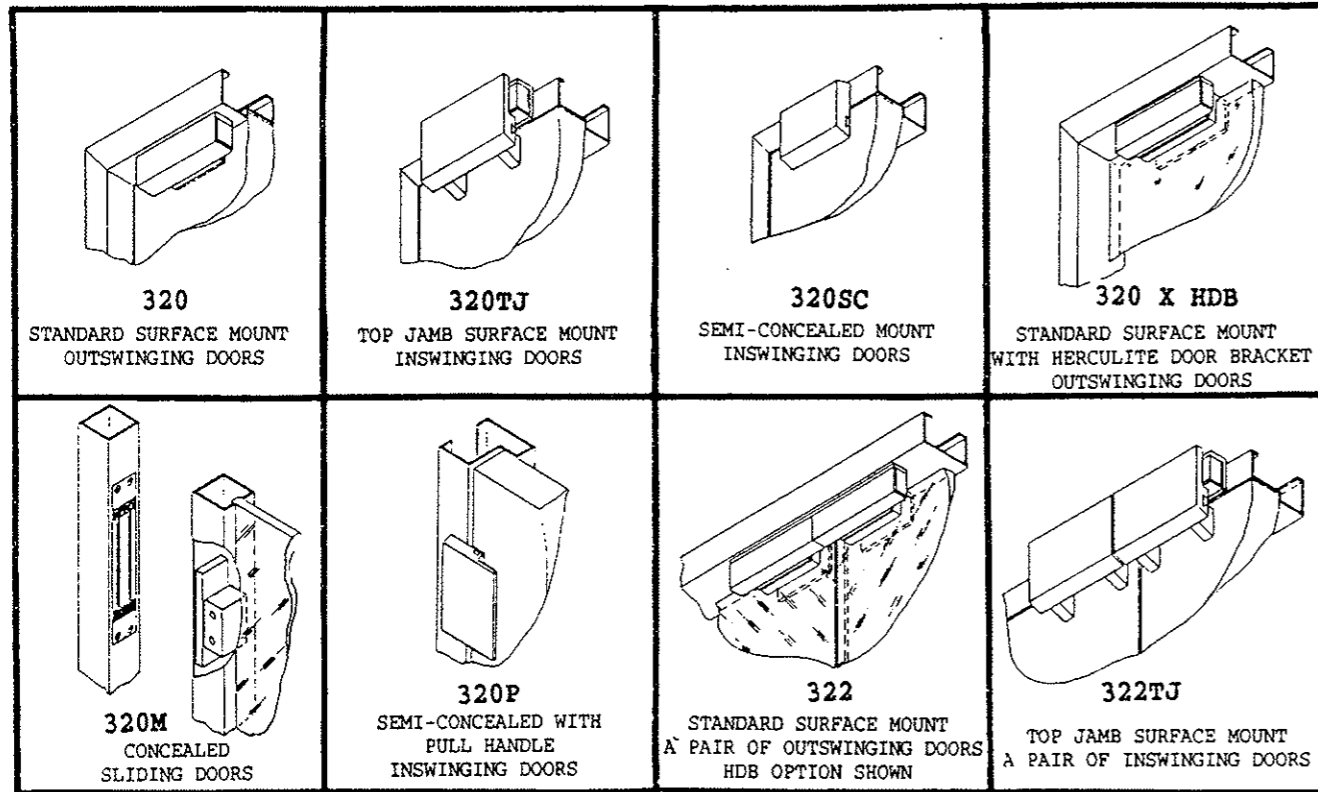


# **320 AND 322 SERIES LOCKS**



# 320 AND 322 SERIES LOCKS

## GENERAL INFORMATION



THE 320 AND 322 SERIES LOCKS ARE MEDIUM SECURITY, HIGH PERFORMANCE LOCKING DEVICES, WHEN PROPERLY MOUNTED ON A QUALITY DOOR AND FRAME WILL WITHSTAND UP TO 650 LBS OF DIRECT FORCE. ANY OTHER CONDITIONS (IE: WEAK HEADER) MAY REQUIRE REINFORCEMENT.

**HOLDING FORCE:**

- 320 SERIES: 500 LBS @ 12V, 650 LBS @ 24V
- 322 SERIES: 500 LBS PER DOOR @ 12V
- 650 LBS PER DOOR @ 24V

**INDEX**

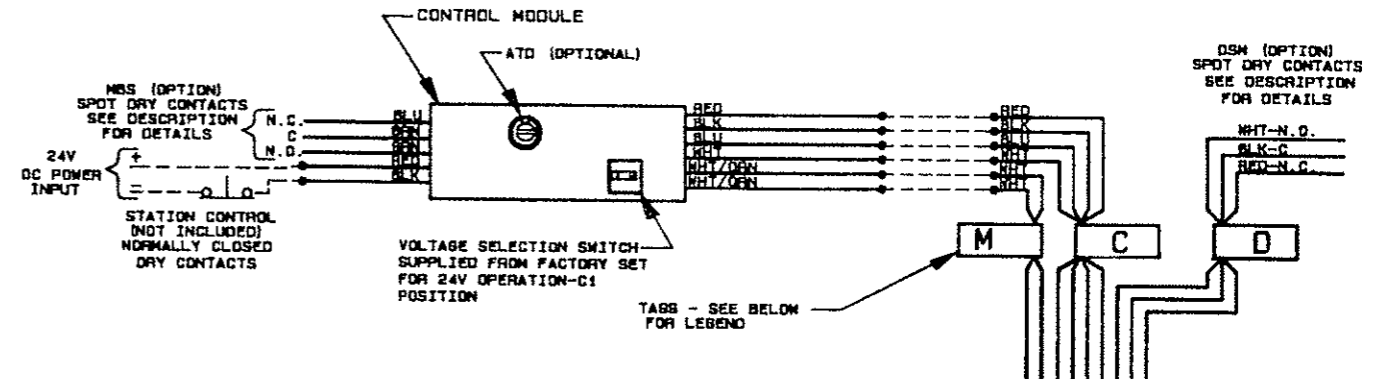
General Information-----Page 1  
 Installation Instructions---Page 2  
 Parts Identification:  
   Model 320 Series-----Page 4  
   Model 320T-----Page 5  
   Model 320SC-----Page 6  
   Model 320M-----Page 7  
   Model 320P-----Page 8  
   Model 322 Series-----Page 9  
   Model 322TJ-----Page 10  
 Parts List-----Page 11  
 Template Drawings-----Page 12  
 Wiring Instructions-----Page 15



# 320 SERIES LOCKS

## WIRING DETAILS

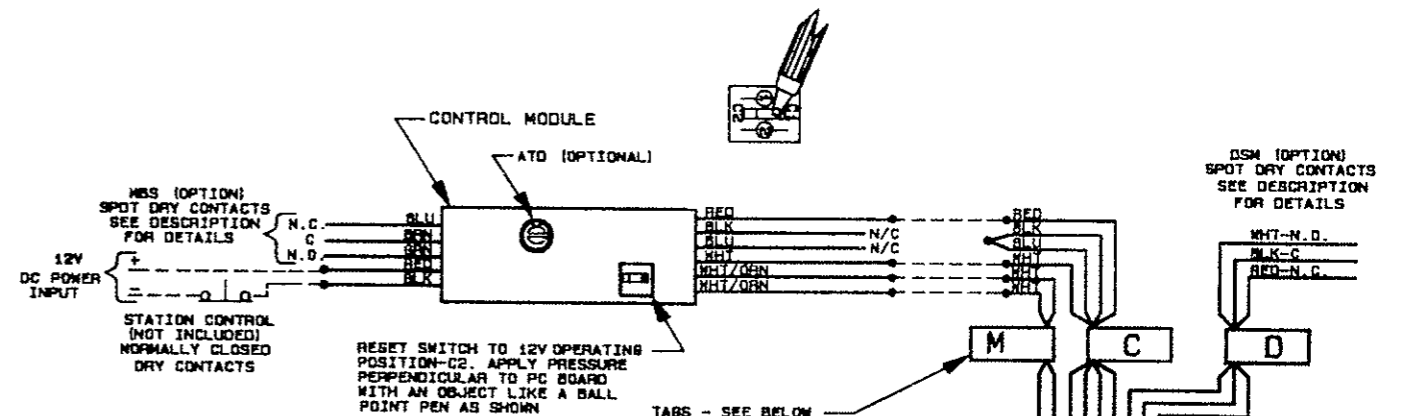
### ALL MODELS



**IMPORTANT: VOLTAGE SELECTION SWITCH MUST BE AT FACTORY SETTING**

TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES
M	MBS WIRES

**FIG. 9**  
24V CONFIGURATION FOR LOCKS WITH MBS OR MBS X ATD OR MBS X ATD X DSM OPTIONS



**IMPORTANT: VOLTAGE SELECTION SWITCH MUST RESET AS SHOWN**

TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES
M	MBS WIRES

**FIG. 10**  
12V CONFIGURATION FOR LOCKS WITH MBS OR MBS X ATD OR MBS X ATD X DSM OPTIONS





# 320 SERIES LOCKS

## WIRING DETAILS

### ALL MODELS



# 320 AND 322 SERIES LOCKS

## INSTALLATION INSTRUCTIONS

**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK**

**GENERAL INFORMATION:**

- \* Handle the equipment carefully. Damaging the mating surfaces of the electromagnet or the armature may reduce locking efficiency.
- \* The electromagnet mounts rigidly to the door frame header. The armature mounts to the door and is designed to pivot about its center compensating for door misalignment.
- \* When installing an electromagnetic lock with the DSM option, care must be used to be certain that the end of the armature holding the permanent magnet will be directly opposite the DSM magnetic switch in the magnet assembly.

**CAUTION:**

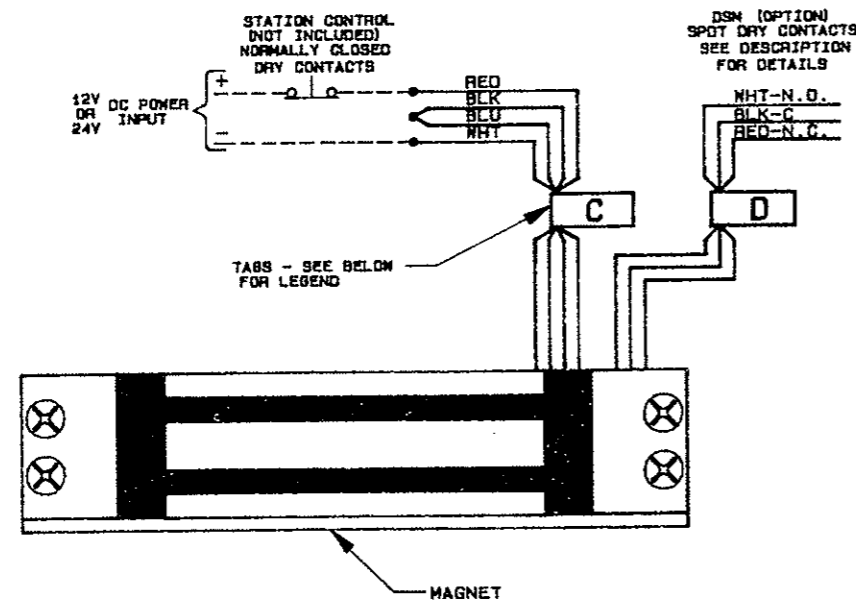
FAILURE TO SECURE THE ARMATURE TO THE DOOR MAY RESULT IN SERIOUS INJURY TO DOOR USER. FOR PROPER OPERATION, SAFETY AND SECURITY, SEX NUT/BOLT ASSEMBLY, WASHERS AND SPACERS MUST BE ASSEMBLED IN THE ORDER ILLUSTRATED AND SECURELY TIGHTENED 1/8 TO 1/4 TURN PAST HAND TIGHT.

**MAINTENANCE:**

- \* The electromagnet and armature are plated for corrosion resistance and require little maintenance. For maximum performance, occasional cleaning and an application of a protective coating to the electromagnet and the armature is recommended.

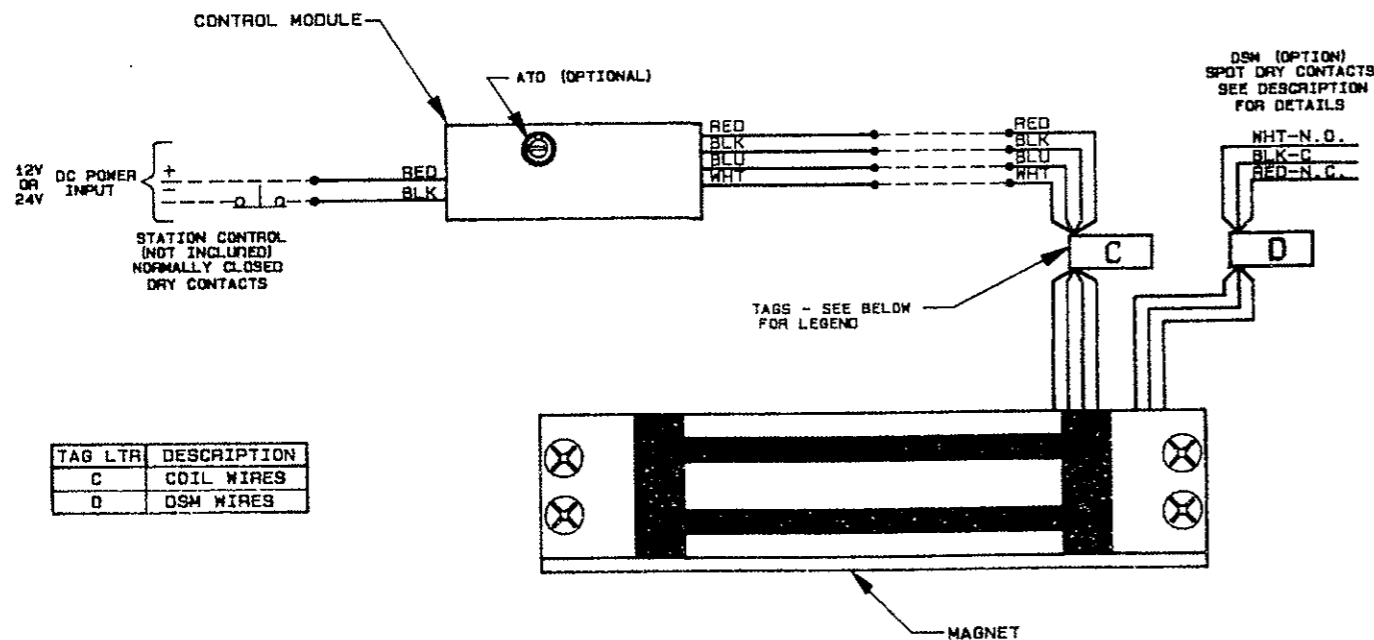
The following service should be done to both the armature and the electromagnet as required:

1. Clean the functional surfaces of the electromagnet and the armature by applying a light coating of silicon lubricant and wipe with a clean dry cloth.



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES

**FIG. 7**  
12V OR 24V CONFIGURATION FOR LOCKS WITHOUT OPTIONS OR LOCKS WITH DSM OPTION



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES

**FIG. 8**  
12V OR 24V CONFIGURATION FOR LOCKS WITH ATD AND ATD X DSM OPTIONS

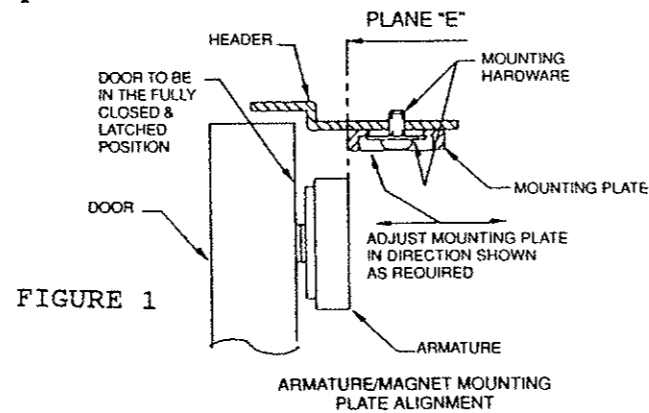


# 320 AND 322 SERIES LOCKS INSTALLATION INSTRUCTIONS

MODELS: 320, 320 X HDB, 322 AND 322 X HDB ONLY

NOTE: Hardware provided is for 1-3/4" door. If door thickness exceeds 1-3/4", an alternate sex nut is required.  
Order P/N - 399025 for 2" doors  
- 399026 for 2-1/4" doors  
or if additional information is required, consult factory.

- 1.0 Prep door and frame according to the appropriate template drawing. When using paper template, follow instructions on the template.
- 1.1 Install armature(s). Refer to Figures 2, 3 and 4 on page 12 and exploded views on pages 4, and 9 for parts identification.
- 1.2 Install the adjustable mounting plate onto frame, placing screws through the slots and into the holes "A" prepped for #10 screws.
- 1.3 With the door fully closed and latched, check the alignment of the magnet mounting plate with the armature as shown in Figure 1, below. When the magnet mounting plate and the armature are in the correct alignment, firmly tighten the screws. Using the mounting plate as a template, drill the remaining mounting holes "C".  
**WARNING: INSTALLATION OF THE REMAINING HARDWARE IS NECESSARY TO MAINTAIN ALIGNMENT.**
- 1.4 Refer to exploded views on pages 4 and 9 to complete mechanical installation.
- 1.5 Go to All Models, paragraph 3.0.



MODELS: 320TJ, 320M, 320P AND 322TJ ONLY

- 2.0 Prep door and frame according to the appropriate template drawing. When using paper template, follow instructions on the template.
- 2.1 Refer to exploded views on pages 5, 6, 7, 8 and 10 to complete mechanical installation.

### ALL MODELS

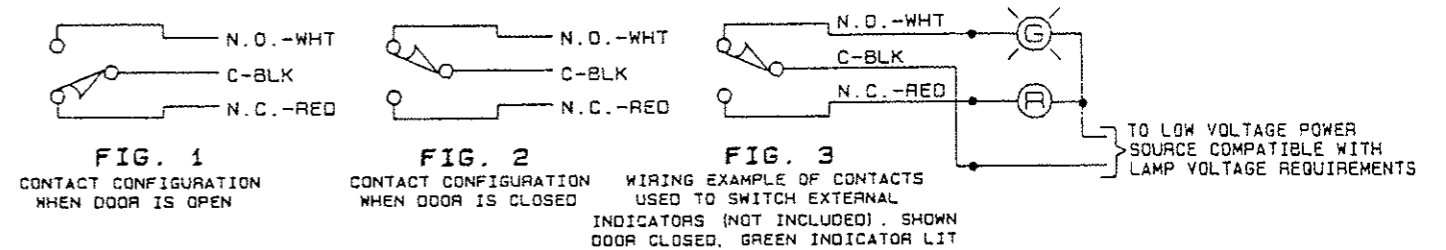
- 3.0 See wiring instructions on pages 15, 16, 17 and 18 and other applicable instructions to complete full installation.



# 320 SERIES LOCKS SPECIFICATION AND ELECTRICAL OPTIONS ALL MODELS

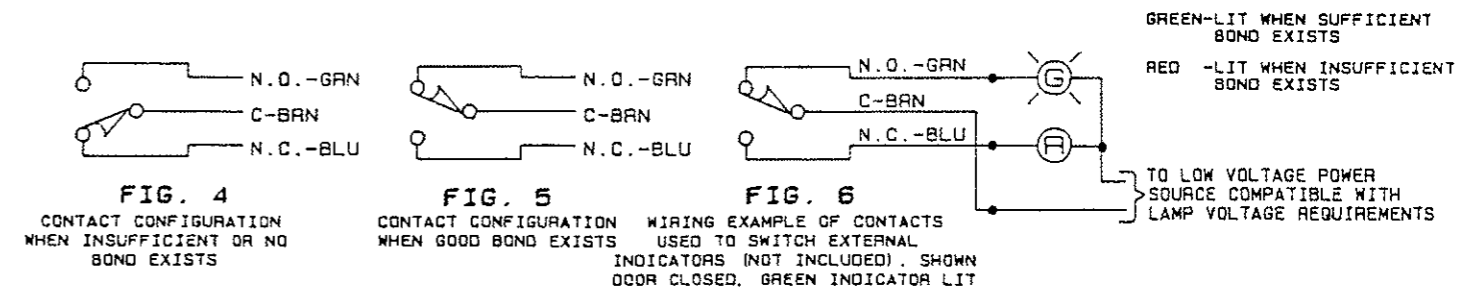
### DOOR STATUS SWITCH (DSM) OPTION:

The DSM provides a signal to indicate whether the door is open or closed. The lock mounting instructions should be followed closely to ensure reliable performance of this option. The DSM provides a signal via a set of form "C" dry contacts rated 100mA resistive at 24VDC. These contacts are accessed by the red, black and white wires. The contacts are labeled in the door opened condition which are: white-N.O. (normally open), black-C (common) and red-N.C. (normally closed). Closing the door causes the contacts across the black and white wires to close and the black and red wires to open. See Figures 1, 2 and 3 below.



### MAGNETIC BOND SENSOR (MBS) OPTION:

The MBS senses whether sufficient magnetic holding force exists to ensure adequate locking. It will respond to low line voltage, foreign materials in the magnetic gap, damage or dirty surfaces of the lock and/or armature. The MBS option provides a signal via a set of form "C" dry contacts rated 1 amp at 30VDC resistive load maximum. The dry contacts are accessed by three (3) wires which are green, blue and brown. They are labeled in a deenergized/no bond condition which are green-N.O. (normally open) and blue-N.C. (normally closed) and brown-C (common). Once the lock is energized and the magnet and armature are properly bonded, the contacts will switch, at which time the common (brown wire lead) and the normally open (green wire lead) will be closed contacts. See Figures 4, 5 and 6 below.





# 320 SERIES LOCKS

## SPECIFICATION AND ELECTRICAL OPTIONS

### ALL MODELS

#### SPECIFICATIONS:

VOLTAGE: 12V OR 24V FIELD SELECTABLE

CURRENT: .225 AMP @ 12V  
.450 AMP @ 24V

RATED HOLDING FORCE;  
500 lbs @ 12v  
650 lbs @ 24v

#### ELECTRICAL OPTIONS:

##### RECTIFIER (RCP) OPTION:

The RCP option allows operation of a direct current (DC) lock from a low voltage alternating current (AC) supply, such as a 12 or 24 volt transformer. The RCP Module converts the AC voltage to DC voltage supplied to the lock. One (1) RC Module should be used for each lock. The RCP Module has four (4) leads. The two yellow wires are the low voltage AC input. The are connected to the low voltage side of the transformer. The red lead is the positive (+) DC output. It is connected to the positive (+) lock input. The black lead is the negative (-) DC output. It is connected to the negative (-) lock input.



##### ADJUSTABLE TIME DELAY (ATD) OPTION:

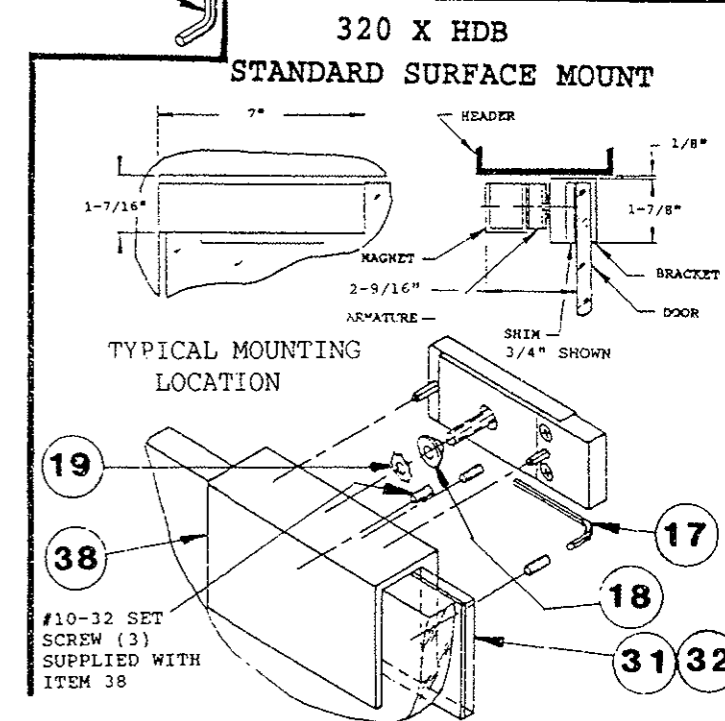
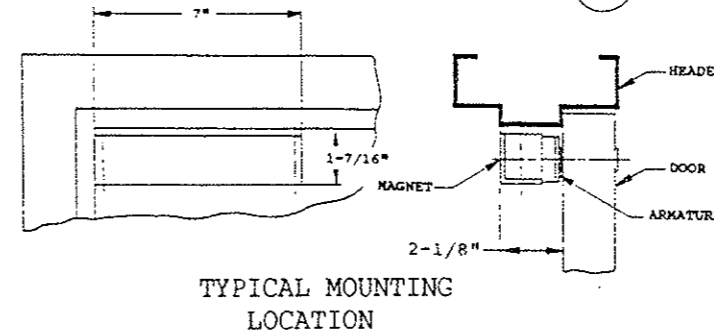
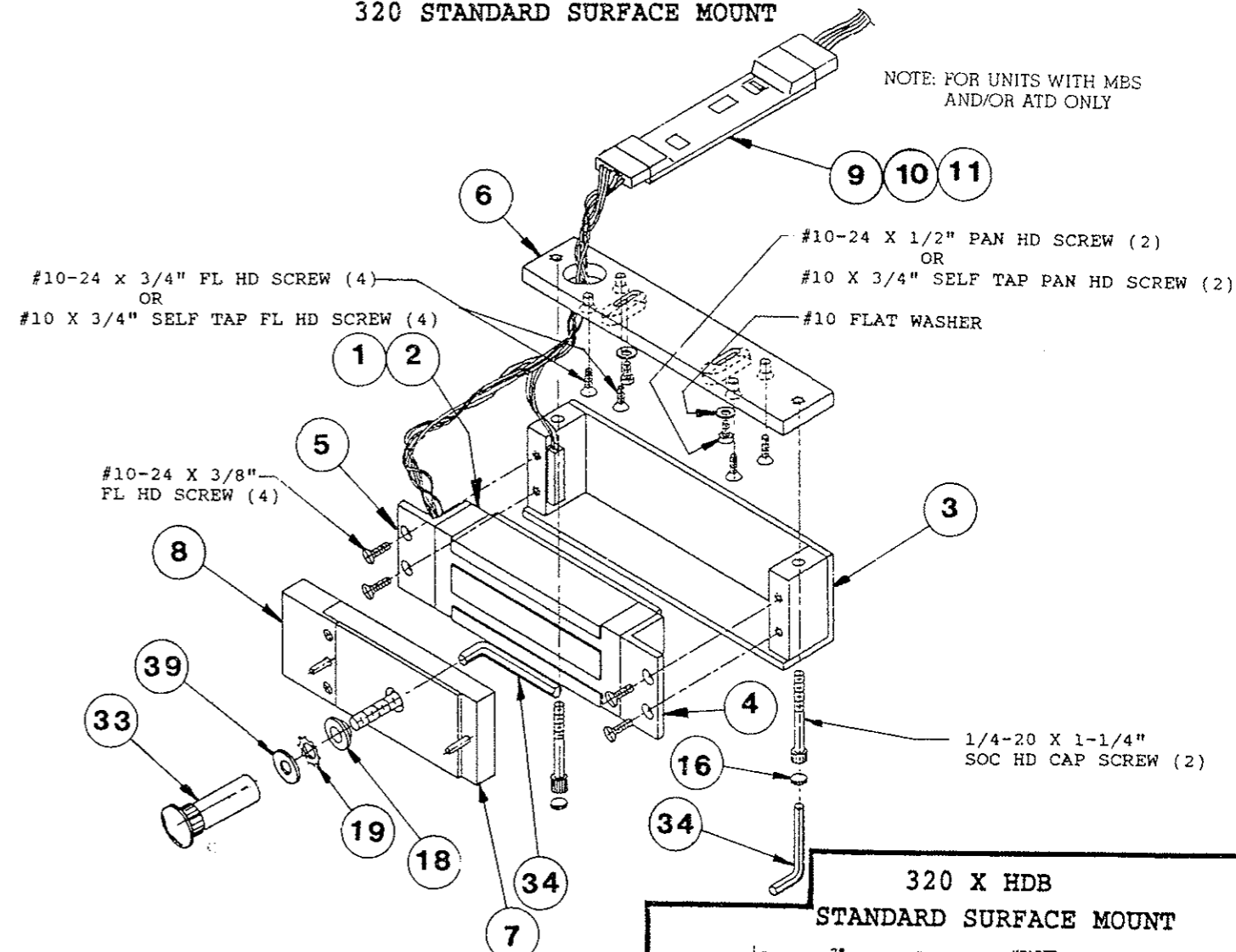
The ATD can be set to delay the relock from 0 to 30 seconds. To increase time, turn adjustment potentiometer clockwise. To decrease time, turn potentiometer counter-clockwise. The ATD will operate whenever input power is interrupted and then reapplied. For location of potentiometer, see Figures 8, 9 and 10.



# 320 AND 322 SERIES LOCKS

## EXPLODED VIEW

### 320 STANDARD SURFACE MOUNT

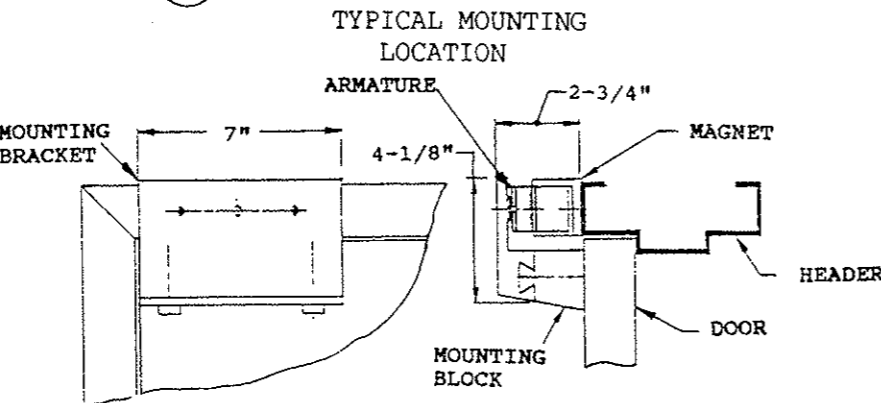
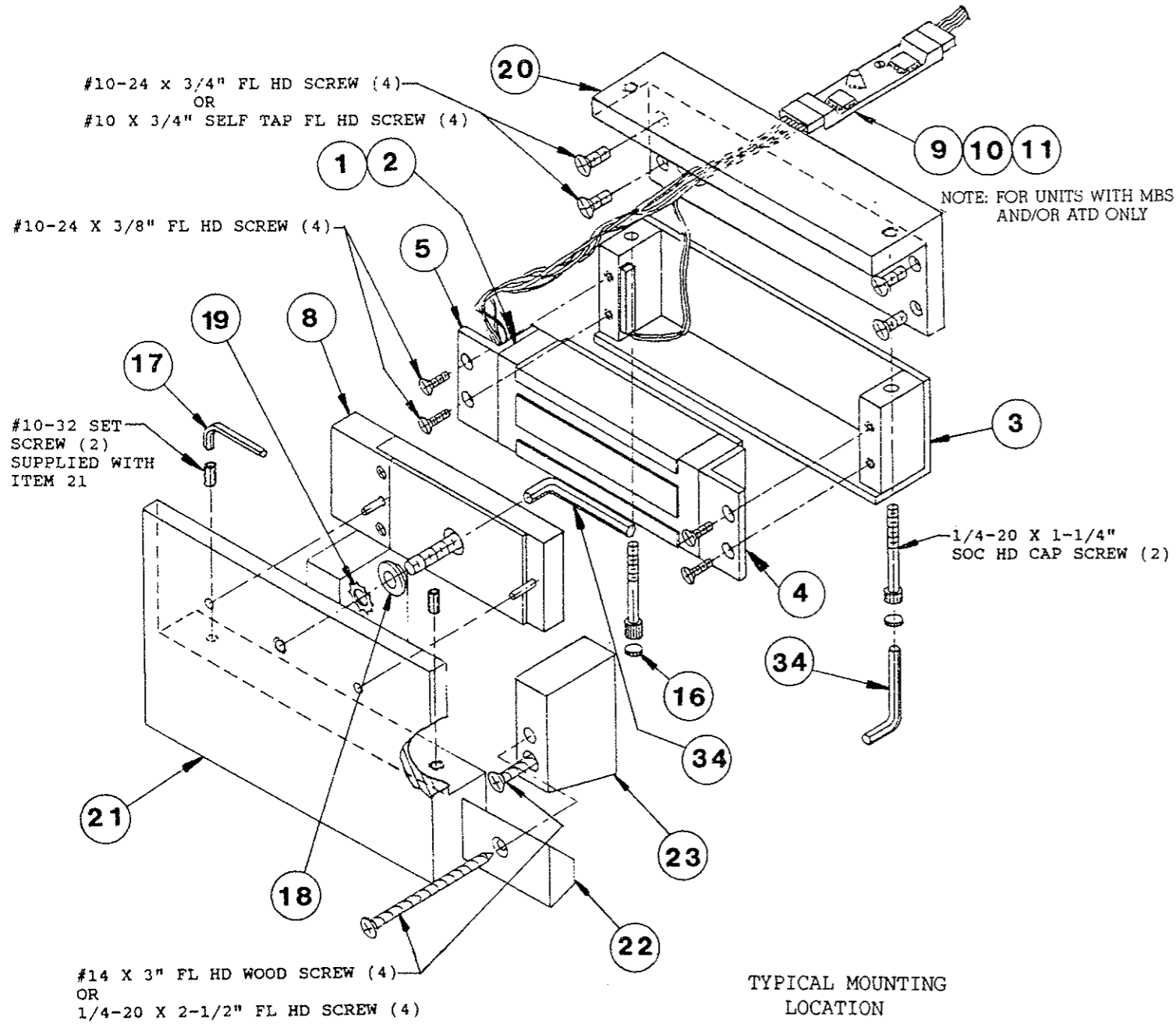






# 320 AND 322 SERIES LOCKS EXPLODED VIEW

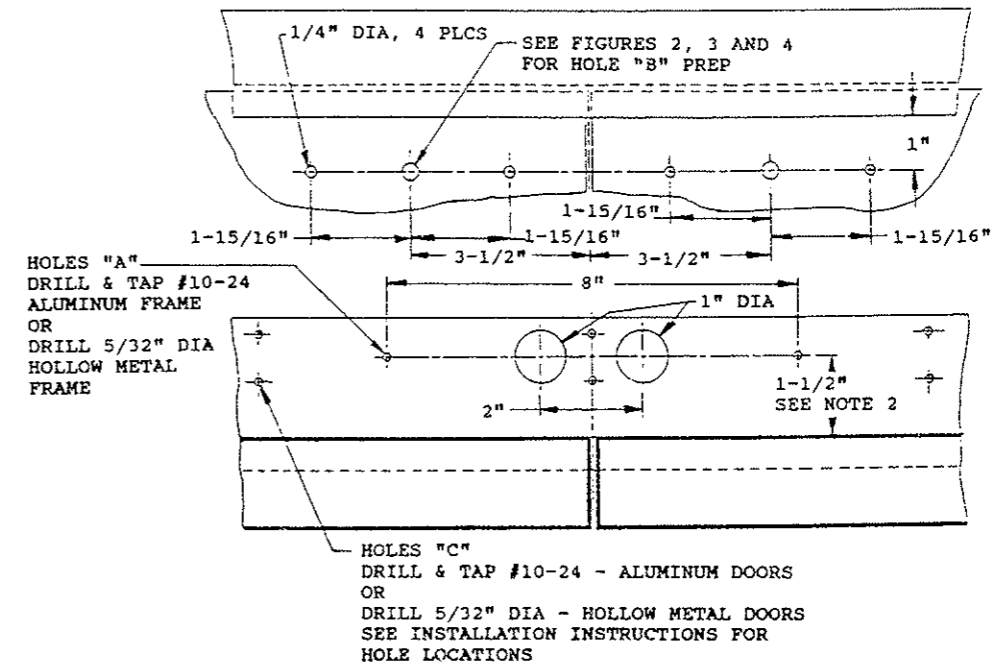
## 320TJ SERIES



# 320 AND 322 SERIES LOCKS

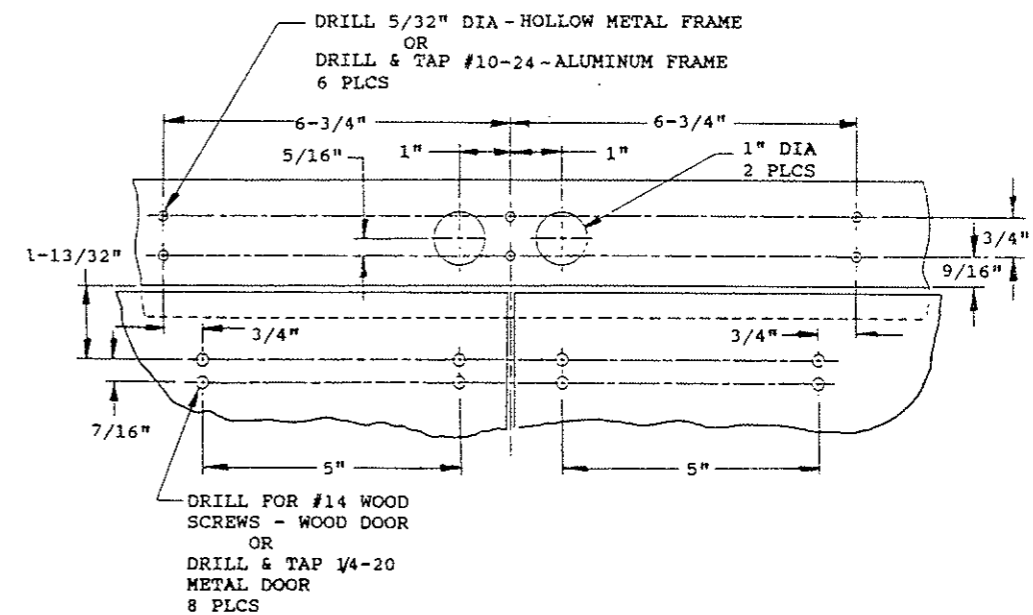
## TEMPLATE DRAWING

### 322 AND 322 X HDB TEMPLATE DRAWING



- NOTES:
1. MODEL 322 X HDB REQUIRES FRAME PREP ONLY
  2. FOR MODEL 322 X HDB 1-1/2" DIMENSION IS FROM ARMATURE BRACKET

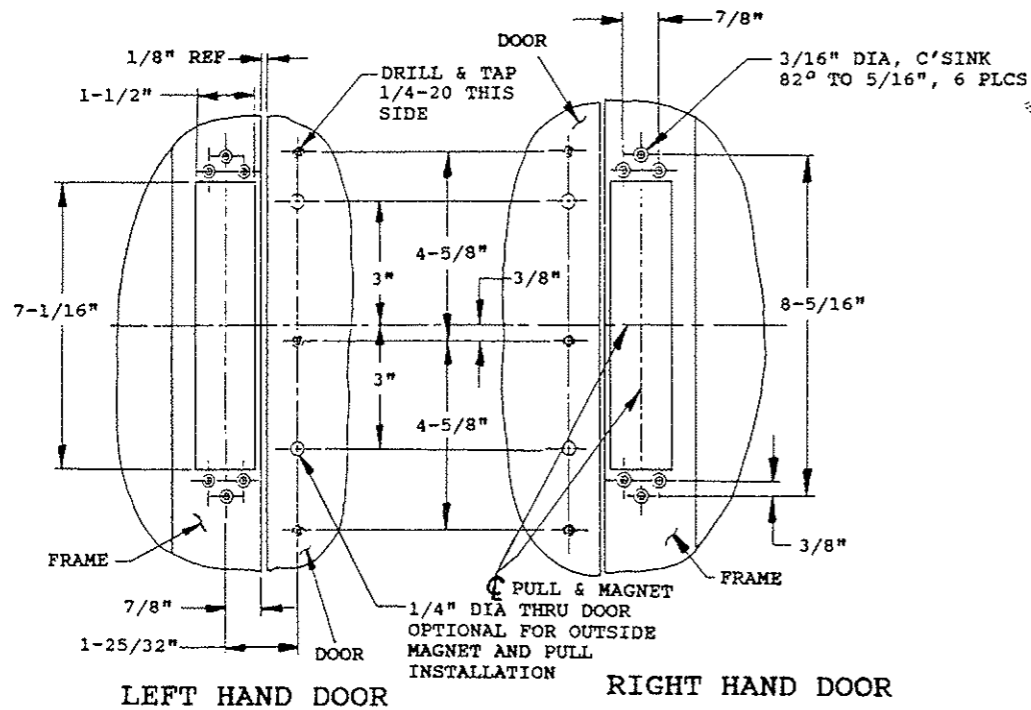
### 322TJ TEMPLATE DRAWING





# 320 AND 322 SERIES LOCKS TEMPLATE DRAWING

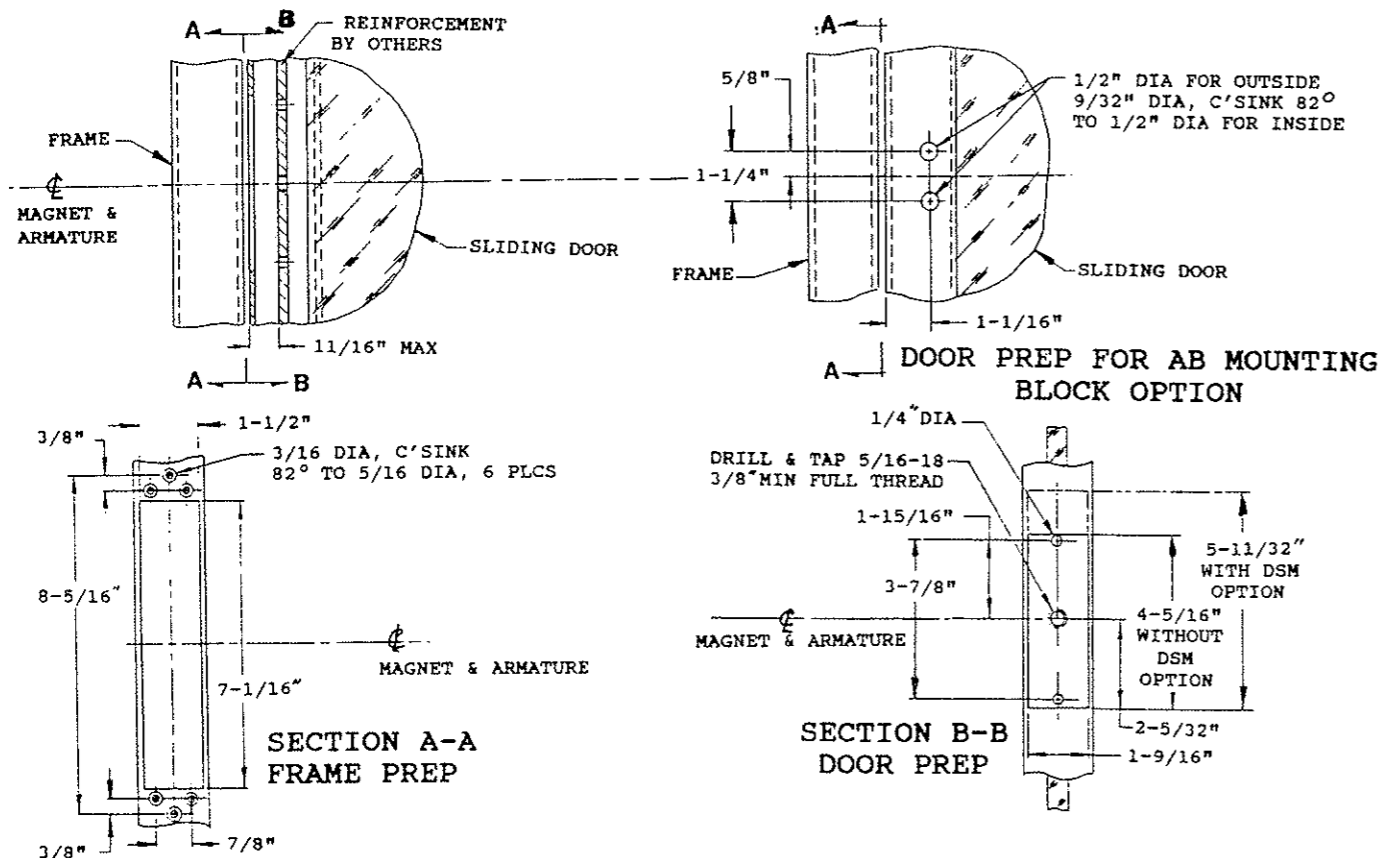
320P  
TEMPLATE DRAWING



LEFT HAND DOOR

RIGHT HAND DOOR

320M  
TEMPLATE DRAWING



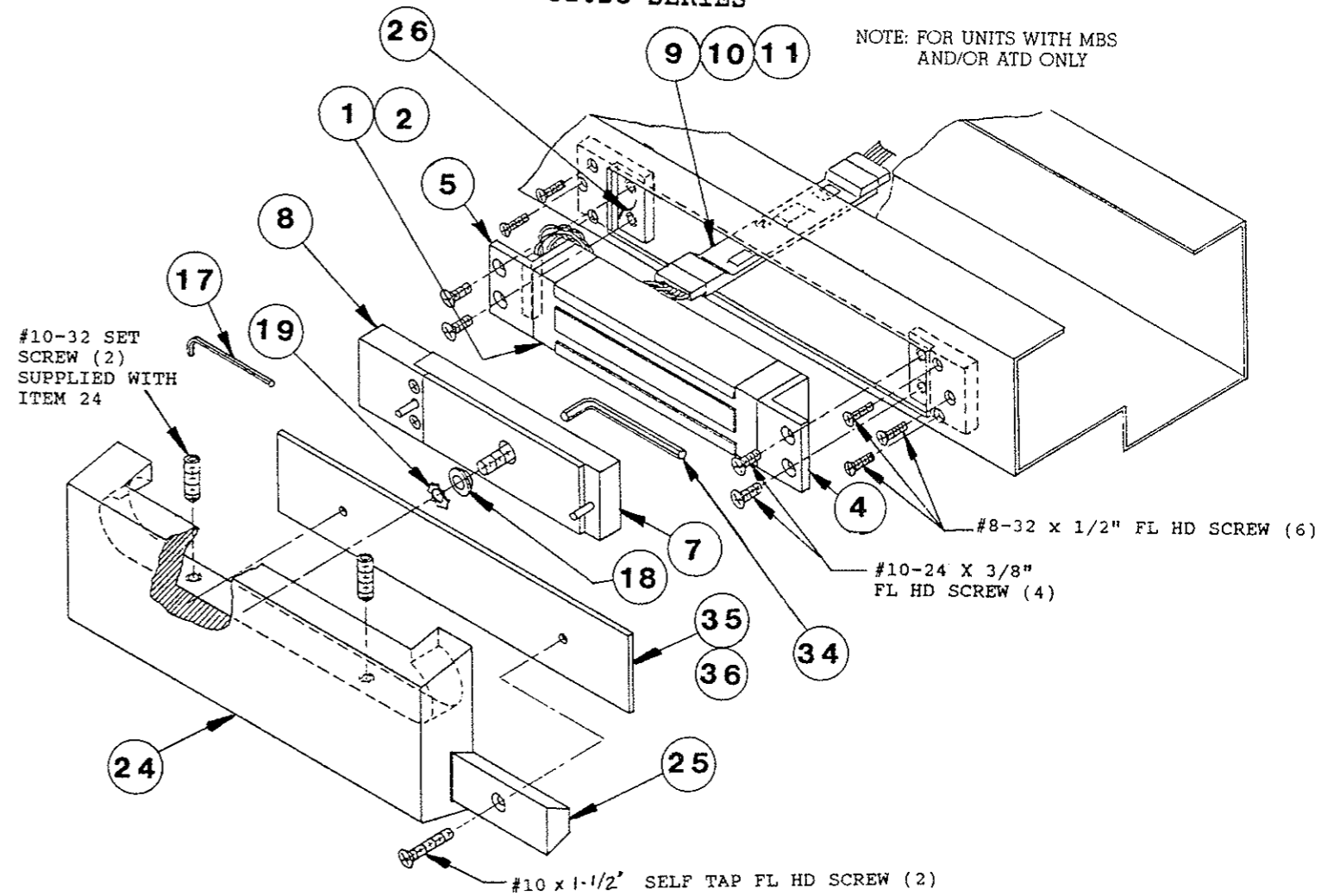
SECTION A-A  
FRAME PREP

SECTION B-B  
DOOR PREP

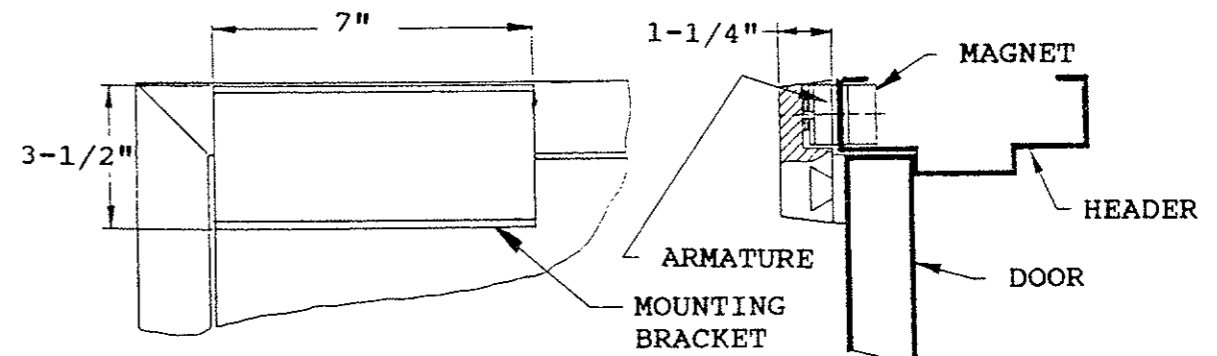


# 320 AND 322 SERIES LOCKS EXPLODED VIEW

320SC SERIES



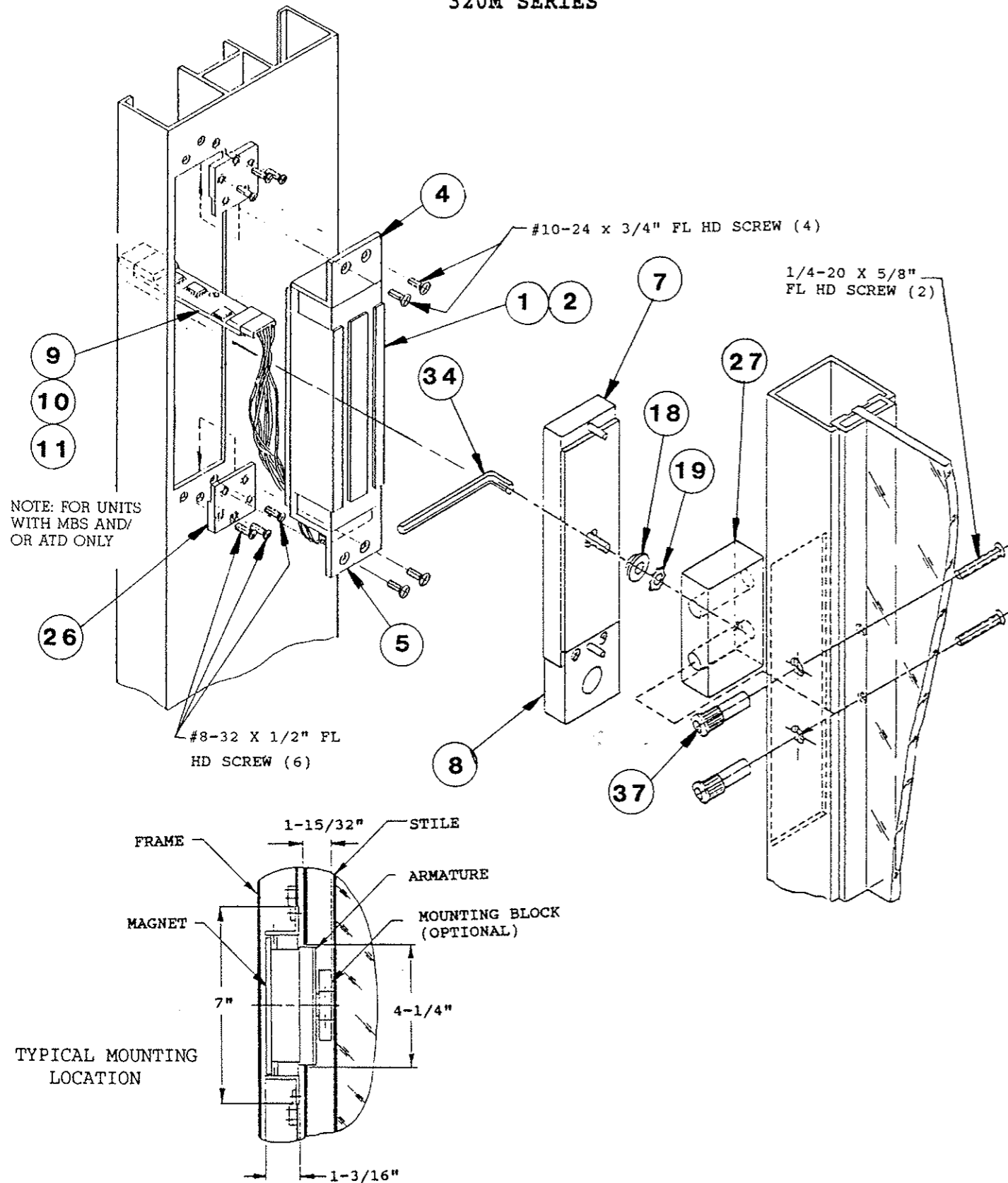
TYPICAL MOUNTING  
LOCATION





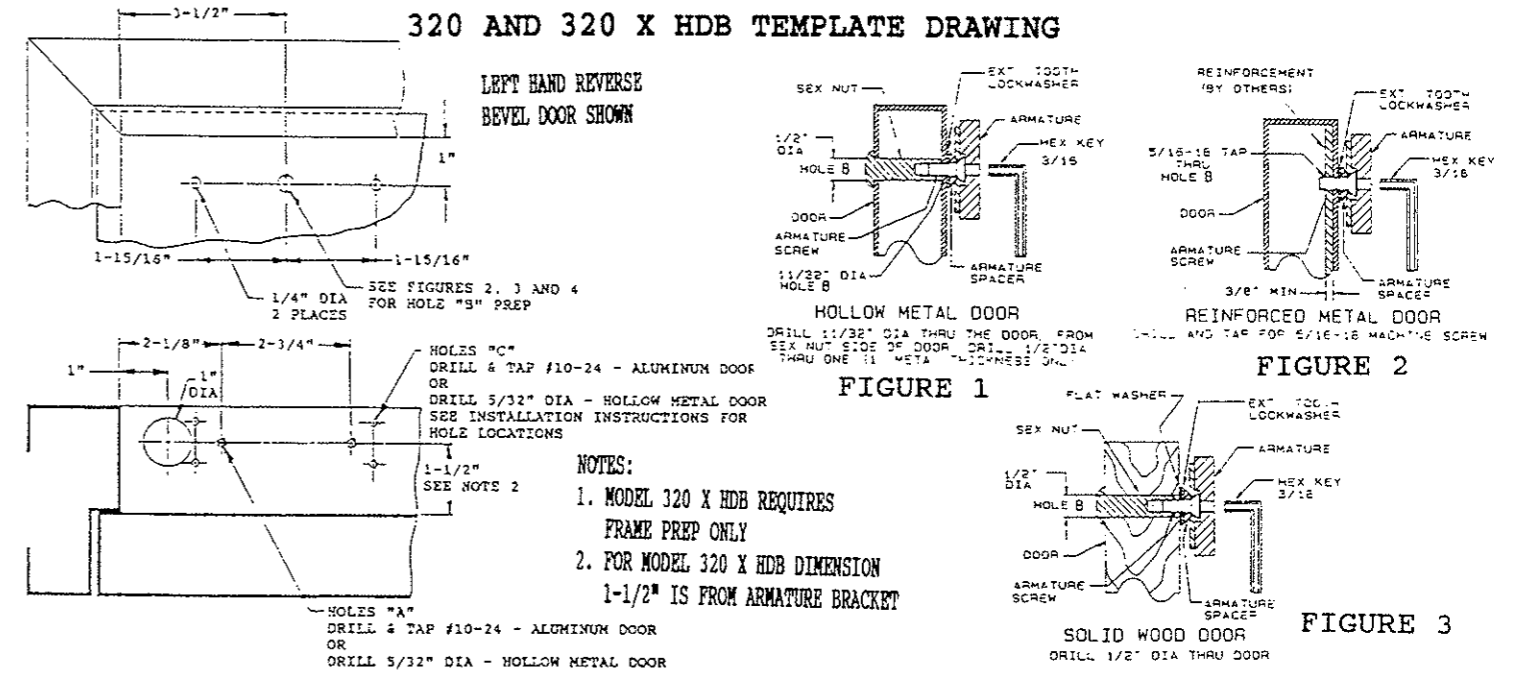
# 320 AND 322 SERIES LOCKS EXPLODED VIEW

## 320M SERIES



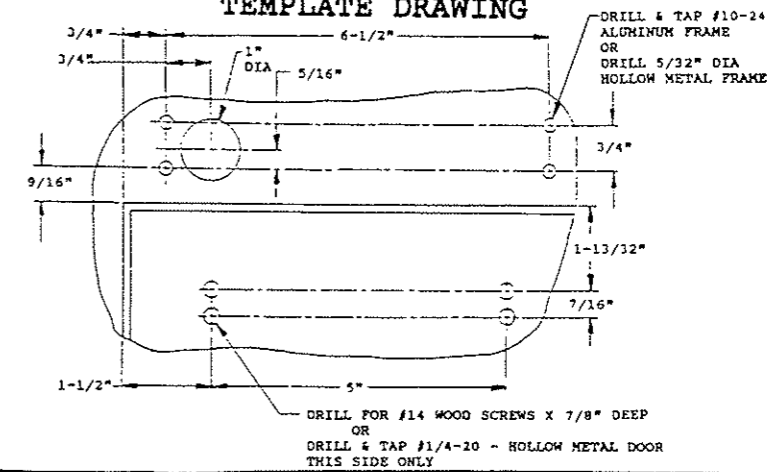
# 320 AND 322 SERIES LOCKS TEMPLATE DRAWING

## 320 AND 320 X HDB TEMPLATE DRAWING



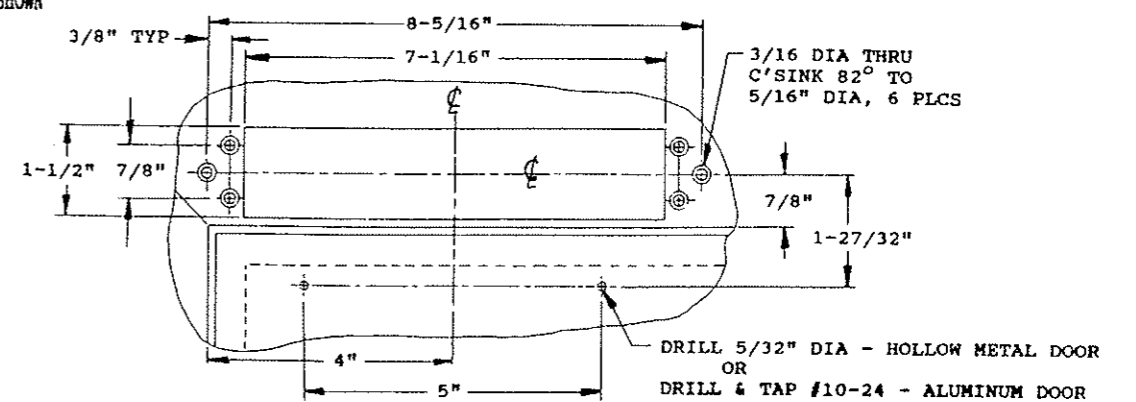
## LEFT HAND DOOR SHOWN

## 320TJ TEMPLATE DRAWING



## LEFT HAND DOOR SHOWN

## 320SC TEMPLATE DRAWING



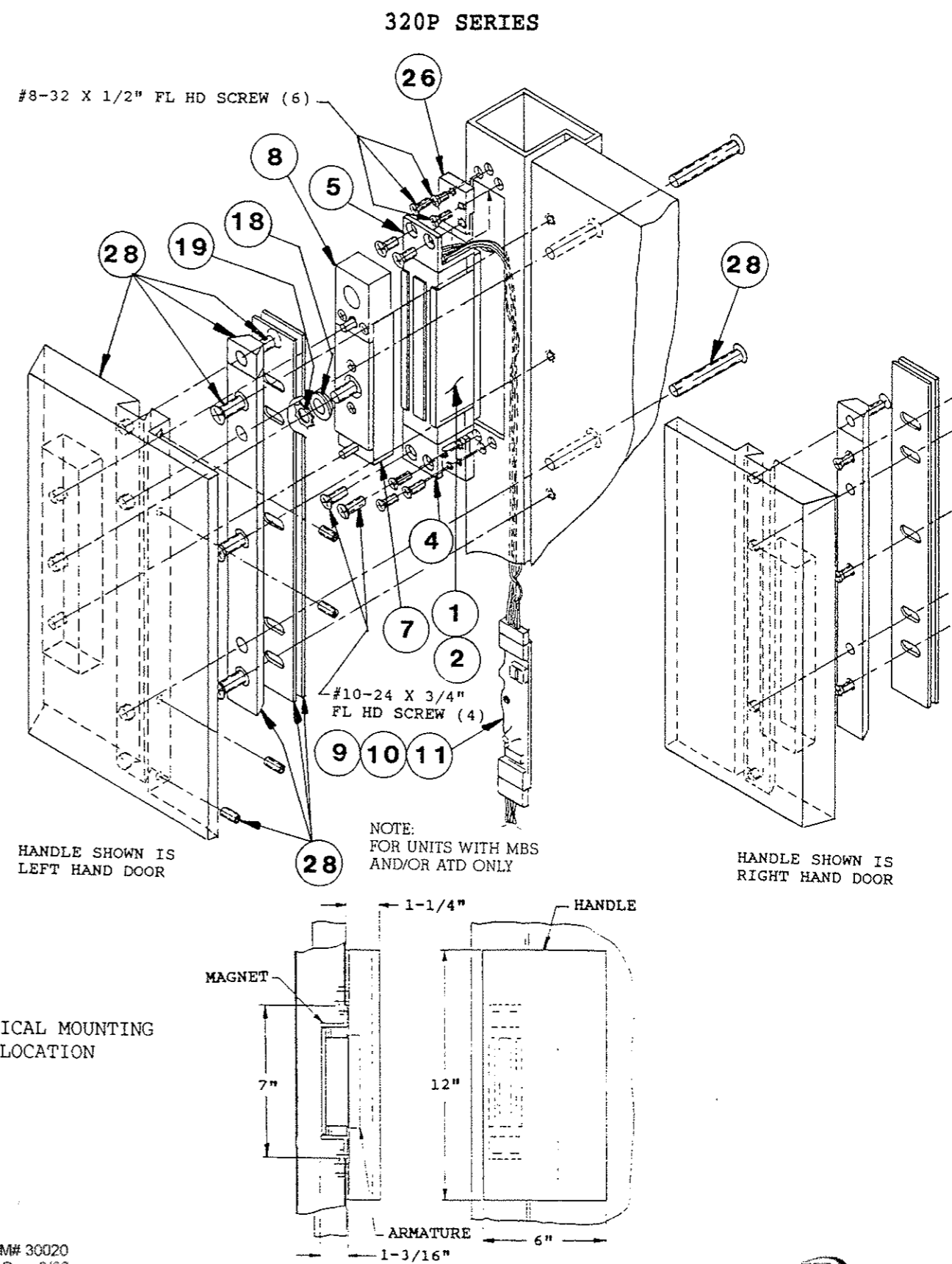


# 320 AND 322 SERIES LOCKS PARTS LIST

ITEM	PART NO.	DESCRIPTION	MODEL									
			320	320 HDB	320 TJ	320 SC	320 M	320 P	322	322 HDB	322 TJ	
1	320096	ELECTROMAGNET ASSY NO MBS	1	1	1	1	1	1	2	2	2	
2	320118	ELECTROMAGNET ASSY MBS	1	1	1	1	1	1	2	2	2	
3	CONSULT FACTORY	HOUSING-MAGNET	1	1	1	-	-	-	2	2	2	
4	320106	BRACKET-MOUNTING MAGNET	1	1	1	1	1	1	2	2	2	
5	320105	BRACKET-MOUNTING MAGNET	1	1	1	1	1	1	2	2	2	
6	320107	PLATE-MOUNTING	1	1	-	-	-	-	-	-	-	
7	320109	ARMATURE ASSY	1	1	1	1	1	1	2	2	2	
8	320115	BLOCK-DSM, ARMATURE	1	1	1	1	1	1	2	2	2	
9	320208	CONTROL MODULE MBS	1	1	1	1	1	1	2	2	2	
10	320209	CONTROL MODULE ATD	1	1	1	1	1	1	2	2	2	
11	320210	CONTROL MODULE ATD X MBS	1	1	1	1	1	1	2	2	2	
12												
13												
14												
15												
16	390022	ANTI-TAMPER PLUG	2	2	2	-	-	-	4	4	4	
17	270076	HEX WRENCH-3/32	1	1	1	1	-	-	1	1	1	
18	390255	SPACER-ARMATURE	1	1	1	1	1	1	2	2	2	
19	990185	LOCKWASHER-EXT TH	1	1	1	1	1	1	2	2	2	
20	320128	BRACKET-MTG, TJ MAGNET	-	-	1	-	-	-	-	-	-	
21	320130	BRACKET-MTG, TJ ARMATURE	-	-	1	-	-	-	-	-	2	
22	320170	DOVETAIL-TJ ARMATURE	-	-	1	-	-	-	-	-	2	
23	320172	BLOCK-MTG, TJ ARMATURE	-	-	2	-	-	-	-	-	4	
24	320168	BRACKET-MTG, SC ARMATURE	-	-	-	1	-	-	-	-	-	
25	320171	DOVETAIL-SC ARMATURE	-	-	-	1	-	-	-	-	-	
26	280006	MOUNTING TAB	-	-	-	2	2	2	-	-	-	
27	320177	MTG BLOCK, ARMATURE	-	-	-	-	1	-	-	-	-	
28	320191	HANDLE-PULL KIT	-	-	-	-	-	1	-	-	-	
29	320108	PLATE-MOUNTING	-	-	-	-	-	-	1	-	-	
30	320129	BRACKET-MTG, TJ MAGNET	-	-	-	-	-	-	-	-	1	
31	320145	SHIM ASSY-3/4 DDDR	-	1	-	-	-	-	-	2	-	
32	320129	SHIM ASSY-1/2 DDDR	-	1	-	-	-	-	-	2	-	
33	390498	SEX NUT, 1-3/4 DDDR	1	-	-	-	-	-	2	-	-	
34	270078	HEX WRENCH-3/16	1	1	1	1	1	1	1	1	1	
35	320174	SHIM-MTG, .187 THK	-	-	-	1	-	-	-	-	-	
36	320173	SHIM-MTG, .093 THK	-	-	-	1	-	-	-	-	-	
37	290014	SEX NUT, 1-3/4 DDDR	-	-	-	-	2	-	-	-	-	
38	320147	HDB ASSY	-	1	-	-	-	-	-	2	-	
39	990183	FLAT WASHER-5/16	1	-	-	-	-	-	2	-	-	



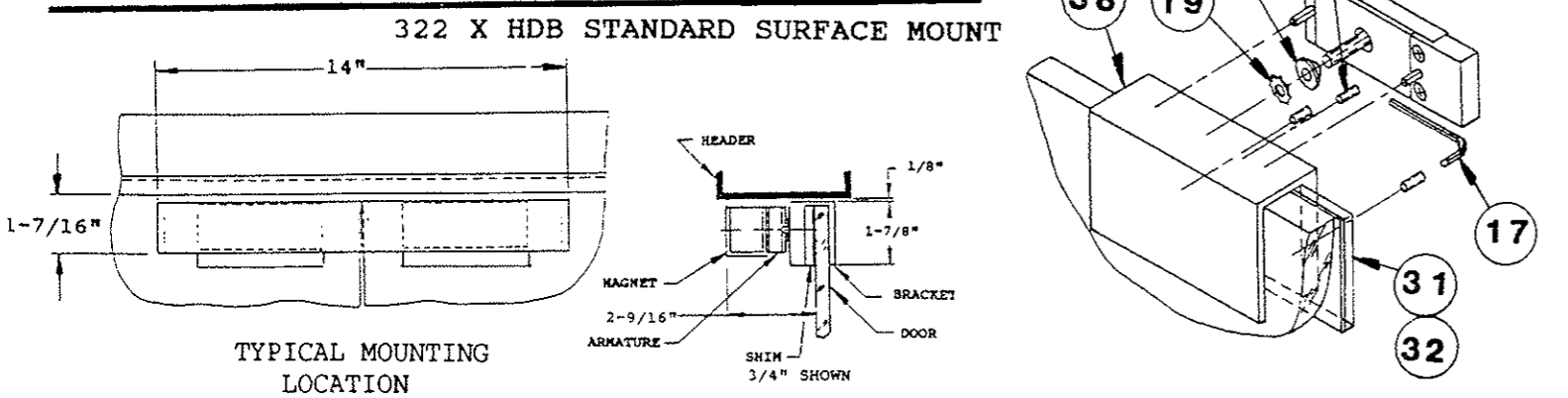
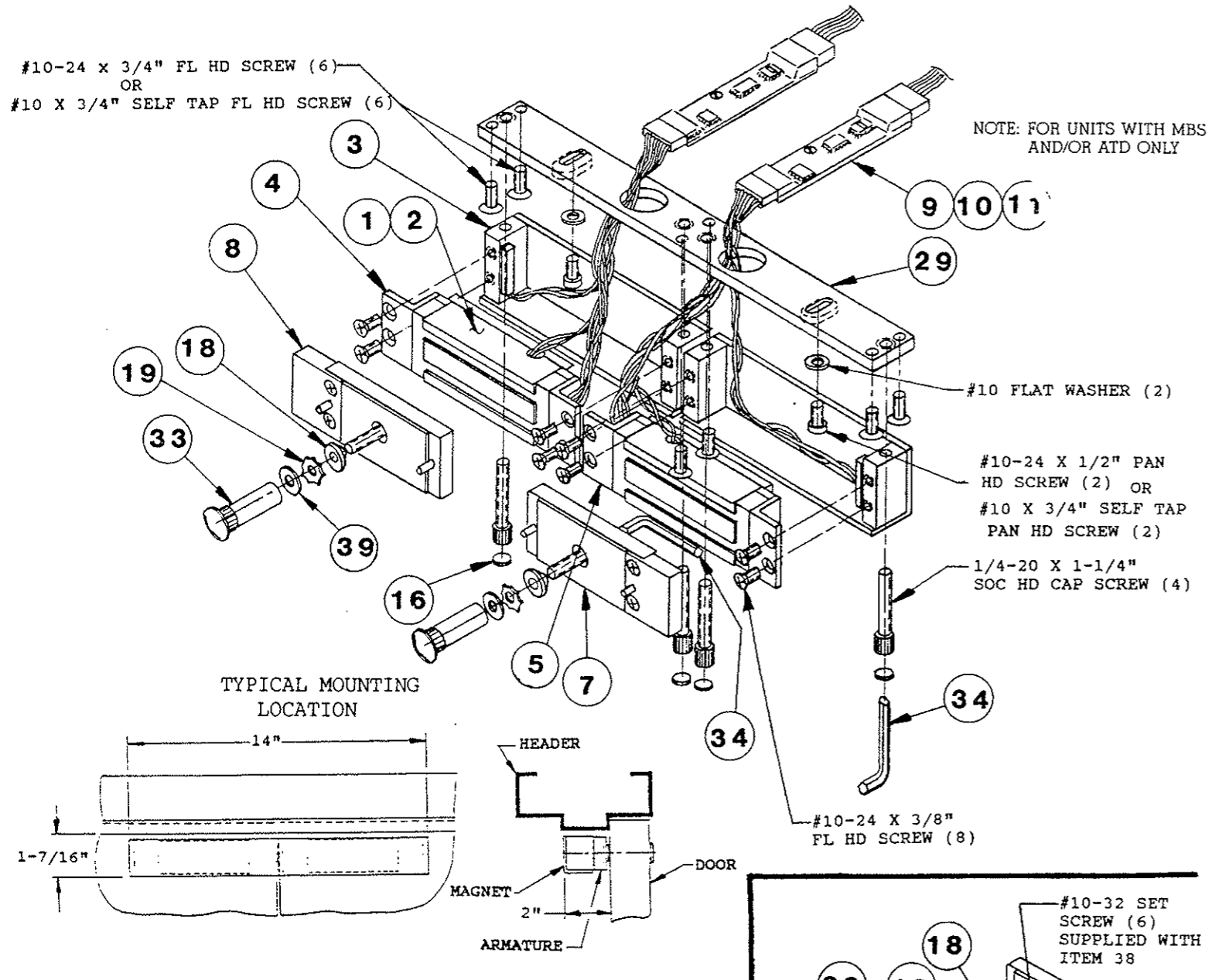
# 320 AND 322 SERIES LOCKS EXPLODED VIEW





# 320 AND 322 SERIES LOCKS EXPLODED VIEW

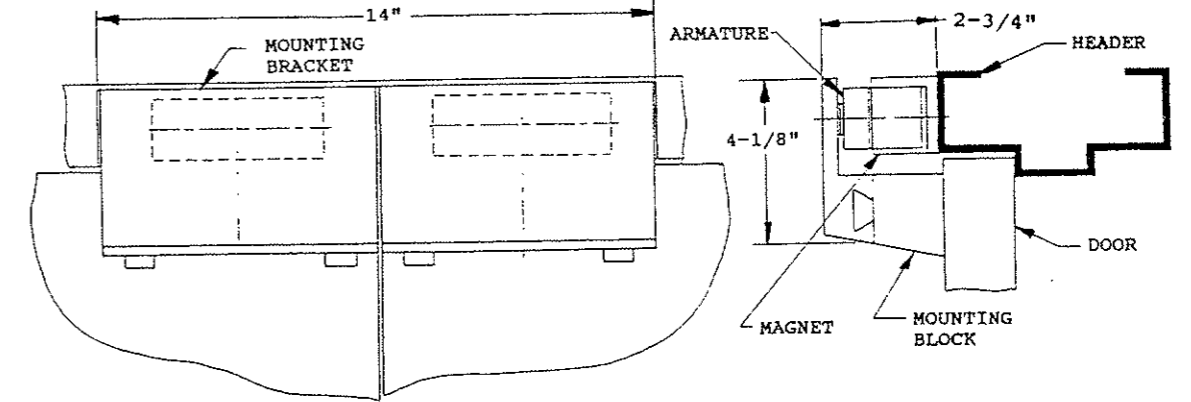
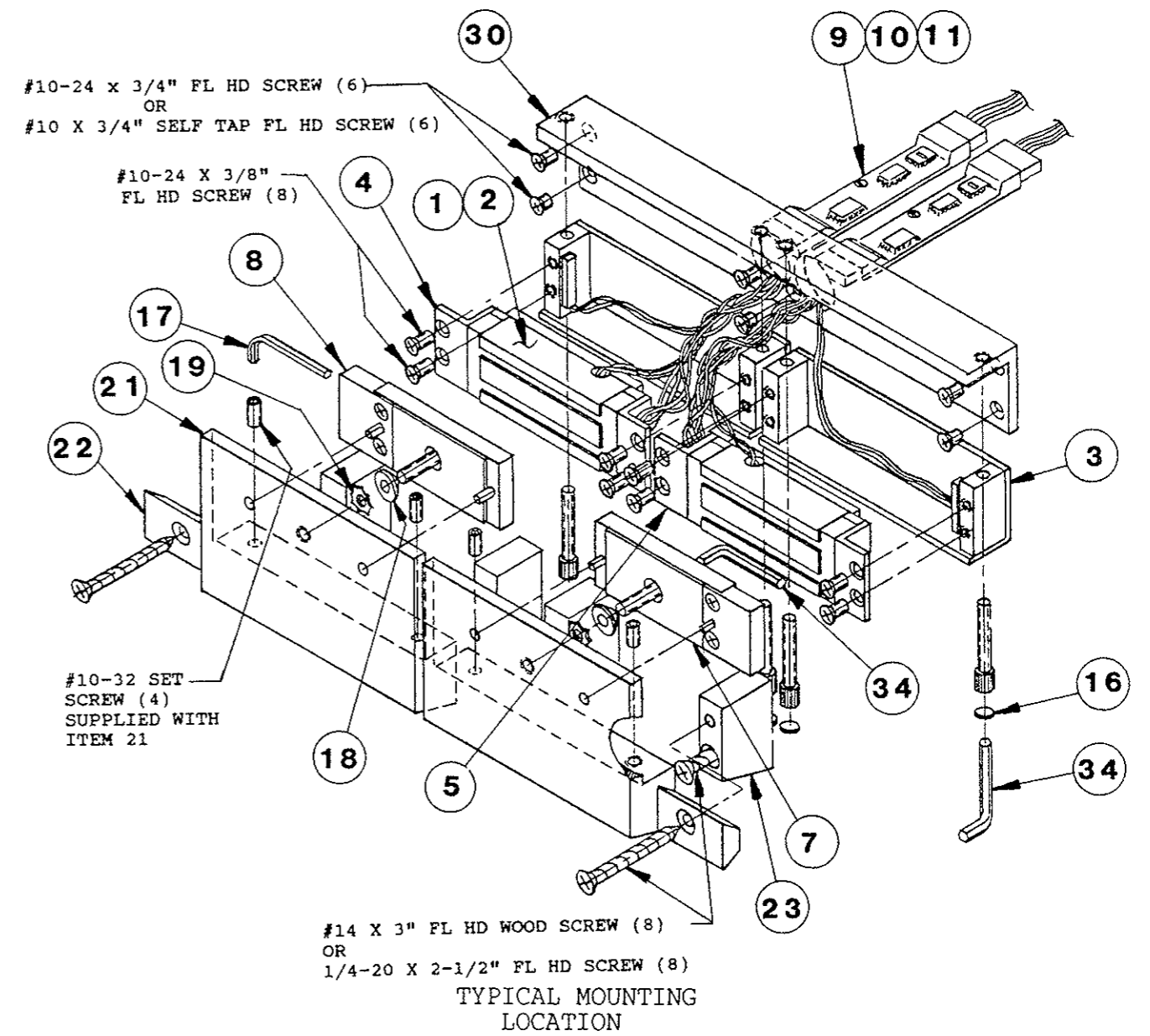
## 322 STANDARD SURFACE MOUNT



# 320 AND 322 SERIES LOCKS EXPLODED VIEW

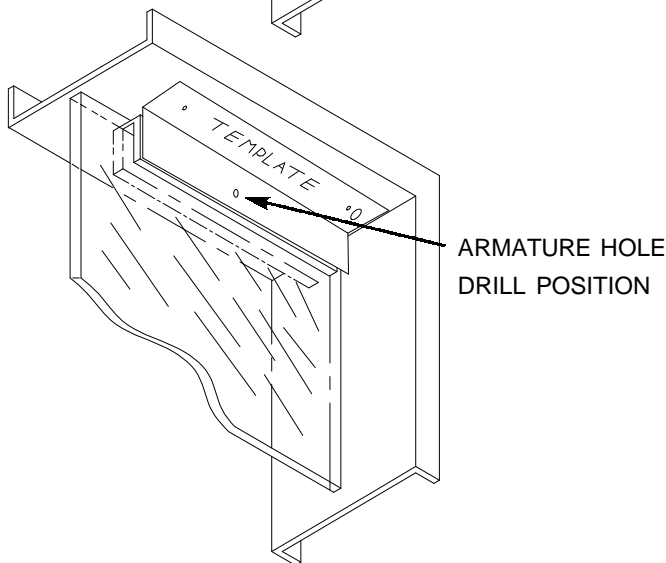
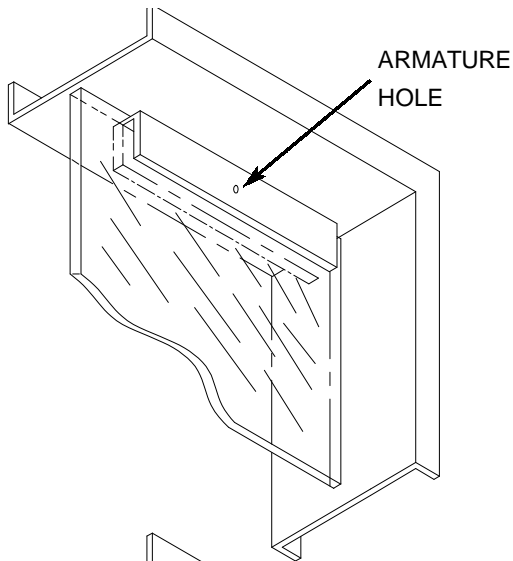
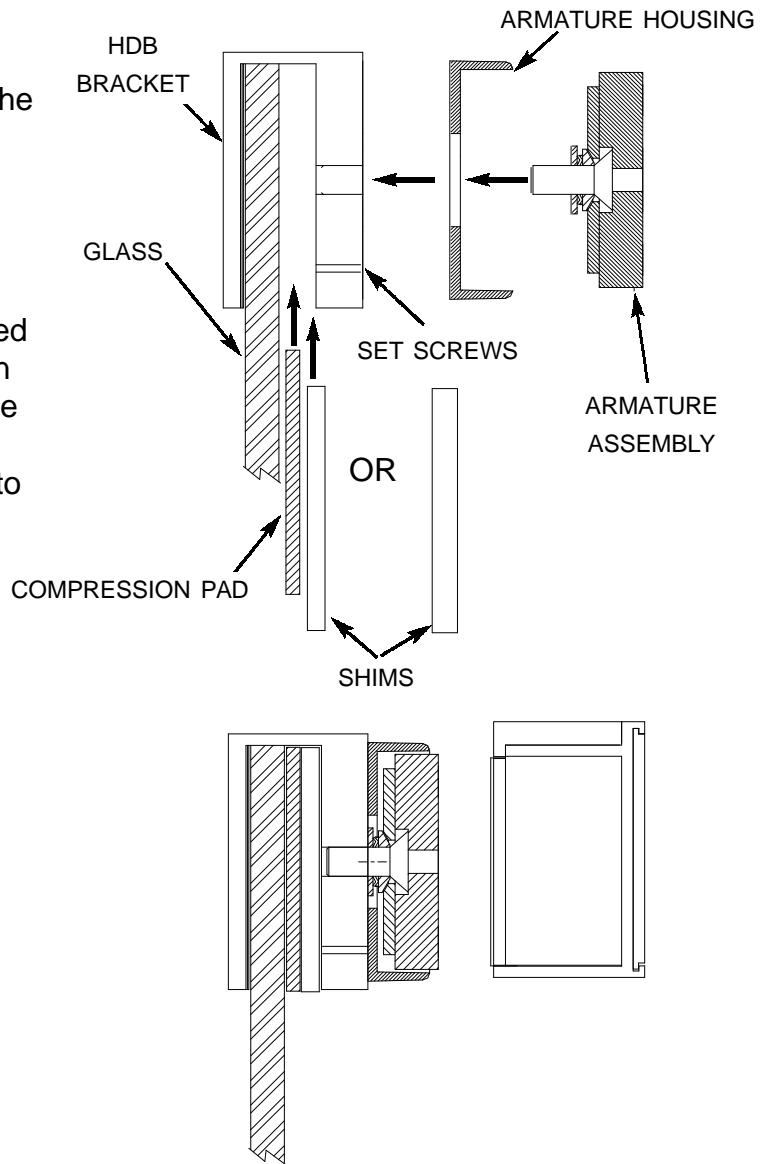
## 322TJ SERIES

NOTE: FOR UNITS WITH MBS AND/OR ATD ONLY



The HDB kits are intended to be installed with the 320+, 350+, and 390+ series outswinging single and double magnetic locks.

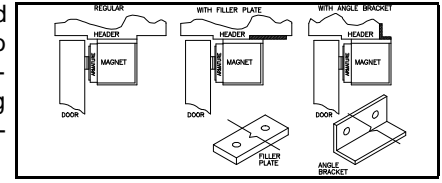
Select the appropriate shim for the thickness of glass. Use the compression pad, installed between the glass and the shim (with the padded side toward the glass). Install in desired position on glass (on top of glass opposite the hinge side with the hole for the armature facing toward the "push" side of the opening). Tighten set screws to trap compression pad and shim into place.



Place standard template on HDB bracket with the armature hole drill position (on template) over the armature hole in the HDB bracket. Tape the template in place. Mark and drill required holes in frame. Follow installation instructions for the model being installed.

**Double Units:** Use the standard template to mark the vertical centerlines of the armature holes on the glass with a wax crayon. Position the HDB brackets on these lines with the armature holes lining up with the marked vertical centerlines.

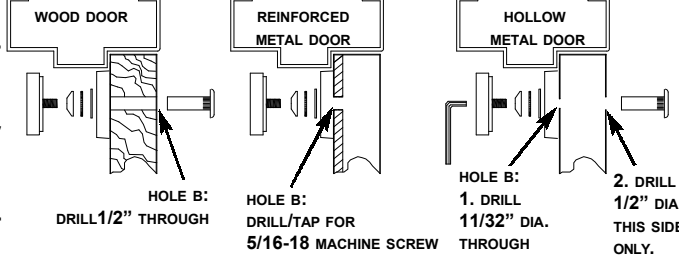
**Pre-Installation Considerations:** It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. It may be necessary to use a filler plate or angle bracket for adequate mounting surface area. See illustration (right). Locknetics offers many sizes of each. Herculite door brackets are also available for glass doors. Consult your distributor.



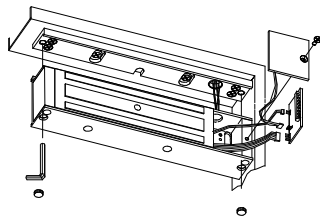
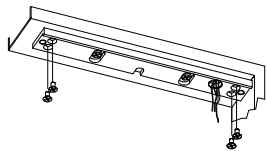
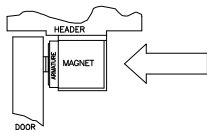
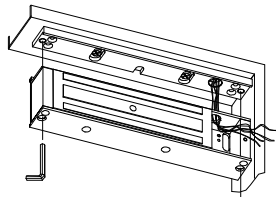
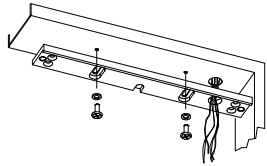
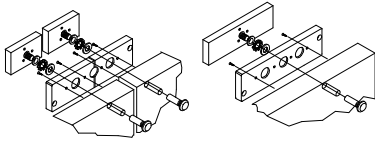
1. Prep door and frame according to the template provided for the correct model you are installing.

**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

Holes "A" (on frame), referenced to on template, are to be for #10-24 machine screws on reinforced metal frames or #10 self tapping screws on sheet (hollow) metal or aluminum. Hole(s) "B" are for sex nut(s) and depend on door type (see illustration to right for correct application.)

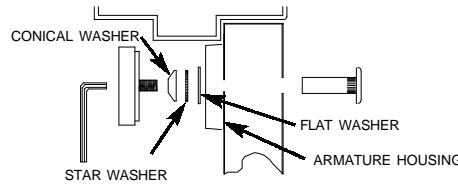


### SINGLE/SPLIT ARMATURE UNITS:



(390+ SHOWN)

2. Mount armature(s), housing(s) and armature using appropriate hardware as shown.



3. Pass control/monitoring wiring through wire access hole in frame and through wire hole in mounting bracket. Mount bracket using pan head screws and flat washers. Do not completely tighten screws - it will be necessary to adjust the position of the bracket in step 5.

4. Install magnet assembly to mounting bracket.

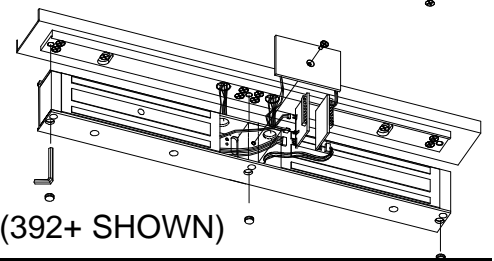
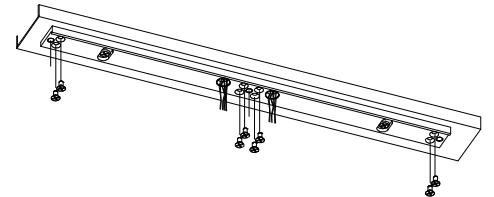
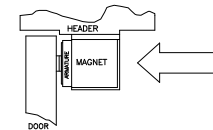
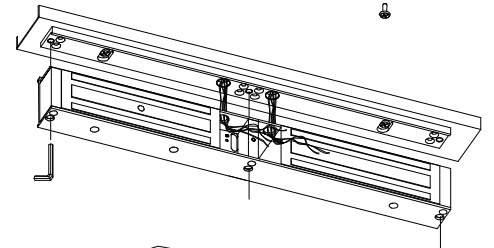
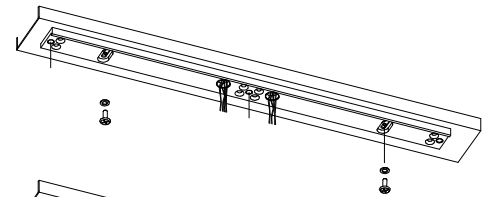
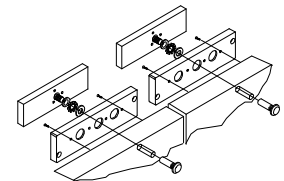
5. Close and latch door. Push the magnet assembly toward armature(s) on door(s) until they are pressed together. When possible, apply power to magnet to set final position. Mark position of mounting bracket and remove magnet assembly.

6. Tighten pan head screws to firmly hold mounting plate to frame. Drill mounting holes for #10 sheet metal/machine screws and secure mounting plate to frame. Make sure all fasteners shown are installed.

7. Install magnet to mounting bracket. Make wiring connections (see wiring instructions on next page). Install circuit board(s) (if used), wire and wire access cover. Do not pinch wires between parts. Install antitamper plugs, using a rubber mallet, if desired.

**Note:** after installing antitamper plugs it will be necessary to drill them out if the lock must be removed.

### DOUBLE UNITS:



(392+ SHOWN)

**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

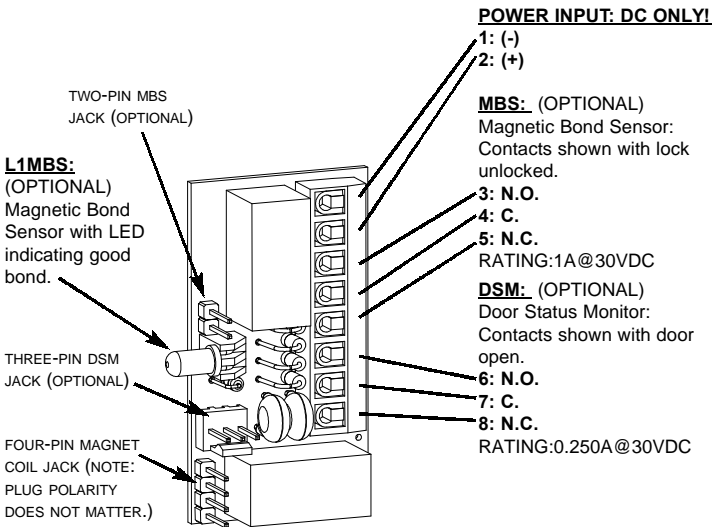
## “+” MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

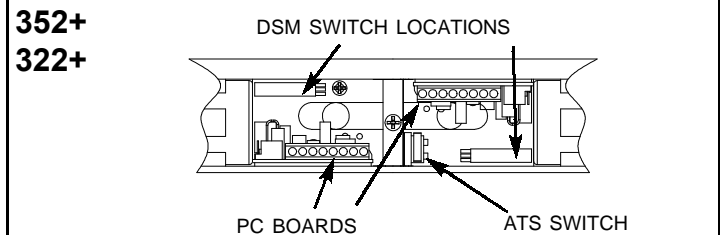
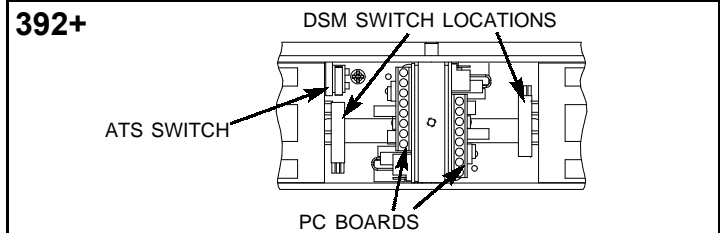
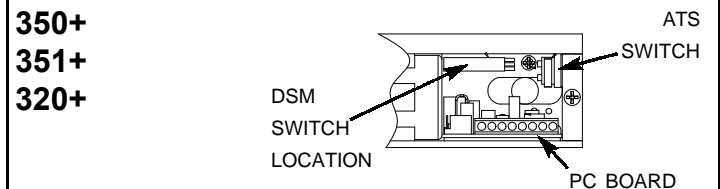
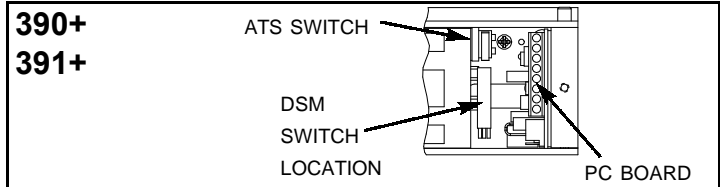
**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)



**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.  
BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING: 1A @ 30VDC

REMOVE PAPER BACKING ON STICKY TAPE DISC TO MOUNT IN POSITION AFTER WIRING

## WIRING CAVITY COMPONENT LOCATION:

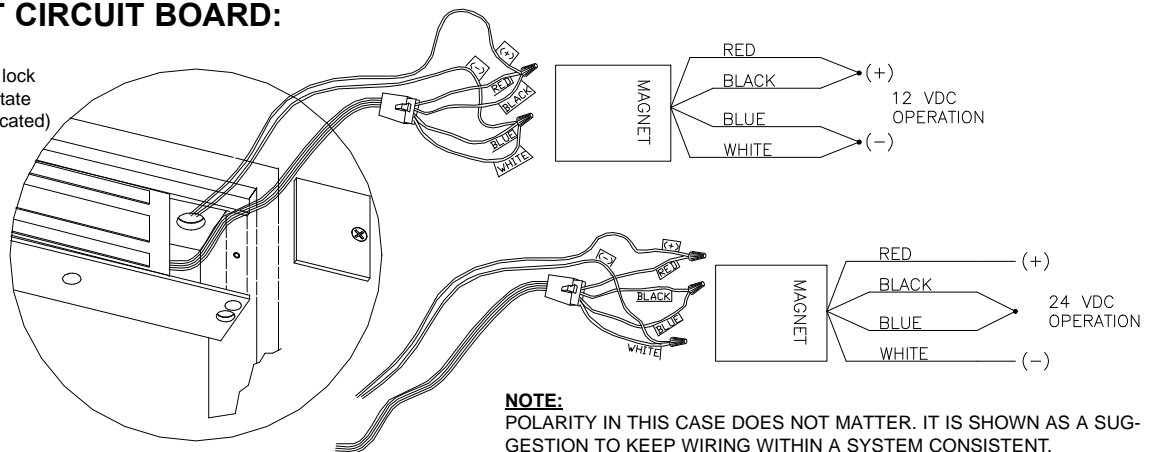


## MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING: 0.250A @ 30VDC)

**DSM:**  
(Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING: 0.250A @ 30VDC)

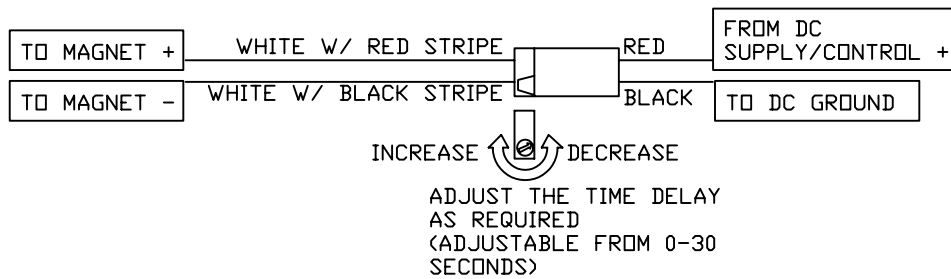
IMPORTANT! DSM SWITCH POSITIONS ARE THE SAME. SEE DIAGRAMS ABOVE.





# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

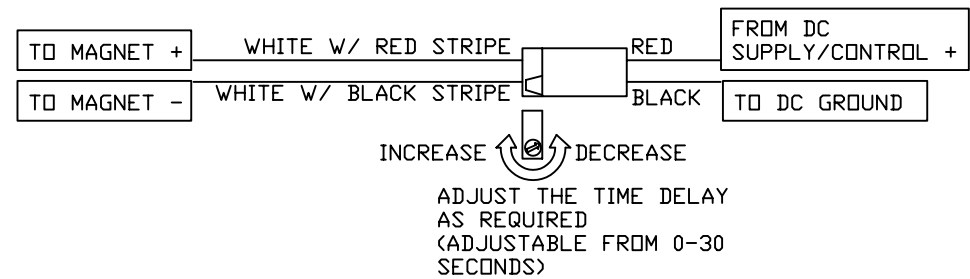


FORM 39476

01-29-2004

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

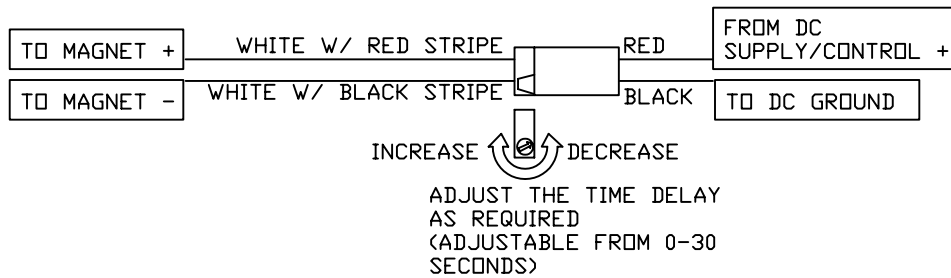


FORM 39476

01-29-2004

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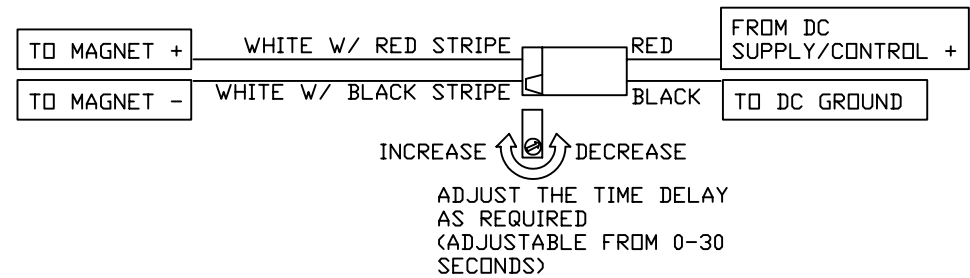


FORM 39476

01-29-2004

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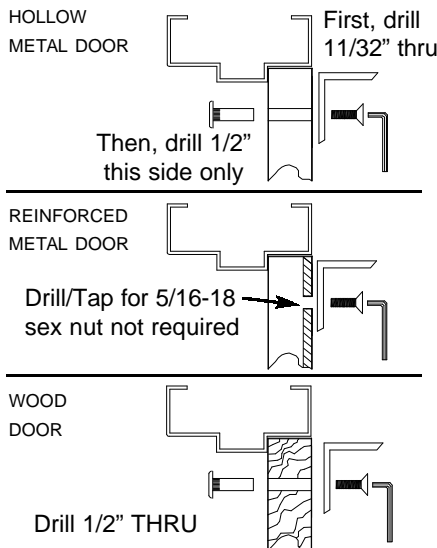
FORM 39476

01-29-2004

### Pre Installation Considerations:

It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. The TJ type of magnetic lock is intended for use on inswinging doors. It is not intended to be installed on the exterior of buildings.

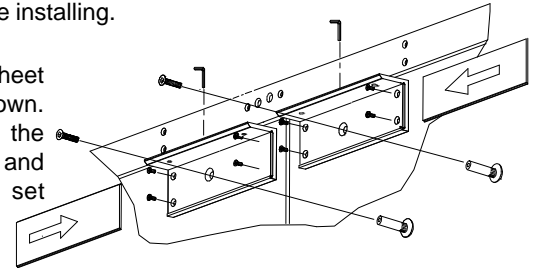
### SEX NUT PREP FOR TJ BRACKETS



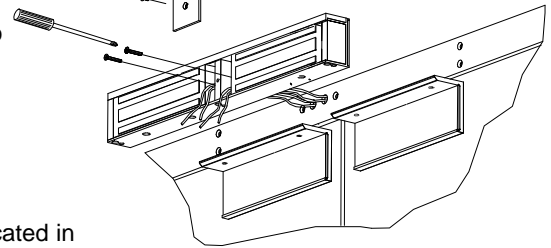
**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

**1.** Prep door and frame according to the template provided for the correct model you are installing.

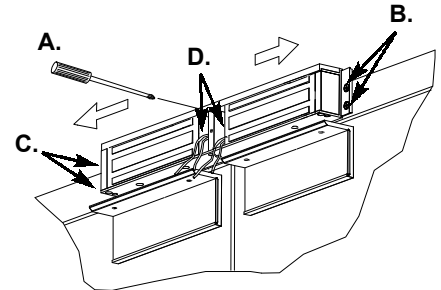
**2.** Mount Lower TJ brackets using sheet metal screws and sex nuts as shown. Slide the TJ dress plates into the lower TJ brackets as shown. Center and secure position using the allen set screws.



**3.** Remove wire access cover from magnet. Pull control wiring through wire access holes. Install magnet to frame with two sheet metal or machine screws through exposed holes inside wire access cavities. Do not completely tighten them at this point.

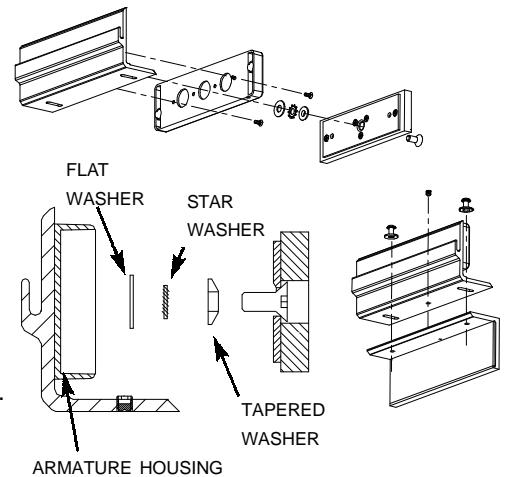


**4.** A. Loosen phillips set screw located in the right wire access cavity. B. Slide magnet to left just enough to expose mounting screw holes on right. Secure magnet with two mounting screws.



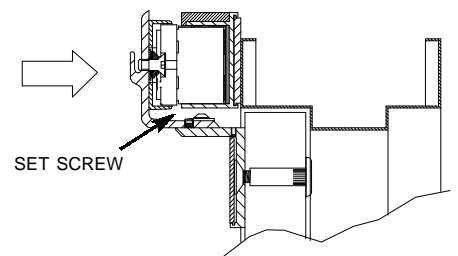
C. Slide just enough to expose two holes on left. Secure magnet with two screws on left. D. Center magnet and tighten two center mounting screws and set screw. **IMPORTANT! Do not slide the magnet too far or wiring could be severed or damaged.**

**5.** Install the armatures and armature housings onto the upper TJ brackets using the hardware provided as shown. **IMPORTANT! Hardware must be assembled in the correct order, as shown, for proper operation. Do not remove foam rubber compression pads from lexan armature housings.**



**6.** Open doors and install the upper TJ brackets to the lower TJ brackets using two machine screws and washers each. Leave the screws just loose enough to slide upper TJ bracket toward or away from the door.

**7.** Close and latch door. Push each upper TJ armature/bracket assembly toward magnet until it is mated against it, with no air gap. Open door slowly and tighten machine screws and set screws to lock TJ bracket assemblies into position.



**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
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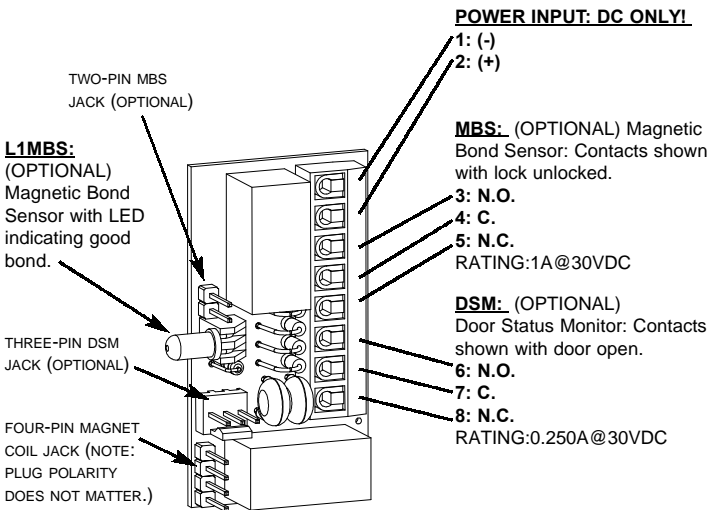
### "+" MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

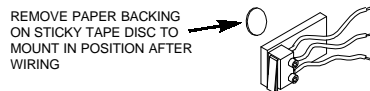
**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

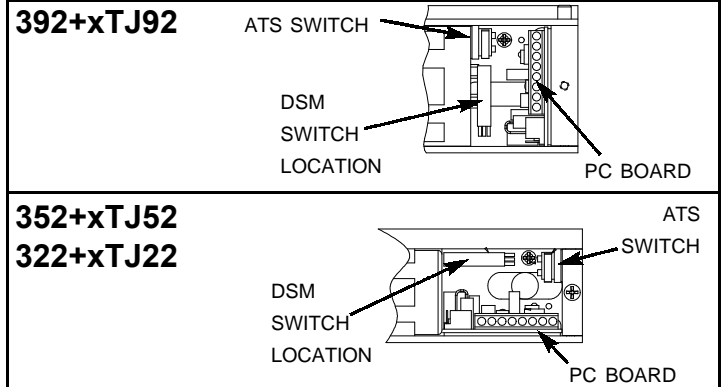


**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING: 1A@30VDC



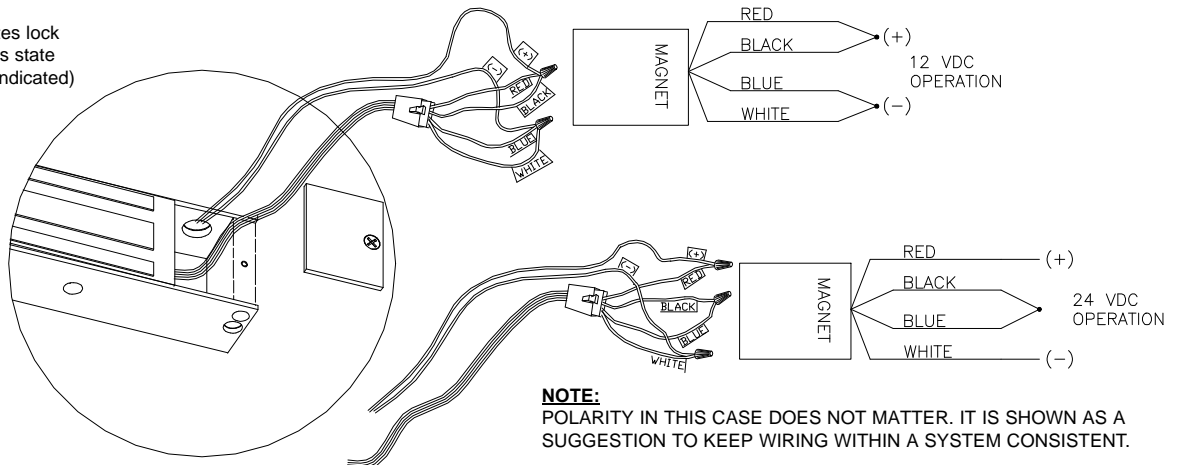
### WIRING CAVITY COMPONENT LOCATION:



### MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING: 0.250A@30VDC)

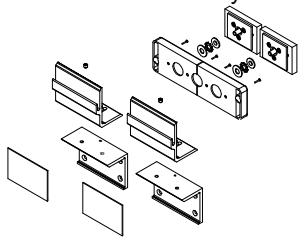
**DSM:**  
(Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING: 0.250A@30VDC)



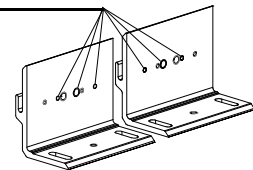
### Pre Installation Considerations:

It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. The TJ type of magnetic lock is intended for use on inswinging doors. It is not intended to be installed on the exterior of buildings.

**SPLIT ARMATURE MODELS:** These models (e.g. 391, etc.) are used for double doors with one magnet and two armature assemblies. Therefore, there are two of each of these parts. The installation is essentially the same.

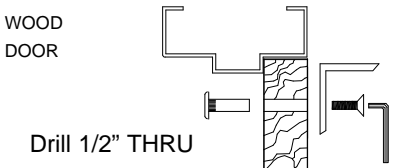
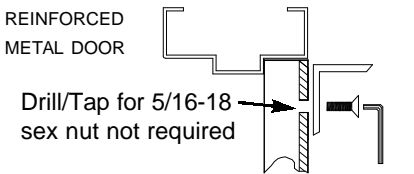
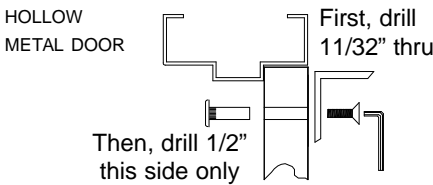


**NOTE:** There are two sets of holes on each TJ bracket. Use sets of holes which are closer to the parting line.



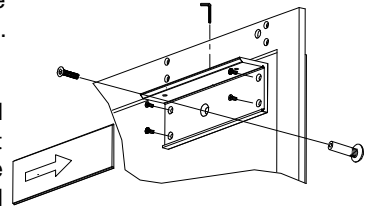
**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

### SEX NUT PREP FOR TJ BRACKETS

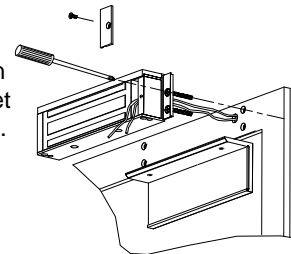


**1.** Prep door and frame according to the template provided for the correct model you are installing.

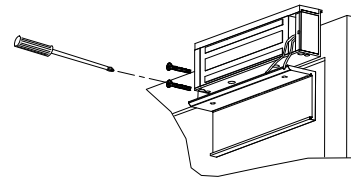
**2.** Install lower TJ bracket(s) using sheet metal screws as shown and sex nut flat head socket screw. Slide the TJ dress plate(s) into the lower TJ bracket(s) as shown. Center and secure position using allen set screw(s).



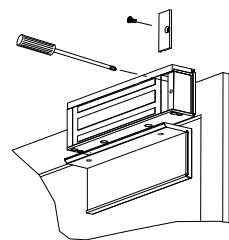
**3.** Remove wire access cover from magnet. Loosen set screw located inside wire cavity. Slide magnet to left just enough to expose two mounting holes. Pull control wiring through wire access hole. Install magnet to frame with two sheet metal or machine screws through exposed holes.



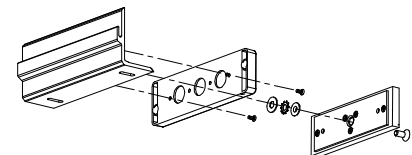
**4.** Slide magnet to right just enough to expose two holes on left. Secure magnet with two screws on left. **IMPORTANT! Do not slide the magnet too far or wiring could be severed or damaged.**



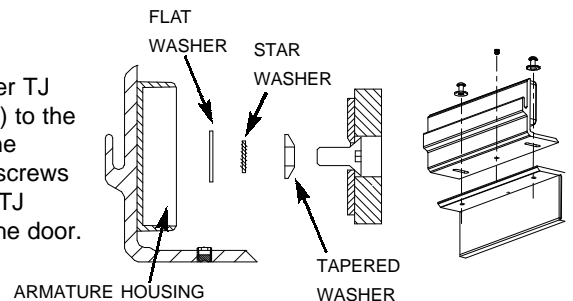
**5.** Center the magnet on the mounting bracket and secure by tightening position set screw with a phillips screw driver. Make wiring connections (refer to other side of this sheet). Tuck wiring into cavity and install cover.



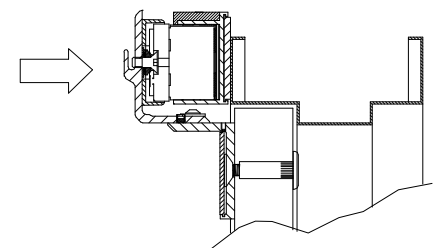
**6.** Install the armature(s) and armature housing(s) onto the upper TJ bracket(s) using the hardware provided as shown. **IMPORTANT! Hardware must be assembled in the correct order, as shown, for proper operation.**



**7.** Open door(s) and install the upper TJ bracket assembly (or assemblies) to the lower TJ bracket(s) using machine screws and washers. Leave the screws just loose enough to slide upper TJ bracket(s) toward or away from the door.



**8.** Close and latch door. Push (each) upper TJ armature/bracket assembly toward magnet until mated against it. Open door slowly and tighten machine screws and set screw(s) into position.



**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
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350+	0.750	0.380	1200
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**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
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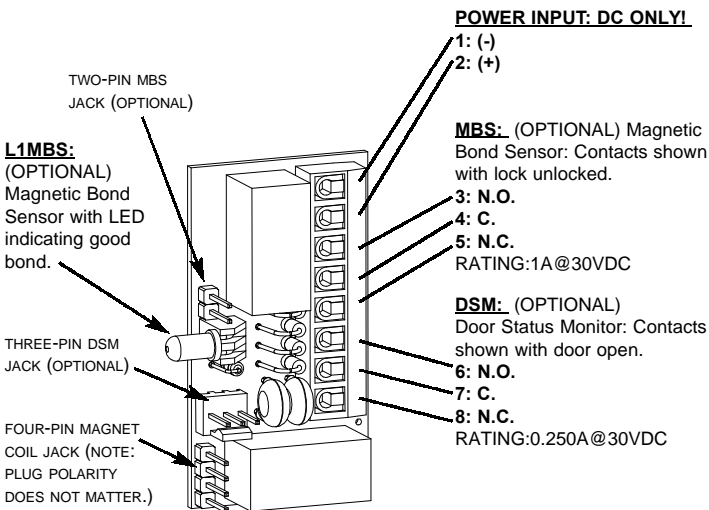
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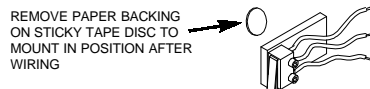
**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

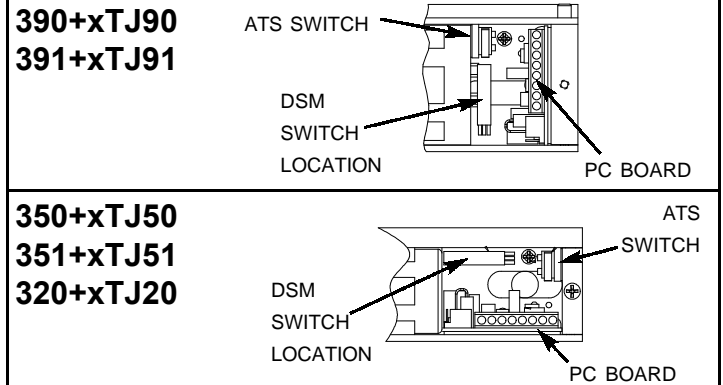


**ATS:** (OPTIONAL) Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
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GREEN: N.O.  
RATING:1A@30VDC



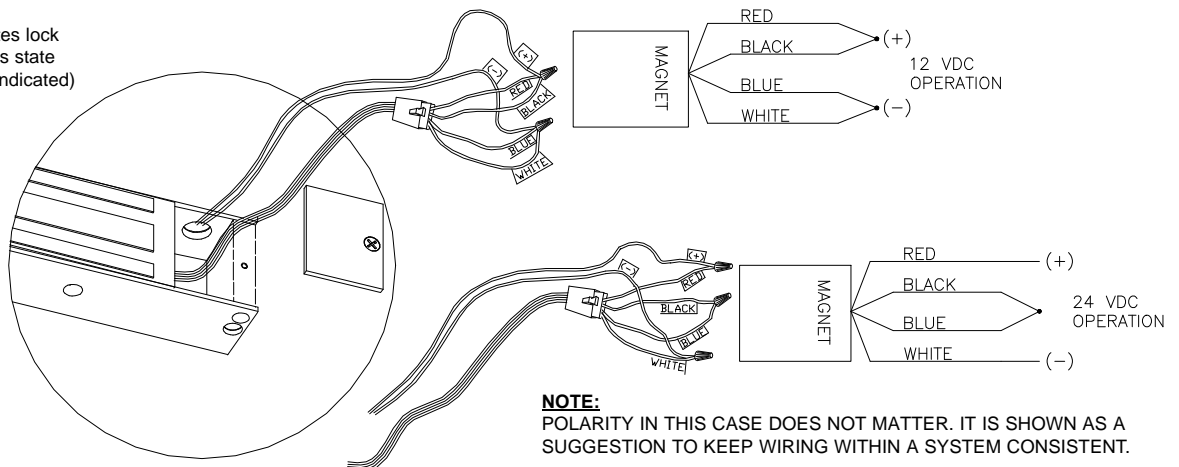
### WIRING CAVITY COMPONENT LOCATION:



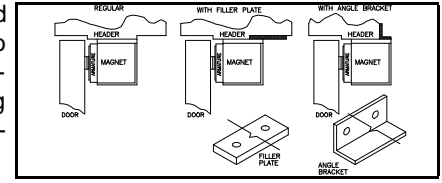
### MODELS WITHOUT CIRCUIT BOARD:

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WHITE: C.  
WHITE: N.O.  
(RATING:0.250A@30VDC)

**DSM:** (Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING:0.250A@30VDC)



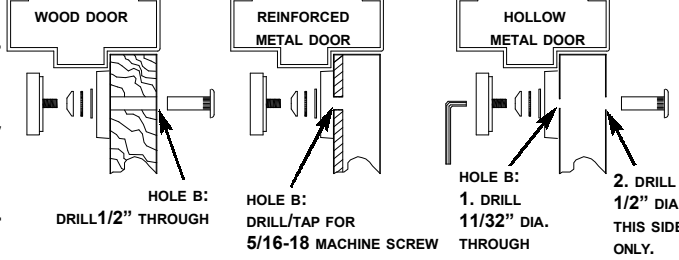
**Pre-Installation Considerations:** It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. It may be necessary to use a filler plate or angle bracket for adequate mounting surface area. See illustration (right). Locknetics offers many sizes of each. Herculite door brackets are also available for glass doors. Consult your distributor.



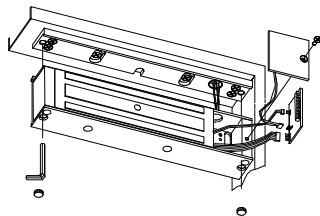
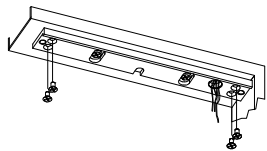
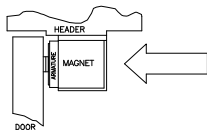
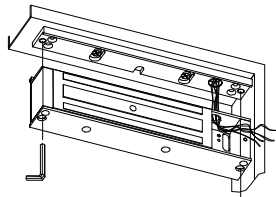
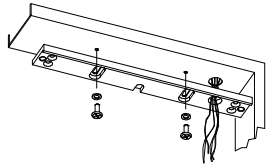
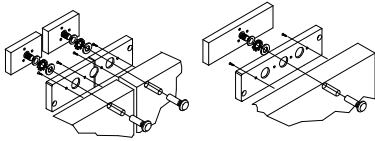
1. Prep door and frame according to the template provided for the correct model you are installing.

**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

Holes "A" (on frame), referenced to on template, are to be for #10-24 machine screws on reinforced metal frames or #10 self tapping screws on sheet (hollow) metal or aluminum. Hole(s) "B" are for sex nut(s) and depend on door type (see illustration to right for correct application.)

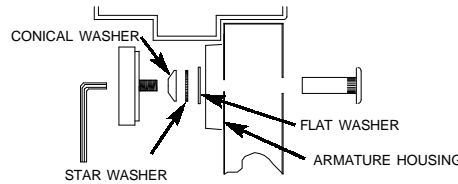


### SINGLE/SPLIT ARMATURE UNITS:



(390+ SHOWN)

2. Mount armature(s), housing(s) and armature using appropriate hardware as shown.



3. Pass control/monitoring wiring through wire access hole in frame and through wire hole in mounting bracket. Mount bracket using pan head screws and flat washers. Do not completely tighten screws - it will be necessary to adjust the position of the bracket in step 5.

4. Install magnet assembly to mounting bracket.

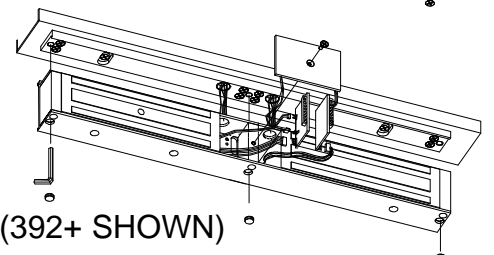
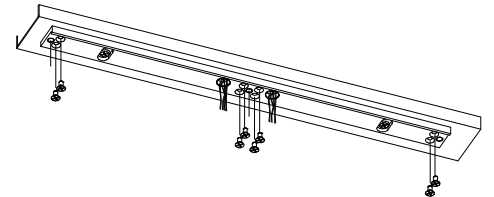
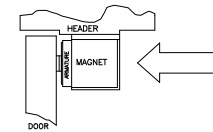
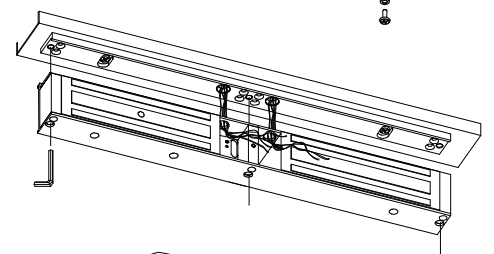
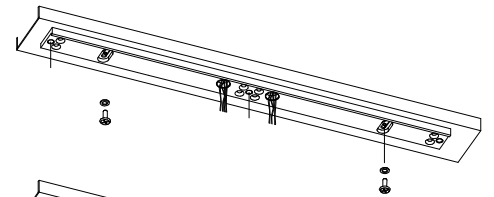
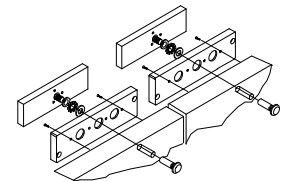
5. Close and latch door. Push the magnet assembly toward armature(s) on door(s) until they are pressed together. When possible, apply power to magnet to set final position. Mark position of mounting bracket and remove magnet assembly.

6. Tighten pan head screws to firmly hold mounting plate to frame. Drill mounting holes for #10 sheet metal/machine screws and secure mounting plate to frame. Make sure all fasteners shown are installed.

7. Install magnet to mounting bracket. Make wiring connections (see wiring instructions on next page). Install circuit board(s) (if used), wire and wire access cover. Do not pinch wires between parts. Install antitamper plugs, using a rubber mallet, if desired.

**Note:** after installing antitamper plugs it will be necessary to drill them out if the lock must be removed.

### DOUBLE UNITS:



(392+ SHOWN)

**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

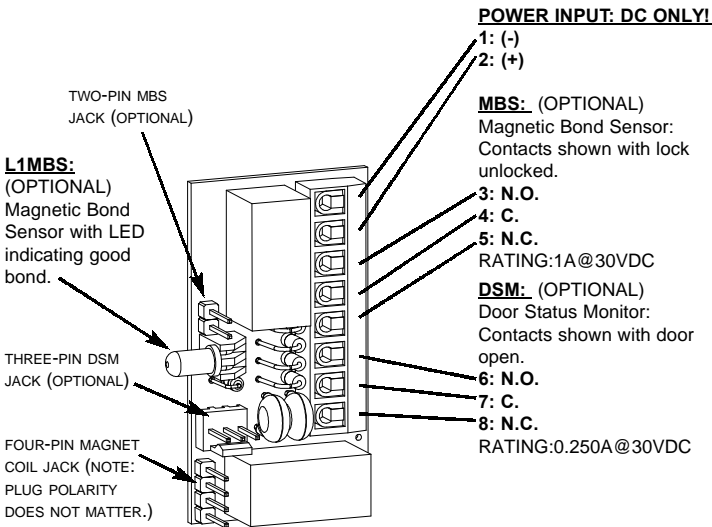
## “+” MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

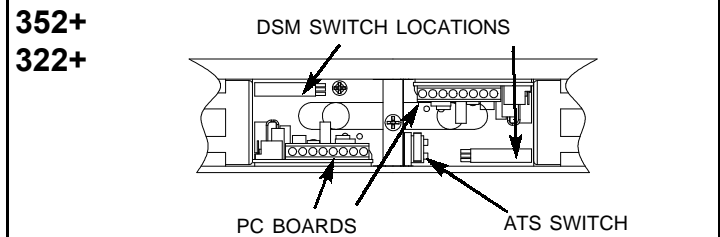
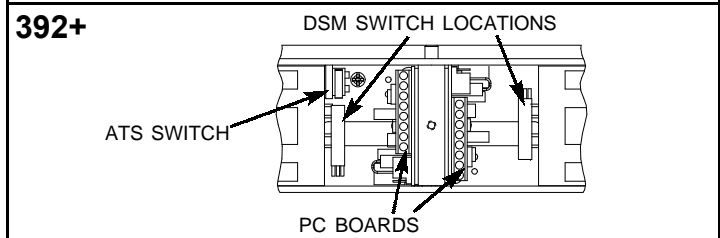
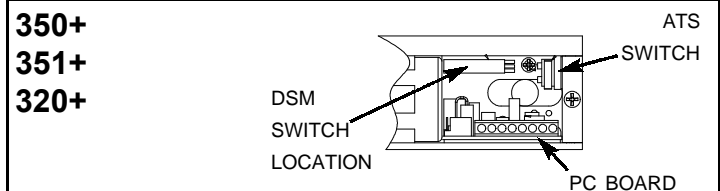
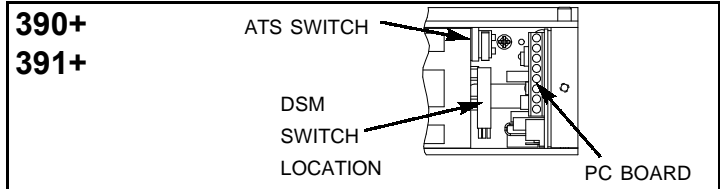


**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING: 1A @ 30VDC

REMOVE PAPER BACKING ON STICKY TAPE DISC TO MOUNT IN POSITION AFTER WIRING

## WIRING CAVITY COMPONENT LOCATION:

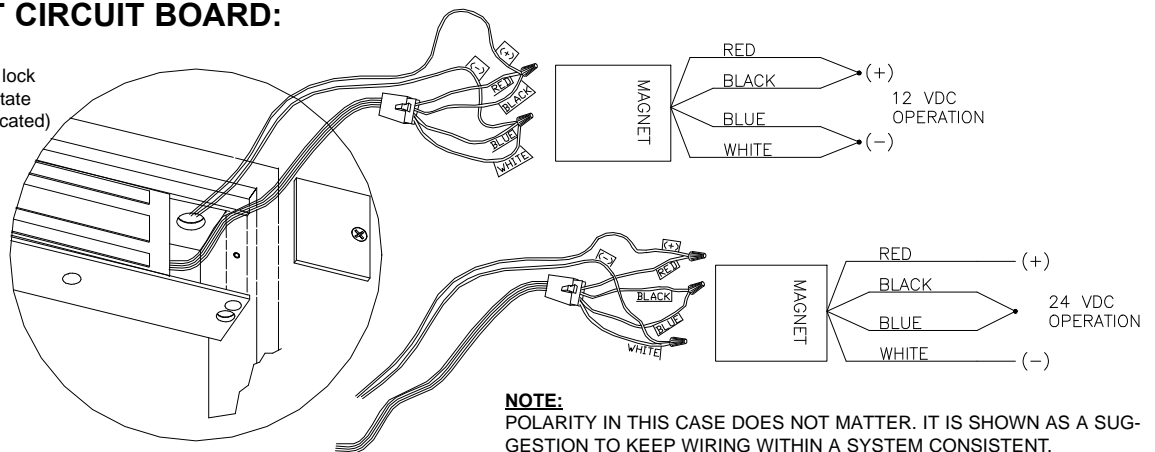


## MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING: 0.250A @ 30VDC)

**DSM:**  
(Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING: 0.250A @ 30VDC)

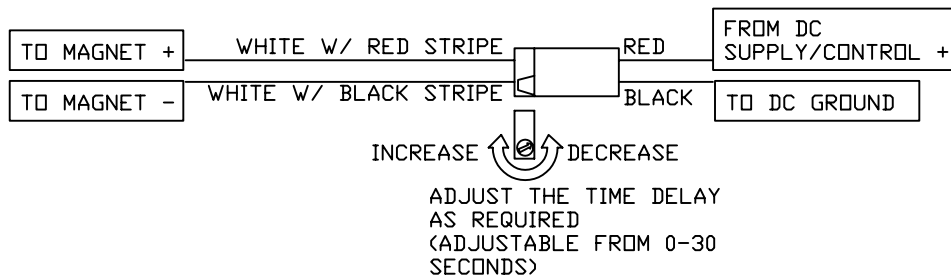
IMPORTANT! DSM SWITCH POSITIONS ARE THE SAME. SEE DIAGRAMS ABOVE.



**NOTE:**  
POLARITY IN THIS CASE DOES NOT MATTER. IT IS SHOWN AS A SUGGESTION TO KEEP WIRING WITHIN A SYSTEM CONSISTENT.

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

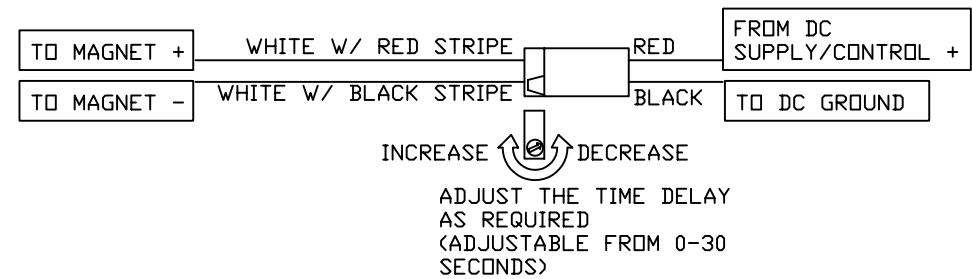


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01-29-2004

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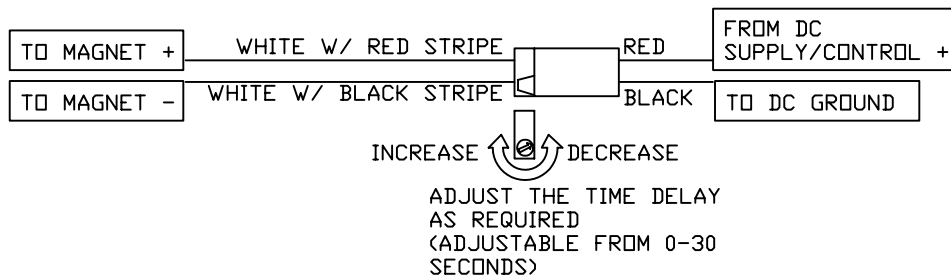


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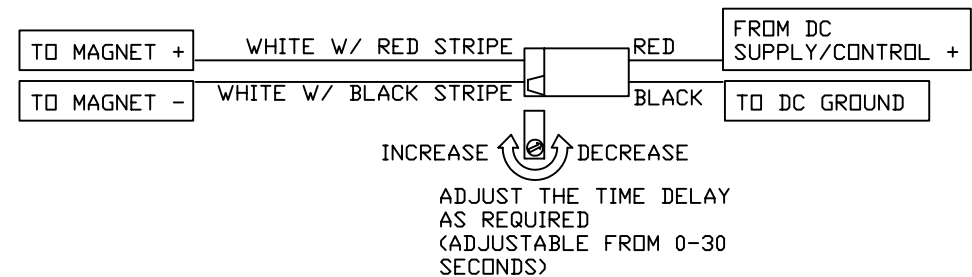


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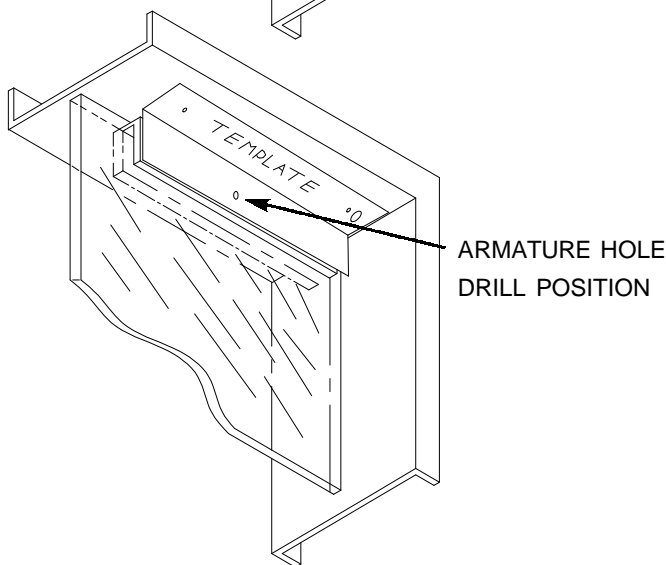
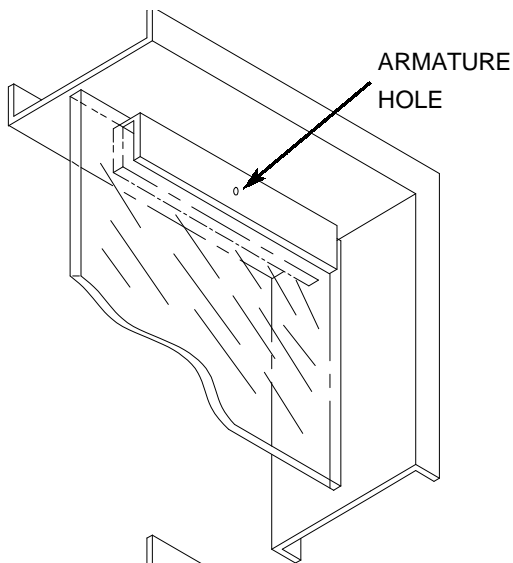
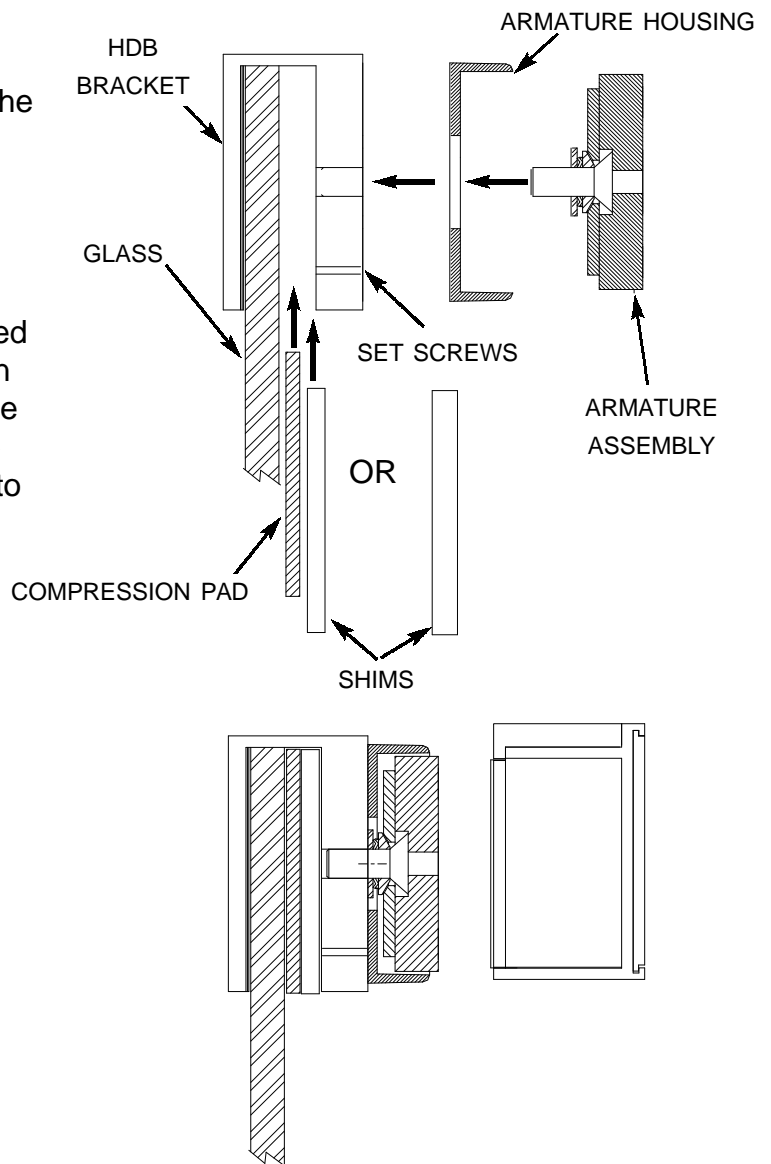
FORM 39476

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The HDB kits are intended to be installed with the 320+, 350+, and 390+ series outswinging single and double magnetic locks.

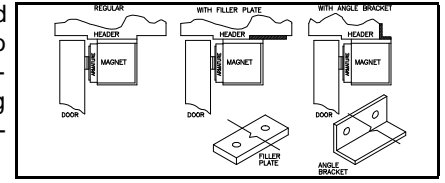
Select the appropriate shim for the thickness of glass. Use the compression pad, installed between the glass and the shim (with the padded side toward the glass). Install in desired position on glass (on top of glass opposite the hinge side with the hole for the armature facing toward the "push" side of the opening). Tighten set screws to trap compression pad and shim into place.



Place standard template on HDB bracket with the armature hole drill position (on template) over the armature hole in the HDB bracket. Tape the template in place. Mark and drill required holes in frame. Follow installation instructions for the model being installed.

**Double Units:** Use the standard template to mark the vertical centerlines of the armature holes on the glass with a wax crayon. Position the HDB brackets on these lines with the armature holes lining up with the marked vertical centerlines.

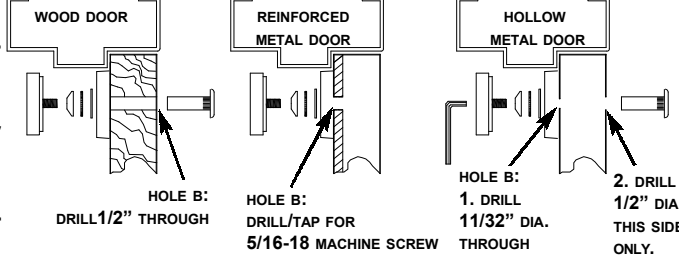
**Pre-Installation Considerations:** It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. It may be necessary to use a filler plate or angle bracket for adequate mounting surface area. See illustration (right). Locknetics offers many sizes of each. Herculite door brackets are also available for glass doors. Consult your distributor.



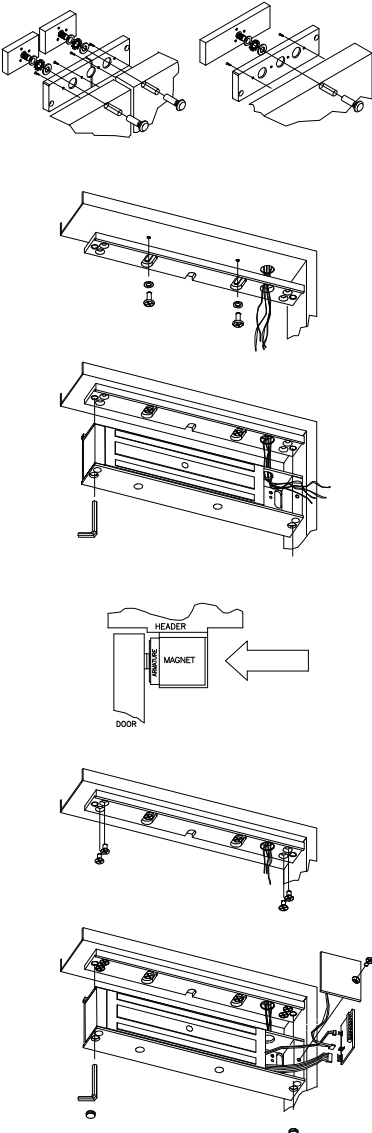
1. Prep door and frame according to the template provided for the correct model you are installing.

**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

Holes "A" (on frame), referenced to on template, are to be for #10-24 machine screws on reinforced metal frames or #10 self tapping screws on sheet (hollow) metal or aluminum. Hole(s) "B" are for sex nut(s) and depend on door type (see illustration to right for correct application.)

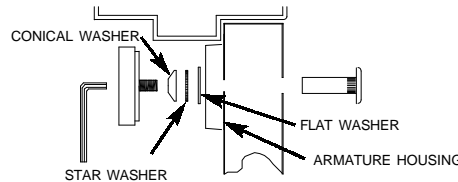


### SINGLE/SPLIT ARMATURE UNITS:



(390+ SHOWN)

2. Mount armature(s), housing(s) and armature using appropriate hardware as shown.



3. Pass control/monitoring wiring through wire access hole in frame and through wire hole in mounting bracket. Mount bracket using pan head screws and flat washers. Do not completely tighten screws - it will be necessary to adjust the position of the bracket in step 5.

4. Install magnet assembly to mounting bracket.

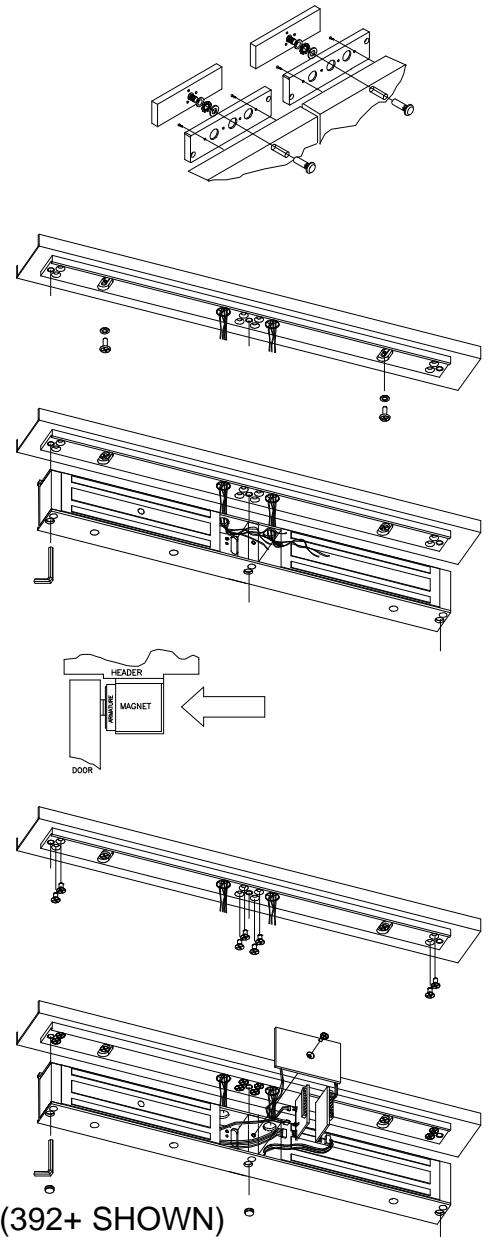
5. Close and latch door. Push the magnet assembly toward armature(s) on door(s) until they are pressed together. When possible, apply power to magnet to set final position. Mark position of mounting bracket and remove magnet assembly.

6. Tighten pan head screws to firmly hold mounting plate to frame. Drill mounting holes for #10 sheet metal/machine screws and secure mounting plate to frame. Make sure all fasteners shown are installed.

7. Install magnet to mounting bracket. Make wiring connections (see wiring instructions on next page). Install circuit board(s) (if used), wire and wire access cover. Do not pinch wires between parts. Install antitamper plugs, using a rubber mallet, if desired.

**Note:** after installing antitamper plugs it will be necessary to drill them out if the lock must be removed.

### DOUBLE UNITS:



(392+ SHOWN)

**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
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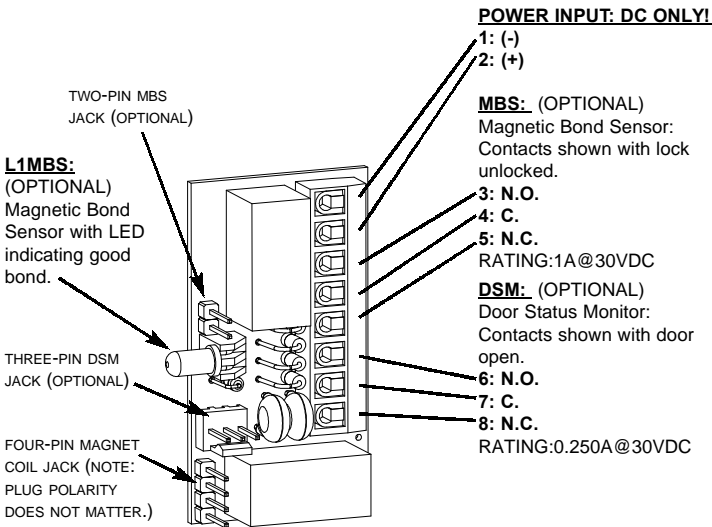
## “+” MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

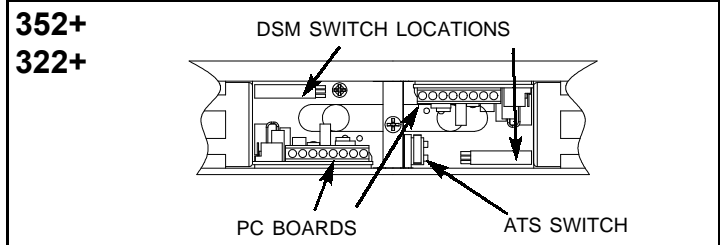
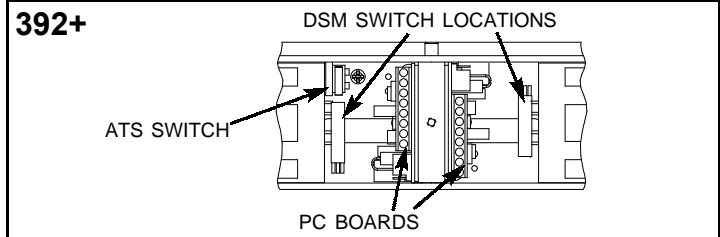
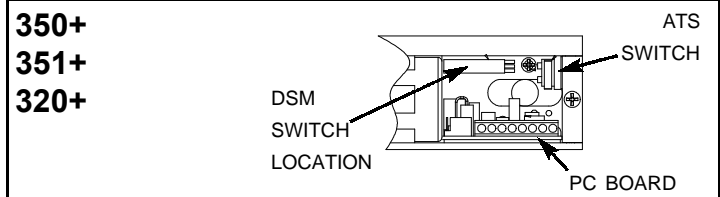
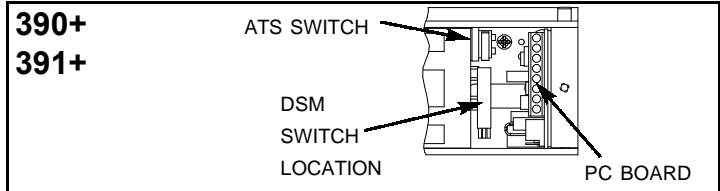


**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING:1A@30VDC

REMOVE PAPER BACKING ON STICKY TAPE DISC TO MOUNT IN POSITION AFTER WIRING

## WIRING CAVITY COMPONENT LOCATION:

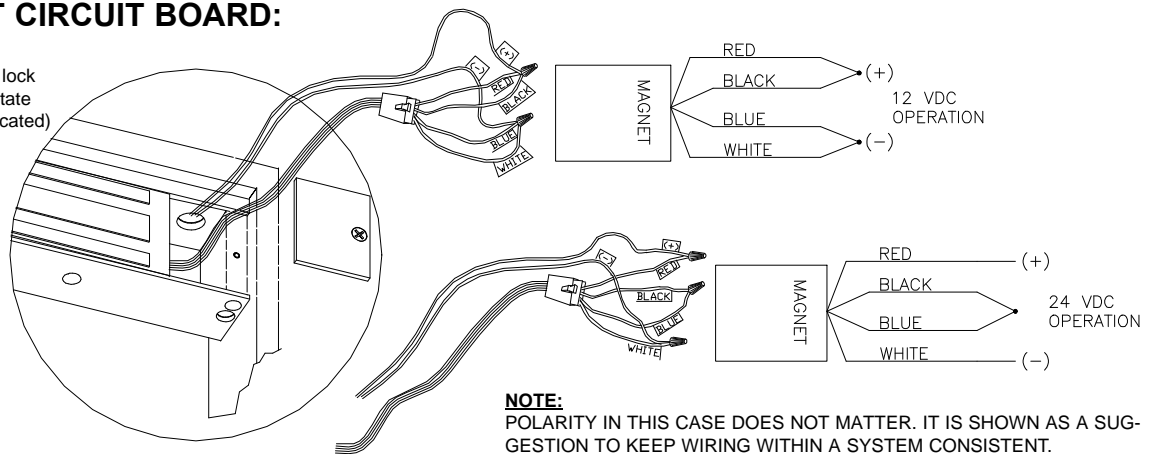


## MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING:0.250A@30VDC)

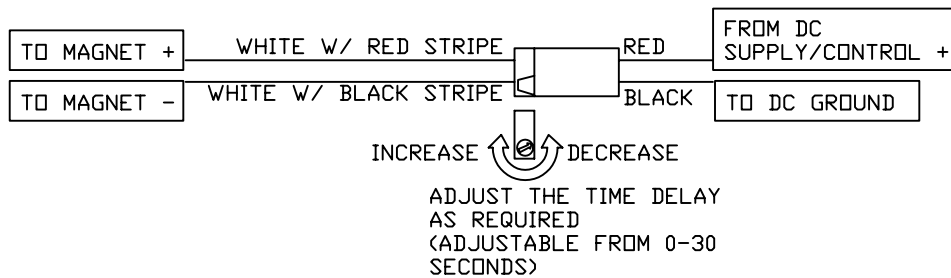
**DSM:**  
(Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING:0.250A@30VDC)

IMPORTANT! DSM SWITCH POSITIONS ARE THE SAME. SEE DIAGRAMS ABOVE.



# RTD MODULE

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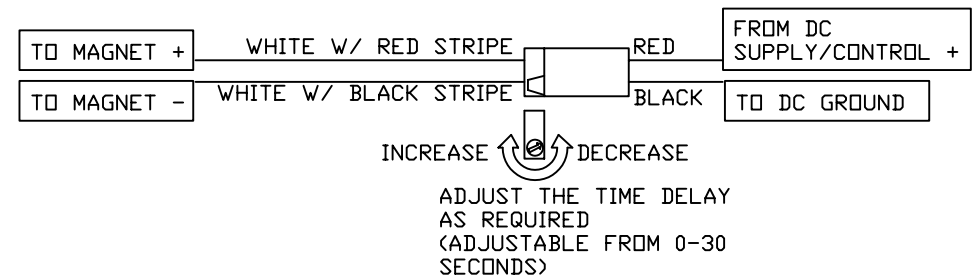


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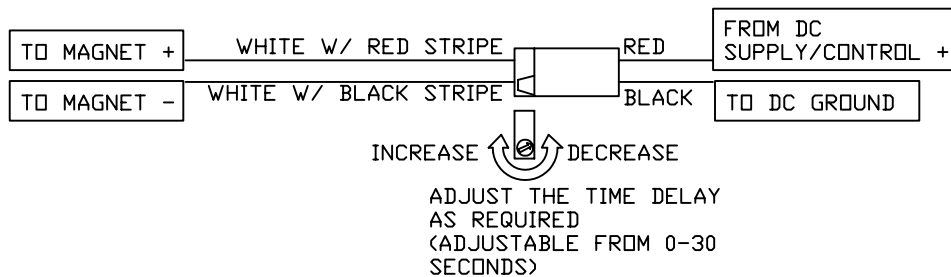


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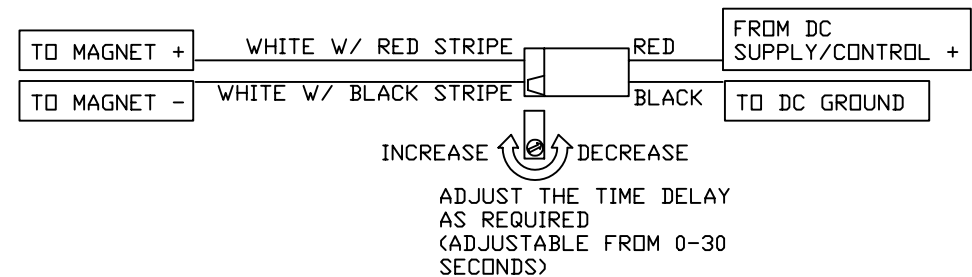


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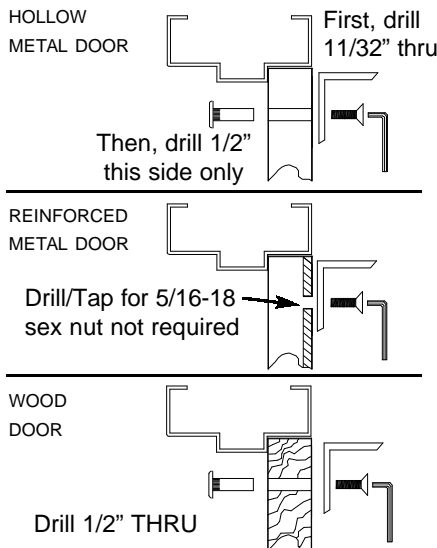
FORM 39476

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### Pre Installation Considerations:

It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. The TJ type of magnetic lock is intended for use on inswinging doors. It is not intended to be installed on the exterior of buildings.

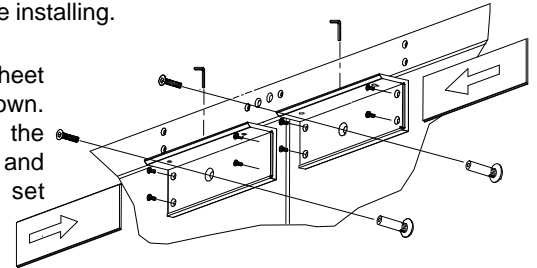
### SEX NUT PREP FOR TJ BRACKETS



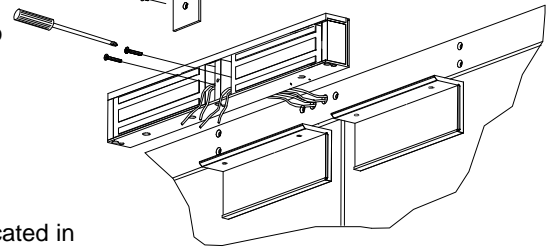
**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

**1.** Prep door and frame according to the template provided for the correct model you are installing.

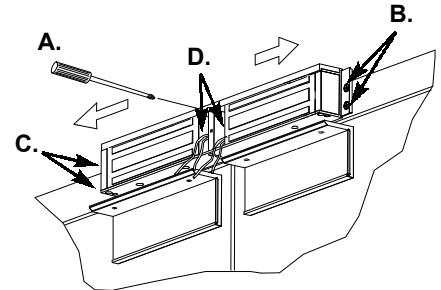
**2.** Mount Lower TJ brackets using sheet metal screws and sex nuts as shown. Slide the TJ dress plates into the lower TJ brackets as shown. Center and secure position using the allen set screws.



**3.** Remove wire access cover from magnet. Pull control wiring through wire access holes. Install magnet to frame with two sheet metal or machine screws through exposed holes inside wire access cavities. Do not completely tighten them at this point.

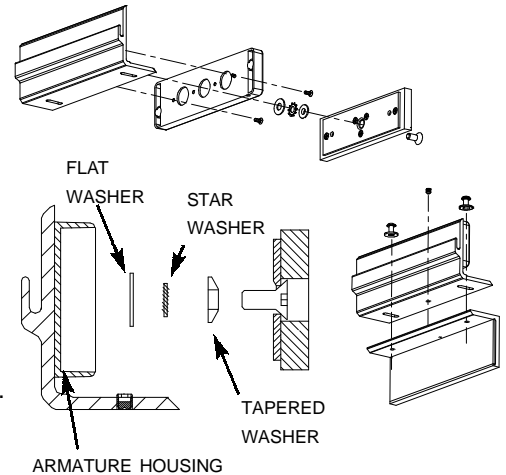


**4.** A. Loosen phillips set screw located in the right wire access cavity. B. Slide magnet to left just enough to expose mounting screw holes on right. Secure magnet with two mounting screws.



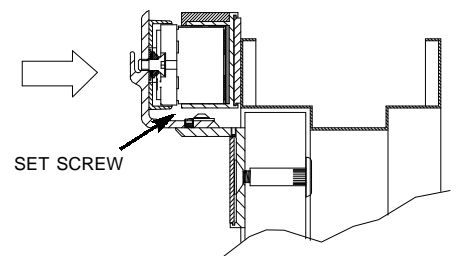
C. Slide just enough to expose two holes on left. Secure magnet with two screws on left. D. Center magnet and tighten two center mounting screws and set screw. **IMPORTANT! Do not slide the magnet too far or wiring could be severed or damaged.**

**5.** Install the armatures and armature housings onto the upper TJ brackets using the hardware provided as shown. **IMPORTANT! Hardware must be assembled in the correct order, as shown, for proper operation. Do not remove foam rubber compression pads from lexan armature housings.**



**6.** Open doors and install the upper TJ brackets to the lower TJ brackets using two machine screws and washers each. Leave the screws just loose enough to slide upper TJ bracket toward or away from the door.

**7.** Close and latch door. Push each upper TJ armature/bracket assembly toward magnet until it is mated against it, with no air gap. Open door slowly and tighten machine screws and set screws to lock TJ bracket assemblies into position.



**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

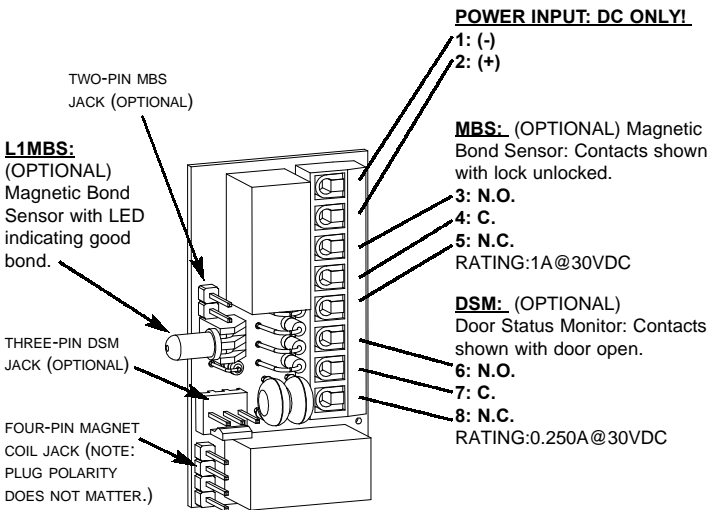
### "+" MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

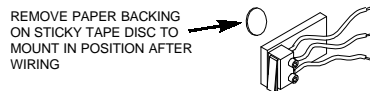
**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

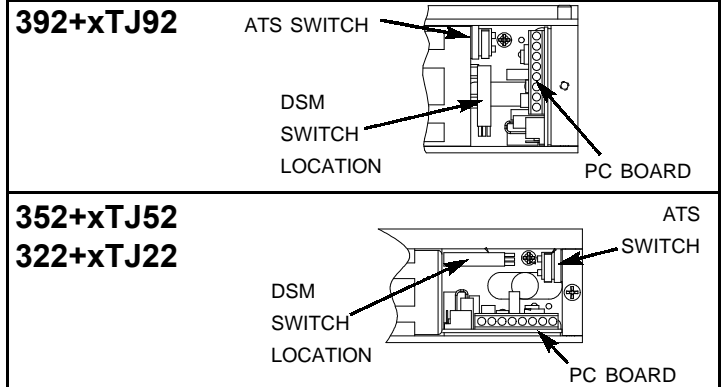


**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING: 1A@30VDC



### WIRING CAVITY COMPONENT LOCATION:



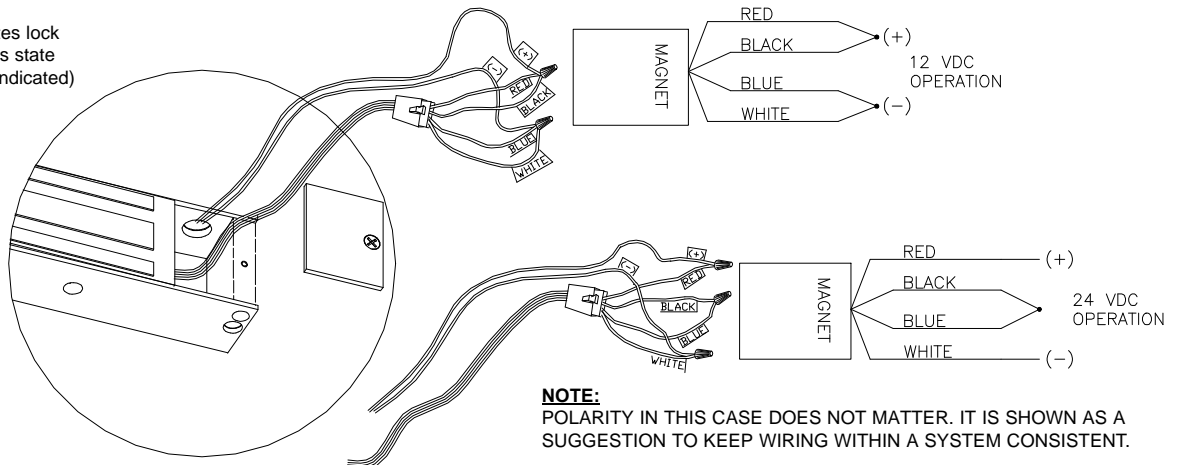
### MODELS WITHOUT CIRCUIT BOARD:

**MBS:** (Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)

WHITE: C.  
WHITE: N.O.  
(RATING: 0.250A@30VDC)

**DSM:** (Door Status Monitor: changes state when door is closed)

RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING: 0.250A@30VDC)

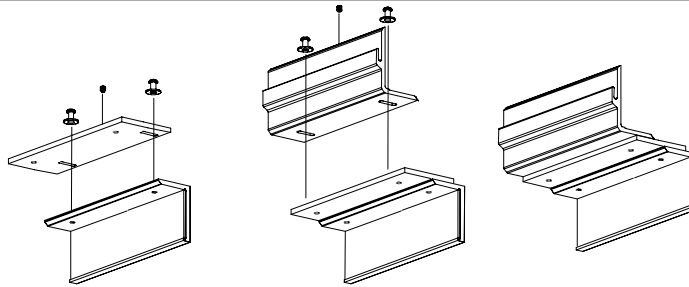


The DEB1 ("Double Egress Bracket") is designed for use with 390+ $\times$ TJ90 top jam magnetic lock, allowing it to extend to accommodate a double egress frame condition. Generally, a standard 390+ magnet will be mounted on the adjacent door. The purpose of this configuration is to allow both magnetic locks to be mounted on same side of the opening, for added security. It is recommended that the TJ lock be mounted first, to allow room for sliding it horizontally to secure the magnet to the frame face.

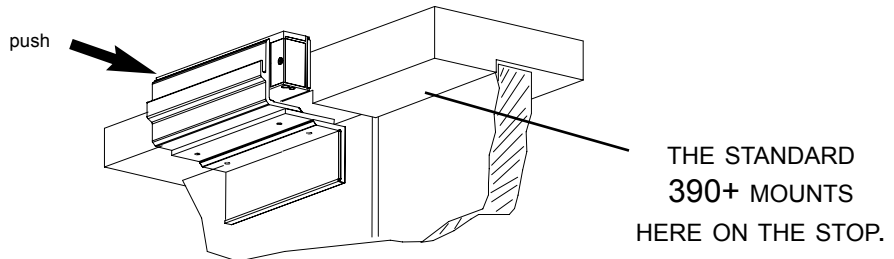
**USE TEMPLATE INFORMATION ON BACK OF THIS SHEET.**  
**DO NOT USE STANDARD TEMPLATE INFORMATION.**

Please refer to the instructions for installing the single TJ magnetic lock (form 39871). Substitute the following for step numbers 7 and 8.

**7.** Attach the DEB1 extension to the lower TJ bracket using two longer socket cap screws. Install set screw. Do not completely tighten the screws. Next, install the upper TJ bracket assembly onto the DEB1 extension using the remaining two longer socket cap screws. Install second set screw.



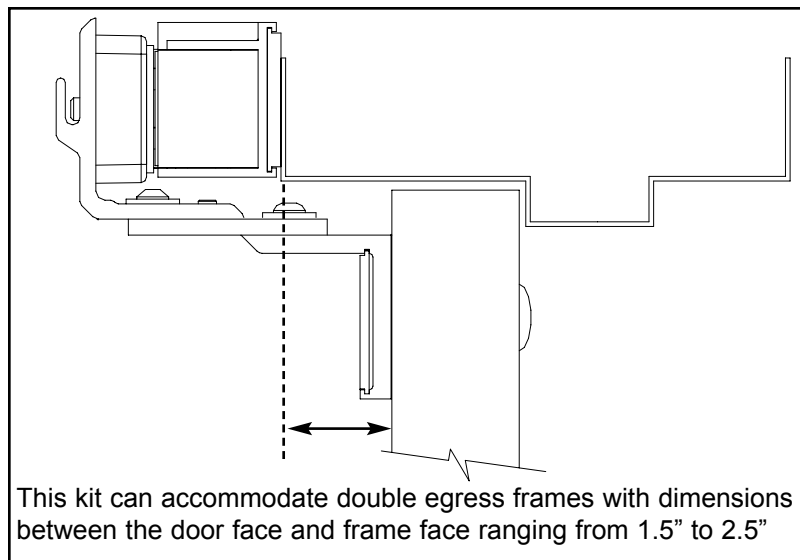
**8.** Close door and push upper TJ bracket assembly (with armature) toward magnet so there is no gap between the magnet and armature. Mark position and slowly open door. Tighten set screws and socket cap screws.



**Notes:**

1. Use the longer socket cap screws provided with this kit.

2. It may be necessary to remove the armature and armature housing in order to tighten the socket cap screws.



## DEB1 TEMPLATE INFORMATION Double Egress Bracket for 390+XTJ90

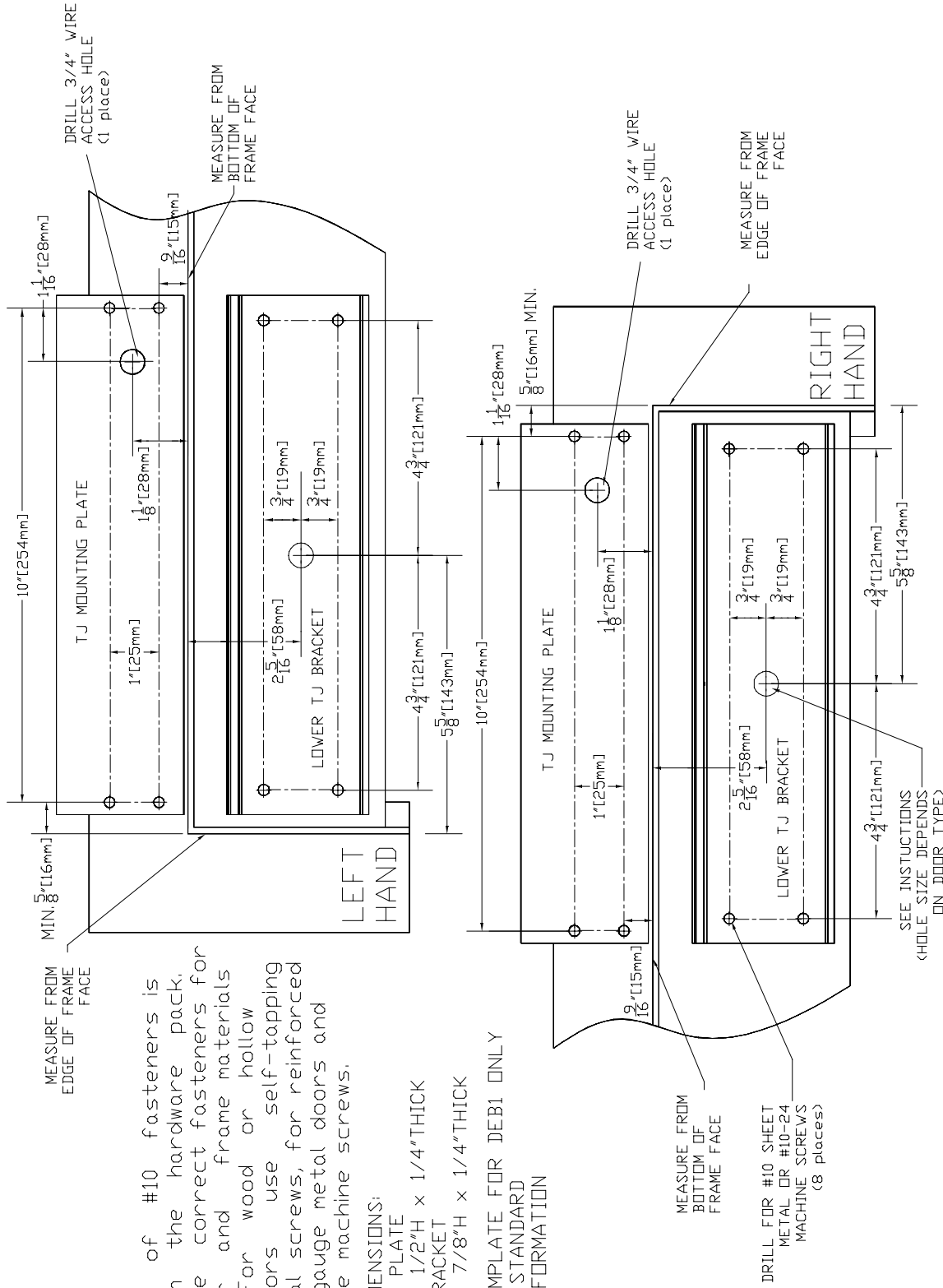
### NOTE:

A variety of #10 fasteners is included in the hardware pack. Select the correct fasteners for the door and frame materials involved. For wood or hollow metal doors use self-tapping sheet metal screws, for reinforced or heavy gauge metal doors and frames, use machine screws.

### OVERALL DIMENSIONS:

- TJ MOUNTING PLATE  
10 1/2"L x 2 1/2"H x 1/4"THICK
- LOWER TJ BRACKET  
10 1/2"L x 2 7/8"H x 1/4"THICK

USE THIS TEMPLATE FOR DEB1 ONLY  
 DO NOT USE STANDARD  
 TEMPLATE INFORMATION

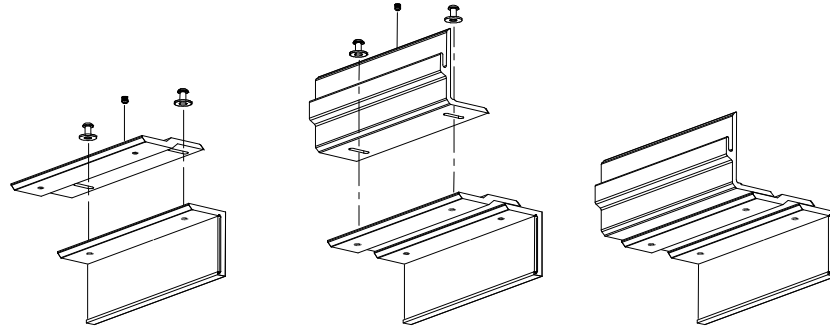




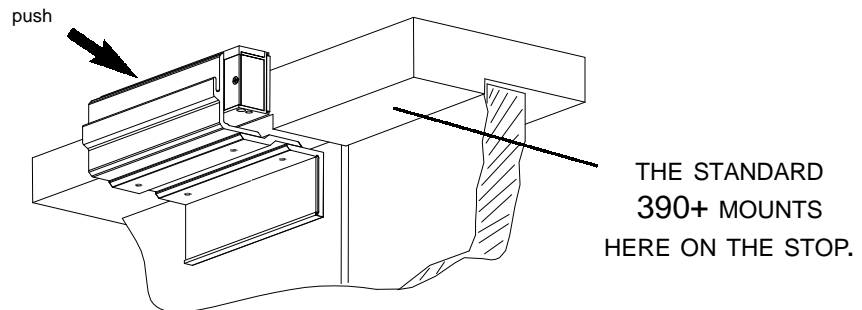
The DEB2 ("Double Egress Bracket") is designed for use with 390+ $\times$ TJ90 top jam magnetic lock, allowing it to extend to accommodate a double egress frame condition. Generally, a standard 390+ magnet will be mounted on the adjacent door. The purpose of this configuration is to allow both magnetic locks to be mounted on same side of the opening, for added security. It is recommended that the TJ lock be mounted first, to allow room for sliding it horizontally to secure the magnet to the frame face.

Please refer to the instructions for installing the single TJ magnetic lock (form 39871). Substitute the following for step numbers 7 and 8.

**7.** Attach the DEB2 extension to the lower TJ bracket using two longer socket cap screws. Install set screw. Do not completely tighten the screws. Next, install the upper TJ bracket assembly onto the DEB2 extension using the remaining two longer socket cap screws. Install second set screw.



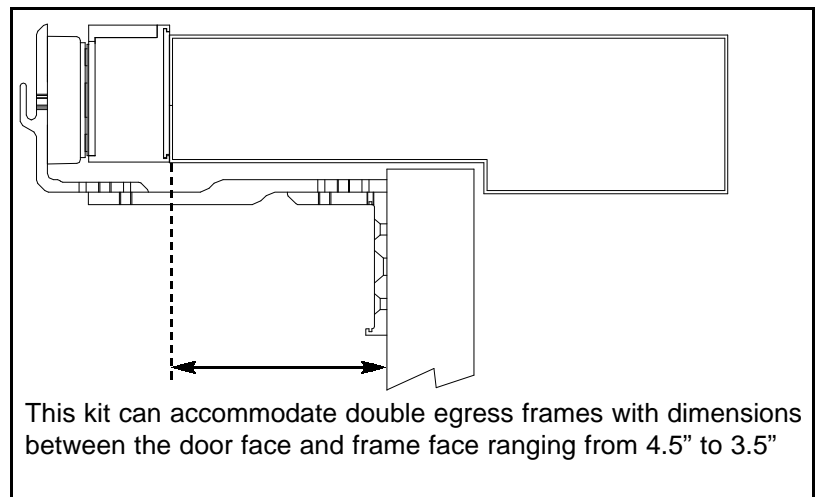
**8.** Close door and push upper TJ bracket assembly (with armature) toward magnet so there is no gap between the magnet and armature. Mark position and slowly open door. Tighten set screws and socket cap screws.



### Notes:

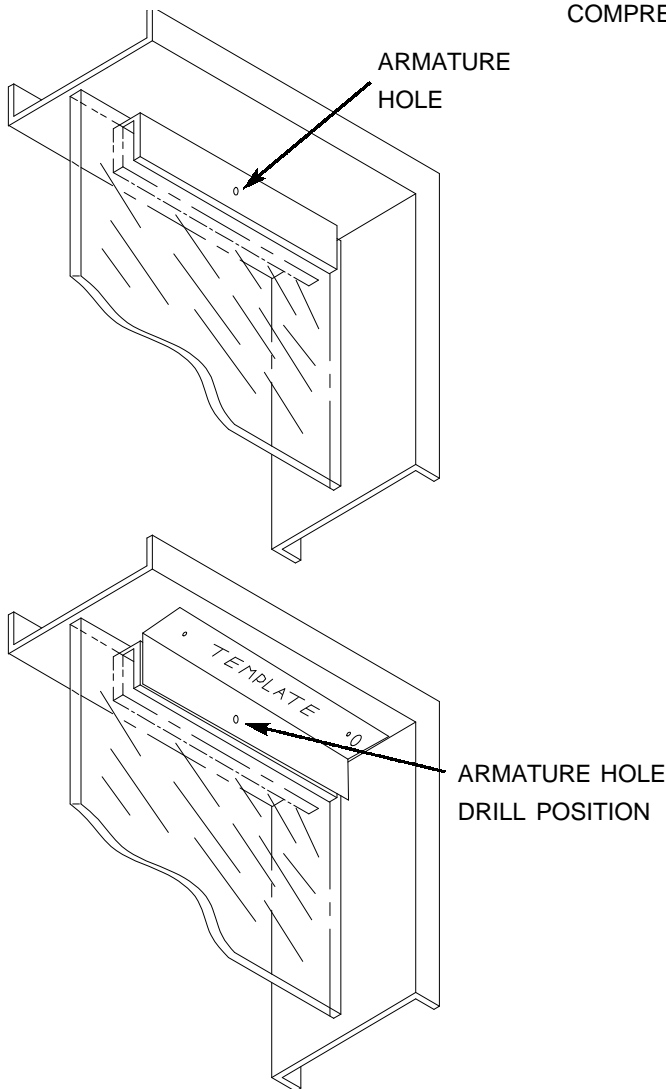
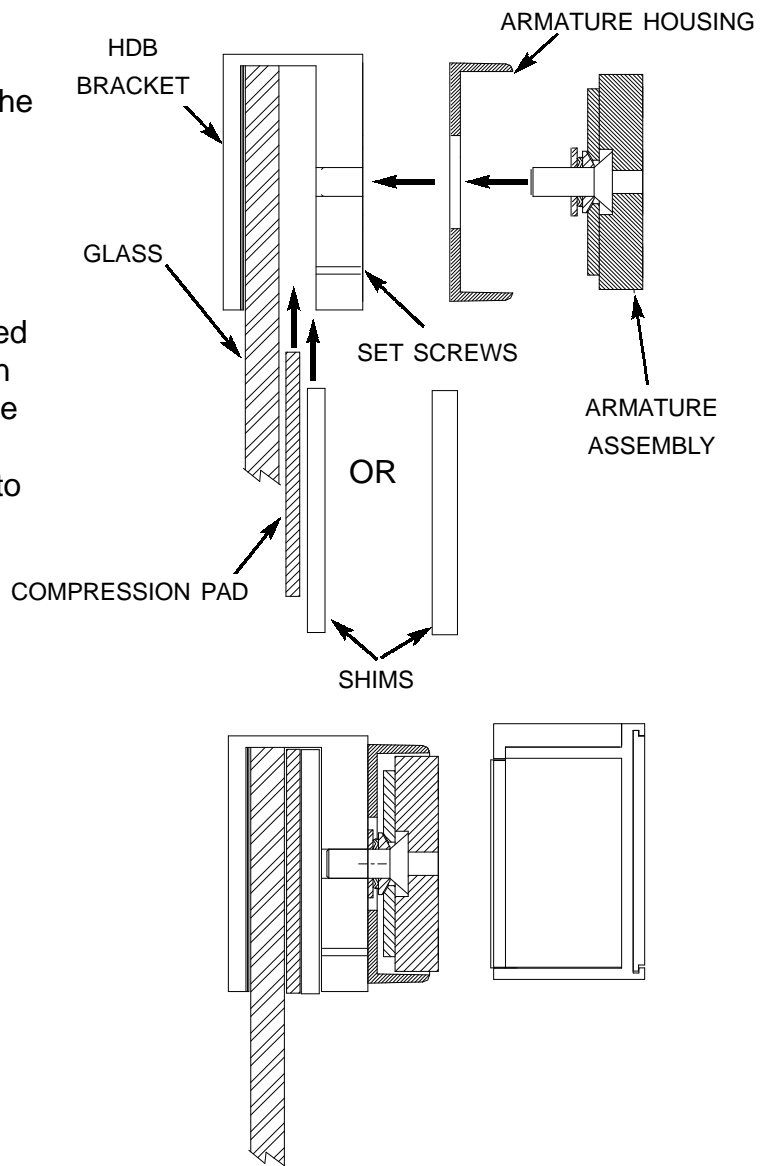
1. Use the longer socket cap screws provided with this kit.

2. It may be necessary to remove the armature and armature housing in order to tighten the socket cap screws.



The HDB kits are intended to be installed with the 320+, 350+, and 390+ series outswinging single and double magnetic locks.

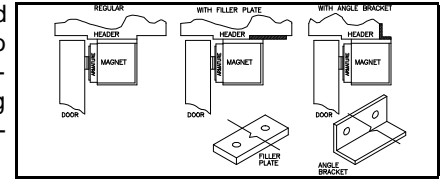
Select the appropriate shim for the thickness of glass. Use the compression pad, installed between the glass and the shim (with the padded side toward the glass). Install in desired position on glass (on top of glass opposite the hinge side with the hole for the armature facing toward the "push" side of the opening). Tighten set screws to trap compression pad and shim into place.



Place standard template on HDB bracket with the armature hole drill position (on template) over the armature hole in the HDB bracket. Tape the template in place. Mark and drill required holes in frame. Follow installation instructions for the model being installed.

**Double Units:** Use the standard template to mark the vertical centerlines of the armature holes on the glass with a wax crayon. Position the HDB brackets on these lines with the armature holes lining up with the marked vertical centerlines.

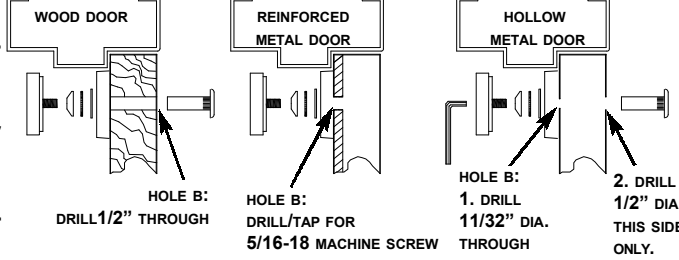
**Pre-Installation Considerations:** It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. It may be necessary to use a filler plate or angle bracket for adequate mounting surface area. See illustration (right). Locknetics offers many sizes of each. Herculite door brackets are also available for glass doors. Consult your distributor.



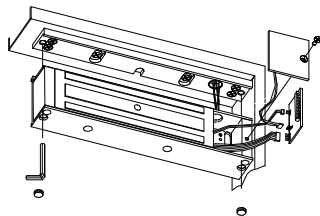
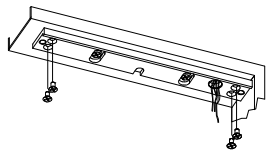
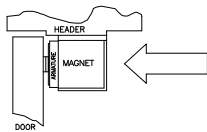
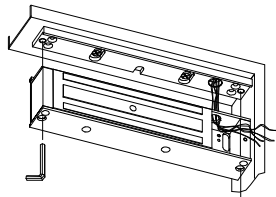
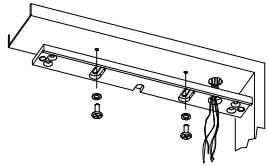
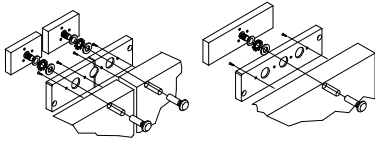
1. Prep door and frame according to the template provided for the correct model you are installing.

**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

Holes "A" (on frame), referenced to on template, are to be for #10-24 machine screws on reinforced metal frames or #10 self tapping screws on sheet (hollow) metal or aluminum. Hole(s) "B" are for sex nut(s) and depend on door type (see illustration to right for correct application.)

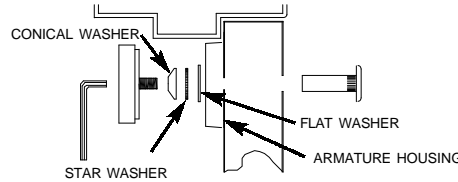


### SINGLE/SPLIT ARMATURE UNITS:



(390+ SHOWN)

2. Mount armature(s), housing(s) and armature using appropriate hardware as shown.



3. Pass control/monitoring wiring through wire access hole in frame and through wire hole in mounting bracket. Mount bracket using pan head screws and flat washers. Do not completely tighten screws - it will be necessary to adjust the position of the bracket in step 5.

4. Install magnet assembly to mounting bracket.

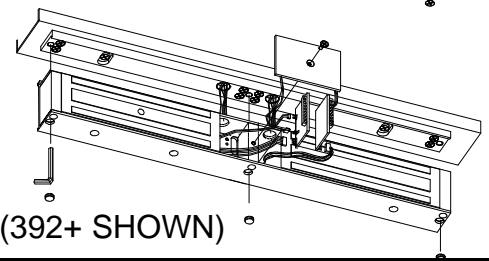
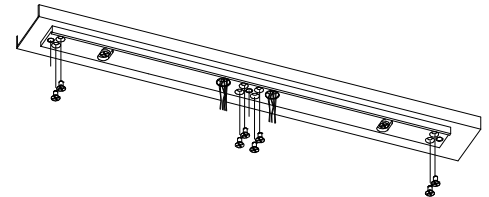
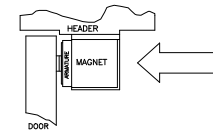
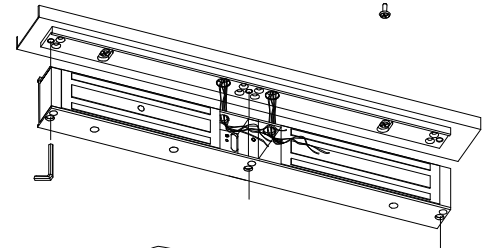
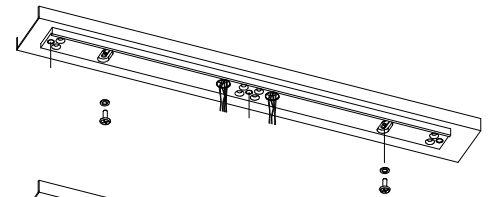
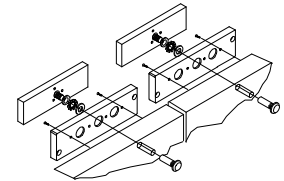
5. Close and latch door. Push the magnet assembly toward armature(s) on door(s) until they are pressed together. When possible, apply power to magnet to set final position. Mark position of mounting bracket and remove magnet assembly.

6. Tighten pan head screws to firmly hold mounting plate to frame. Drill mounting holes for #10 sheet metal/machine screws and secure mounting plate to frame. Make sure all fasteners shown are installed.

7. Install magnet to mounting bracket. Make wiring connections (see wiring instructions on next page). Install circuit board(s) (if used), wire and wire access cover. Do not pinch wires between parts. Install antitamper plugs, using a rubber mallet, if desired.

**Note:** after installing antitamper plugs it will be necessary to drill them out if the lock must be removed.

### DOUBLE UNITS:



(392+ SHOWN)

**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

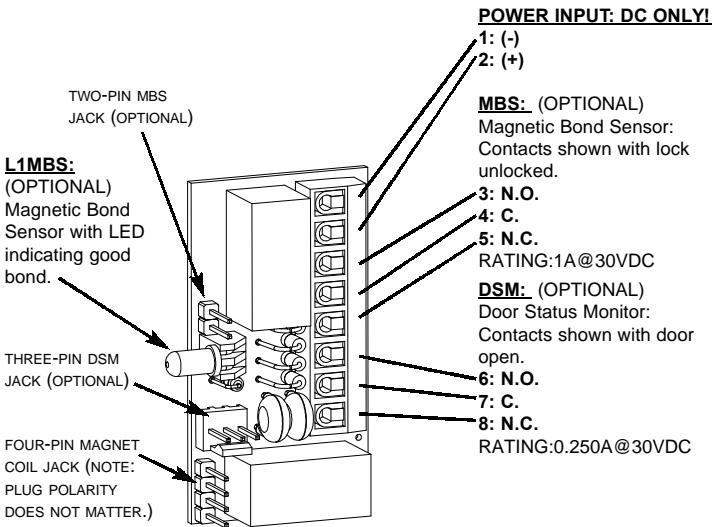
## “+” MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

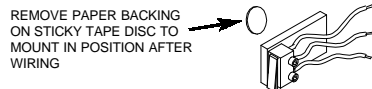
**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

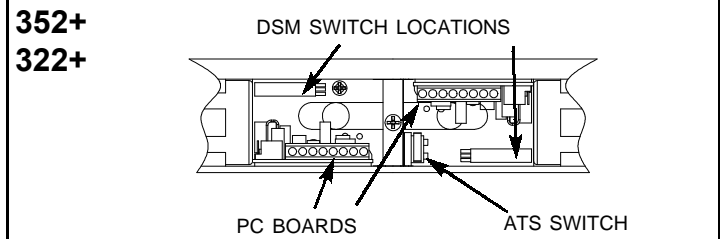
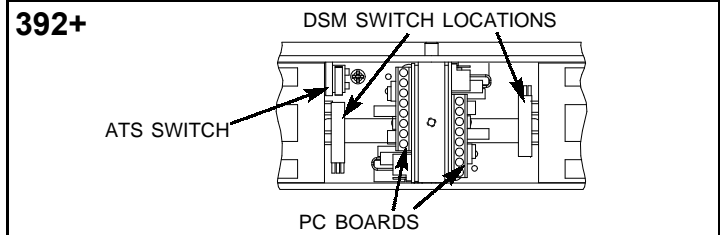
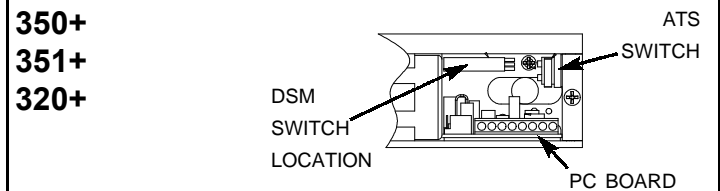
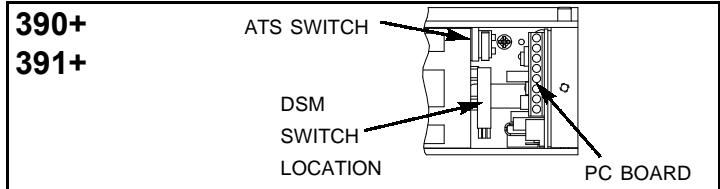


**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING: 1A @ 30VDC



## WIRING CAVITY COMPONENT LOCATION:

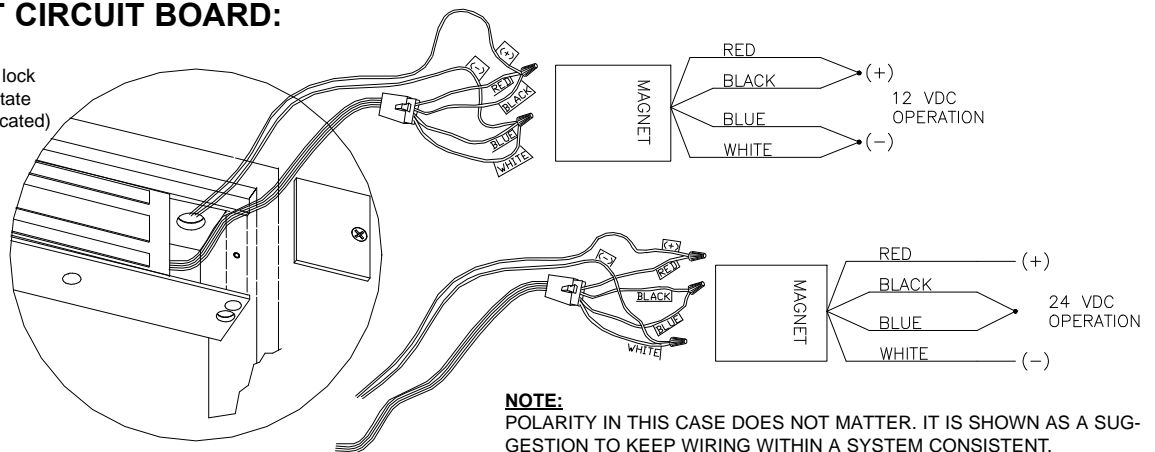


## MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING: 0.250A @ 30VDC)

**DSM:**  
(Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING: 0.250A @ 30VDC)

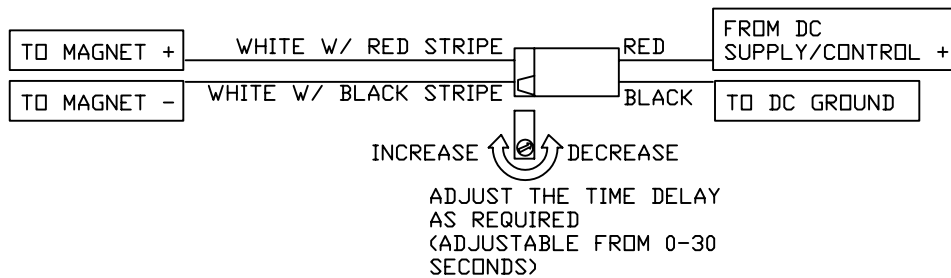
IMPORTANT! DSM SWITCH POSITIONS ARE THE SAME. SEE DIAGRAMS ABOVE.



**NOTE:**  
POLARITY IN THIS CASE DOES NOT MATTER. IT IS SHOWN AS A SUGGESTION TO KEEP WIRING WITHIN A SYSTEM CONSISTENT.

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

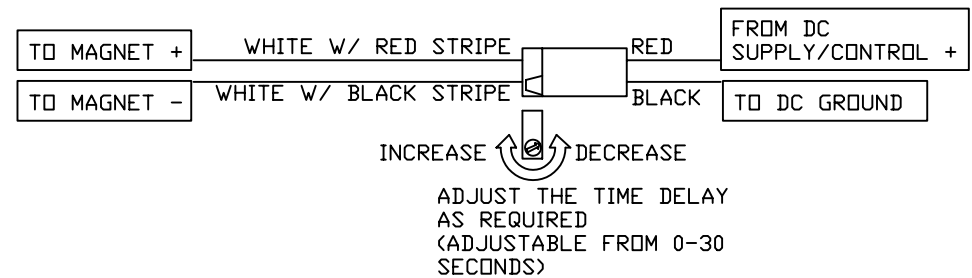


FORM 39476

01-29-2004

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

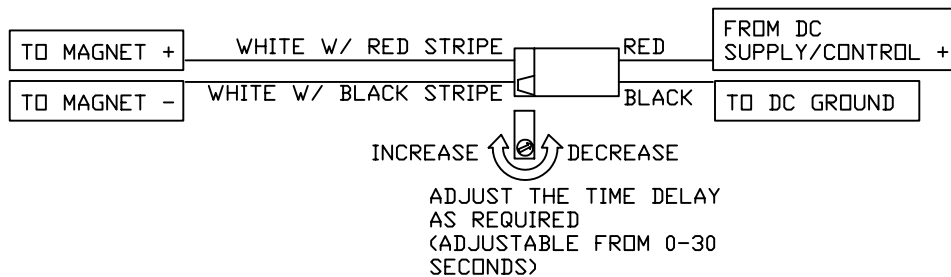


FORM 39476

01-29-2004

# RTD MODULE

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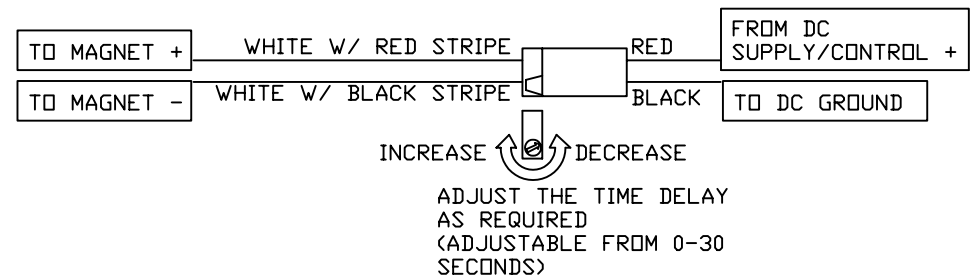


FORM 39476

01-29-2004

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.



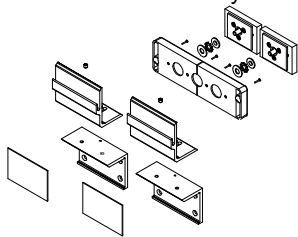
FORM 39476

01-29-2004

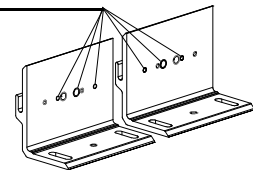
### Pre Installation Considerations:

It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. The TJ type of magnetic lock is intended for use on inswinging doors. It is not intended to be installed on the exterior of buildings.

**SPLIT ARMATURE MODELS:** These models (e.g. 391, etc.) are used for double doors with one magnet and two armature assemblies. Therefore, there are two of each of these parts. The installation is essentially the same.

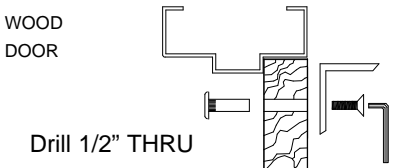
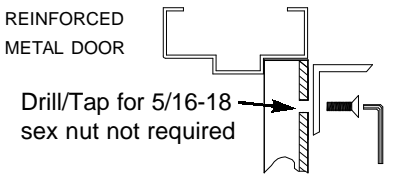
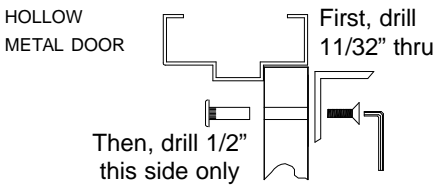


**NOTE:** There are two sets of holes on each TJ bracket. Use sets of holes which are closer to the parting line.



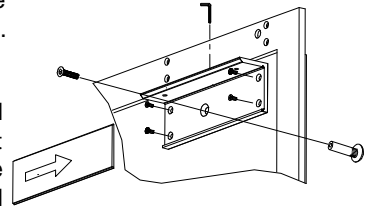
**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

### SEX NUT PREP FOR TJ BRACKETS

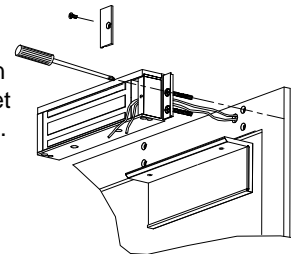


**1.** Prep door and frame according to the template provided for the correct model you are installing.

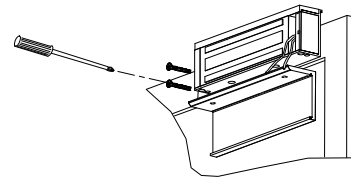
**2.** Install lower TJ bracket(s) using sheet metal screws as shown and sex nut flat head socket screw. Slide the TJ dress plate(s) into the lower TJ bracket(s) as shown. Center and secure position using allen set screw(s).



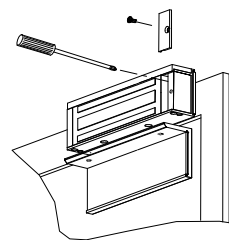
**3.** Remove wire access cover from magnet. Loosen set screw located inside wire cavity. Slide magnet to left just enough to expose two mounting holes. Pull control wiring through wire access hole. Install magnet to frame with two sheet metal or machine screws through exposed holes.



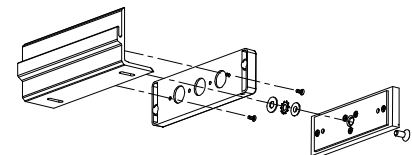
**4.** Slide magnet to right just enough to expose two holes on left. Secure magnet with two screws on left. **IMPORTANT! Do not slide the magnet too far or wiring could be severed or damaged.**



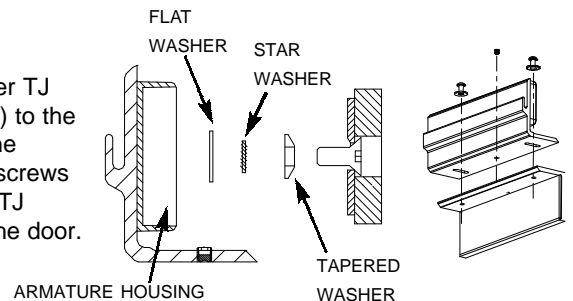
**5.** Center the magnet on the mounting bracket and secure by tightening position set screw with a phillips screw driver. Make wiring connections (refer to other side of this sheet). Tuck wiring into cavity and install cover.



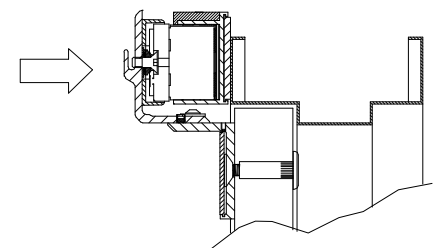
**6.** Install the armature(s) and armature housing(s) onto the upper TJ bracket(s) using the hardware provided as shown. **IMPORTANT! Hardware must be assembled in the correct order, as shown, for proper operation.**



**7.** Open door(s) and install the upper TJ bracket assembly (or assemblies) to the lower TJ bracket(s) using machine screws and washers. Leave the screws just loose enough to slide upper TJ bracket(s) toward or away from the door.



**8.** Close and latch door. Push (each) upper TJ armature/bracket assembly toward magnet until mated against it. Open door slowly and tighten machine screws and set screw(s) into position.



**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

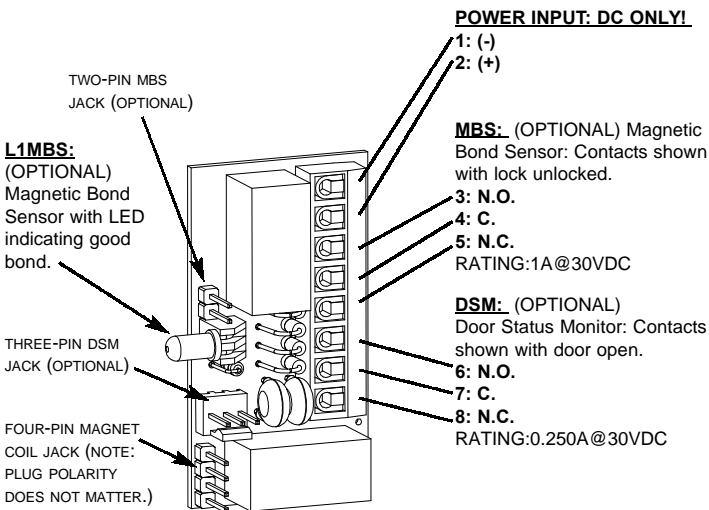
### "+" MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

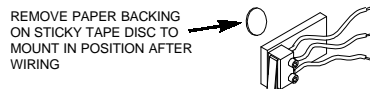
**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

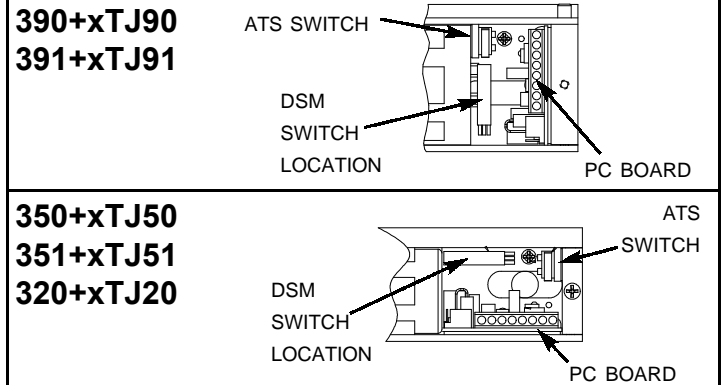


**ATS:** (OPTIONAL) Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING: 1A@30VDC



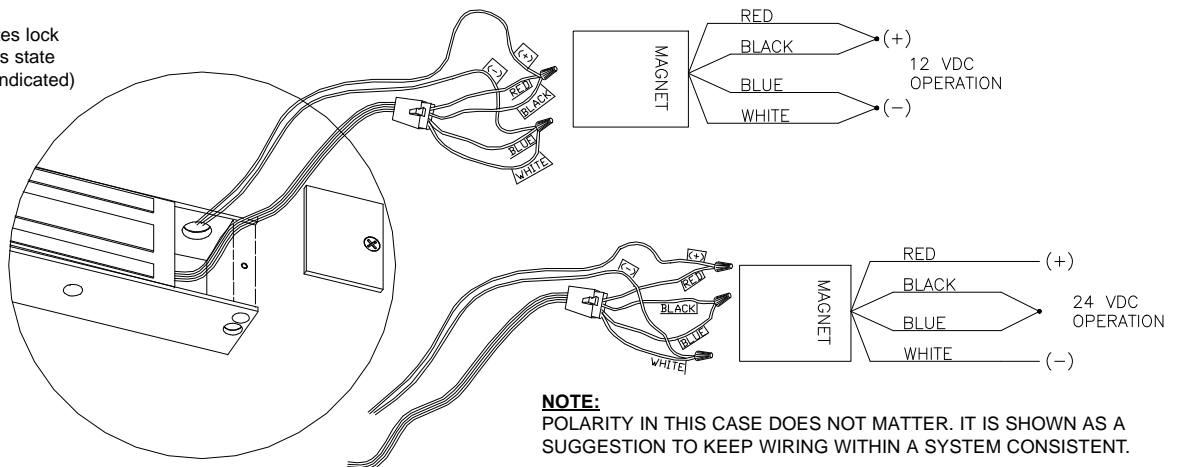
### WIRING CAVITY COMPONENT LOCATION:

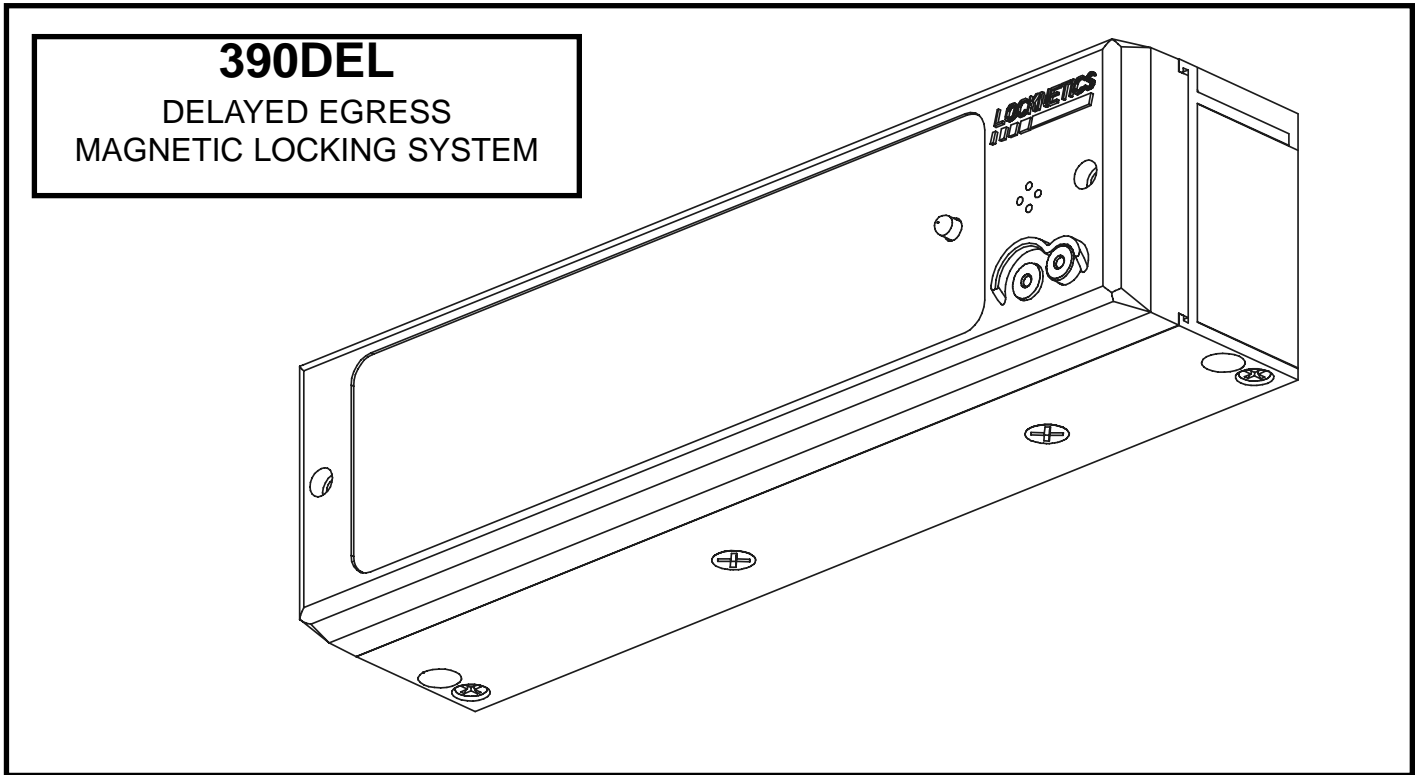


### MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING: 0.250A@30VDC)

**DSM:**  
(Door Status Monitor: changes state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING: 0.250A@30VDC)





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**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK.**

HANDLE THE EQUIPMENT CAREFULLY, DAMAGING THE MATING SURFACES OF THE ELECTROMAGNET OR THE ARMATURE MAY AFFECT LOCKING EFFICIENCY.

**IMPORTANT!** This manual is intended to be kept for programming, maintenance, and trouble shooting purposes. *Do not dispose of after installation.* Please present this manual to facility manager upon completion of installation.



**GENERAL DESCRIPTION:** The electromagnet mounts rigidly to the door frame header. The armature mounts to the door. The armature is designed to pivot about its center compensating for door misalignment. When the door is closed the energized magnet will bond with the armature, providing auxiliary locking force. If the opening is fire rated, the door must be secured positively with a mechanical latching device, in addition to the magnetic lock, in accordance with local authority having jurisdiction. Locknetics manufactures fire rated mechanical latching devices. The electronically controlled 390 DEL and 390-2 DEL series magnetic locks described in this manual share the same access control circuitry. With optional access control input devices (Locknetics keypads or iButton readers) the locks can hold up to 150 codes or iButtons standard for access, toggle, lockout, or special functions. Dry contact inputs allow for fire alarm tie in and remote release/reset capabilities. This manual covers the mechanical installation, wiring, and manual programming aspects of the locks. For computer programming, see information provided with the software package you will be using.

### **THIS MANUAL COVERS THE 390 DEL AND 390-2 DEL, DELAYED EGRESS MAGNETS:**

Delayed egress is initiated by a "plunger" switch which is actuated by a spring-loaded armature plate. By setting dip-switches, an auxiliary switch, such as an exit device or pushbutton, can be used as well. (See dipswitch/terminal layout on page 9.) The nuisance delay can be set from 0-3 seconds in the standard unit (fixed at 1 second in the BOCA unit). The delay time is generally fixed at 15 seconds, but, with approval of the local authority having jurisdiction, can be set to 30 seconds in the standard unit.

### **DESCRIPTION OF OPTIONS:**

**DSM:** Door Status Monitor will provide status of door with or without power applied.

**MBS:** Magnetic Bond Sensor will provide status of lock (locked or unlocked) with or without power applied.

**SEC:** Security Alarm will close alarm relay contacts if the door is forced open or after it is propped open for a selectable time period. (See page 12.) Anti tailgate is also in effect: the door will relock as soon as it closes, even if the relock time delay has not yet transpired.

**BOCA:** Some areas adhere to this life safety code for delayed egress. The nuisance delay is fixed at one second and the delayed egress time at 15 seconds. After delayed egress has been initiated and the door opened, the alarm will automatically reset after 30 seconds and the door will relock. If the door is opened within the 30 seconds the timer will begin again.

**ATR:** Audit Trail Retrieval uses computer programming and interrogation of the lock to store and retrieve the past 100 events such as access, alarm, and reset functions and the time that they occur.

### **TECHNICAL SPECIFICATIONS:**

**Dual Voltage:** 12 or 24 volts AC or DC (Automatic Voltage Selection)

**Max. Current:** 0.8 Amps @ 12 Volts (DC) 1.5 Amps @ 12Volts (AC)  
0.5 Amps @ 24 Volts (DC) 1.0 Amps @ 24Volts (AC)

**Outputs:**

<b>Alarm: (standard)</b>	N.O.	1.0 Amp resistive load at 30V
<b>DSM: (optional)</b>	SPDT	200 mA @ 12V, 100mA @ 24V
<b>MBS: (optional)</b>	SPDT	1.0 Amp resistive load at 30V

**Audible:** 91 dB @ 2 feet

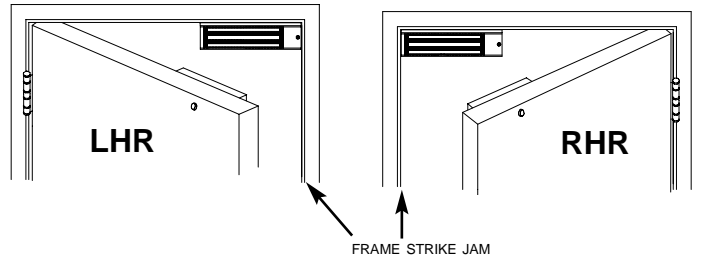
**Mechanical Holding Force:** 1650 pounds  
1500 pounds

**UL listings:**

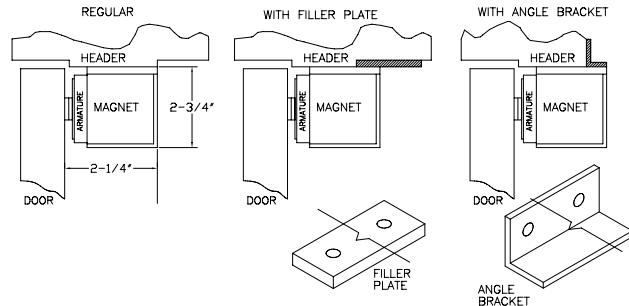
SA8954 Special Locking Arrangements  
R12092 Auxiliary Locks

### PRE-INSTALLATION CONSIDERATIONS

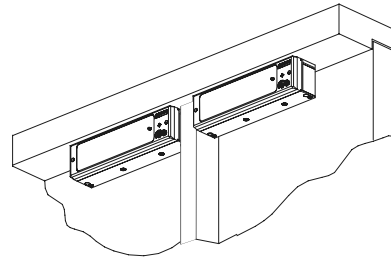
The electromagnet should be mounted as near to the frame strike jamb as possible to provide maximum holding force. Visually check the mounting location to assure that the unit will mount without interference.



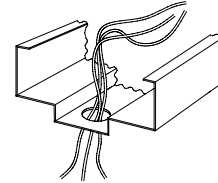
Frame conditions may require the use of filler plates and/or angle brackets. These items are available from Locknetics.



When mounting two locks on one opening with or without a mullion, treat each installation separately. Use the template for each leaf. If the installation involves a 390-2 (master/slave magnet set) see important wiring information on pages 10 and 11.



Wiring for the electromagnet must enter the top of the unit through the wire access hole drilled in the frame header (see template). Be certain provisions can be made to bring the wire through the header into the top of the unit.

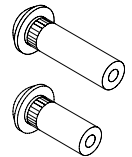


Use proper mounting screws for your door frame. For light-gauge metal door frames, self tapping screws may be used. If the door frame is heavy-gauge metal, machine screws may be necessary and the holes will have to be tapped.  
*Caution: It is very important to make sure that magnet is secured to the structure of the opening.*

	PAN HEAD	FLAT HEAD
MACHINE SCREWS		
SELF-TAPPING SCREWS		

Armature mounting hardware is for door thickness of 1-3/4 inches. For doors thicker than 1-3/4" consult your Locknetics distributor for availability of sex nuts.

FOR SEX NUTS FOR USE ON DOORS OTHER THAN 1-3/4" CONSULT DISTRIBUTOR.

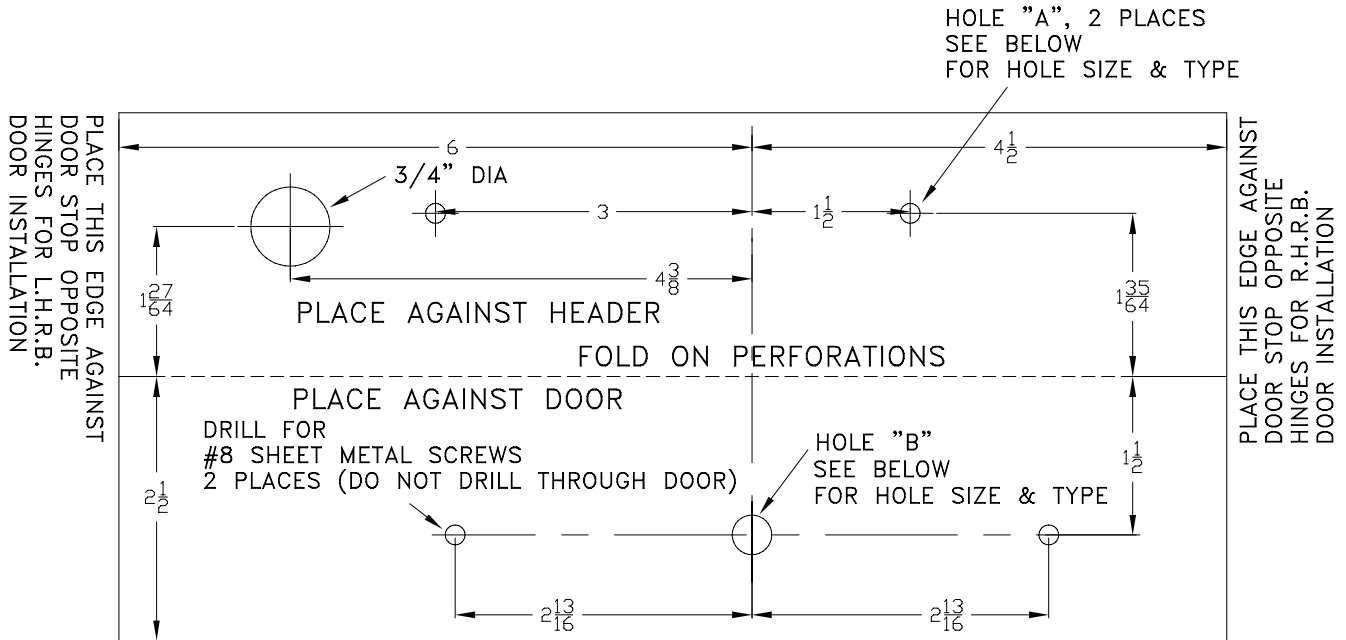


**DELAYED EGRESS LOCKS:** Local codes generally require the signage, provided with the product, to be posted on or near the door. Consult local authority having jurisdiction prior to any installation involving the use of delayed egress products to ensure life safety compliance.

### INSTALLATION PROCEDURE

#### 1. PREP DOOR AND FRAME:

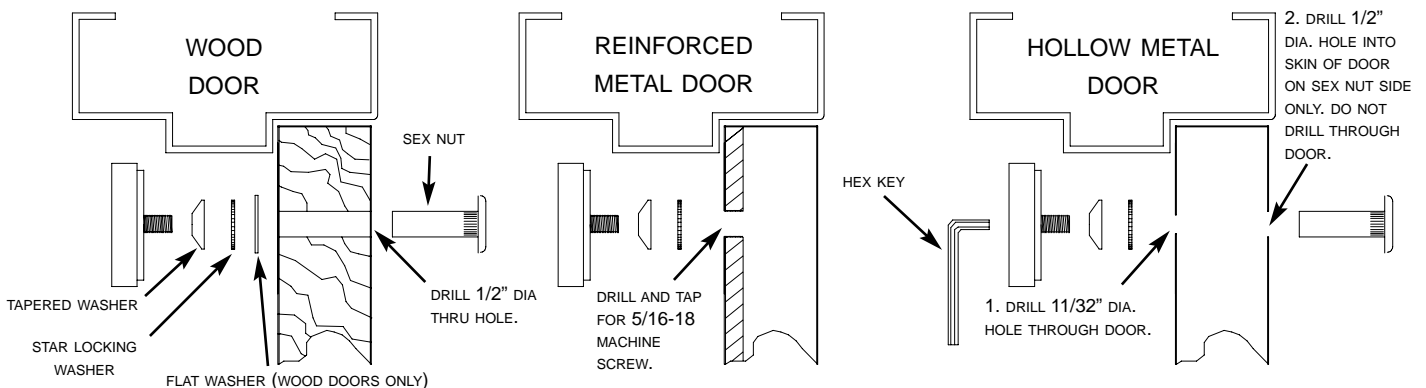
The paper template is the preferable way to prepare the door and frame. If for any reason it is not available, use the dimensions shown below to mark the centerlines of the holes. *Note that the layout is not symmetrical with respect to the centerline of the armature.*



**A.** The door should be closed and latched. You should be at the "push" side. Locate the paper template and fold it along the perforated line with the printed sides facing each other. Place the template against the frame stop and the door. Tape template in place.

**B.** On the frame stop mark the location of holes "A" from the template. For heavy gauge or reinforced frames, drill and tap for #10-24 thread. For standard frames, drill 5/32" dia. for #10 self tapping screws. Locate and drill the 3/4" dia. wire hole. (The 3/4" dia. hole is oversized to the 5/8" dia. mounting plate hole to allow the full range of adjustability.)

**C.** On the doors, mark the locations of all holes. Drill (2) 1/4" dia. holes per template for armature holder mounting screws. Armature mounting hole "B" is determined by the door type (see below).

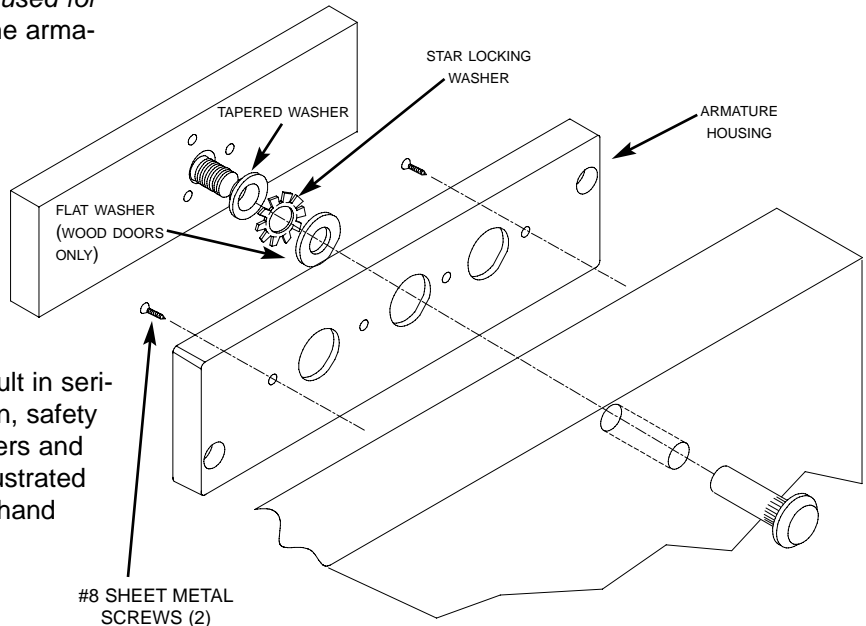


### 2. MOUNT ARMATURE TO DOOR

Assemble using hardware provided in the order shown. All hardware shown must be used except where noted. *Note that the tapered washer must be placed with the pointed side facing away from the door and toward the armature.* It **MUST** be used for proper operation. Use hex key to tighten the armature mounting bolt. For solid core and hollow metal doors, gently tap sex nut into position with a rubber mallet before mounting armature assembly. *Proper use of hardware will allow armature to pivot slightly after securely tightening the mounting screw. This is normal, and necessary to allow armature to mate properly with magnet.*

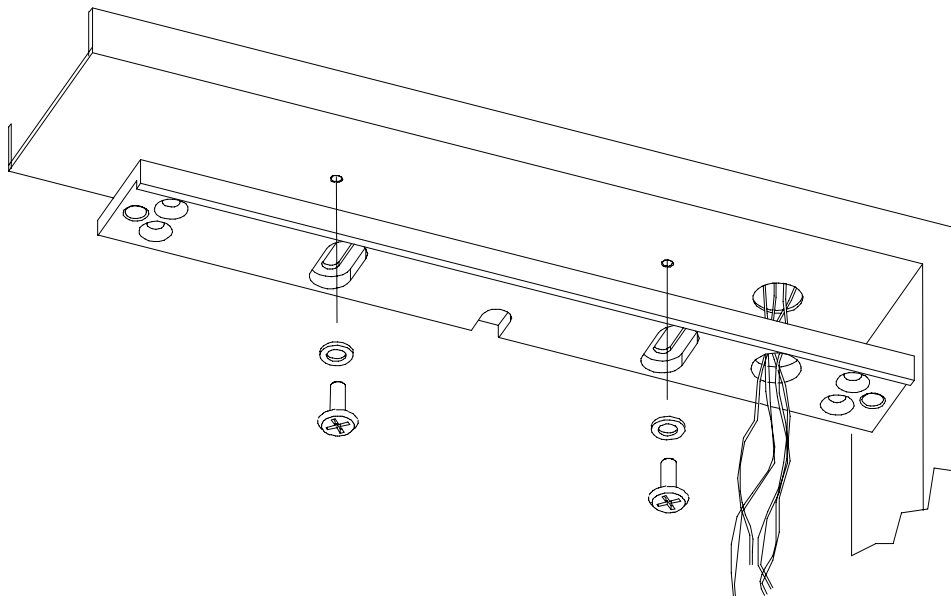
#### CAUTION:

Failure to secure armature to door may result in serious injury to door user. For proper operation, safety and security, sex nut / bolt assembly, washers and spacers must be assembled in the order illustrated and securely tightened 1/8 to 1/4 turn past hand tight.



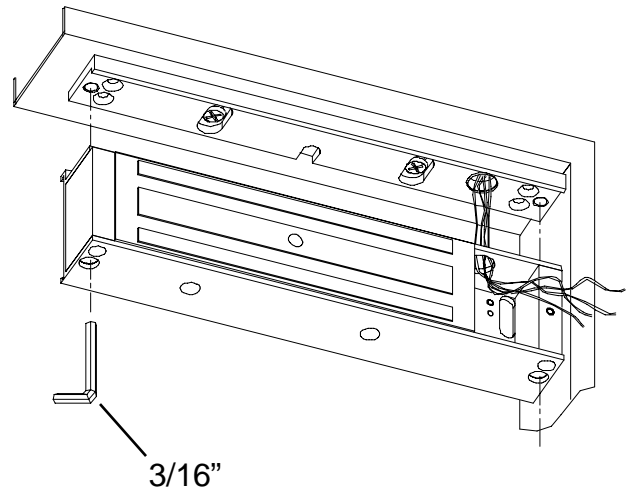
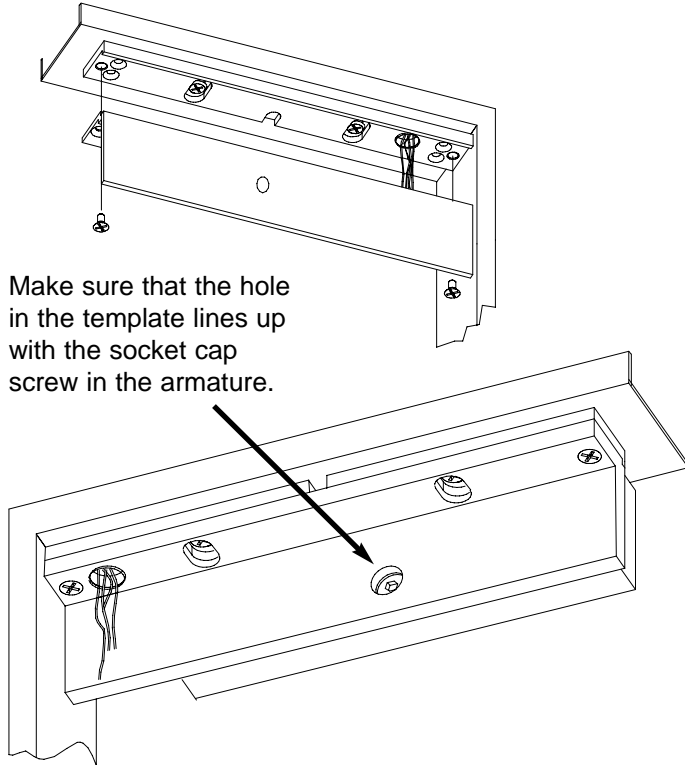
### 3. TEMPORARILY ATTACH MOUNTING PLATE TO HEADER

Slotted holes and counterbore should face downward. Mount to the frame using (2) #10-24 x 1/2" pan head machine screws, or (2) #10 x 3/4" pan head self-tapping screws, and #10 flat washers. Tighten screws just tight enough to allow shifting the plate during adjustment.



### 4. TEMPORARILY MOUNT TEMPLATE OR MAGNET TO MOUNTING PLATE

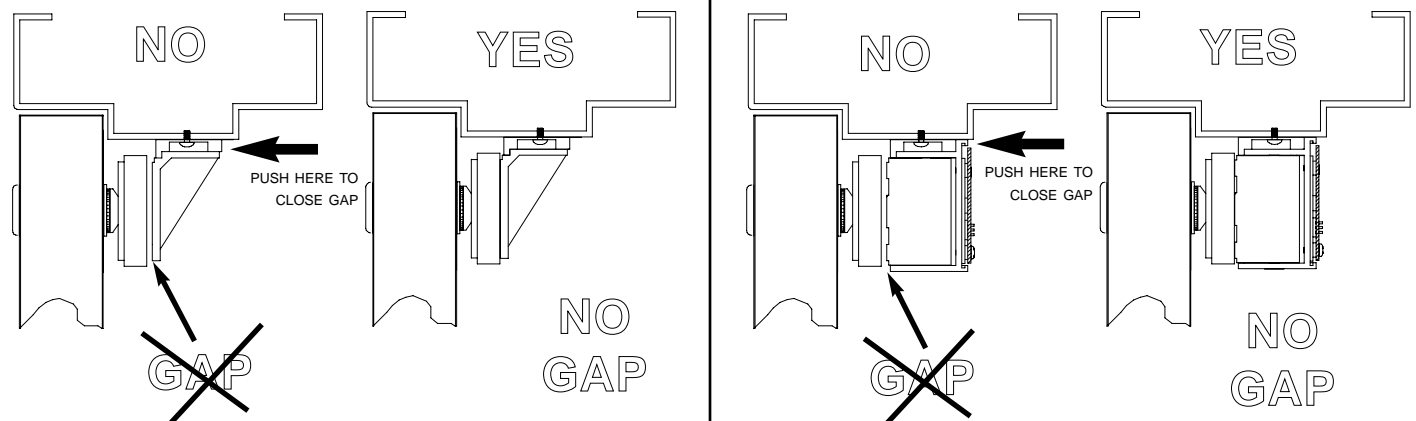
Using 1/4-20 flat head screws, temporarily secure the plastic or metal template to the mounting plate, carefully passing the wiring through the hole in the template.



### 5. ALIGN MAGNET WITH ARMATURE

With door closed and latched push magnet assembly (or template) toward the armature by applying pressure on each end of the magnet until fully mated together, as shown below. Mark the position of the mounting plate. Remove magnet from the mounting plate without moving the mounting plate. (If using template, tighten two pan head screws through holes in template before removing it.) Tighten the slotted hole screws without moving the mounting plate to assure proper alignment.

**CAUTION:** Do not press on the PC board while moving the magnet. This could cause damage.



### 6. SECURE MOUNTING PLATE

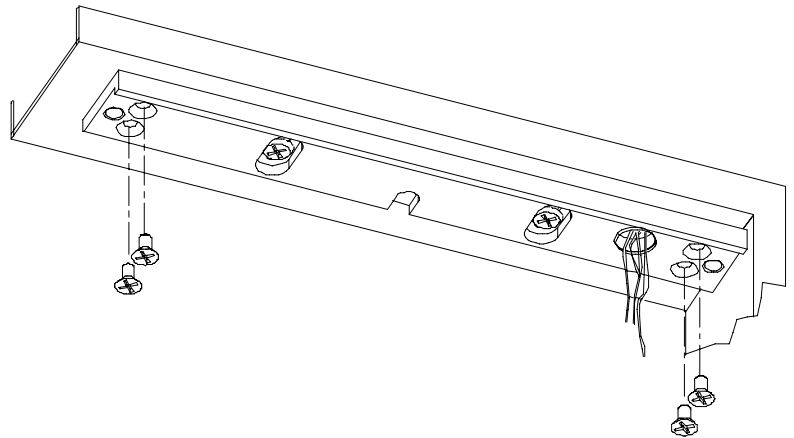
Using the Mounting Plate as a template, drill the four remaining mounting holes.

Tighten two 10-24 self tapping pan head screws

If using #10 self-tapping, flat-head screws drill 5/32" dia. holes and drive four screws tight.

If using #10-24 flat head machine screws, drill and tap for #10-24 threads and tighten four screws.

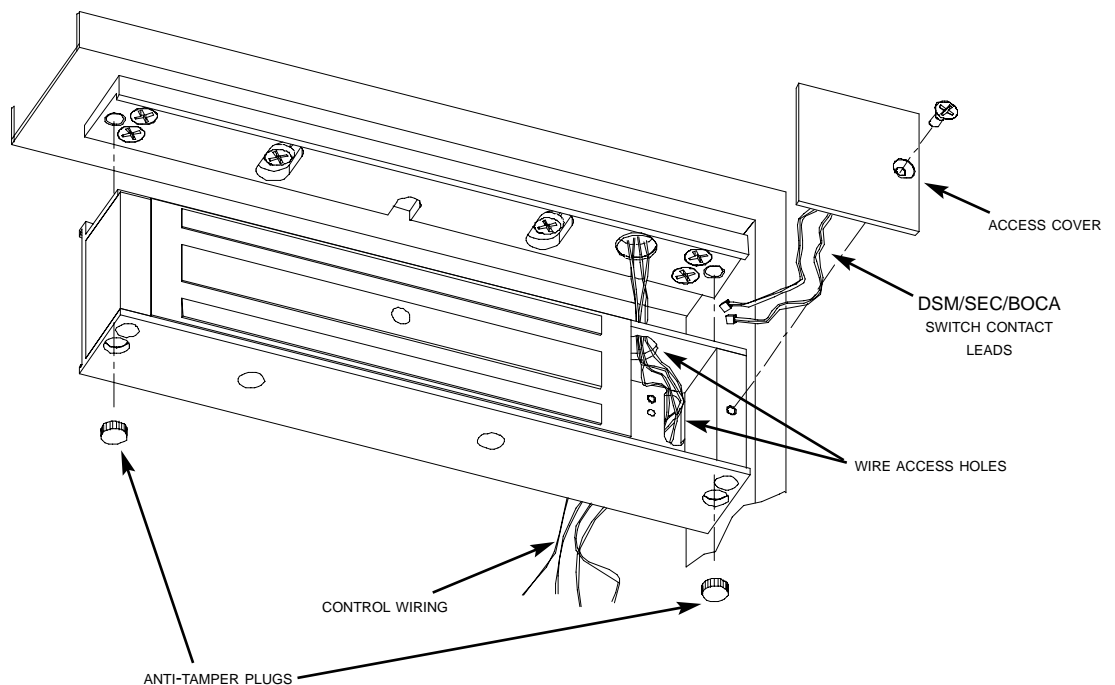
**CAUTION:** It is critical that the screws used secure the mounting plate to the *structure* of the frame.



### 7. SECURE MAGNET TO MOUNTING PLATE

Install the electromagnet to the mounting plate by tightening the captured 1/4-20 x 2" socket head cap screws with a 3/16" hex key. Firmly tighten the screws. Pass wiring through hole in top of magnet and through access hole on circuit board side of magnet as shown below. If the unit has DSM and/or SEC and/or BOCA there will be up to two switch contacts with plug-in leads mounted on the access cover. Pass these leads through the access hole on circuit board side of magnet. Secure access cover. Drive in anti-tamper plugs using a rubber mallet.

**NOTE:** Double units with SEC2 or BOCA2: Do not switch covers between units. The wiring on each cover is different and doing so will cause improper operation.

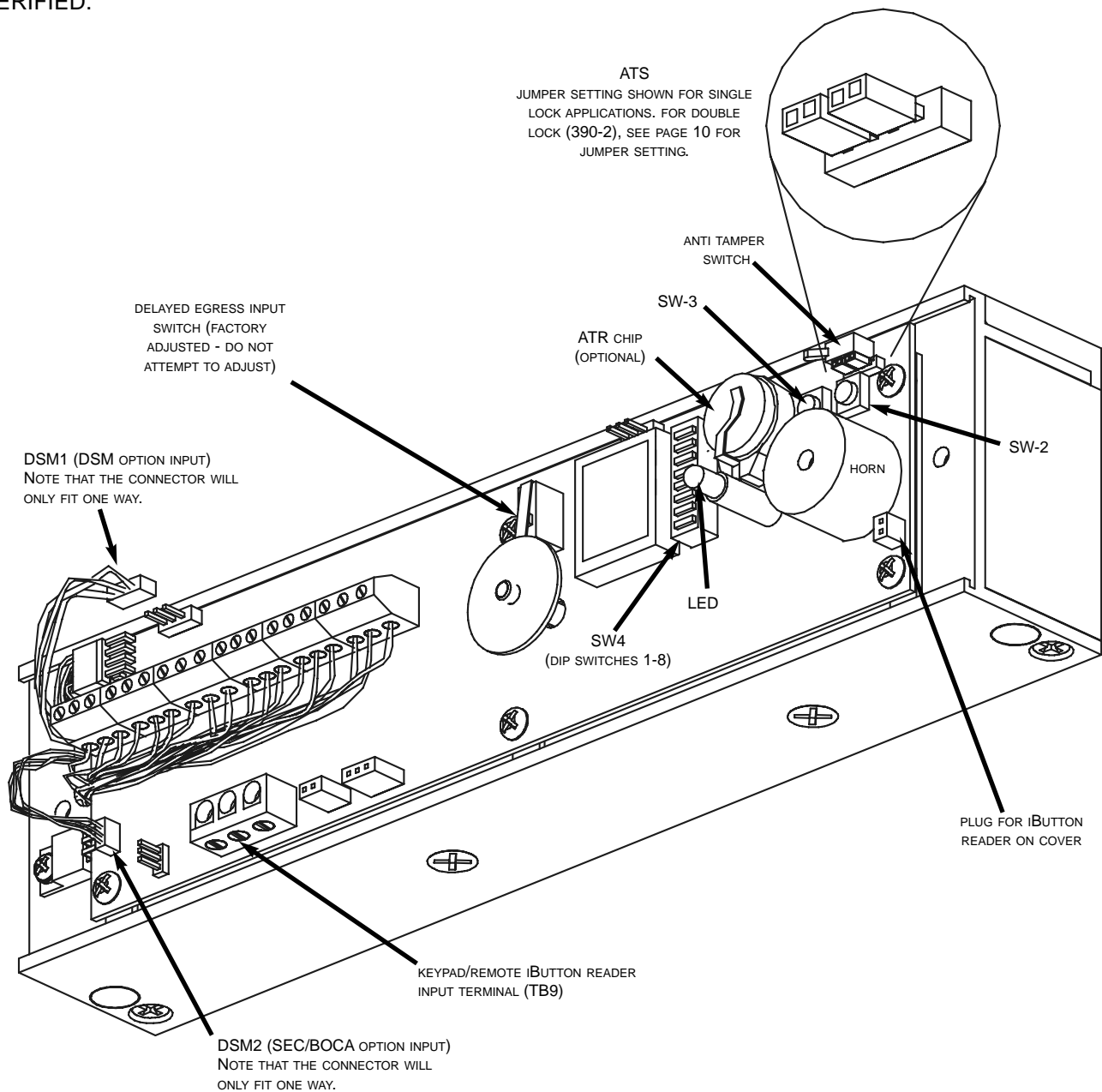


### 8. MAKE WIRING CONNECTIONS AND SET DIPSWITCHES

Connect wiring to main terminal strip. If furnished, connect DSM1 and DSM2 to board as shown. Note that if the unit has only the DSM option, connect the plug into the DSM1 jack. If the unit has only the SEC and/or BOCA option, connect the plug into the DSM2 jack. If the unit is to be used with a keypad (and the required 100CAB adapter cable) or a TR80 or TR81 see the programming information starting on page 10. After wiring, time delay setting, initialization and programming have been completed, secure the cover onto the lock, making sure to connect the iButton reader (DEL models). See illustration on page 15.

See next page (9) for terminal layouts and dipswitch settings. Not all terminals will be used in all cases. Note that to get the correct outputs, the correct options must have been ordered and the dipswitches set properly.

**IMPORTANT: DO NOT APPLY POWER UNTIL ALL CONNECTIONS HAVE BEEN MADE AND DIPSWITCHES SET AND VERIFIED.**



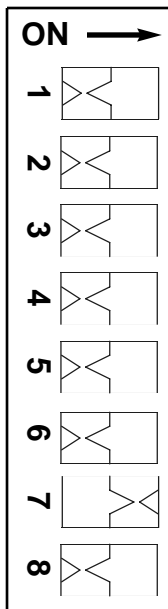
### TERMINAL LAYOUT TB1:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

<b>POWER INPUT</b> 12/24 VOLTS AC OR DC (AUTOMATIC SELECTION)  <b>DO NOT APPLY 120 VAC</b>	<b>FIRE ALARM INPUT</b>  APPLY A NORMALLY CLOSED DRY CONTACT OR A JUMPER IF NOT CONNECTED TO FIRE ALARM	<b>AUXILIARY INPUT</b>  (SEE DIPSWITCH SETTINGS BELOW)	<b>C NO</b> <b>ALARM OUTPUT</b> (STANDARD) CONTACTS CHANGE STATE DURING ALARM CONDITION	<b>NO C NC</b> <b>DSM OUTPUT (OPTIONAL)</b> CONTACTS CHANGE STATE WHEN DOOR IS CLOSED.	<b>C NC NO</b> <b>MBS OUTPUT (OPTIONAL)</b> CONTACTS CHANGE STATE WHEN MAGNET IS PROPERLY BONDED TO ITS ARMATURE. POOR BOND CAN BE CAUSED BY LOW VOLTAGE, MISALIGN- MENT OR DAMAGED MATING SURFACES.	<b>RELEASE INPUT</b>  DRY CONTACT CLOSURE WILL RELEASE LOCK FOR THE TIME DELAY PERIOD (SEE PAGE 14)	<b>RESET INPUT</b> DRY CONTACT CLOSURE RESETS LOCK IN ALARM CONDITION.
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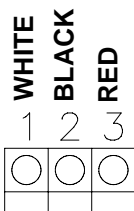
### DIPSWITCH SW-4 SETTINGS:

Set the dipswitches as required for your system. **SW-4**



### TERMINAL LAYOUT TB9:

IF YOUR SYSTEM USES A KEYPAD/READER WITH A 100CAB ADAPTER CABLE OR A TR80 OR TR81, CONNECT THE WIRES AS SHOWN. KEYPADS WILL NEED TO BE INITIALIZED. SEE KEYPAD OR iBUTTON PROGRAMMING FOR FURTHER INFORMATION.

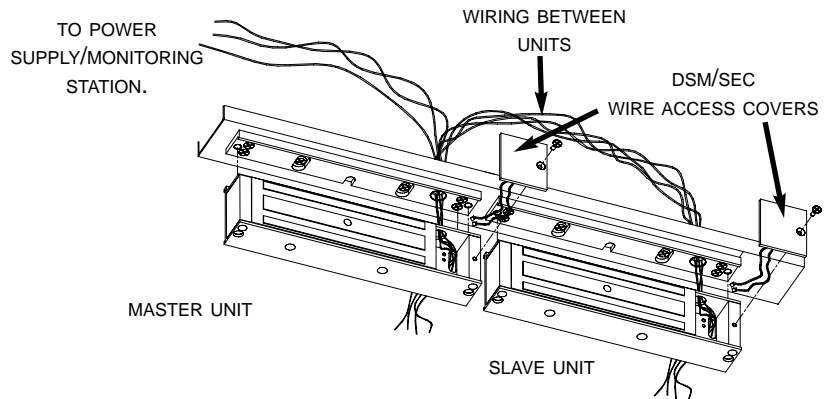


<b>SW4-1: DELAYED EGRESS TIME:</b> 15 SECONDS      30 SECONDS 			
<b>DELAYED EGRESS INITIATION:</b>			
<b>SW4-2:</b> 			
<b>SW4-3:</b> 			
DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH ONLY.	DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH OR AUX. INPUT.	DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH AND AUX. INPUT.	DELAYED EGRESS DISABLED.
<b>SW4-4: ANTI-TAILGATE (SEC REQUIRED)</b> DOOR WILL RELOCK AS SOON AS IT CLOSES - EVEN IF THE RELOCK TIME DELAY HAS NOT ENDED. DISABLED      ENABLED			
<b>SW4-5: UNLOCK ALERT (HORN SOUNDS WHENEVER DOOR IS UNLOCKED)</b> POWER MUST STILL BE APPLIED TO TERMINALS 1&2. CODE/iButton, PIR, OR LEGAL RELEASE INPUT MUST BE TRIGGERED. AVAILABLE ON ALL MODELS. DISABLED      ENABLED			
<b>SW4-6: DOOR FORCED/PROPPED ALARM (SEC REQUIRED)</b> <b>FORCED:</b> ALARM SOUNDS UNTIL RESET BY CODE/iButton OR RESET INPUT ON TERM. 17&18. <b>PROPPED:</b> AFTER PRE-SET TIME (SEE PG. 14 ) ALARM SOUNDS UNTIL DOOR CLOSES AGAIN. DISABLED      ENABLED			
<b>SW4-7: AUTOMATIC RELOCK ON POWER-UP/FIRE ALARM RESET</b> WHEN ENABLED, LOCK WILL ENERGIZE UPON REGAINING POWER OR AFTER A FIRE ALARM CONDITION CLEARS. DISABLED      ENABLED			
<b>SW4-8: NUISANCE ALERT</b> HORN SOUNDS DURING NUISANCE ALERT. DISABLED      ENABLED			

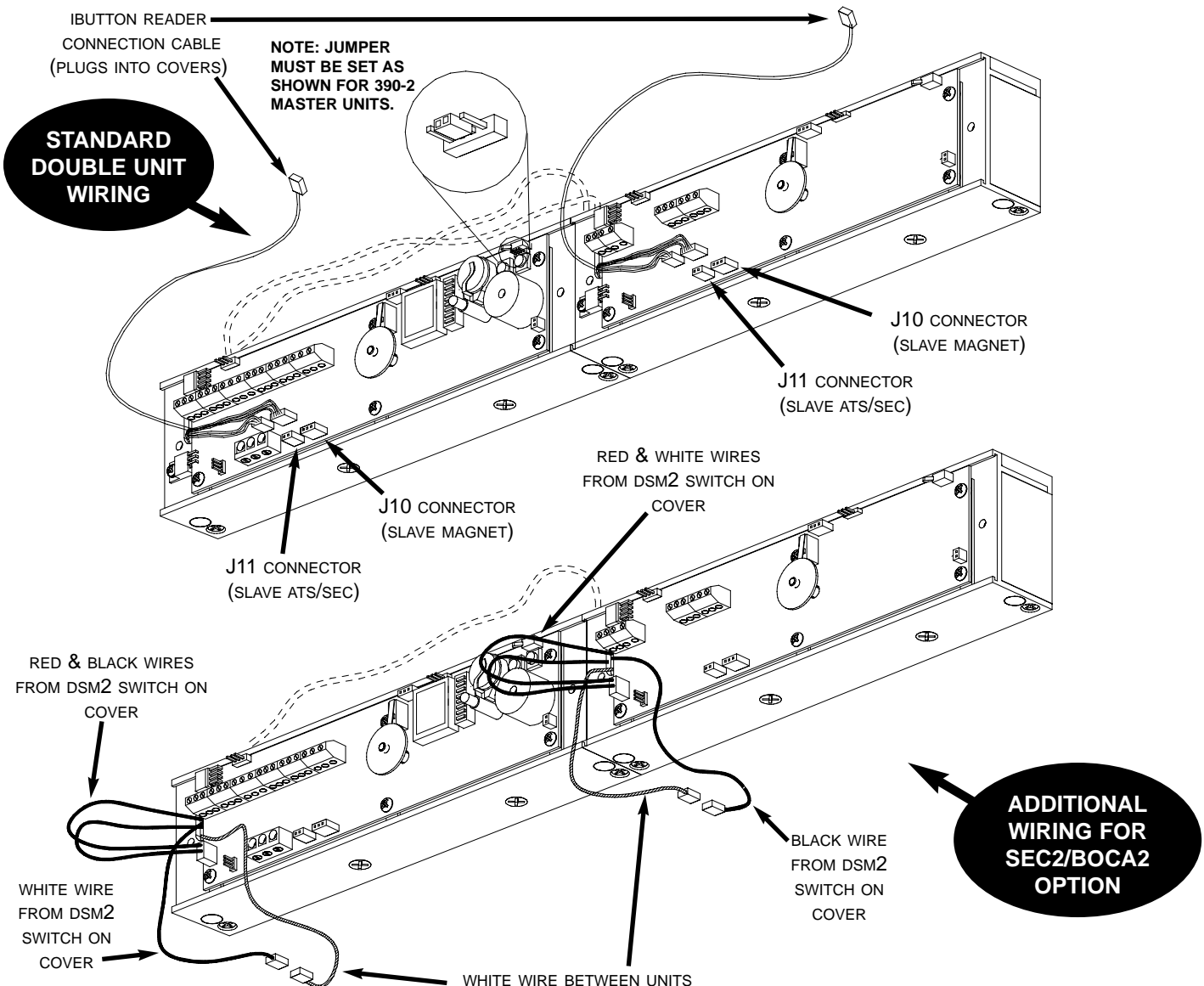


### 390-2 (DOUBLE UNIT) INSTALLATION AND WIRING INFORMATION

The electronic 390 series has the capability of operating two locks with the "brain" of one. The lock with the central processing unit is referred to as the "master" unit while the dependent one is referred to as the "slave" unit. The system can be run on 12 or 24 volts AC or DC. It does not matter which lock is on the left or right of an opening.

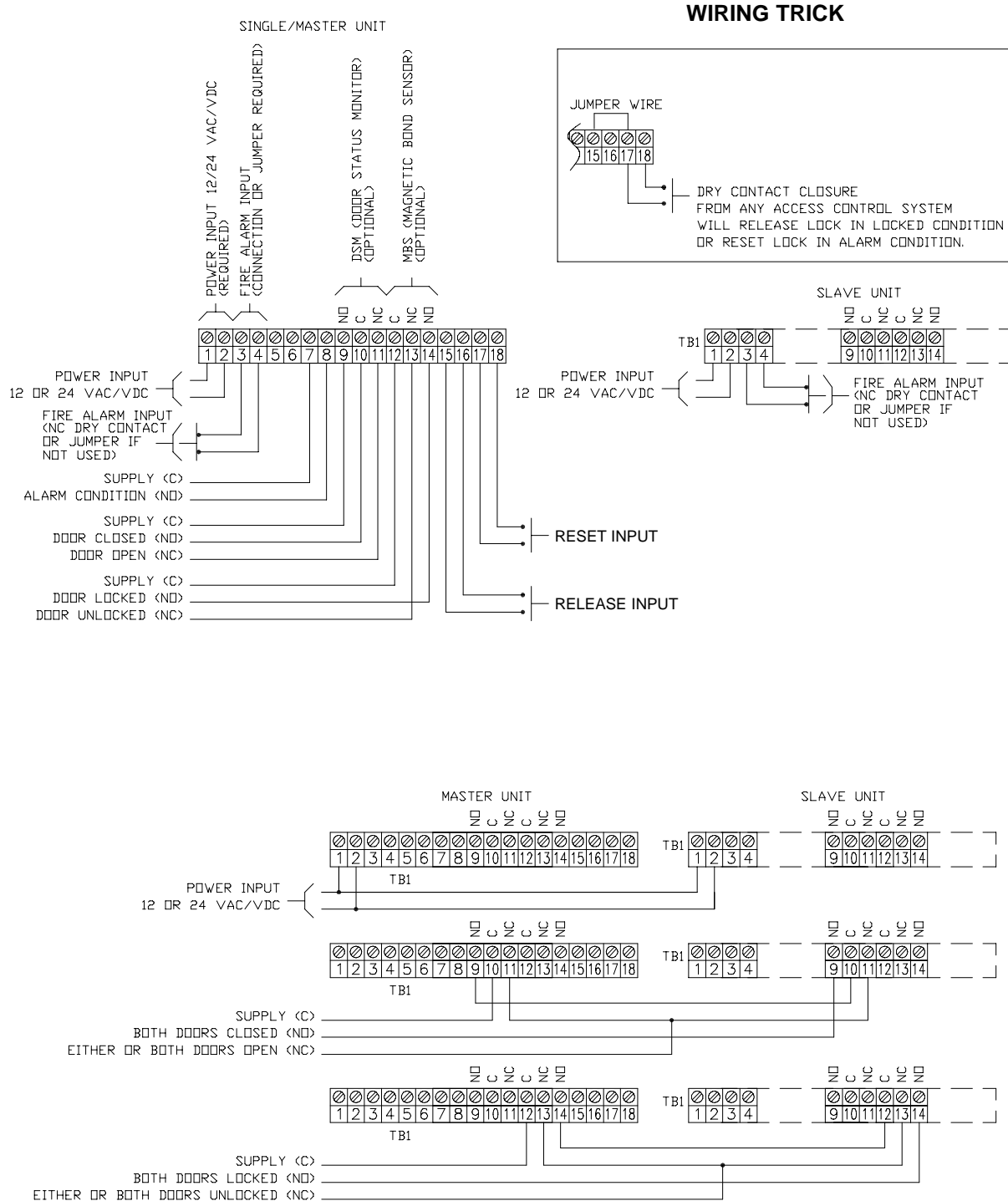


There are three, 36 inch cables furnished standard with a double unit and one which comes with the SEC or BOCA options which are intended to connect the locks, using plug-in connectors, to each other. They may be extended if necessary. If the units have SEC2 or BOCA2 options there will be a fourth cable which connects to the DSM2 cables as shown.



### MONITORING AND CONTROL SYSTEM WIRING INFORMATION AND EXAMPLES

Shown below are basic wiring examples for supplying power, monitoring lock, door and alarm status as well as fire alarm, auxiliary, release/reset and timer inputs. Note that most national codes require that magnetic locks become unlocked whenever a fire alarm condition exists. Consult authority having jurisdiction prior to installation to assure compliance with all local and national codes.



### PROGRAMMING: GENERAL INFORMATION

Programming the electronic 390 model electromagnetic locking systems can be done either by computer programming or manually, using the keypad, or TEP1 programmer. The standard unit can have up to 150 codes and/or iButtons. Their functions can be chosen using software or by manually adding the code/iButton and function (see "DEFINITION OF CODE/IBUTTON FUNCTIONS AND FACTORY DEFAULTS" below). When manual programming, it is critical to keep a record of the people and codes/iButtons which are issued to them along with their functions and PIN numbers (for iButtons). This will enable the ability to manage the access system properly. The units come from the factory with preset factory default code (described below). When the lock is reset (memory erased) it will return to factory default codes and any keypad (using the 100CAB) or TEP1 will need to be initialized again. Initializing a master iButton, TEP1, or changing the master code, or computer programming, will erase the factory default codes.

When programming with a computer, it is possible to enable or disable manual programming. If manual programming is enabled, and a code is entered manually, the Audit Trail Report will be corrupted. The time delay functions can be entered using computer programming or by buttons located on the PC board. The manual setting of time delays will still be possible even if manual programming of codes and/or iButtons is disabled via the computer.

Additional codes and iButtons can only be programming in with a computer. They cannot be manually programmed in. The exception to this is "System 7" programming in which up to 7 iButtons can be added. With System 7 programming, the unit must have or be attached to an iButton reader, or a Locknetics keypad that has an iButton reader. The iButtons can be entered into the reader on the cover (See page 13).

### DEFINITION OF CODE/iButton FUNCTIONS AND FACTORY DEFAULTS:

	FACTORY DEFAULT	
<i>MASTER</i>	97531	Allows access to programming functions. Will not release lock.
<i>NORMAL ACCESS</i>	13579	Unlocks lock for relock time delay. Will reset lock in alarm condition.
<i>TOGGLE</i>	135135	Unlocks the lock until same or another Toggle Code is entered.
<i>LOCKOUT</i>	9115	"Freezes" the lock in its present condition, either locked or unlocked, until the same or another Lockout Code/iButton is entered.
<i>ONE-TIME ACCESS</i>		No factory default. This type of code/iButton will allow access only once. It will then become deleted from memory.
<i>SUPERVISED ACCESS</i>		No factory default. This type of code/iButton allows access only when used with another Supervised Access Code/iButton. The second code/iButton must be entered within five seconds of the first one. The order that they are entered does not matter.

---

### TO CREATE MASTER iButton (FOR USE WITH COMPUTER PROGRAMMING)

The master iButton is used to initialize programming (like a password to access programming mode).

- A. Set SW4 dipswitch #1 to ON (if it is off).
- B. Press and hold SW3 until two beeps are heard.
- C. Touch a iButton key to the reader within ten seconds. The lock will indicate acceptance with two beeps. This will be the Master iButton.
- D. Return SW4, #1 to its original position.

#### NOTES:

1. Refer to instructions included with the programmer/software that you will use to program for more information regarding programming.
2. The Master iButton is used for initiating programming. It will not unlock the door.

---

### KEYPAD/100CAB INITIALIZATION (REQUIRED TO ENABLE KEYPAD TO FUNCTION)

It is necessary to initialize the keypad/100CAB any time that the memory is erased.

- A. Set SW4 dipswitch #1 to ON.
- B. Press and hold switch SW3 for two quick beeps of the audible..
- C. Push each button in order, starting with the 1-2 button, and including the \*.  
\* Wait for LEDs to stop flashing before pushing next button.  
\* Waiting for longer than 7 seconds will terminate initialization.
- D. After the last button is pressed, the audible will beep three times and the LEDs will flash indicating that programming has ended.
- E. Return SW4 dipswitch #1 to its original position.

---

### “SYSTEM 7” PROGRAMMING:

This procedure will allow up to seven iButtons to be programmed into a lock equipped with an iButton reader or Locknetics keypad with an iButton reader. iButtons will be of the Normal Access type and will unlock the unit for the relock time delay. The iButtons will also reset the lock if it is in an alarm condition.

- A. Set SW4-1 to OFF (if it is on)
- B. Press and hold SW3 until you hear two beeps. Release SW3.
- C. Touch each of the iButtons to the reader. Two quick beeps will sound each time a key has been accepted.
- D. After entering up to seven iButtons wait 10 seconds for programming to end. One quick beep will indicate that programming has ended.
- E. Return SW4-1 to its original position, if required.

**NOTE:** Whenever new “System 7” iButtons are entered, the old ones are erased. Also, whenever computer programming is done, or memory is erased, all “System 7” iButtons are erased.

---

### ERASE MEMORY

Memory may be erased to conveniently return to default time delay settings or if an error was made.

- A. Press and hold SW2 until a single beep is heard. Release SW2.
- B. Quickly press SW2 three times, three beeps will sound.
- C. Another 3 beeps will sound in about 10 seconds indicating the memory is erased.

#### NOTES:

1. All programmed codes and iButtons will be erased. Factory default codes and time settings will be restored.
2. Keypads w/100CAB will need to be initialized again.

---

### SETTING TIME DELAYS MANUALLY:

---

#### **AUTOMATIC RELOCK DELAY** (factory default: 8 seconds)

The amount of time the lock is de-energized after release.

Programmable 1-30 seconds.

- A. Set SW4 dipswitch #6 to OFF (if it is on).
- B. Press and release SW2. The LED will begin flashing GREEN .
- C. Thereafter, press SW3 once for each second of relock delay desired.  
(ex. 3 presses equals 3 seconds-15 presses equals 15 seconds-Up to 30 seconds)  
Each SW3 activation will cause the LED to flash RED and the horn to beep .
- D. Press SW2 and the relock delay will be stored in non-volatile memory.
- E. Return SW4 dipswitch #6 to its original position.

- NOTES:**
1. Not pressing SW3 between pressing SW2 will set the relock time delay to zero seconds. This will cause the lock not to unlock with a momentary contact closure or valid code or iButton.
  2. Models with the SEC option include the anti-tailgate feature. If SW4-4 is on, the lock will relock immediately when the door closes even if the time delay has not yet expired.

---

#### **NUISANCE DELAY** (factory default: 3 second)

The amount of time the door must be pushed before triggering the *DELAYED EGRESS CYCLE*

Programmable 0 - 3 seconds. (BOCA Units are fixed at 1 second.)

- A. Press and release SW3, the LED will begin flashing RED.
- B. Thereafter, press SW2 once for each second of nuisance delay desired, up to 3 seconds maximum.  
Each SW2 activation will cause the LED to flash GREEN and the horn to beep .
- C. Press SW3 and the nuisance delay will be stored in non-volatile memory.

- NOTES:**
1. To program nuisance delay to zero, eliminate Step B.
  2. Setting nuisance delay to zero will allow the lock to go into delayed egress the instant that it is pushed upon. This may prove inconvenient in some applications.

---

#### **DOOR PROPPED DELAY** (Units with SEC option only) (factory default: 60 second)

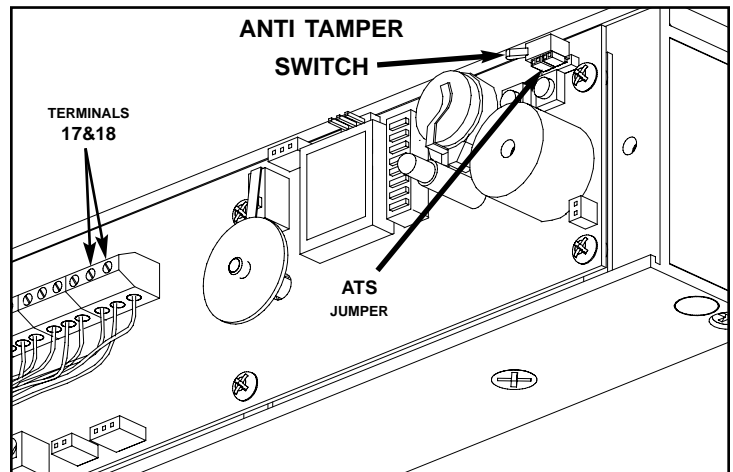
The amount of time the door must be propped open (after normal release time delay has ended) before triggering the alarm. The alarm will clear as soon as the door closes again. Programmable 0 - 120 seconds.

- A. Set SW4-6 to ON (if it is off).
- B. Press and release SW2, the LED will begin flashing YELLOW.
- C. Thereafter, press SW3 once for each second of propped delay desired, up to 120 seconds maximum.  
Each SW3 activation will cause the RED LED to flash and the horn to beep .
- D. Press SW2 and the door prop delay will be stored in non-volatile memory.
- E. Leave SW4-6 ON to enable door propped alarm.

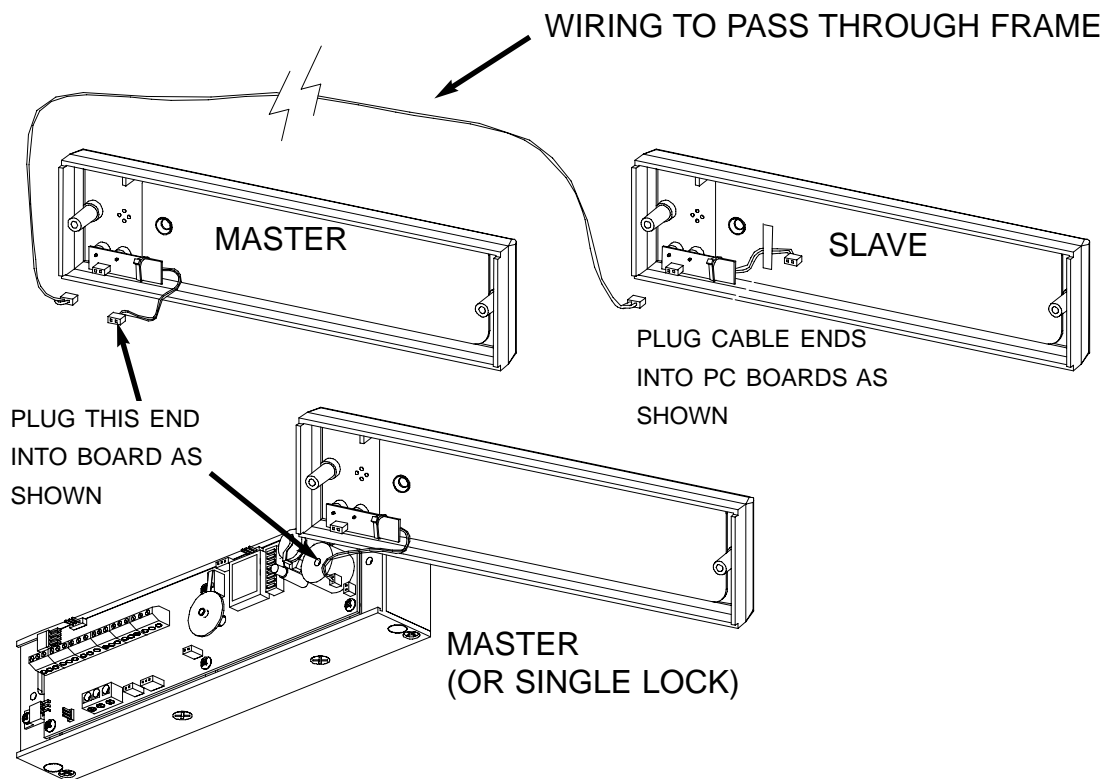
- NOTES:**
1. To program door propped delay to zero, eliminate Step B.
  2. Setting the door propped delay to zero will cause the lock to go into alarm the instant that the normal time delay has ended, if the door is still open.

### ANTI TAMPER SWITCH - IMPORTANT NOTE:

The electronic 390 models come standard with the ATS (Anti Tamper Switch). When the cover is removed, the alarm will sound. It can be reset either by momentarily shorting terminals 17 and 18, which is the reset input, or by entering a valid keypad code or iButton. If power is applied while the cover is off, the alarm will not sound. Putting the cover on or depressing the ATS switch will arm it. If the ATS switch is not working properly, check the setting of the jumper (see pages 8 & 10).



### PLUGTOUCH READER INTO PC BOARD AND SECURE LOCK COVER



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### MANUAL PROGRAMMING - KEYPAD

When using a keypad to manually program a 390DEL, the keypad must first be initialized. It is recommended that the factory default Master Code be changed. Doing so will delete all factory default codes and ensure the security of the system. After entering the Master code the LEDs on the keypad will flash. They will also flash each time that \* is entered. Wait for the LED to stop flashing before entering the next sequence.

---

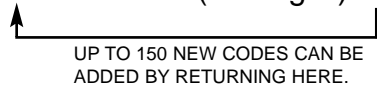
#### TO CHANGE MASTER CODE

Master Code \*...7 \*...New Master Code (5-8 digits)\*...New Master Code \*

---

#### TO ADD NORMAL ACCESS CODES - Will unlock door for relock time delay period. Will also reset lock after an alarm condition.

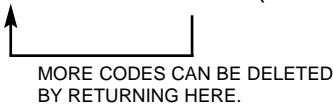
Master Code \*...3 \*...New Code (3-8 digits) \*...\* (to end)



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#### TO DELETE CODES

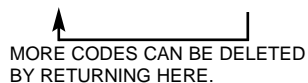
Master Code \*...5 \*...Old Code \*...\* (to end)



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**TO DELETE CODES WITH ALARM/ATR NOTICE:** Codes will not be allowed to function but will remain in memory. When the code is used, the lock will go into alarm, the alarm relay will close, the audible will sound and the LED will illuminate red. The door will not unlock. It will stay in alarm until a valid user code, iButton or reset input will silence the alarm. If the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master Code \*...55 \*...Old Code \*...\* (to end)



TO ADD FUNCTION CODES (Note that a three digit function code sets the function of the user code)

UP TO 150 NEW CODES CAN BE ADDED BY RETURNING HERE.

Master Code \*...33\*...111\*...New Access Code (3-8 digits) \*...\* (to end)

OR

191\*...New Toggle Code

OR

115\*...New Lockout Code

OR

113\*...New One-Time Access Code

OR

117\*...New Supervised Access Code

TO CHANGE FUNCTION/CODES

Master Code \*...11\*...Old Code \*... X Y Z \*...New(or same) Code (3-8 digits) \*...\* (to end)

New or Same  
3-digit function  
code. See above.



---

### MANUAL PROGRAMMING - iButtons

When manually programming the 390-2 DEL for iButtons, a TEP1 programmer must first be initialized. Only one programmer can be initialized to a particular lock. A Master iButton must also be initialized at the same time as the programmer and will be used to enter the programming mode. See steps below. After entering the Master iButton, the green LED on the iButton reader will flash. It will also flash each time that \* is entered. Wait for the LED to stop flashing before entering the next sequence. The TEP1 programmer is intended to simulate a keypad.

### PROGRAMMER INITIALIZATION TEP1

- A. Set SW4 dipswitch #1 to ON.
- B. Press and hold switch SW2 for two quick beeps of the audible..
- C. Touch a iButton key up to the reader. (This iButton will be initialized as a MASTER iButton.)
- D. Touch each iButton of the TEP1 to the reader in the following order(two beeps of the audible will sound indicating acceptance of each key.)
  - \* *Wait for LEDs to stop flashing before touching next key or pushing next button.*
  - \* *Waiting for longer than 7 seconds will terminate initialization.*
- E. After the last button is entered, the audible will beep three times and the LEDs will flash indicating that programming has ended.
- F. Return SW4 dipswitch #1 to its original position.

---

TO ADD NORMAL ACCESS iButtons - Will unlock door for relock time delay period. Will also reset lock after an alarm condition.

Master iButton...3 \* ...New PIN(3-8 digits)\* ...New Access iButton...\* (to complete)

UP TO 150 NEW iButtons CAN BE  
ADDED BY RETURNING HERE.

---

### TO DELETE iButtons

Master iButton...5 \* ...Old PIN\*...\* (to end)

MORE iButtons CAN BE DELETED  
BY RETURNING HERE.

---

TO DELETE iButtons (and with alarm/ATR notice): iButtons will not be allowed to function, but will remain in memory. When the iButton is used, the lock will go into alarm, the alarm relay will close, the audible will sound and the LED will illuminate red. The door will not unlock. It will stay in alarm until a valid user code, iButton or reset input silences the alarm. When the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master iButton...55 \* ...Old PIN\*...\* (to complete)

MORE iButtons CAN BE DELETED  
BY RETURNING HERE.

---

TO ADD FUNCTION iButtons (Note that a three digit function code sets the function of the user iButton)

UP TO 150 NEW iButtons CAN BE ADDED BY RETURNING HERE.

Master iButton ...33\*...111\*...New PIN(3-8 digits)\*...New Access iButton ...\* (to end)

OR

191\*...New *Toggle* iButton

OR

115\*...New *Lockout* iButton

OR

113\*...New *One-Time Access* iButton

OR

117\*...New *Supervised Access* iButton

---

TO CHANGE FUNCTION AND/OR PIN

Master iButton ...11\*...Old PIN\*... XYZ\*...New(or same) PIN (3-8 digits)\*...\* (to end)

New or Same  
3-digit function  
code. See above.

The table below is intended to provide all possible indications and states which can be encountered under normal operation. Note that some conditions or features are only available on certain models or when certain options are included.

<b>DESCRIPTION OF INDICATORS</b>			
<b>CONDITION</b>	<b>LED INDICATOR</b>	<b>AUDIBLE</b>	<b>ALARM RELAY STATE (TERM.7&amp;8)</b>
<b>STANDARD FEATURES</b>			
LOCK SECURE	OFF	OFF	OPEN
LEGAL RELEASE INPUT	STEADY GREEN	OFF	OPEN
LOW INPUT VOLTAGE	OFF	SLOW BEEP	OPEN
DURING NUISANCE DELAY	STEADY YELLOW	OFF(DEFAULT) (SET BY SW4-8)	OPEN
DURING DELAYED EGRESS	FLASHING RED	BEEPING	CLOSED
AFTER DELAYED EGRESS	STEADY GREEN	STEADY TONE	CLOSED
ANTI-TAMPER ALARM IF LOCK COVER IS REMOVED	STEADY RED	STEADY TONE	CLOSED
<b>SWITCH SELECTABLE FEATURES</b>			
SW4-5 "ON" =UNLOCK ALARM WHENEVER LOCK IS UNLOCKED	STEADY GREEN	STEADY TONE	OPEN
SW4-8 "ON" = HORN WILL SOUND DURING NUISANCE ALERT	STEADY YELLOW	ON	OPEN
<b>OPTIONAL SWITCH SELECTABLE FEATURES SEC (SECURITY ALARM OPTION) REQUIRED</b>			
SW4-6 "ON" DOOR PROPPED OPEN ALARM DOOR IS HELD OPEN PAST RELOCK TIME	FLASHING GREEN	BEEPING	CLOSED
SW4-6 "ON" DOOR FORECED OPEN ALARM DOOR OPENED WITHOUT VALID RELEASE SIGNAL	FLASHING RED	BEEPING	CLOSED
<b>PROGRAMMING INDICATIONS</b>			
RELOCK DELAY PROGRAMMING ACTIVE	FLASHING GREEN	OFF	OPEN
DOOR PROPPED OPEN DELAY	FLASHING YELLOW	OFF	OPEN
WHILE PRESSING SW3 OR SW2 TO SET RELOCK AND DOOR PROPPED DELAYS	RED	CHIRP	OPEN
NUISANCE DELAY PROGRAMMING ACTIVE	FLASHING RED	OFF	OPEN
WHILE PRESSING SW2 TO SET NUISANCE DELAY	GREEN	CHIRP	OPEN

### ERROR CODES:

If an error is made while manually programming a lock, an error code indication will be indicated at the iButton reader or keypad. The LED(s) will flash several times. Count the number of flashes and refer to the chart below for diagnosis.

ERROR CODES			
NUMBER OF FLASHES	ERROR	NUMBER OF FLASHES	ERROR
2	Code entered too long. Code length cannot exceed 8 digits.	6	Invalid command.
3	Memory full – too many codes/iButtons entered	7	Code does not exist. (For “Delete With Alarm/ATR” only)
4	Master code cannot be deleted, only changed.	8	Code too short. Minimum master code 5 digits. Minimum user code 3 digits.
5	Second entry of master code does not match first. Master code not changed.	9	Not a unique code/iButton.
		10	Manual Programming disabled.

### TROUBLE SHOOTING:

Some common problems associated with the installation of the 390 series can be easily recognized and corrected:

#### Problem:

Lock has power but won't lock.  
LED (on lock) is Green.

Won't go into delayed egress.

Goes into delayed egress upon powerup.

Lock can be pushed open with minimal resistance.

Lock “hums” or vibrates noisily when energized.

Lock “beeps” every several seconds.

Won't accept iButtons.  
LED(s) flash once quickly.

Lock won't accept programmed codes/iButtons.  
LED(s) flash once quickly.

MBS doesn't change state when locked.

DSM/SEC option not working properly.

#### Possible Solution:

Fire alarm not connected or open connection. SW4-7 not ON (set switch, remove and re-apply power).

Check dipswitch settings (p.9). Armature washers not installed properly (p.5)  
Magnet not properly aligned with armature. (p.6)

Armature washers not installed properly (p.5)  
Improper gap between magnet and armature (p.6)

Magnet/Armature/washers not installed properly (p.5-6).

Magnet/Armature/washers not installed properly (p.5-6).

Low voltage alert. Check voltage at terminals 1&2. It must be 12.00 volts or 24.00 volts or slightly higher.

iButton reader on cover not plugged in to board. (p.15)  
Relock delay set to 0 sec.(p.14)

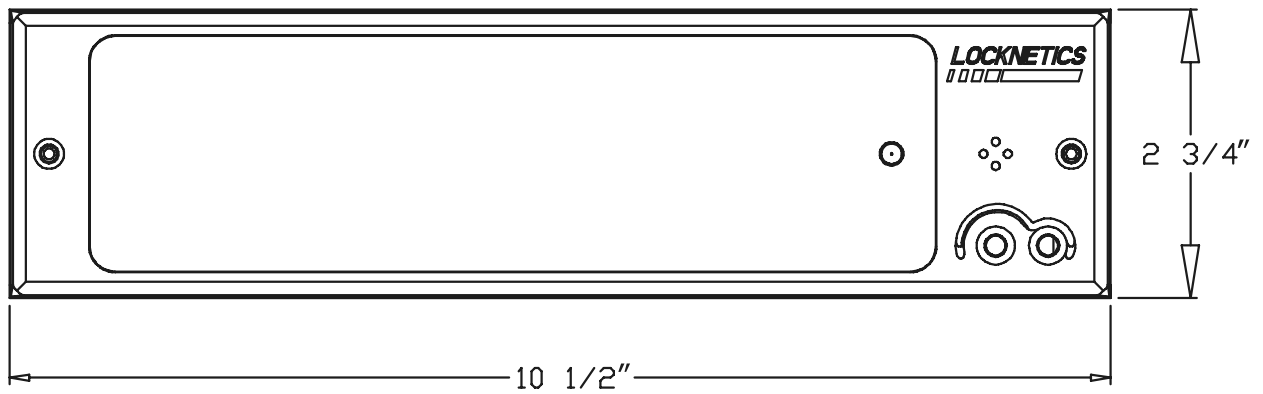
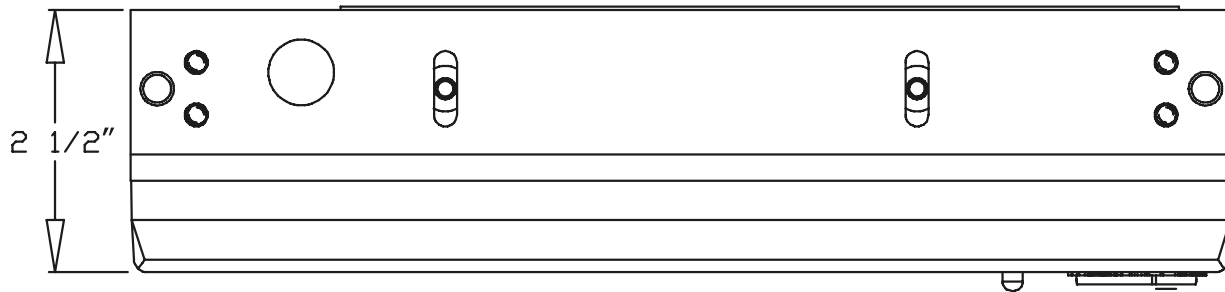
Relock time delay set to 0 sec. (p.14)  
Keypad not initialized (p.12).

Low voltage. Mechanical misalignment. Debris between lock and armature.  
Armature/magnet not installed properly (p.5-6).

Armature holder not aligned with DSM/SEC switch(s). Switch not plugged into correct jack (p.8)

### MAINTENANCE

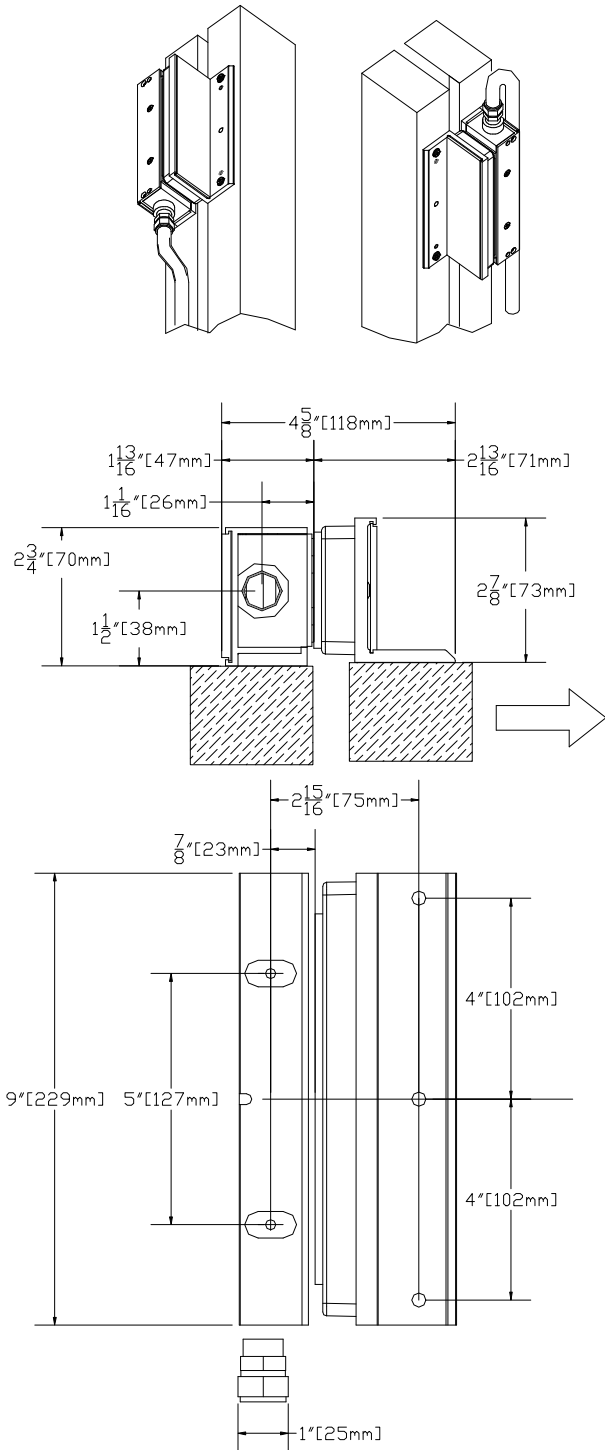
It is not recommended that the magnet be painted (unless ordered with in iridite primer). If the unit must be painted, it is important that the mating surfaces of the magnet and armature not be painted. The iButton reader and LED must not be painted either. The electromagnet and armature are plated for corrosion resistance and require little maintenance. For maximum performance the following service should be done to both the armature and electromagnet as required: Clean the mating surfaces of the electromagnet and armature with a non-abrasive cleaning pad, apply a light coating of silicon lubricant and wipe with a clean dry cloth.



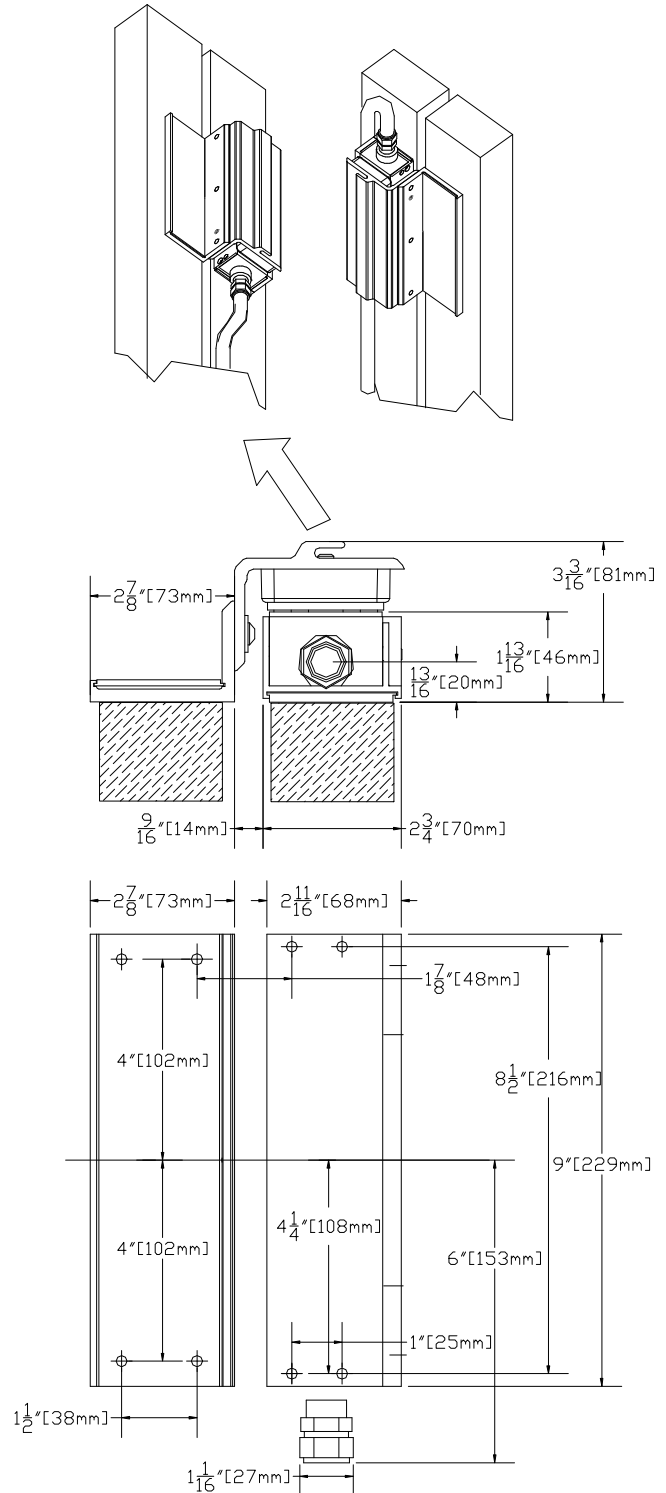
**INSTALLATION CONSIDERATIONS:**

The 390G+ is an electromagnetic lock designed for use on exterior gate applications, though it can be used indoors under circumstances where conduit-enclosed wiring is desirable or unavoidable. These instructions cover two basic mounting situations: swinging and sliding. Other mounting situations may be encountered which may necessitate fabrication of custom brackets or reinforcements to accommodate the lock. Wiring should be protected by conduit. Wire leads provided are 24 inches long and provisions should be made for connections within that distance. You must determine which type of mounting screws provided will best suit your installation. For light-gauge metal frames, self tapping screws may be used. If the frame is heavy gauge metal, machine screws may be required to adapt the lock to a particular post or frame. Armature mounting hardware is provided for direct mounting. The sex nut (provided) can be used instead of the TJ brackets, if mounting the armature on a standard, 1-3/4" door. Other sex nuts, of different lengths, are available from Locknetics distributors. Refer to the last page for parts list with pictures.

**SLIDING GATE APPLICATION TEMPLATE:**

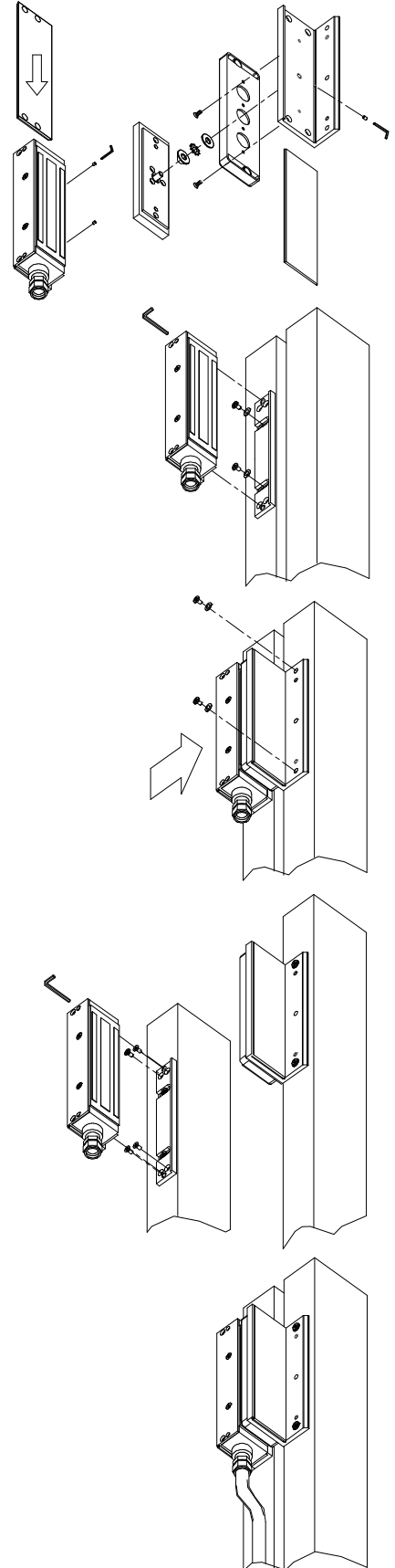


**SWINGING GATE APPLICATION TEMPLATE:**



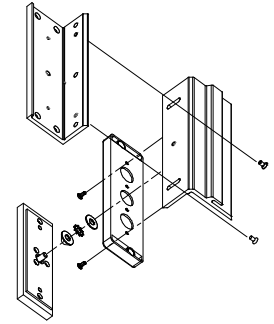
**SLIDING GATE INSTRUCTIONS:**

- 1.** Prep the gate and post according to the instructions or in accordance with the requirements of the situation. Note that some installations may require additional brackets, hardware, or reinforcement for a sound installation. Loosen the socket cap screws which secure the standard mounting bracket to the magnetic lock assembly and remove the bracket. (The socket head cap screws are captured in the magnetic lock assembly.) Slide the TJ mounting plate onto the magnetic lock assembly. Center it and secure with two #6-32 set screws. Install the armature housing to the lower TJ bracket using the two #6-32 flat head machine screws. Do not remove the foam rubber compression pads. Pre assemble the armature assembly to the lower TJ bracket as shown (left). Note that the tapered washer assemblies with the pointed side toward the armature, then the external tooth washer, followed by the flat washer. Next, slide the dress plate into the lower TJ bracket and secure in position with one of the #6-32 set screws.
- 2.** Mount the standard mounting plate onto the gate post using either the two #10 pan head self tapping screws and washers or the 10-24 pan head machine screws. Do not completely tighten them at this time because the position of the bracket must be adjustable in the next step. Fasten the magnetic lock assembly to the mounting plate using the 2/16 hex wrench provided.
- 3.** Mount armature/lower TJ bracket assembly to moving part of gate using two 1/4-20 button head socket cap screws and washers. (Alternate hardware may be substituted if necessary.) Close the gate and secure it (if such mechanical means exists). With the gate in its closed position, push the magnetic lock toward the armature so that it comes to rest completely engaged, with no air gap. (If a temporary power supply is available to power up the lock do so in order to ensure that the lock will properly engage.) Mark the position of the magnetic lock assembly. Remove the magnetic lock and tighten the two pan head screws.
- 4.** Open gate. Using the standard mounting bracket as a template, drill the four remaining holes for #10 self tapping or #10-24 machine screws as appropriate. Install screws, tightening completely. Install magnetic lock, tightening socket screws completely.
- 5.** Run conduit to lock and make wiring connections for the voltage being used. See page 1 for wiring and monitor switch information. If the lock is used in a particularly corrosive environment such as near salt water or in a climate where salt is applied on the roads apply a thin film of grease (supplied) to the mating surfaces of the magnet and the armature.

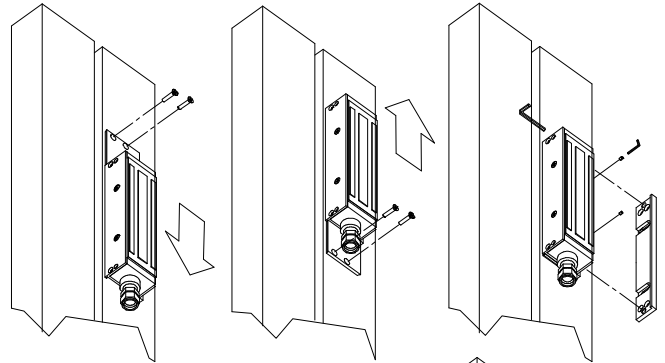


**SWINGING GATE INSTRUCTIONS:**

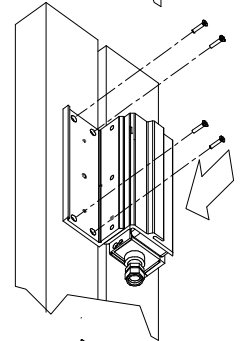
**1.** Prep the gate and post according to the instructions or in accordance with the requirements of the situation. Note that some installations may require additional brackets, hardware, or reinforcement for a sound installation. Install the armature housing to the upper TJ bracket using the two #6-32 flat head machine screws. Do not remove the foam rubber compression pads. Install the armature to the upper TJ bracket using the tapered washer, external tooth washer and flat washer. Note that the tapered washer assembles with the pointed side toward the armature, then the external tooth washer, followed by the flat washer. Pre assemble the armature assembly to the upper TJ bracket as shown (right) using the 1/4-20 button head socket cap screws and washers. Do not completely tighten them at this time.



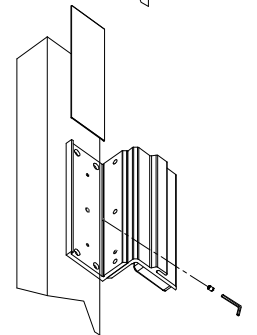
**2.** Loosen the socket cap screws which secure the standard mounting bracket to the magnetic lock assembly and remove the bracket. (The socket head cap screws are captured in the magnetic lock assembly.) Slide the TJ mounting plate into the magnetic lock assembly, leaving the upper two holes exposed. Place magnet/bracket assembly onto gate post and secure using two of either #10 flat head self tapping screws or the 10-24 flat head machine screws. Slide the magnetic lock upward to expose the to lower holes. Fasten the assembly with the remaining two #10 screws. Center the assembly on the TJ mounting plate and lock into place using two 6-32 set screws. A rubber mallet may be used to adjust position if tight. Fasten the standard mounting plate to the magnetic lock using the 3/16 hex wrench provided.



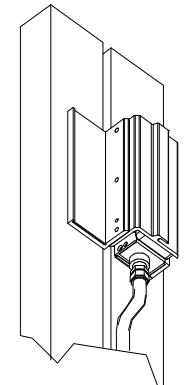
**3.** Mount armature/TJ bracket assembly to moving part of gate using four of either #10 flat head self tapping screws or the 10-24 flat head machine screws. Close the gate and secure it (if such mechanical means exists). With the gate in its closed position, push the armature/upper TJ bracket assembly toward the armature so that it comes to rest completely engaged, with no air gap. (If a temporary power supply is available to power up the lock do so in order to ensure that the lock will properly engage.) Mark the position of the armature/upper TJ bracket assembly (relative to the lower TJ assembly.) Open the gate. Tighten the 1/4-20 button head socket cap screws completely. Secure the position with the remaining 1/4-20 set screw.



**4.** Slide the dress plate into the lower TJ bracket. Center it and secure with a 6-32 set screw.



**5.** Run conduit to lock and make wiring connections for the voltage being used. See page 1 for wiring and monitor switch information. If the lock is used in a particularly corrosive environment such as near salt water or in a climate where salt is applied on the roads apply a thin film of grease (supplied) to the mating surfaces of the magnet and the armature.





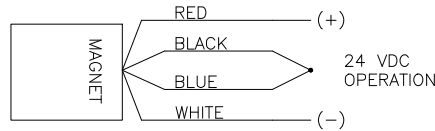
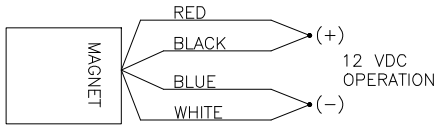
**WIRING INFORMATION:**

**SPECIFICATIONS:**

Amps(12V)  
0.670

Amps(24V)  
0.350

Holding Force: 1500lbs.



**NOTE:** POLARITY IN THIS CASE DOES NOT MATTER. IT IS SHOWN AS A SUGGESTION TO KEEP WIRING WITHIN A SYSTEM CONSISTENT.

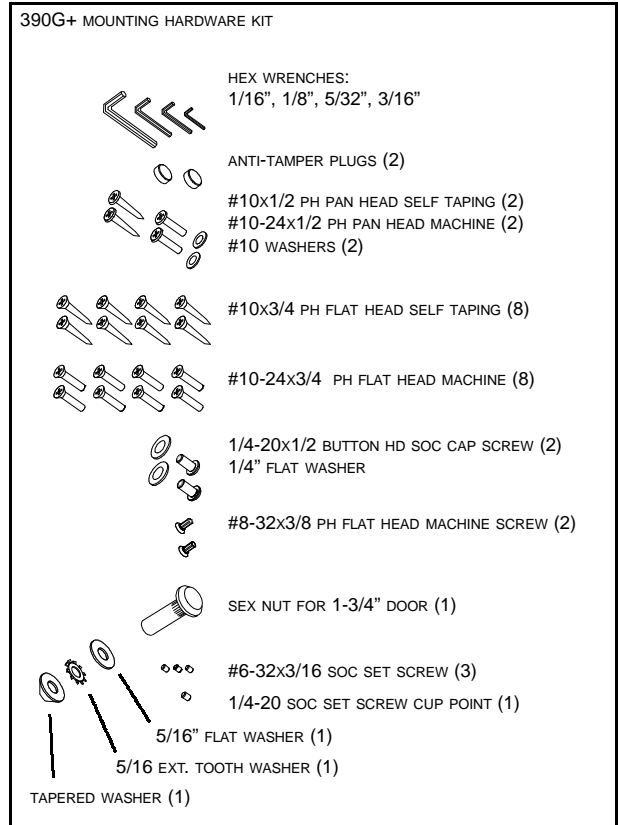
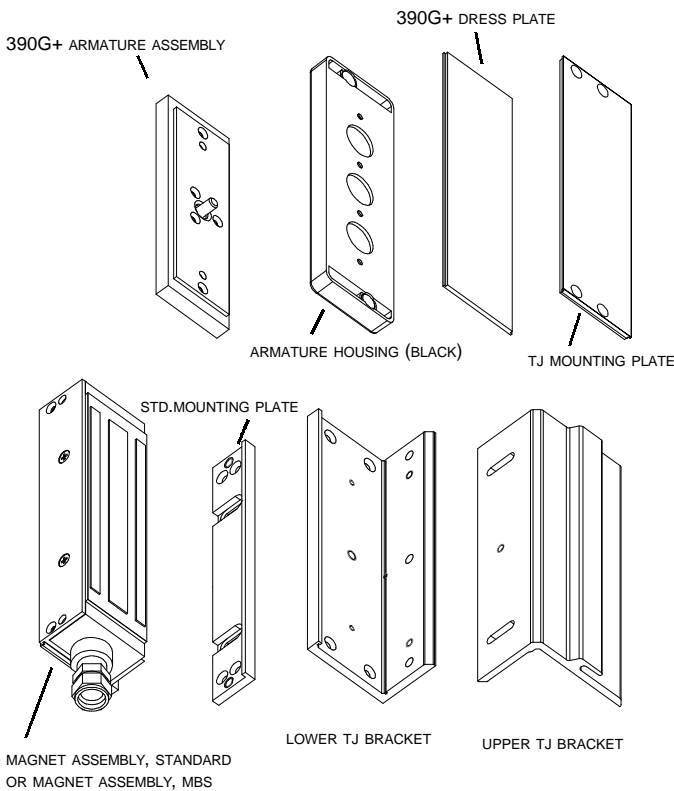
**DSM:**

(Door Status Monitor: changes state when gate is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING:0.250A@30VDC)

**MBS:**

(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING:0.250A@30VDC)

**PARTS LIST:**



**TROUBLE SHOOTING:**

**PROBLEM:**

**POSSIBLE CAUSE:**

**RESOLUTION:**

Lock does not lock.

No power applied.  
AC voltage applied instead of DC.  
Lock not making contact with armature.

Check power at lock, then check wiring and power supply.  
Use rectifier on low voltage side. Use DC power supply.  
Adjust mechanical position. Check for proper installation of armature.

Lock does not have enough holding force.

Improper installation of armature hardware.  
Improper alignment of armature to lock.

Correct sequence (tapered washer points toward armature-required.)  
Adjust position to correct.

MBS not changing state.

Low voltage.  
Debris between magnet and armature.  
Poor alignment.

Check voltage at lock. It should be above 12 or above 24 VDC. If not correct condition. (Possibly the wire gauge is too small for the length and load.) Power supply inadequate.  
Check and clean.  
Correct condition.

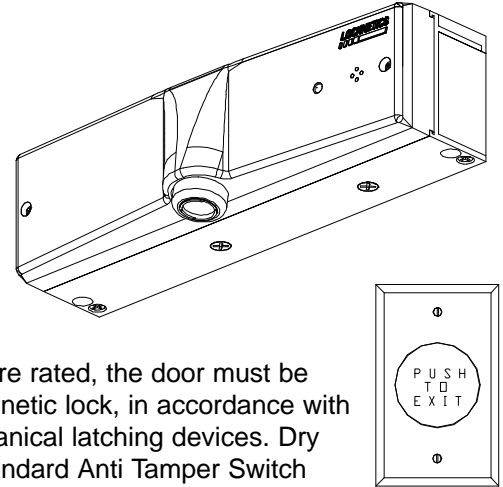
DSM not changing state when gate closed.

Poor alignment between magnet and armature.

Correct condition.  
Make sure there are small permanent magnets inside armature housing.

# 390PIR MAGNETIC LOCKING SYSTEM INSTALLATION AND WIRING

**GENERAL DESCRIPTION:** The 390PIR is an auxiliary magnetic lock with a built-in PIR (passive infrared) motion detector for the purpose of "hands-free" egress. Upon approaching the door from the inside (secured side) the magnet will unlock automatically. A 'PEX' ("Push to Exit") button can be used where required. When installed according to this manual, the PEX button unlocks the magnet for a fixed, 30 second (minimum) period of time, independent of any other timer circuits. The electromagnet mounts rigidly to the door frame header. The armature mounts to the door. The armature is designed to pivot about its center compensating for door misalignment. When the door is closed the energized magnet will bond with the armature, providing auxiliary locking force. If the opening is fire rated, the door must be secured positively with a mechanical latching device, in addition to the magnetic lock, in accordance with local authority having jurisdiction. Locknetics manufactures fire rated mechanical latching devices. Dry contact inputs allow for fire alarm tie in and remote release capabilities. Standard Anti Tamper Switch (ATS) provides a normally open or normally closed dry contacts (field selectable) which change state if the cover is removed. Three independent timers are standard: release timer(3-30 sec), PIR timer(3-30 sec), and push to exit (PEX) timer (fixed at 30seconds (minimum)), for emergency egress in compliance with 1997 NFPA 101 section 5-2.1.6.2.) This manual covers the mechanical installation, wiring, and operational options. Consult local authority having jurisdiction to ensure compliance with local and national life safety and building codes.

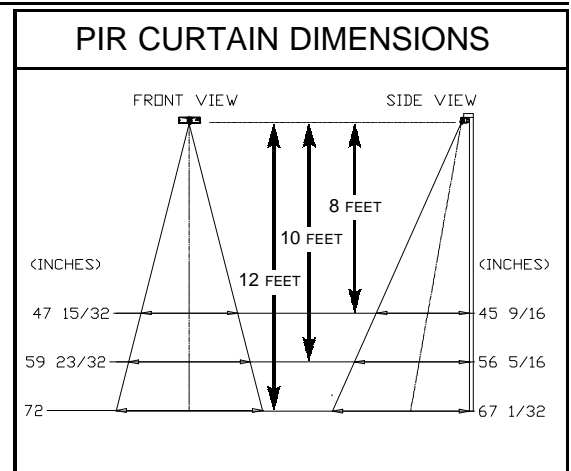


**DESCRIPTION OF OPTIONS:**

- DSM:** Door Status Monitor will provide status of door with or without power applied.
- MBS:** Magnetic Bond Sensor will provide status of lock (locked or unlocked) with or without power applied.
- REX100 output option:** Using a Locknetics REX100 module, this option provides a 1 second time delay to a set of Form C dry contacts to signal other equipment such as an automatic door operator when a pulse is received from the PIR or a contact closure from the release (REL) input is detected. Applications note: the pulse may be repeated several times as people pass through the field of the PIR.
- LPB:** "Less Push Button" - does not include PEX pushbutton.

**TECHNICAL SPECIFICATIONS:**

- Dual Voltage:** 12 or 24 volts AC or DC  
(Selected by jumper setting on PC board)
- Max. Current:** 0.7 Amps @ 12 Volts (DC) 1.0 Amps @ 12Volts (AC)  
0.5 Amps @ 24 Volts (DC) 0.7 Amps @ 24Volts (AC)
- Output Contact Ratings:**
- ATS:** standard) SPST 100 mA resistive load @ 24V
- DSM:** (optional) SPDT 200 mA @ 12V, 100mA @ 24V
- MBS:** (optional) SPDT 1.0 Amp resistive load @ 30V
- REX100:** (optional) SPDT 1.0 Amp resistive load @ 30V
- Mechanical Holding Force:** 1650 pounds
- PEX (Push to Exit Button - DP):** SPST N.C. contacts  
rated 1amp @30VAC/DC  
Mounts in single gang box.  
(DP has two SPST N.C. contacts)

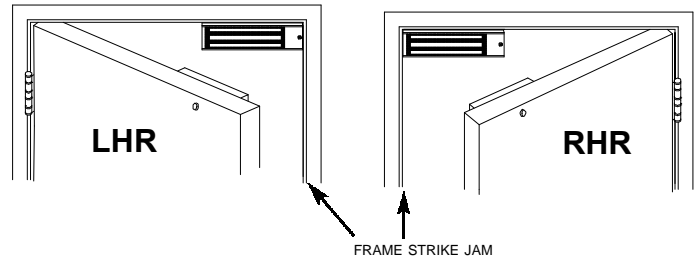


**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK.**  
 HANDLE THE EQUIPMENT CAREFULLY, DAMAGING THE MATING SURFACES OF THE  
 ELECTROMAGNET OR THE ARMATURE MAY REDUCE LOCKING EFFICIENCY.

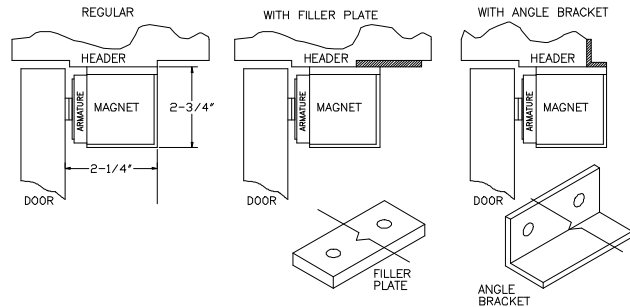
**IMPORTANT!** This manual is intended to be kept for operation, maintenance, and troubleshooting purposes. *Do not dispose of after installation.* Please present this manual to facility manager upon completion of installation.

**PRE-INSTALLATION CONSIDERATIONS**

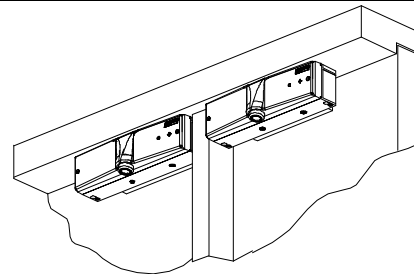
The electromagnet should be mounted as near to the frame strike jamb as possible to provide maximum holding force. Visually check the mounting location to assure that the unit will mount without interference.



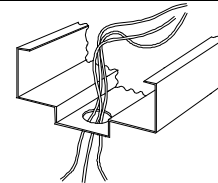
Frame conditions may require the use of filler plates and/or angle brackets. These items are available from Locknetics.



When mounting two locks on one opening with or without a mullion, treat each installation separately. Use the template for each leaf.



Wiring for the electromagnet must enter the top of the unit through the wire access hole drilled in the frame header (see template). Be certain provisions can be made to bring the wire through the header into the top of the unit.

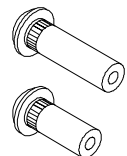


Use proper mounting screws for your door frame. For light-gauge metal door frames, self tapping screws may be used. If the door frame is heavy-gauge metal, machine screws may be necessary and the holes will have to be tapped.  
**Caution:** It is very important to make sure that magnet is secured to the structure of the opening. Consult factory with questions regarding the installation of a magnetic lock on a wooden frame. Be prepared to provide structural detail of opening.

	PAN HEAD	FLAT HEAD
MACHINE SCREWS		
SELF-TAPPING SCREWS		

Armature mounting hardware is for door thickness of 1-3/4 inches. For doors thicker than 1-3/4" consult factory.

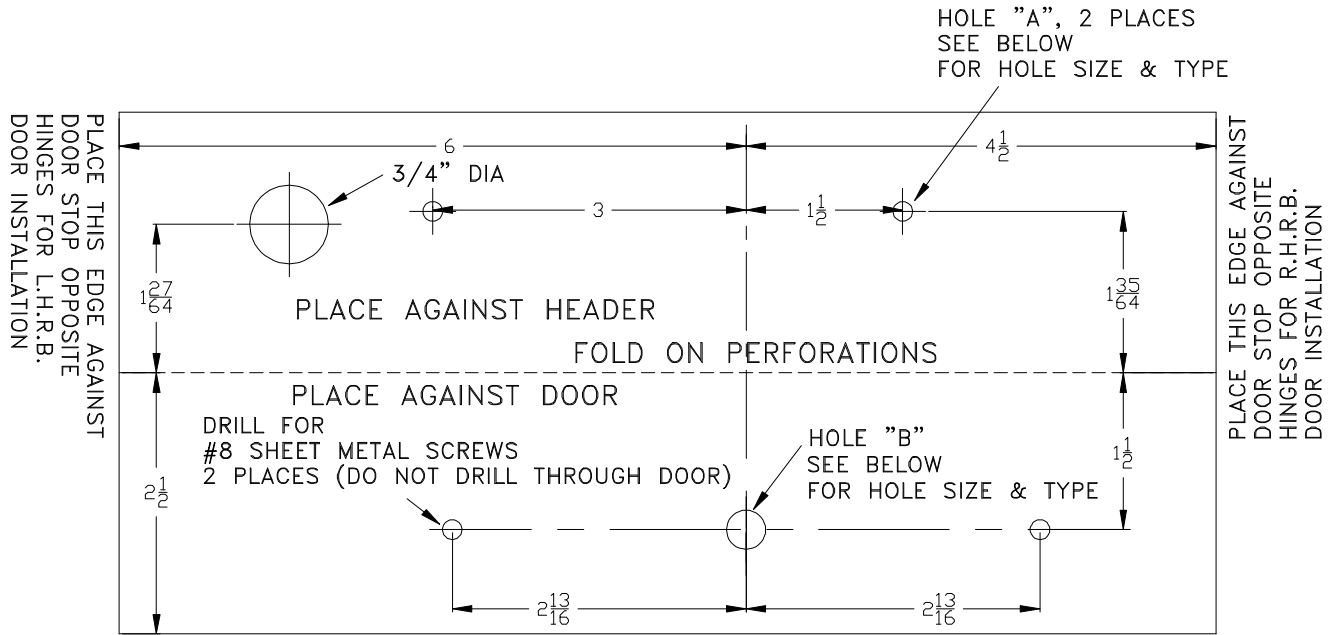
FOR SEX NUTS FOR USE ON DOORS OTHER THAN 1-3/4" CONSULT FACTORY.



**INSTALLATION PROCEDURE**

**1. PREP DOOR AND FRAME:**

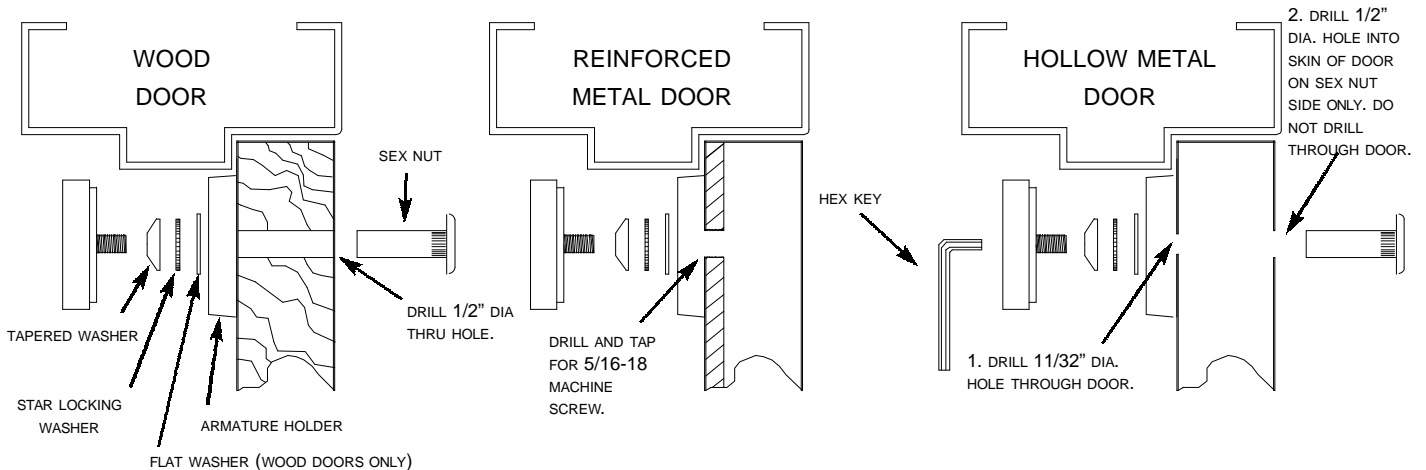
The paper template is the preferable way to prepare the door and frame. If for any reason it is not available, use the dimensions shown below to mark the centerlines of the holes. *Note that the layout is not symmetrical with respect to the centerline of the armature.*



**A.** The door should be closed and latched. You should be at the "push" side. Locate the paper template and fold it along the perforated line with the printed sides facing each other. Place the template against the frame stop and the door. Tape template in place.

**B.** On the frame stop mark the location of holes "A" from the template. For heavy gauge or reinforced frames, drill and tap for #10-24 thread. For standard frames, drill 5/32" dia. for #10 self tapping screws. Locate and drill the 3/4" dia. wire hole. (The 3/4" dia. hole is oversized to the 5/8" dia. mounting plate hole to allow the full range of adjustability.)

**C.** On the doors, mark the locations of all holes. Drill (2) holes per template for #8 self tapping or #8-32 machine screws. Armature mounting hole "B" is determined by the door type (see below).

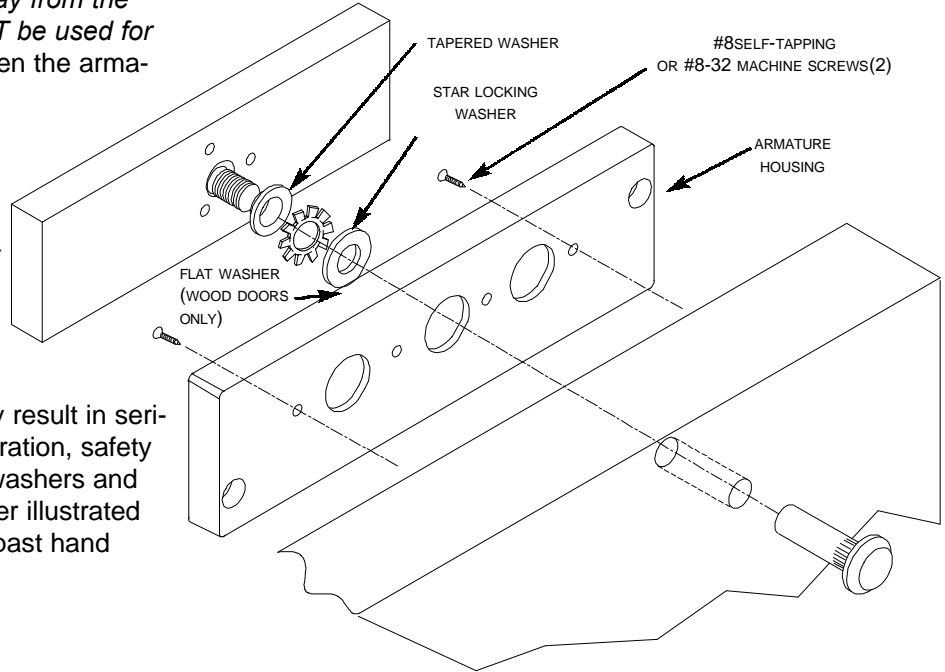


**2. MOUNT ARMATURE TO DOOR**

Assemble using hardware provided in the order shown. All hardware shown must be used except where noted. *Note that the tapered washer must be placed with the pointed side facing away from the door and toward the armature.* It **MUST** be used for proper operation. Use hex key to tighten the armature mounting bolt. For solid core and hollow metal doors, gently tap sex nut into position with a rubber mallet before mounting armature assembly. *Proper use of hardware will allow armature to pivot slightly after securely tightening the mounting screw. This is normal, and necessary to allow armature to mate properly with magnet.*

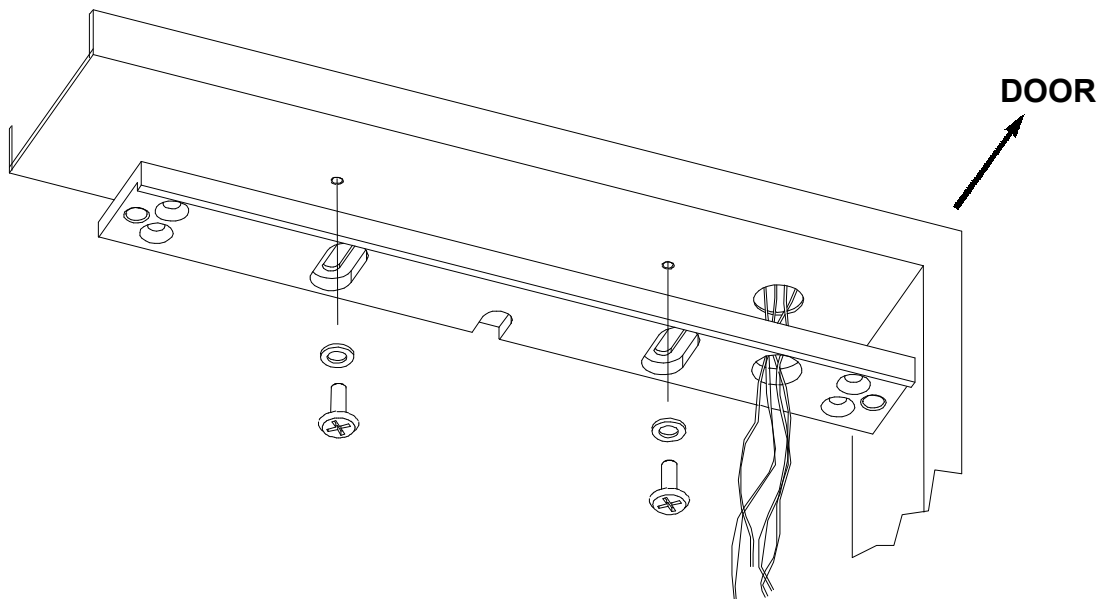
**CAUTION:**

Failure to secure armature to door may result in serious injury to door user. For proper operation, safety and security, sex nut / bolt assembly, washers and spacers must be assembled in the order illustrated and securely tightened 1/8 to 1/4 turn past hand tight.



**3. TEMPORARILY ATTACH MOUNTING PLATE TO HEADER**

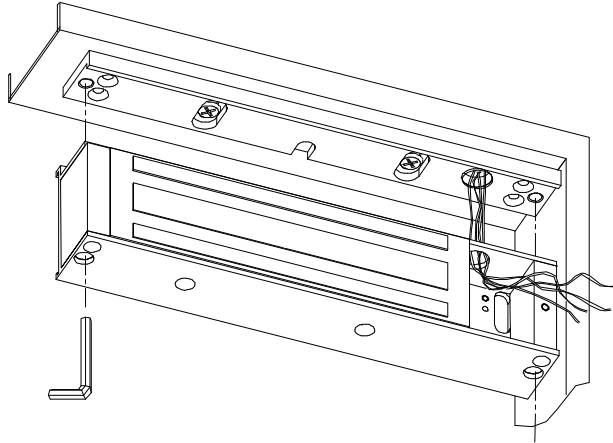
Slotted holes and counterbore should face downward. Mount to the frame using (2) #10-24 x 1/2" pan head machine screws, or (2) #10 x 3/4" pan head self-tapping screws, and #10 flat washers. Tighten screws just tight enough to allow shifting the plate during adjustment.



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#### 4. TEMPORARILY MOUNT TEMPLATE OR MAGNET TO MOUNTING PLATE

Using socket cap screws, mount the magnet to the mounting plate. Carefully pass wiring through wire access hole in top of magnet and allow it to hang out of wiring cavity. *Do not install anti-tamper plugs at this time.*

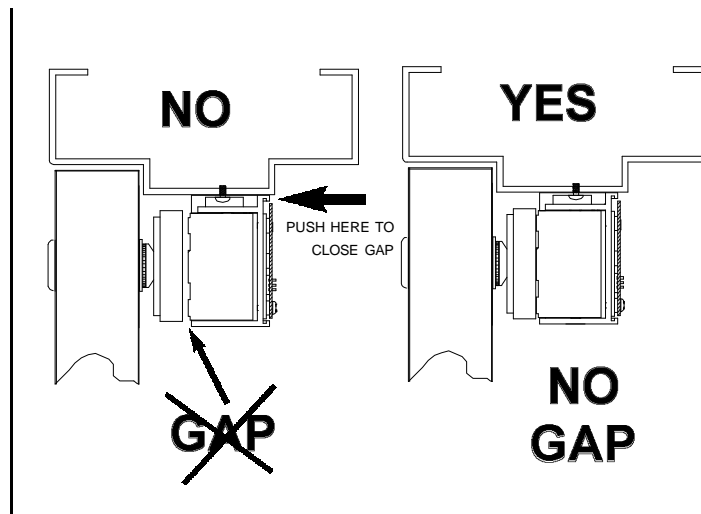


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#### 5. ALIGN MAGNET WITH ARMATURE

With door closed and latched push magnet assembly toward the armature by applying pressure on each end of the magnet until fully mated together, as shown below. Mark the position of the mounting plate. Remove magnet from the mounting plate without moving the mounting plate. (If using template, tighten two pan head screws through holes in template before removing it.) Tighten the slotted hole screws without moving the mounting plate to assure proper alignment.

**CAUTION:** Do not press on the PC board while moving the magnet. This could cause damage.



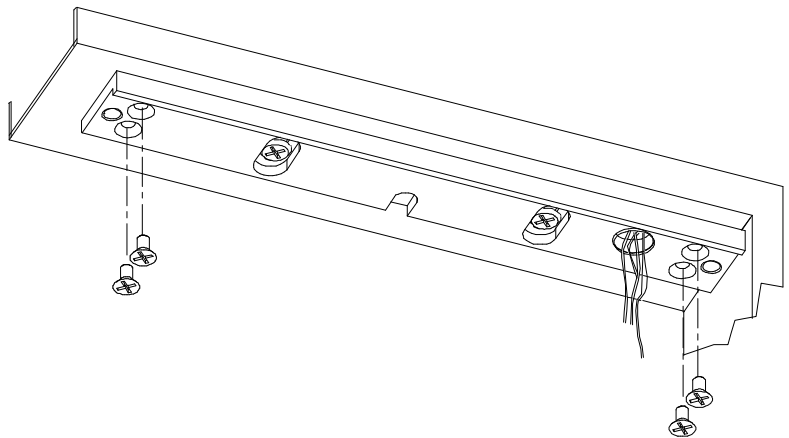
**6. SECURE MOUNTING PLATE**

Using the Mounting Plate as a template, drill the four remaining mounting holes. Tighten two 10-24 self tapping pan head screws

If using #10 self-tapping, flat-head screws drill 5/32" dia. holes and drive four screws tight.

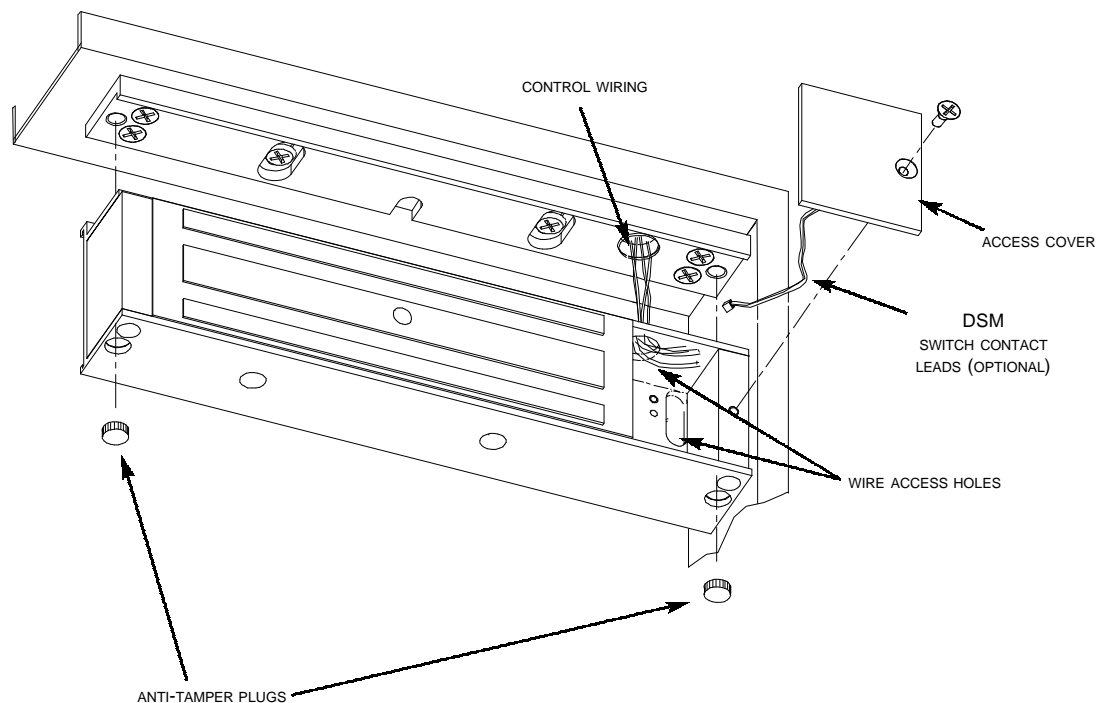
If using #10-24 flat head machine screws, drill and tap for #10-24 threads and tighten four screws.

**CAUTION:** If the frame is wood it is critical that the screws used secure the mounting plate to the *structure* of the frame. Consult factory with any questions regarding wood frame applications. Be prepared to provide structural detail of opening.



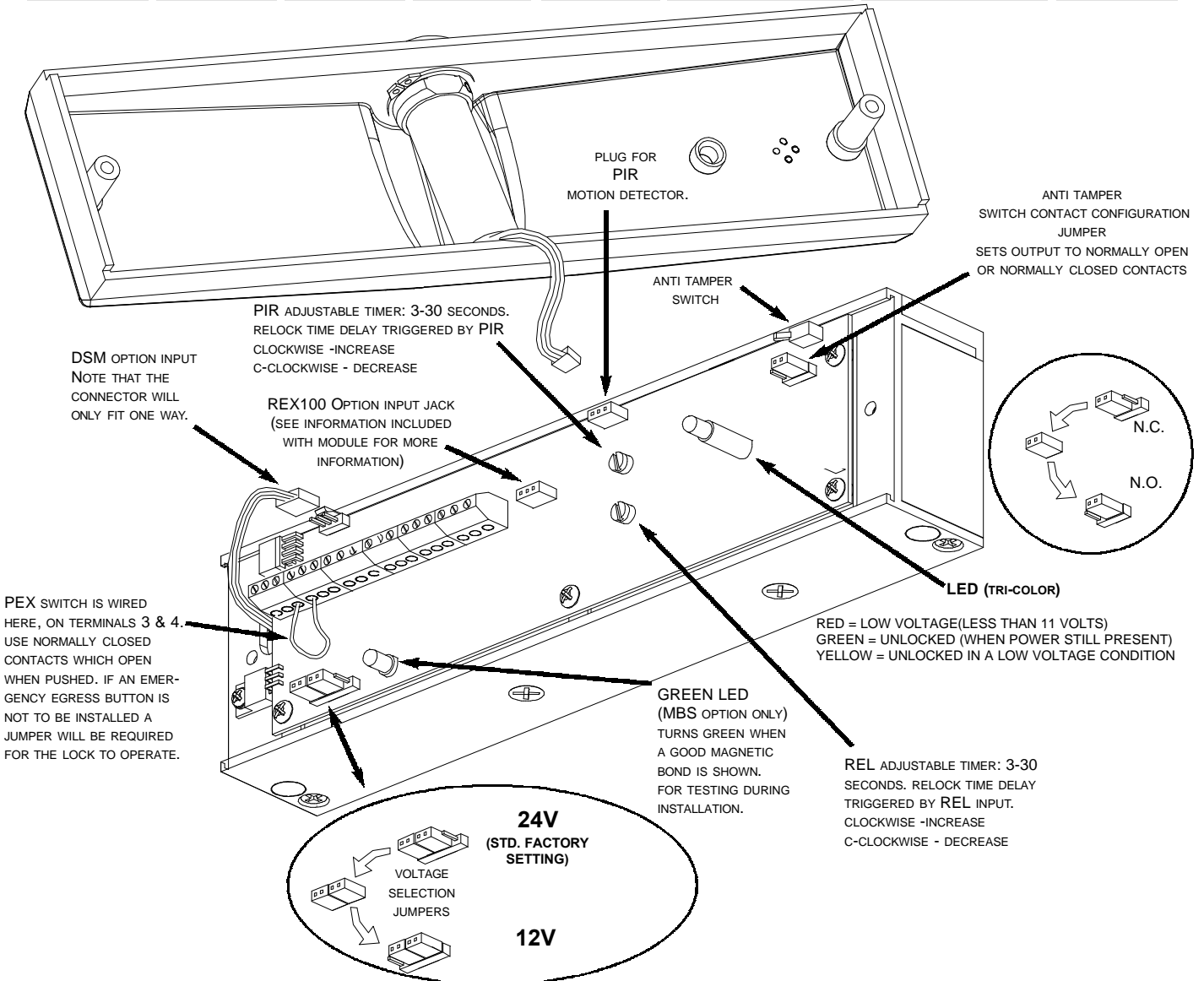
**7. SECURE MAGNET TO MOUNTING PLATE**

Install the electromagnet to the mounting plate by tightening the captured 1/4-20 x 2" socket head cap screws with a 3/16" hex key. Firmly tighten the screws. Pass wiring through hole in top of magnet and through access hole on circuit board side of magnet as shown below. If the unit has DSM and/or SEC and/or BOCA there will be up to two switch contacts with plug-in leads mounted on the access cover. Pass these leads through the access hole on circuit board side of magnet. Secure access cover. Drive in anti-tamper plugs using a rubber mallet.



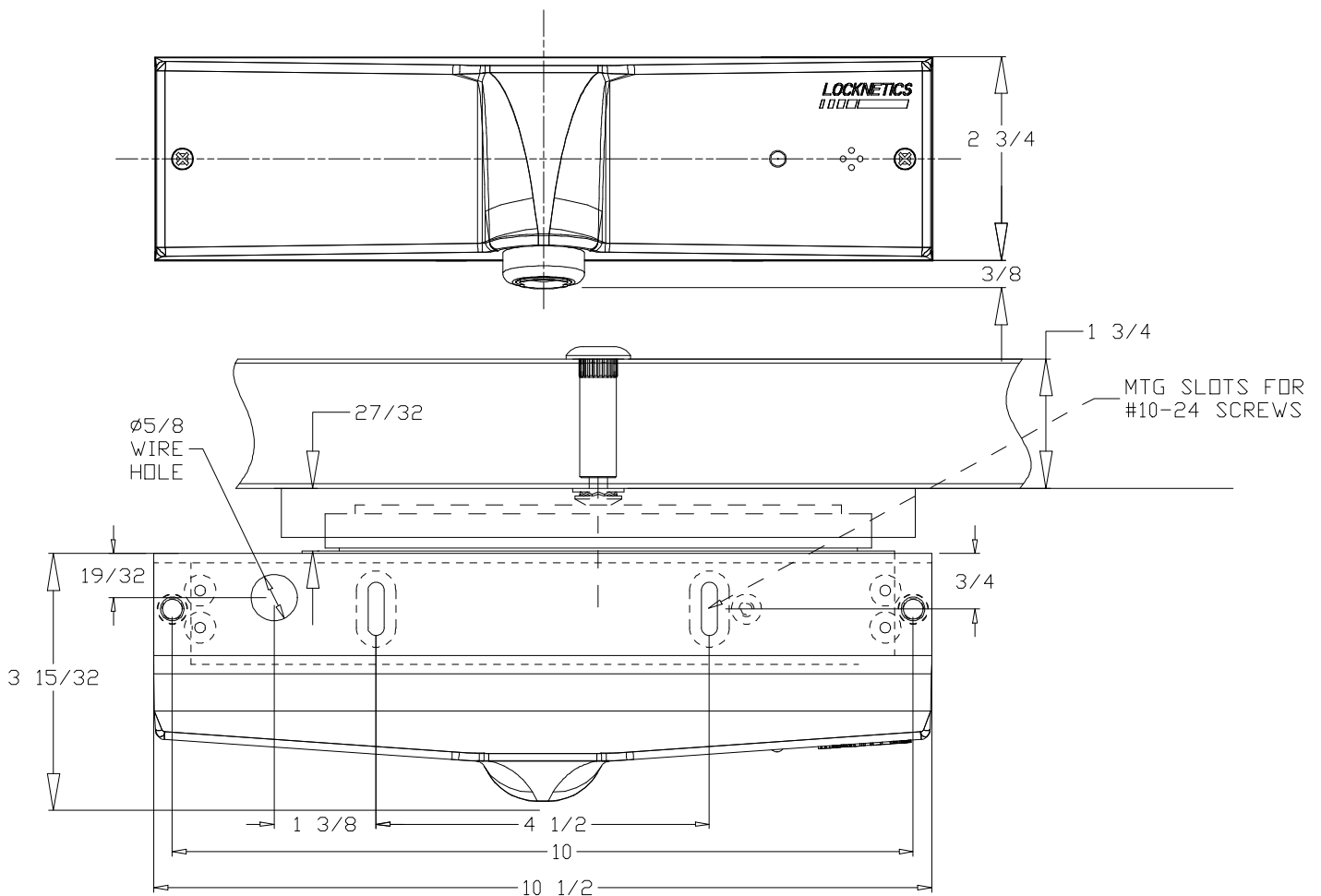
### TERMINAL LAYOUT TB1:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>POWER INPUT</b> 12/24 VOLTS AC OR DC (SELECTION JUMPER ON BOARD MUST BE SET - SEE BELOW)  <b>DO NOT APPLY 120 VAC</b>		<b>PEX INPUT</b> (N.C. DRY CONTACT)  A JUMPER IS REQUIRED IF NOT CONNECTED TO EMERGENCY EGRESS BUTTON		<b>FIRE ALARM INPUT</b> APPLY A NORMALLY CLOSED DRY CONTACT OR A JUMPER IF NOT CONNECTED TO FIRE ALARM		<b>RELEASE INPUT</b> DRY CONTACT CLOSURE WILL RELEASE LOCK FOR THE TIME DELAY PERIOD (SEE BELOW)		<b>DSBL INPUT</b> (DISABLE PIR) MAINTAINED DRY CONTACT CLOSURE WILL DISABLE PIR FOR AFTER HOURS SECURITY (RECOMMEND USE OF PEX)		<b>NO   C   NC</b>  <b>DSM OUTPUT</b> (OPTIONAL) CONTACTS CHANGE STATE WHEN DOOR IS CLOSED.			<b>C   NC   NO</b>  <b>MBS OUTPUT</b> (OPTIONAL) CONTACTS CHANGE STATE WHEN MAGNET IS PROPERLY BONDED TO ITS ARMATURE. POOR BOND CAN BE CAUSED BY LOW VOLTAGE, MISALIGN- MENT OR DAMAGED MATING SURFACES.			<b>C   NO/NC</b>  <b>ANTI TAMPER SWITCH OUTPUT</b> CONTACTS CHANGE STATE WHEN COVER IS REMOVED	

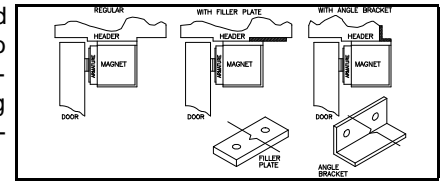


**NOTE: There will be a time delay of approximately 30 seconds before magnet locks when power is applied.**





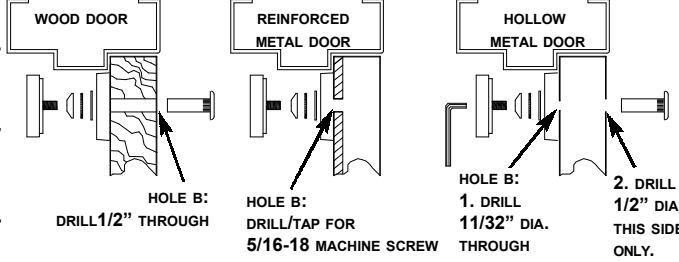
**Pre-Installation Considerations:** It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. It may be necessary to use a filler plate or angle bracket for adequate mounting surface area. See illustration (right). Locknetics offers many sizes of each. Herculite door brackets are also available for glass doors. Consult your distributor.



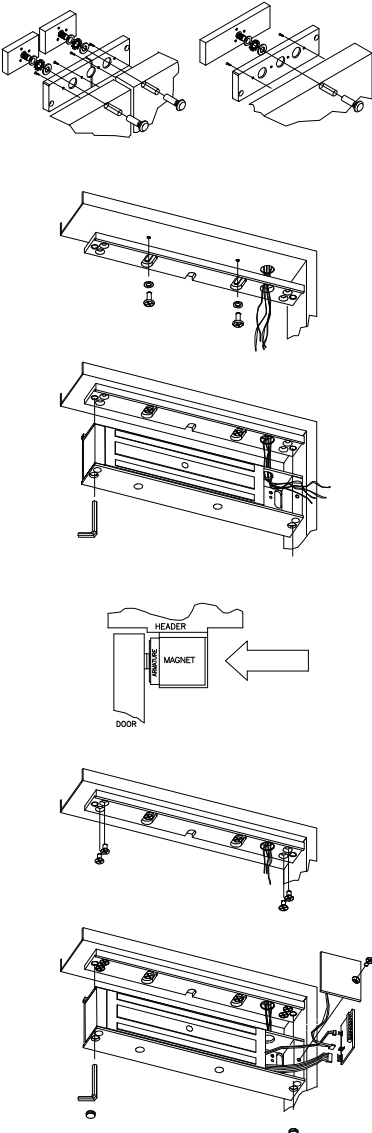
1. Prep door and frame according to the template provided for the correct model you are installing.

**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

Holes "A" (on frame), referenced to on template, are to be for #10-24 machine screws on reinforced metal frames or #10 self tapping screws on sheet (hollow) metal or aluminum. Hole(s) "B" are for sex nut(s) and depend on door type (see illustration to right for correct application.)

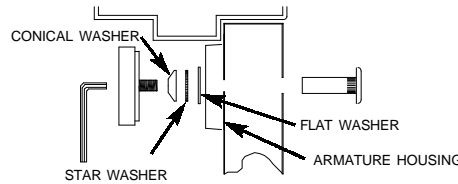


### SINGLE/SPLIT ARMATURE UNITS:



(390+ SHOWN)

2. Mount armature(s), housing(s) and armature using appropriate hardware as shown.



3. Pass control/monitoring wiring through wire access hole in frame and through wire hole in mounting bracket. Mount bracket using pan head screws and flat washers. Do not completely tighten screws - it will be necessary to adjust the position of the bracket in step 5.

4. Install magnet assembly to mounting bracket.

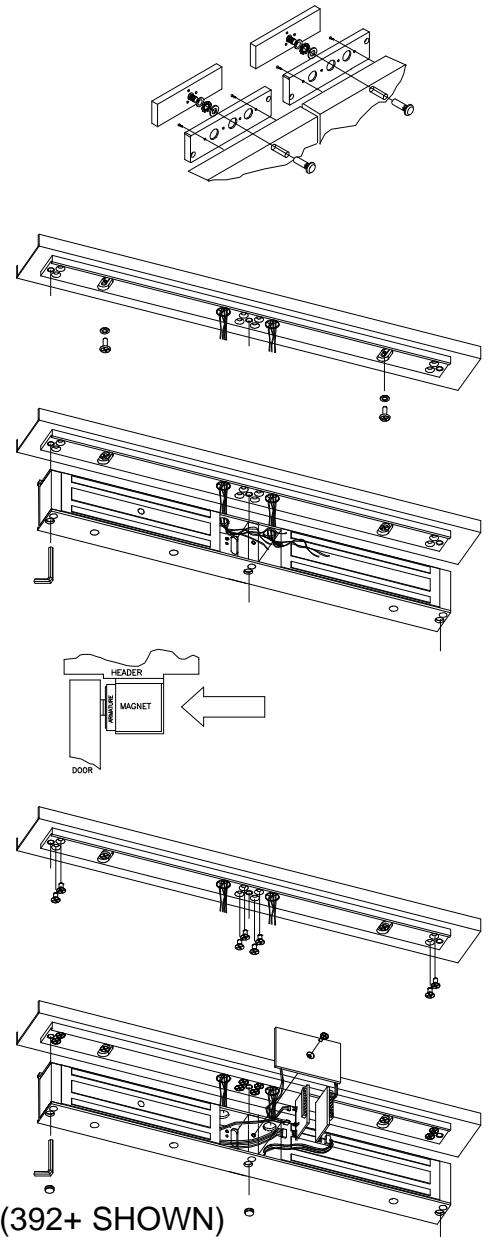
5. Close and latch door. Push the magnet assembly toward armature(s) on door(s) until they are pressed together. When possible, apply power to magnet to set final position. Mark position of mounting bracket and remove magnet assembly.

6. Tighten pan head screws to firmly hold mounting plate to frame. Drill mounting holes for #10 sheet metal/machine screws and secure mounting plate to frame. Make sure all fasteners shown are installed.

7. Install magnet to mounting bracket. Make wiring connections (see wiring instructions on next page). Install circuit board(s) (if used), wire and wire access cover. Do not pinch wires between parts. Install antitamper plugs, using a rubber mallet, if desired.

**Note:** after installing antitamper plugs it will be necessary to drill them out if the lock must be removed.

### DOUBLE UNITS:



(392+ SHOWN)

**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

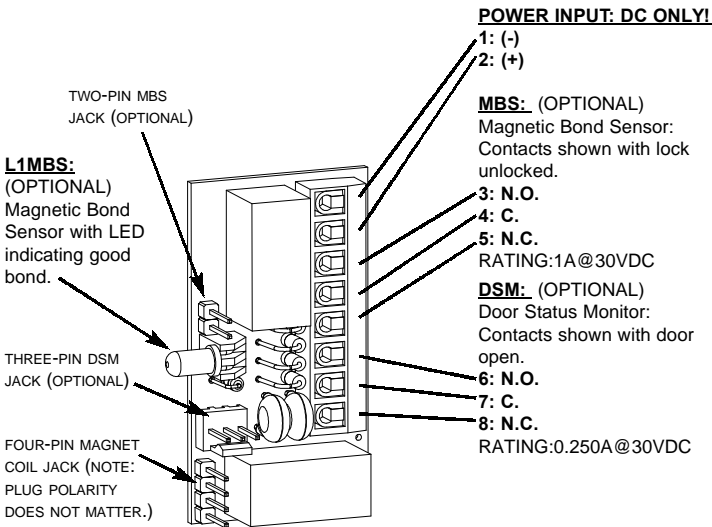
## “+” MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)

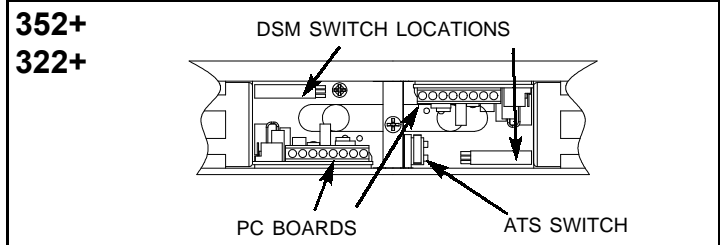
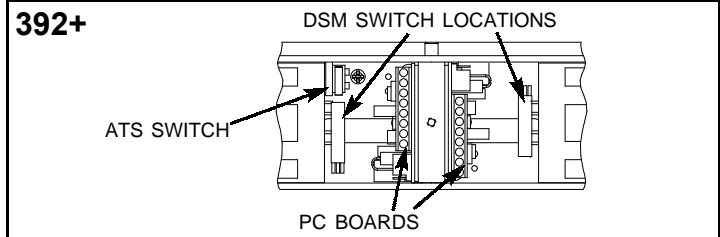
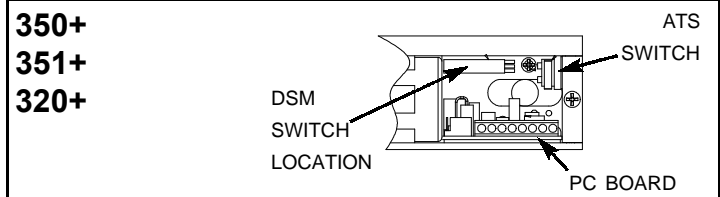
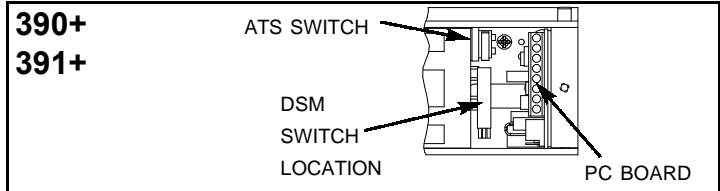


**ATS:** (OPTIONAL) Anti Tamper Switch: Contacts shown with cover removed.

BLUE: N.C.  
TAN: C.  
GREEN: N.O.  
RATING:1A@30VDC

REMOVE PAPER BACKING  
ON STICKY TAPE DISC TO  
MOUNT IN POSITION AFTER  
WIRING

## WIRING CAVITY COMPONENT LOCATION:

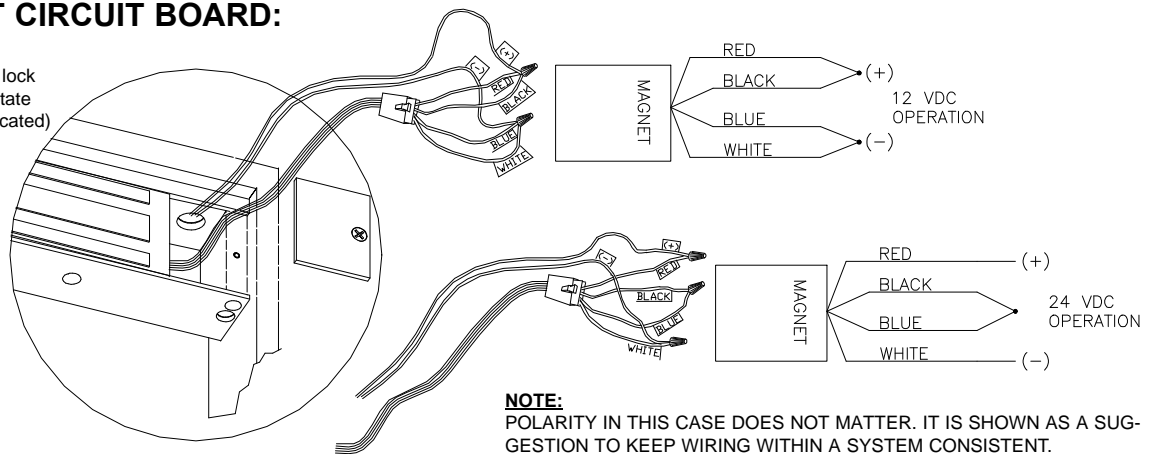


## MODELS WITHOUT CIRCUIT BOARD:

**MBS:**  
(Magnetic Bond Sensor - indicates lock  
status, shown unlocked: changes state  
when a good magnetic bond is indicated)  
WHITE: C.  
WHITE: N.O.  
(RATING:0.250A@30VDC)

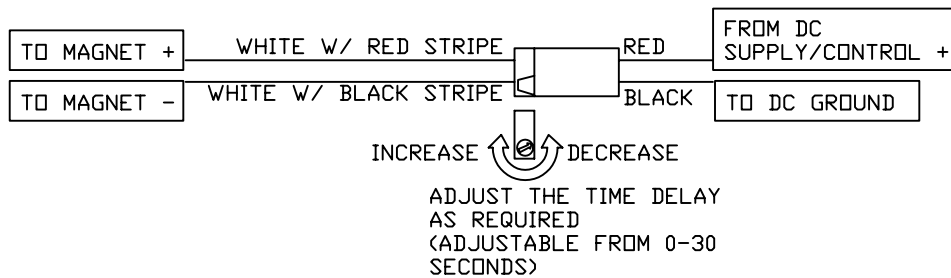
**DSM:**  
(Door Status Monitor: changes  
state when door is closed)  
RED: N.C.  
BLACK: C.  
WHITE: N.O.  
(RATING:0.250A@30VDC)

IMPORTANT! DSM SWITCH  
POSITIONS ARE THE SAME.  
SEE DIAGRAMS ABOVE.



# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

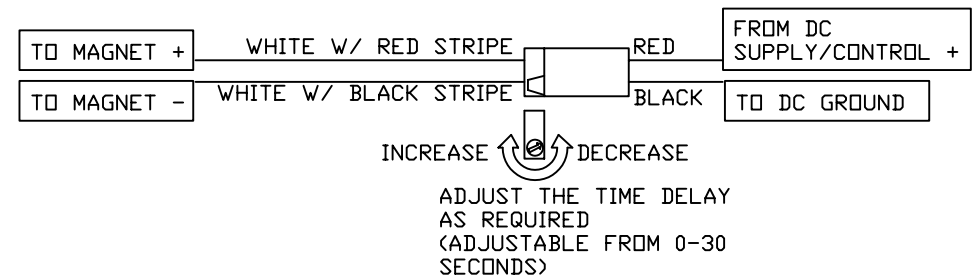


FORM 39476

01-29-2004

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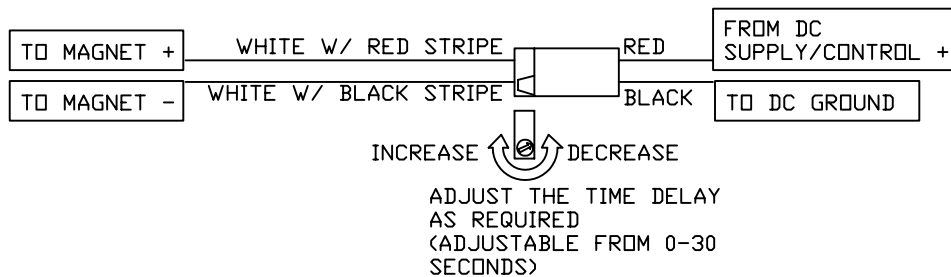


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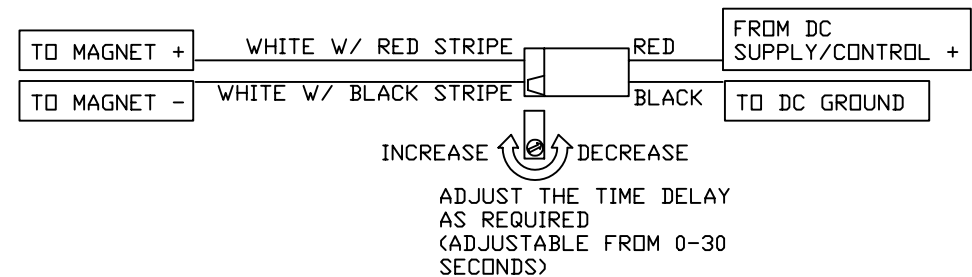


FORM 39476

01-29-2004

# RTD MODULE

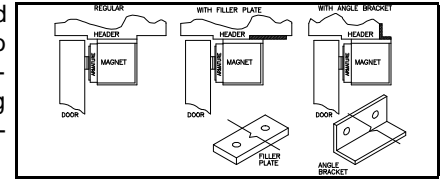
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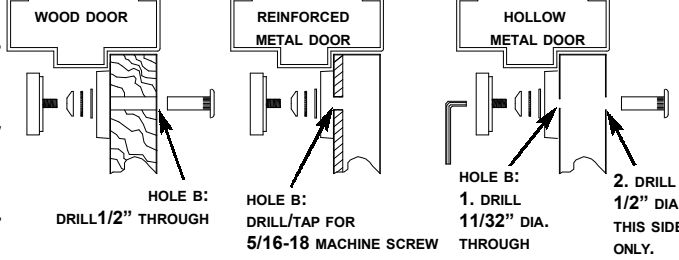
**Pre-Installation Considerations:** It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. It may be necessary to use a filler plate or angle bracket for adequate mounting surface area. See illustration (right). Locknetics offers many sizes of each. Herculite door brackets are also available for glass doors. Consult your distributor.



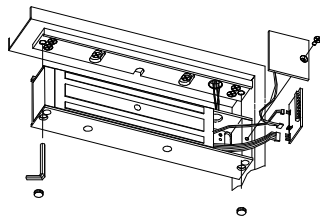
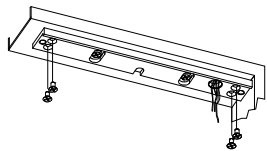
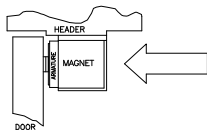
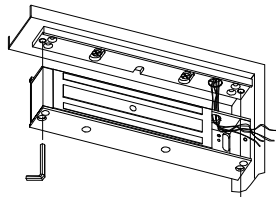
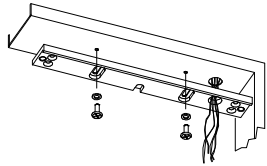
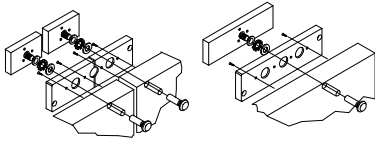
1. Prep door and frame according to the template provided for the correct model you are installing.

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Holes "A" (on frame), referenced to on template, are to be for #10-24 machine screws on reinforced metal frames or #10 self tapping screws on sheet (hollow) metal or aluminum. Hole(s) "B" are for sex nut(s) and depend on door type (see illustration to right for correct application.)

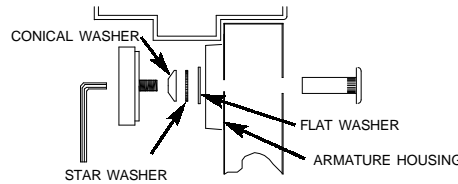


### SINGLE/SPLIT ARMATURE UNITS:



(390+ SHOWN)

2. Mount armature(s), housing(s) and armature using appropriate hardware as shown.



3. Pass control/monitoring wiring through wire access hole in frame and through wire hole in mounting bracket. Mount bracket using pan head screws and flat washers. Do not completely tighten screws - it will be necessary to adjust the position of the bracket in step 5.

4. Install magnet assembly to mounting bracket.

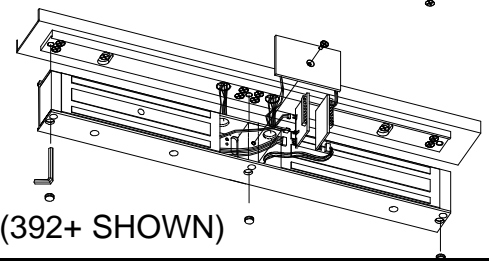
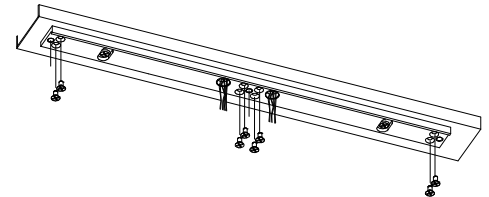
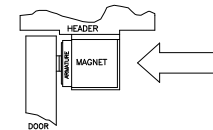
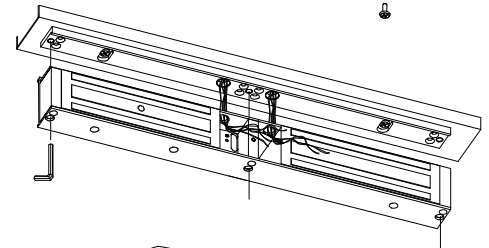
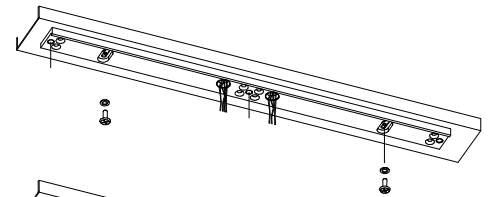
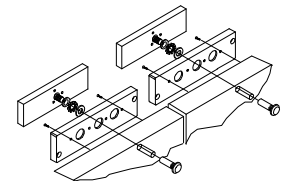
5. Close and latch door. Push the magnet assembly toward armature(s) on door(s) until they are pressed together. When possible, apply power to magnet to set final position. Mark position of mounting bracket and remove magnet assembly.

6. Tighten pan head screws to firmly hold mounting plate to frame. Drill mounting holes for #10 sheet metal/machine screws and secure mounting plate to frame. Make sure all fasteners shown are installed.

7. Install magnet to mounting bracket. Make wiring connections (see wiring instructions on next page). Install circuit board(s) (if used), wire and wire access cover. Do not pinch wires between parts. Install antitamper plugs, using a rubber mallet, if desired.

**Note:** after installing antitamper plugs it will be necessary to drill them out if the lock must be removed.

### DOUBLE UNITS:



(392+ SHOWN)

**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

Model:	Amps(12VDC)	Amps(24VDC)	Holding Force(lbs)
320+	0.750	0.380	700
350+	0.750	0.380	1200
390+	0.600	0.300	1650

**PHYSICAL DIMENSIONS (LOCK BODY ONLY):**

SINGLE UNITS:				DOUBLE UNITS:		
Model:	HEIGHT:	WIDTH:	DEPTH:	HEIGHT:	WIDTH:	DEPTH:
320+	2 1/8"	8 9/16"	1 11/16"	2 1/8"	16 3/4"	1 11/16"
350+	2 1/8"	12 1/2"	1 11/16"	2 1/8"	25"	1 11/16"
390+	2 3/4"	10 1/2"	1 11/16"	2 3/4"	20 5/8"	1 11/16"

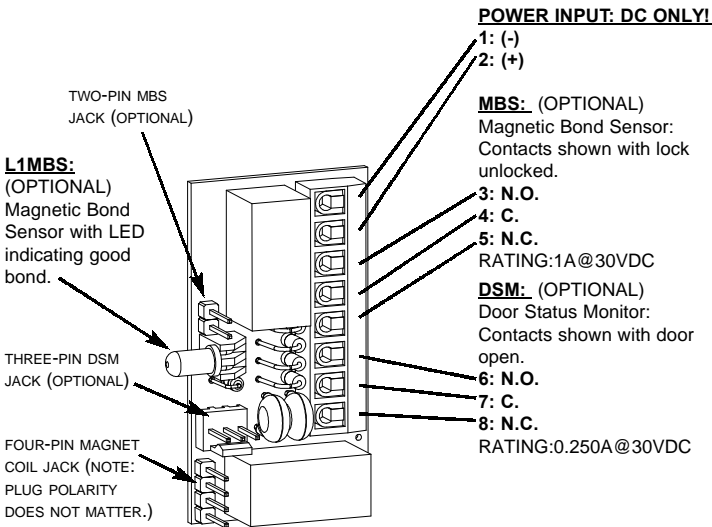
### “+” MODELS WITH AVS CIRCUIT BOARD:

There are three PC board Options:

**AVS:** Automatic Voltage Selection.

**AVSxDSMxMBS:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor

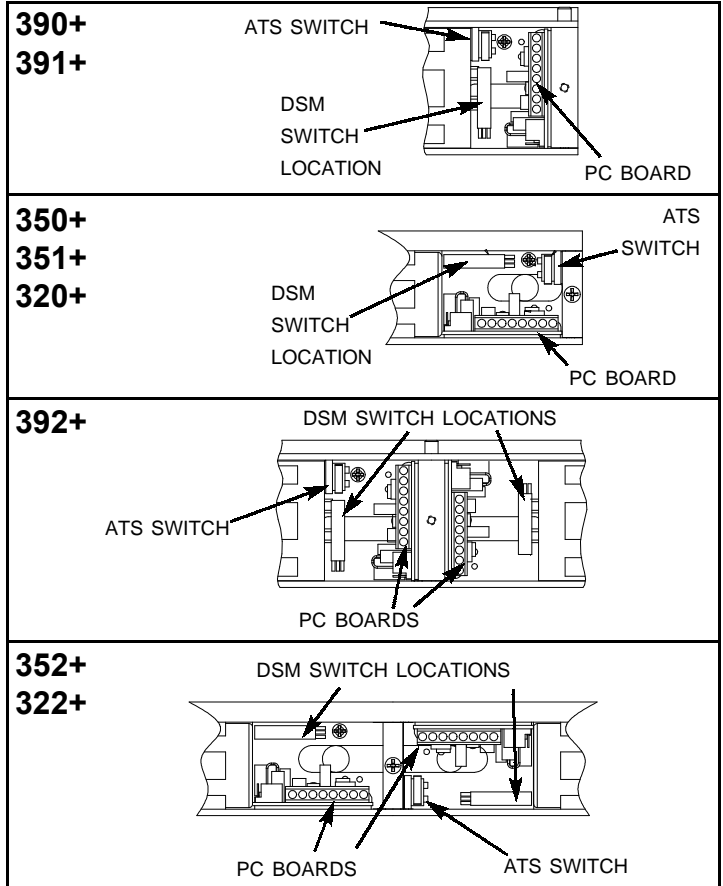
**AVSxMBSxDSM:** Automatic Voltage Selection, Door Status and Magnetic Bond Sensor W/ L1 OPTION (LED TURNS GREEN WHEN GOOD BOND EXISTS)



**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.  
 BLUE: N.C.  
 TAN: C.  
 GREEN: N.O.  
 RATING: 1A @ 30VDC

REMOVE PAPER BACKING ON STICKY TAPE DISC TO MOUNT IN POSITION AFTER WIRING

### WIRING CAVITY COMPONENT LOCATION:

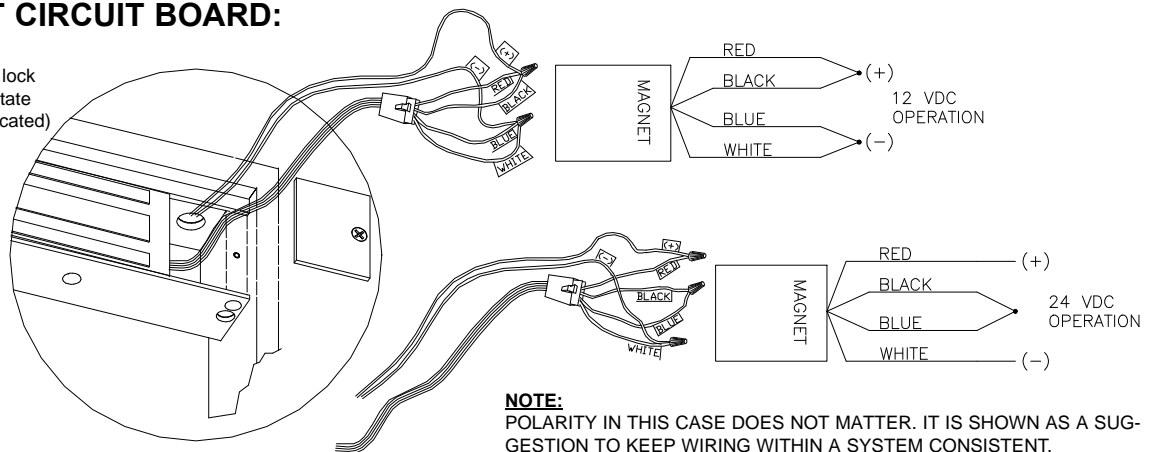


### MODELS WITHOUT CIRCUIT BOARD:

**MBS:** (Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)  
 WHITE: C.  
 WHITE: N.O.  
 (RATING: 0.250A @ 30VDC)

**DSM:** (Door Status Monitor: changes state when door is closed)  
 RED: N.C.  
 BLACK: C.  
 WHITE: N.O.  
 (RATING: 0.250A @ 30VDC)

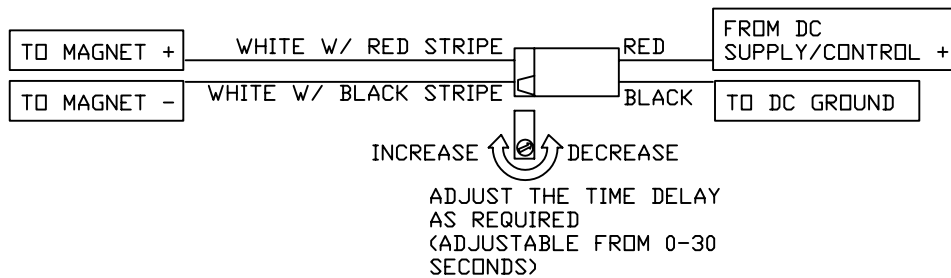
IMPORTANT! DSM SWITCH POSITIONS ARE THE SAME. SEE DIAGRAMS ABOVE.



**NOTE:** POLARITY IN THIS CASE DOES NOT MATTER. IT IS SHOWN AS A SUGGESTION TO KEEP WIRING WITHIN A SYSTEM CONSISTENT.

# RTD MODULE

Locknetics RTD module is an inline time delay unit for delaying relock on magnetic locks. It is rated at 12 or 24 VDC 40mA max power consumption. Contacts are rated at 1amp @12 or 24VDC. Use one RTD for each individual magnet.

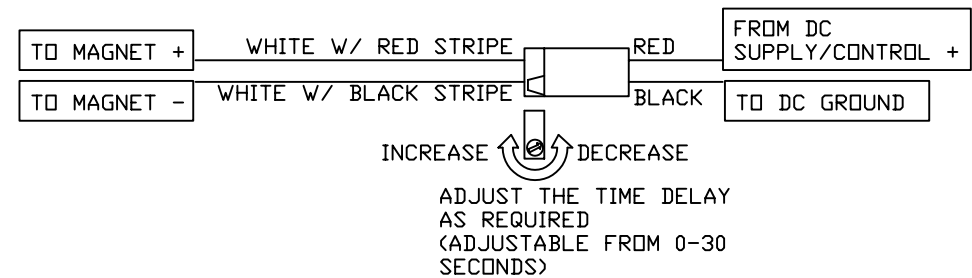


FORM 39476

01-29-2004

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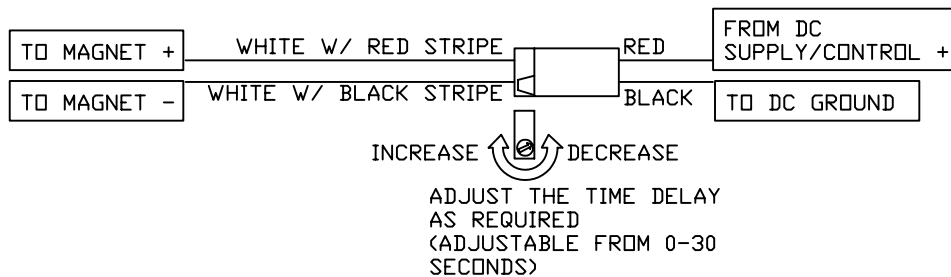


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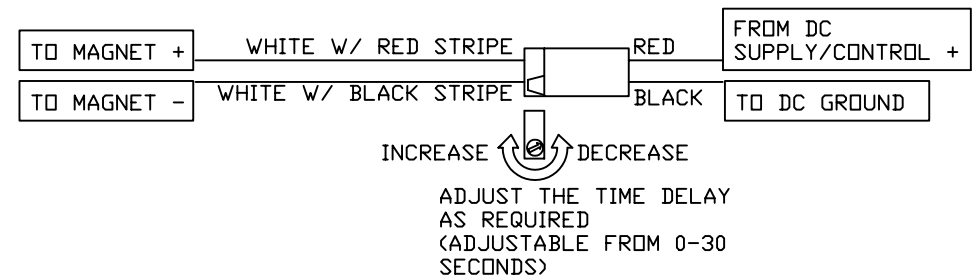


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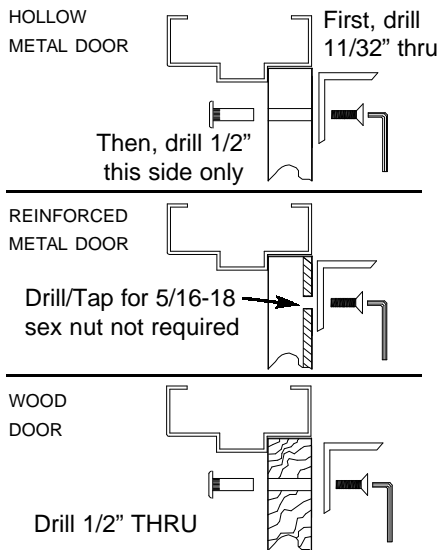
FORM 39476

01-29-2004

### Pre Installation Considerations:

It is important that the door and frame be structurally sound for safety and security reasons. Compare the template information to the installation site to make sure that there is enough space to mount the magnet without interfering with any existing hardware. The TJ type of magnetic lock is intended for use on inswinging doors. It is not intended to be installed on the exterior of buildings.

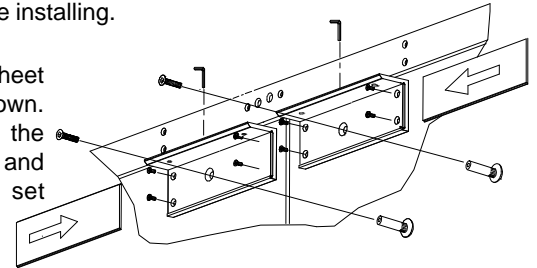
### SEX NUT PREP FOR TJ BRACKETS



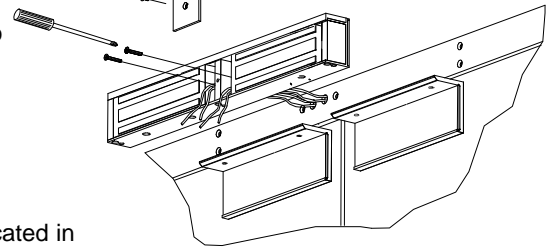
**IMPORTANT!** Armature plate(s) must be installed with the correct hardware in the correct order and orientation for proper operation. DO NOT REMOVE FOAM RUBBER COMPRESSION PADS FROM LEXAN ARMATURE HOUSINGS.

1. Prep door and frame according to the template provided for the correct model you are installing.

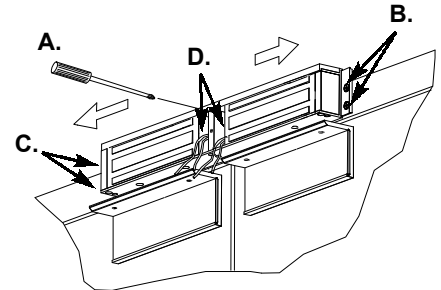
2. Mount Lower TJ brackets using sheet metal screws and sex nuts as shown. Slide the TJ dress plates into the lower TJ brackets as shown. Center and secure position using the allen set screws.



3. Remove wire access cover from magnet. Pull control wiring through wire access holes. Install magnet to frame with two sheet metal or machine screws through exposed holes inside wire access cavities. Do not completely tighten them at this point.

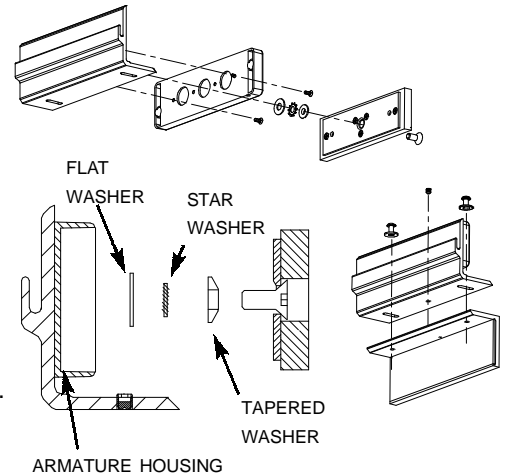


4. A. Loosen phillips set screw located in the right wire access cavity. B. Slide magnet to left just enough to expose mounting screw holes on right. Secure magnet with two mounting screws. C. Slide just enough to expose two holes on left. Secure magnet with two screws on left.



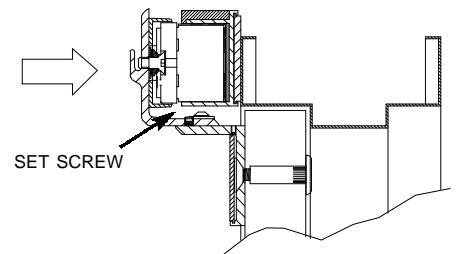
D. Center magnet and tighten two center mounting screws and set screw. **IMPORTANT! Do not slide the magnet too far or wiring could be severed or damaged.**

5. Install the armatures and armature housings onto the upper TJ brackets using the hardware provided as shown. **IMPORTANT! Hardware must be assembled in the correct order, as shown, for proper operation. Do not remove foam rubber compression pads from lexan armature housings.**



6. Open doors and install the upper TJ brackets to the lower TJ brackets using two machine screws and washers each. Leave the screws just loose enough to slide upper TJ bracket toward or away from the door.

7. Close and latch door. Push each upper TJ armature/bracket assembly toward magnet until it is mated against it, with no air gap. Open door slowly and tighten machine screws and set screws to lock TJ bracket assemblies into position.





**ELECTRICAL SPECIFICATIONS:** Note: Specifications refer to magnet type and are per coil. Double units will require twice the current. Holding force on spit armature models is less than one half of the force of a single unit.

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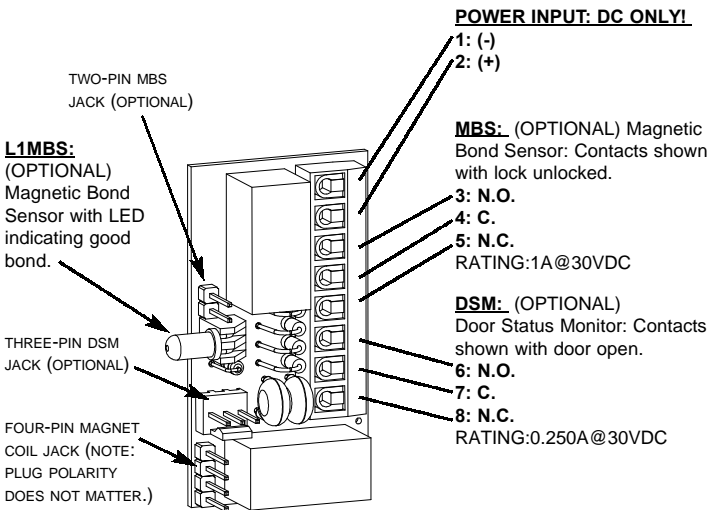
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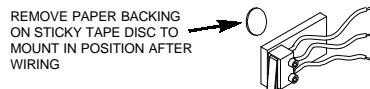
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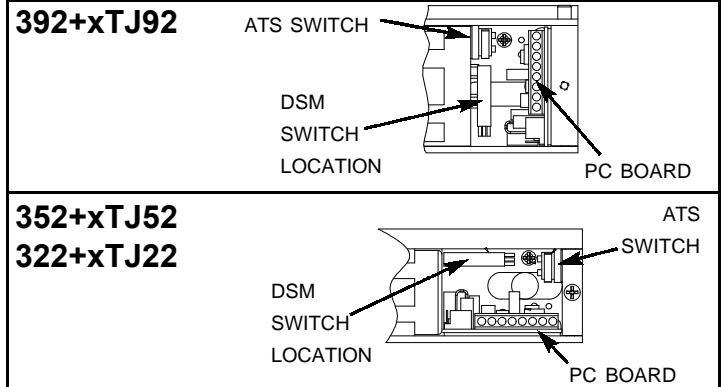


**ATS: (OPTIONAL)** Anti Tamper Switch: Contacts shown with cover removed.

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GREEN: N.O.  
RATING: 1A@30VDC



### WIRING CAVITY COMPONENT LOCATION:



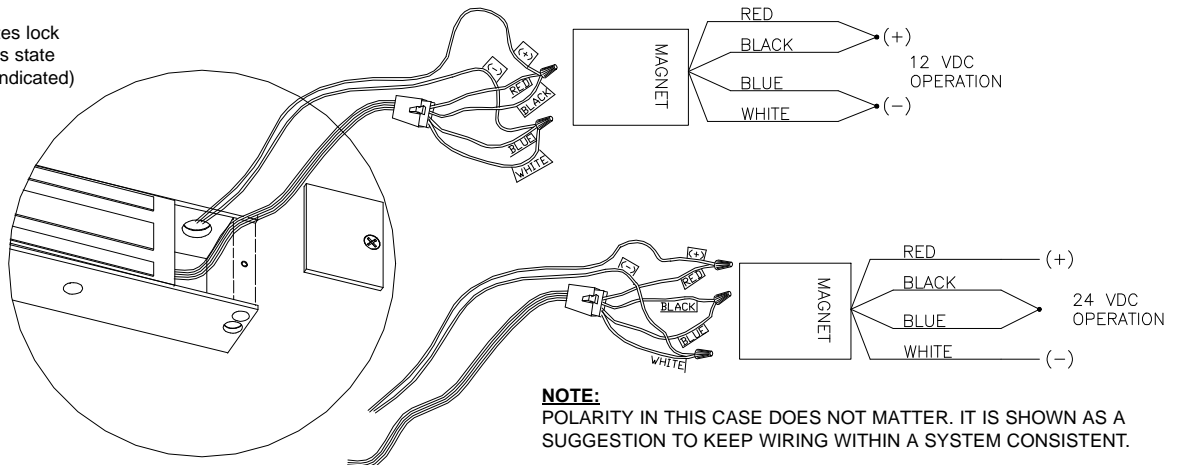
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(RATING: 0.250A@30VDC)

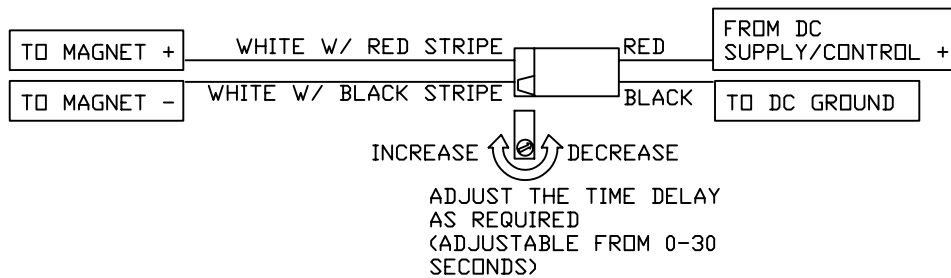
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RED: N.C.  
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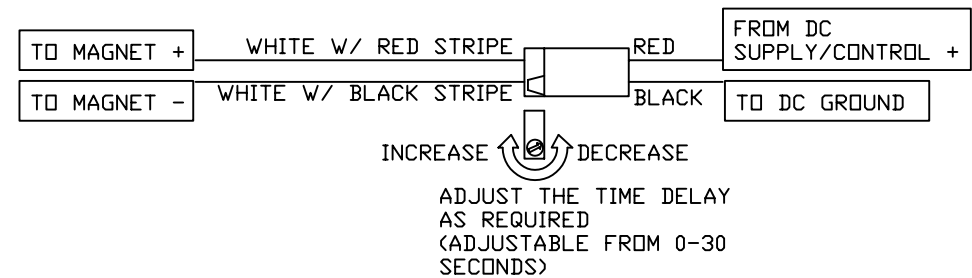


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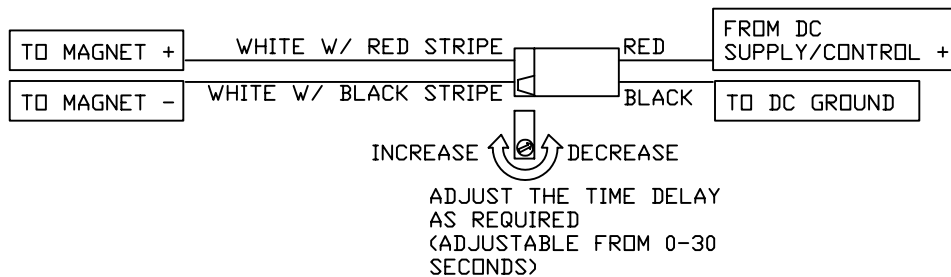


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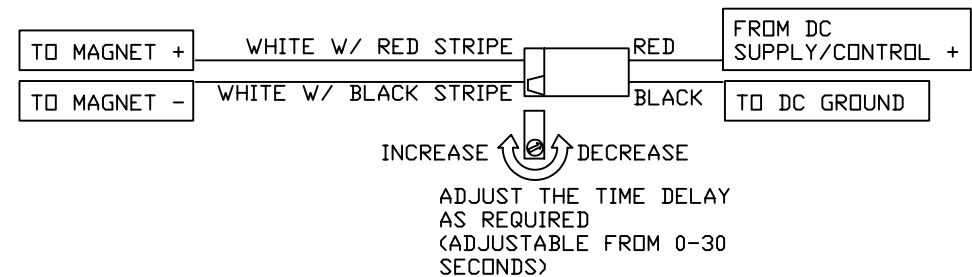


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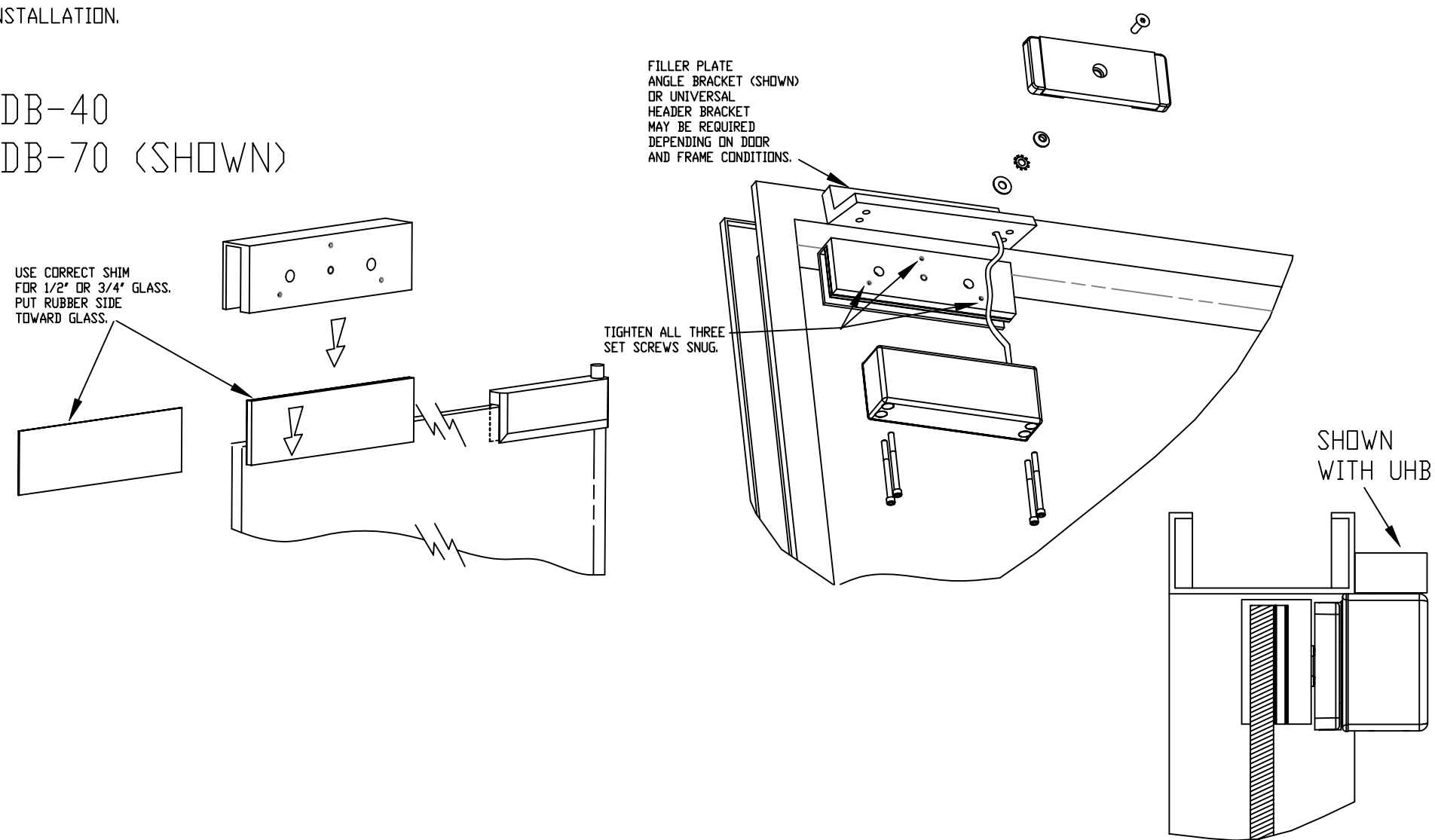
# LOCKNETICS®

## 40 & 70 SERIES MAGNETIC LOCK ACCESSORIES

THE PICTURES ON THIS SHEET SHOW MANY TYPICAL SITUATIONS WHICH CAN BE HELPED BY USING THE AVAILABLE MOUNTING ACCESSORIES. ALWAYS BE SURE THAT THE MAGNETIC LOCK IS PROPERLY FASTENED TO THE DOOR AND FRAME FOR A SECURE AND SAFE INSTALLATION.

HDB-40

HDB-70 (SHOWN)



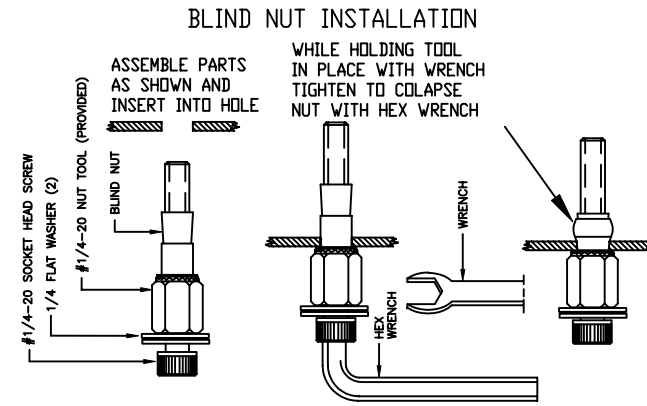
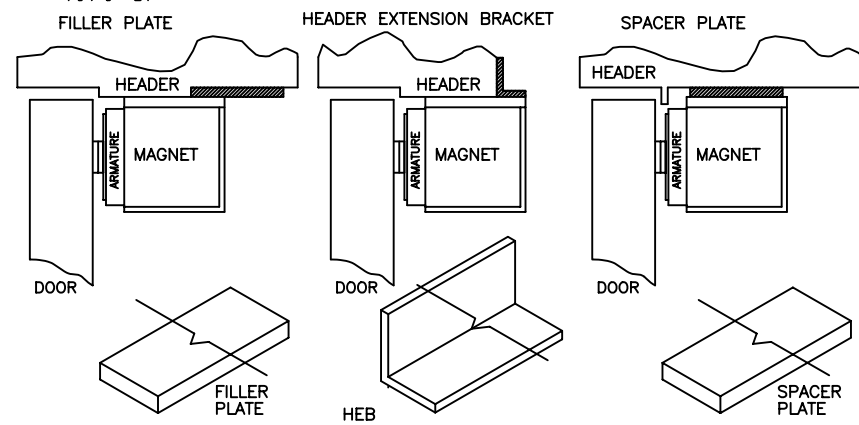
P/N 700251  
11/21/03

4070-1F  
4070-2F  
4070-3F  
4070-4F  
4070-5F

HEB

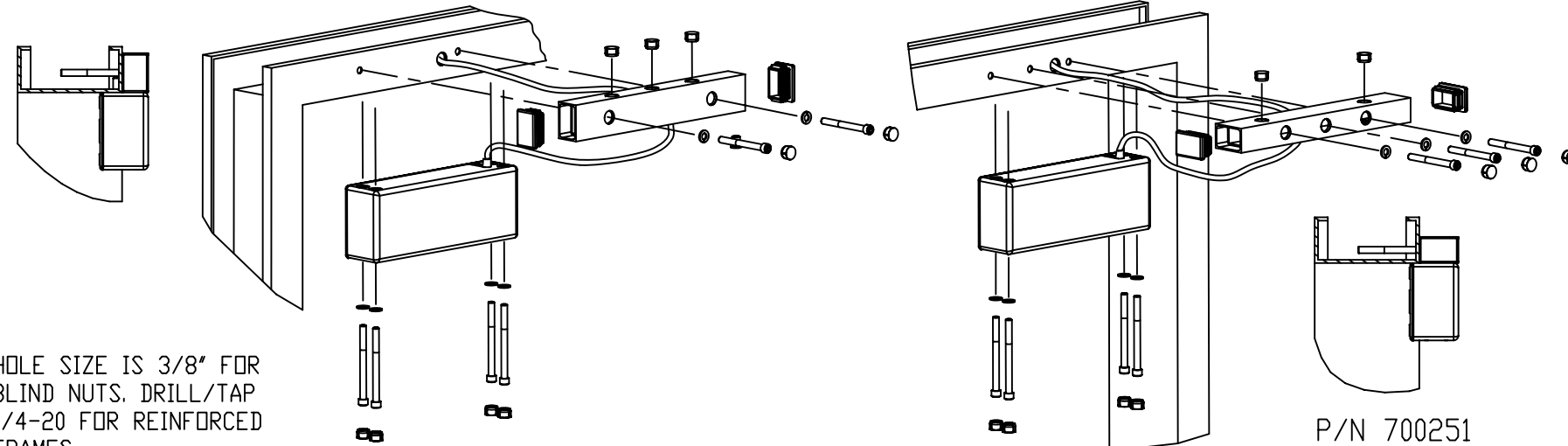
ASB-40  
ASB-70  
FOR BLADE STOP SPACING

CWB-40  
CWB-70 (SHOWN)  
CONCRETE/WOOD BRACKET

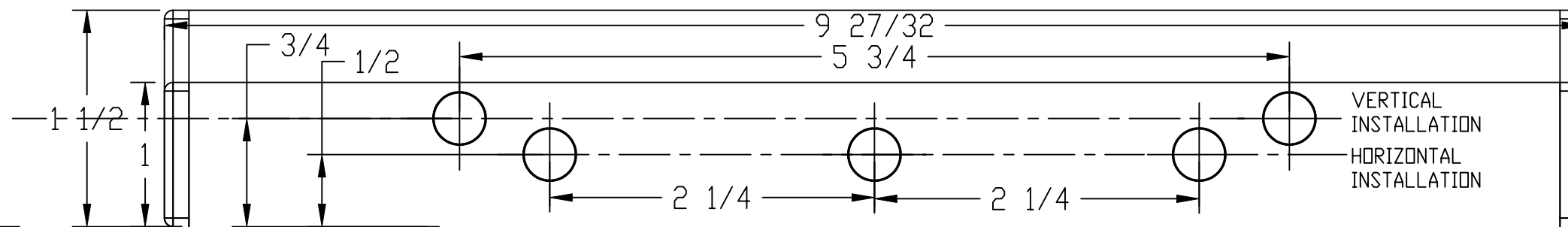


UHB MOUNTED VERTICALLY

UHB MOUNTED HORIZONTALLY



P/N 700251  
11/21/03



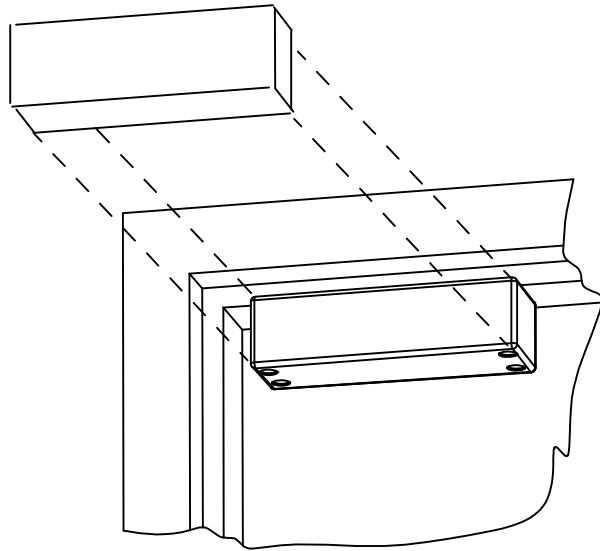
# LOCKNETICS®

40 & 70 SERIES MAGNETIC LOCK

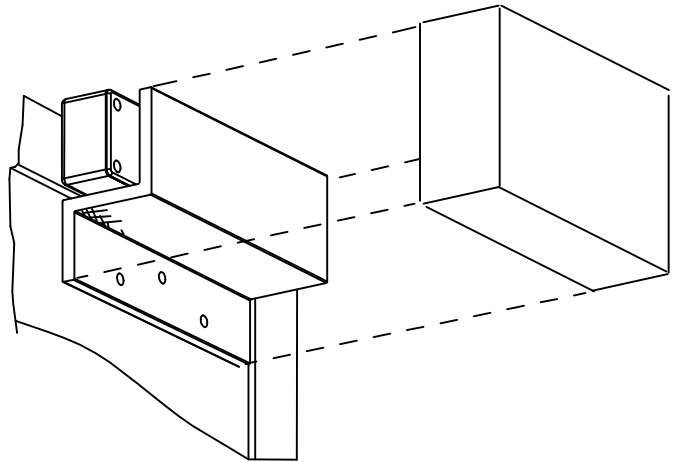
## DRESS COVER INSTALLATION

AFTER INSTALLING MAGNETIC  
LOCK AND FINAL ADJUSTMENT,  
REMOVE STICKY TAPE BACKING  
FROM INSIDE DRESS COVERS AND  
APPLY TO LOCK AS SHOWN.

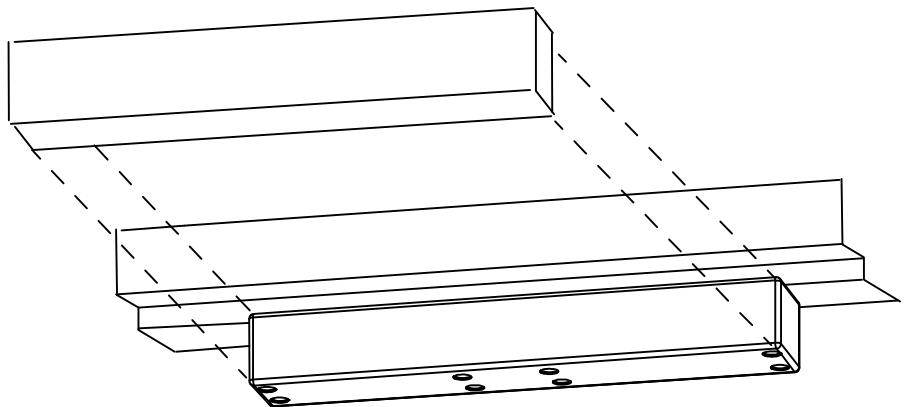
### 40/70 APPLICATION



### 40/70 TJ APPLICATION



### 72 APPLICATION



# LOCKNETICS.

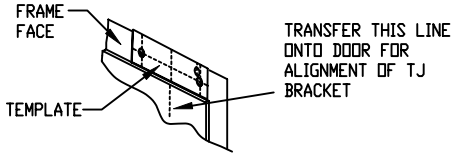
## 40TJ SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

# TEMPLATE & INSTALLATION SHEET

THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

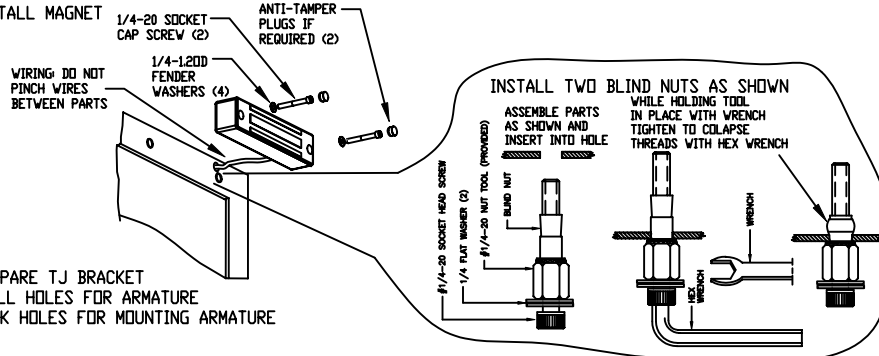
- ① PLACE TEMPLATE ON FRAME FACE AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.



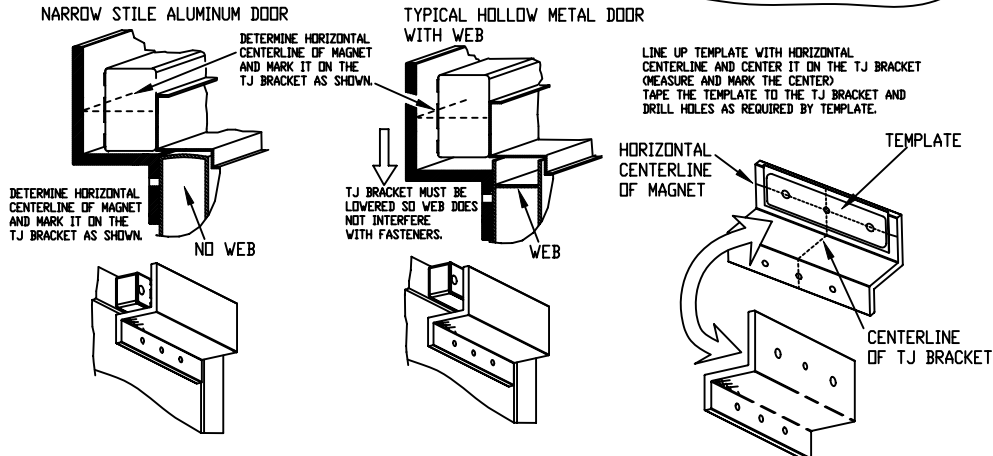
- ② MAKE WIRING CONNECTIONS (AFTER INSTALLING BLIND NUTS - SEE STEP 3)

WIRING:	(+) 0.300 AMP @ 12VDC
RED:	(-) 0.150 AMP @ 24VDC
BLACK:	
WHITE:	MBS C } 1 AMP MAX.
GREEN:	MBS ND } @ 30VDC
ORANGE:	MBS NC } @ 30VDC
YELLOW:	DSM C } 0.10 AMP MAX.
BLUE:	DSM ND } @ 30VDC
BROWN:	DSM NC } @ 30VDC

- ③ INSTALL MAGNET



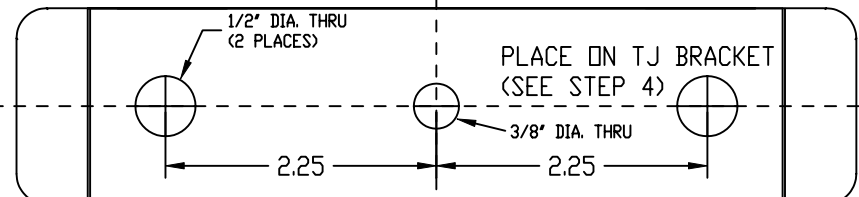
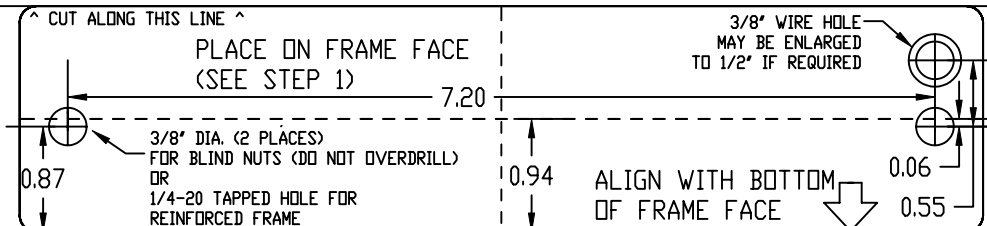
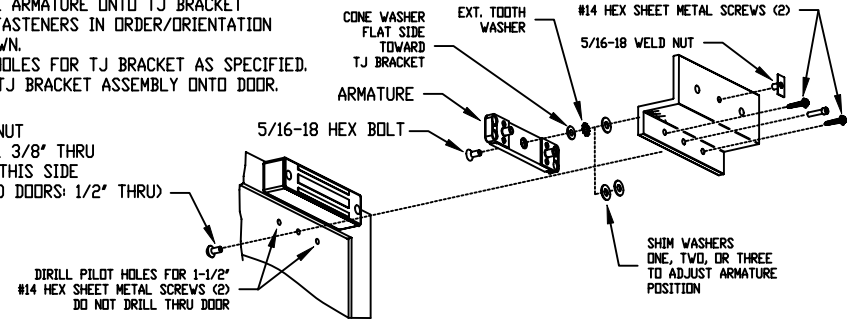
- ④ PREPARE TJ BRACKET  
DRILL HOLES FOR ARMATURE  
MARK HOLES FOR MOUNTING ARMATURE



PART NUMBER 700196

- ⑤ INSTALL ARMATURE ONTO TJ BRACKET USING FASTENERS IN ORDER/ORIENTATION AS SHOWN. DRILL HOLES FOR TJ BRACKET AS SPECIFIED. MOUNT TJ BRACKET ASSEMBLY ONTO DOOR.

SEX NUT  
DRILL 3/8" THRU 1/2" THIS SIDE (WOOD DOORS: 1/2" THRU)



PART NUMBER 700196

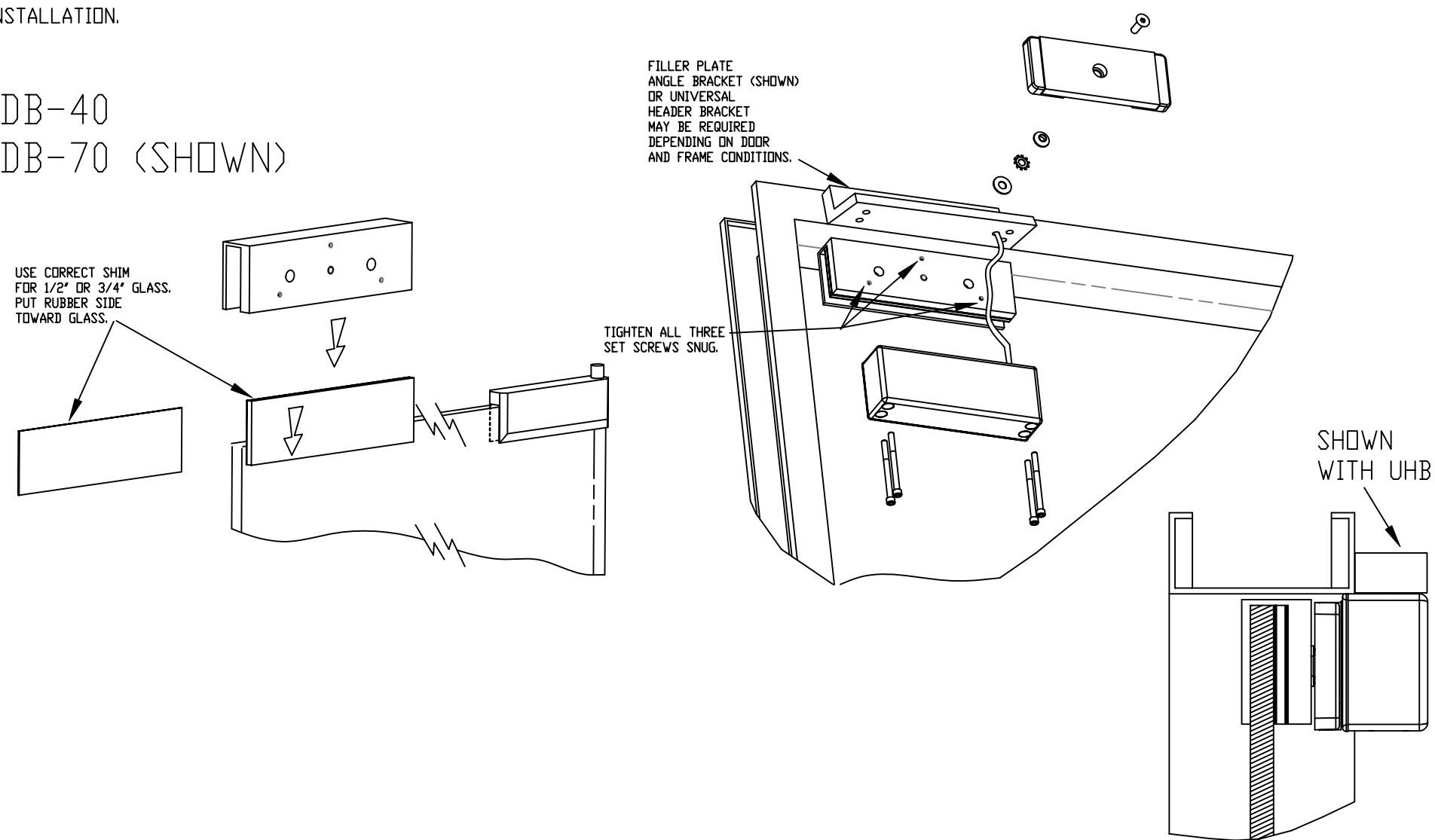
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HDB-40

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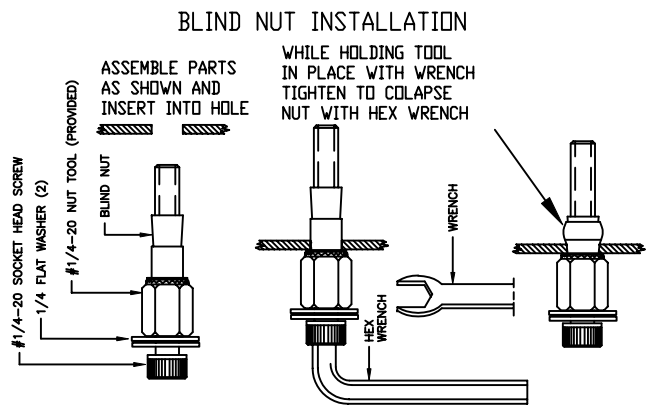
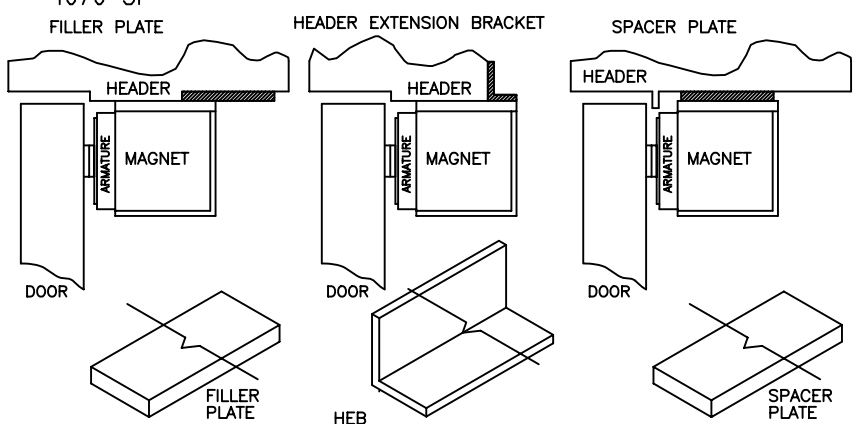
P/N 700251  
11/21/03

4070-1F  
4070-2F  
4070-3F  
4070-4F  
4070-5F

HEB

ASB-40  
ASB-70  
FOR BLADE STOP SPACING

CWB-40  
CWB-70 (SHOWN)  
CONCRETE/WOOD BRACKET

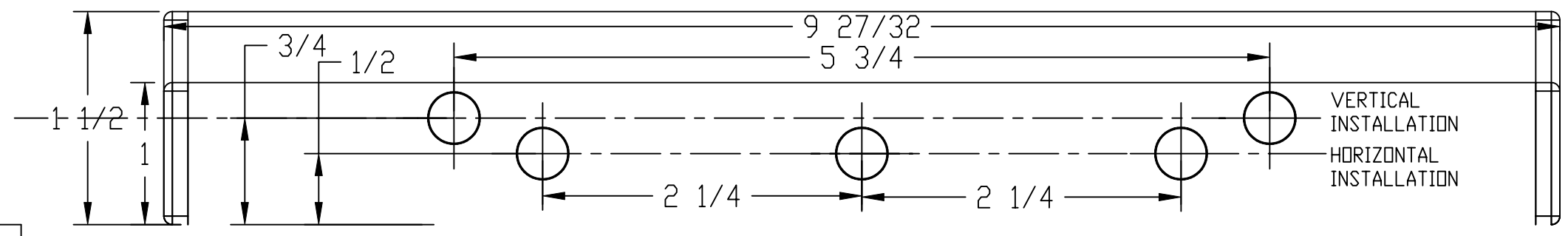


UHB MOUNTED VERTICALLY

UHB MOUNTED HORIZONTALLY

HOLE SIZE IS 3/8" FOR  
BLIND NUTS. DRILL/TAP  
1/4-20 FOR REINFORCED  
FRAMES

P/N 700251  
11/21/03

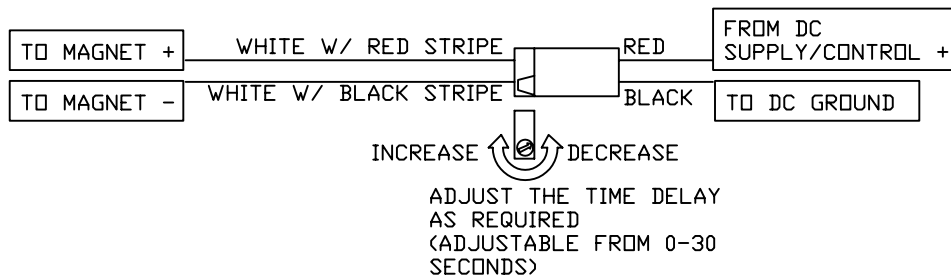


VERTICAL  
INSTALLATION  
HORIZONTAL  
INSTALLATION



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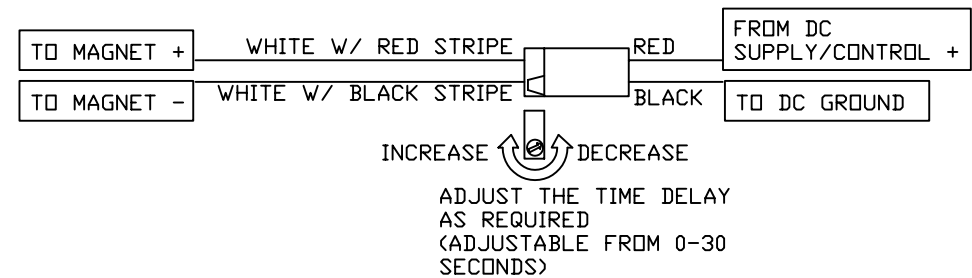


FORM 39476

01-29-2004

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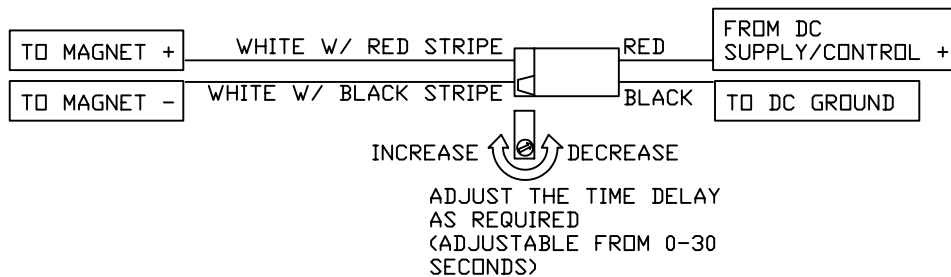


FORM 39476

01-29-2004

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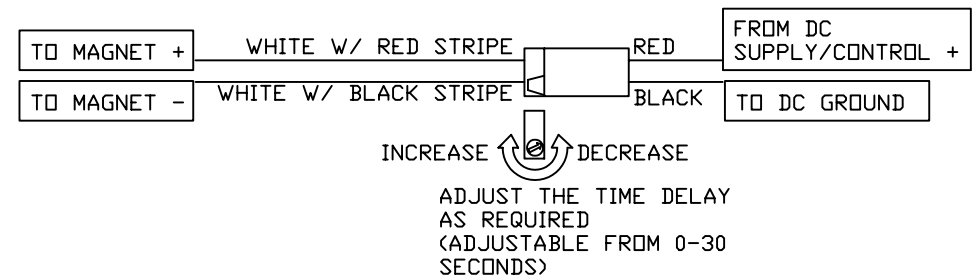


FORM 39476

01-29-2004

# RTD MODULE

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FORM 39476

01-29-2004

# LOCKNETICS.

## 70TJ SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED) - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

# TEMPLATE & INSTALLATION SHEET

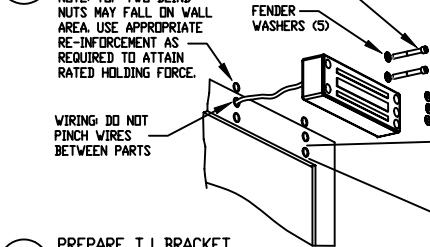
THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

1 PLACE TEMPLATE ON FRAME FACE AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.

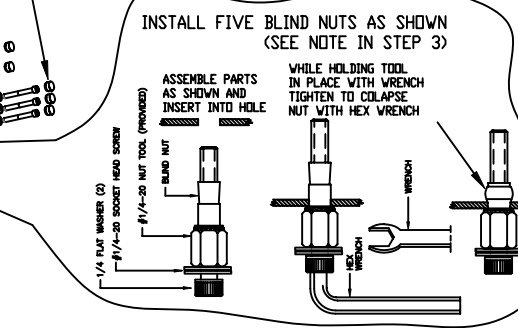
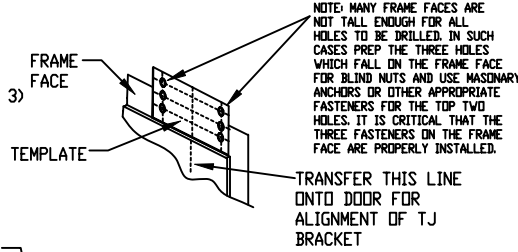
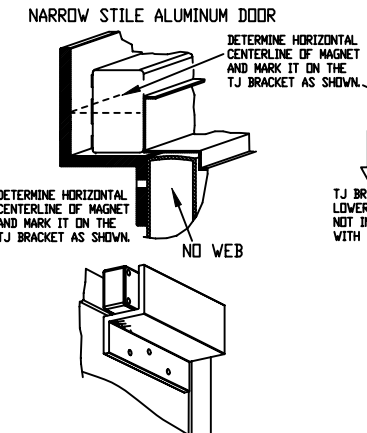
2 MAKE WIRING CONNECTIONS (AFTER INSTALLING BLIND NUTS - SEE STEP 3)

WIRING:		
RED:	(+)	0.300 AMP @ 12VDC
BLACK:	(-)	0.150 AMP @ 24VDC
WHITE:	MBS C	1 AMP MAX. @ 30VDC
GREEN:	MBS ND	
ORANGE:	MBS NC	
YELLOW:	DSM C	0.10 AMP MAX. @ 30VDC
BLUE:	DSM ND	
BROWN:	DSM NC	

3 INSTALL MAGNET  
NOTE: TOP TWO BLIND NUTS MAY FALL ON WALL AREA. USE APPROPRIATE RE-INFORCEMENT AS REQUIRED TO ATTAIN RATED HOLDING FORCE.

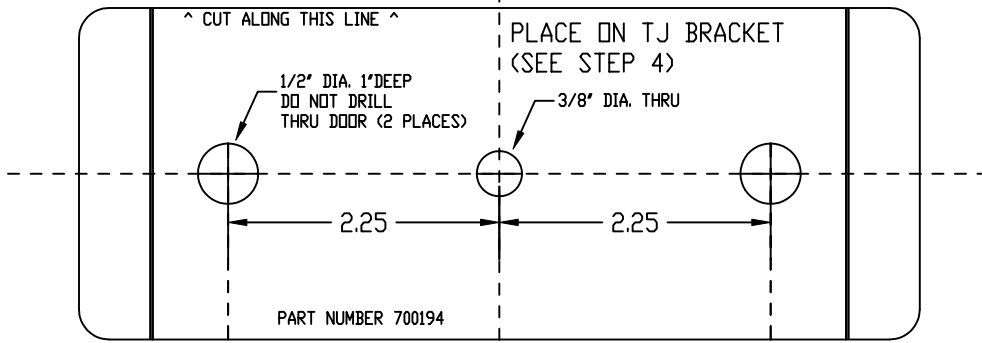
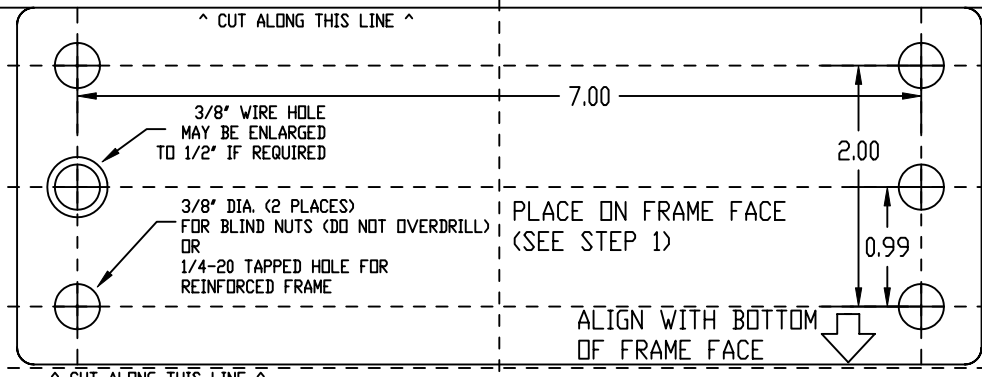
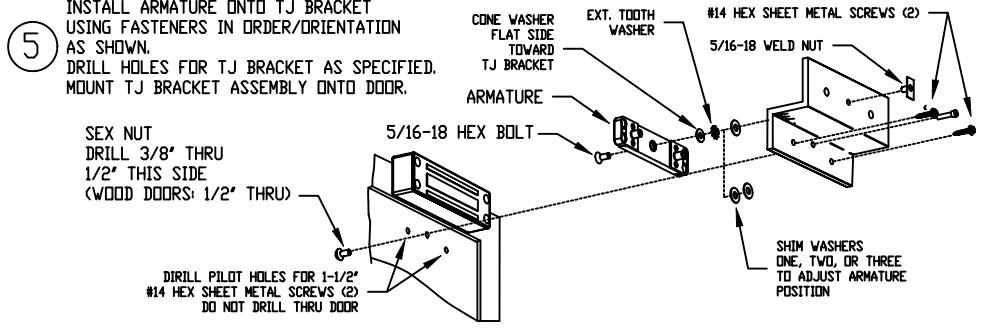


4 PREPARE TJ BRACKET  
DRILL HOLES FOR ARMATURE  
MARK HOLES FOR MOUNTING ARMATURE



5 INSTALL ARMATURE ONTO TJ BRACKET USING FASTENERS IN ORDER/ORIENTATION AS SHOWN.  
DRILL HOLES FOR TJ BRACKET AS SPECIFIED.  
MOUNT TJ BRACKET ASSEMBLY ONTO DOOR.

SEX NUT  
DRILL 3/8" THRU 1/2" THIS SIDE (WOOD DOORS: 1/2" THRU)



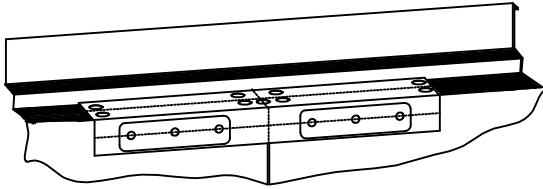
# LOCKNETICS®

## 72 SERIES MAGNETIC LOCK

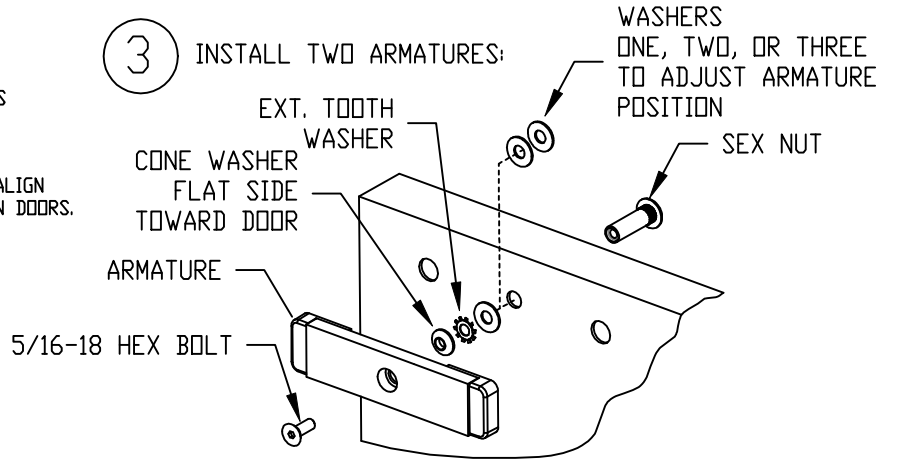
# INSTALLATION SHEET

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING WASHERS.

- 1 PLACE TEMPLATE ON DOOR AND FRAME AS SHOWN. ALIGN CENTER OF TEMPLATE WITH PARTING LINE BETWEEN DOORS. TAPE IN PLACE AND DRILL REQUIRED HOLES.

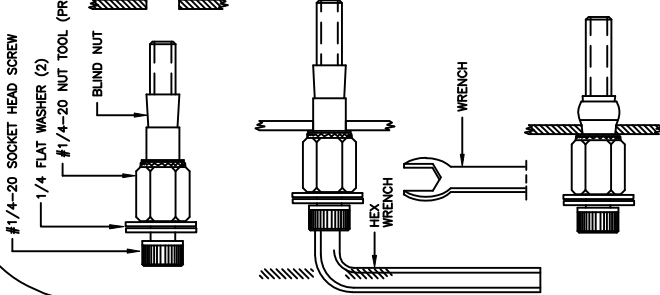


- 3 INSTALL TWO ARMATURES:

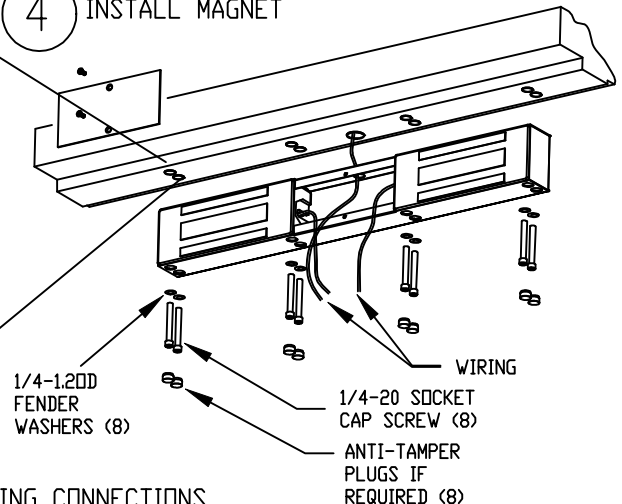


- 2 INSTALL EIGHT BLIND NUTS AS SHOWN

ASSEMBLE PARTS AS SHOWN AND INSERT INTO HOLE WHILE HOLDING TOOL IN PLACE WITH WRENCH TIGHTEN TO COLAPSE NUT WITH HEX WRENCH



- 4 INSTALL MAGNET

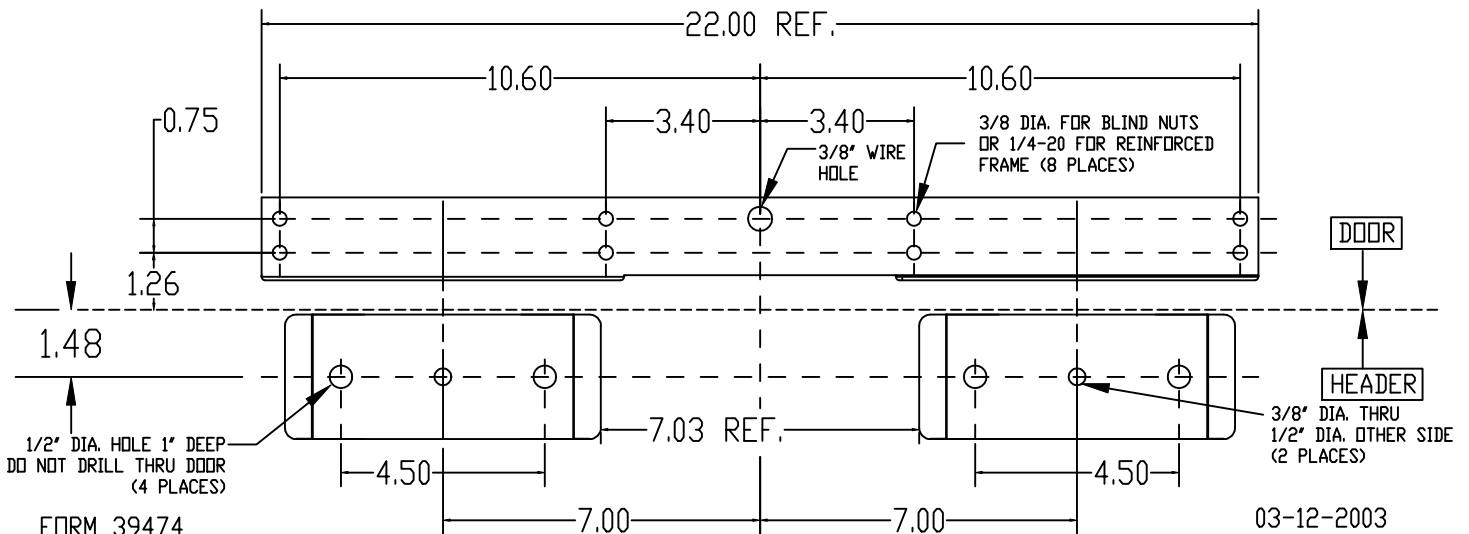


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- 5 MAKE WIRING CONNECTIONS AND INSTALL WIRE COVER.

WIRING:	(CURRENT PER MAGNET)
RED:	(+) } 0.300 AMP @ 12VDC
BLACK:	(-) } 0.150 AMP @ 24VDC
WHITE:	MBS C } 1 AMP MAX.
GREEN:	MBS NO } @ 30VDC
ORANGE:	MBS NC }
YELLOW:	DSM C } 0.10 AMP MAX.
BLUE:	DSM NO } @ 30VDC
BROWN:	DSM NC }

## 72 TEMPLATE: NOT TO SCALE





30500

# GF3000



## INSTALLATION MANUAL

### Models Covered: Standard, TRD, BRD, SM, and TJ

GF3000 (Standard Model)	GF3000TRD	GF3000BRD
GF3000SM	GF3000TJ	

**Gravity Force Shear Locks:  
Mortise & Surface Mount**

**Customer Service**  
 1-877-671-7011    [www.allegion.com/us](http://www.allegion.com/us)



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 30500 1/15-f

# GF3000 SERIES INSTALLATION MANUAL

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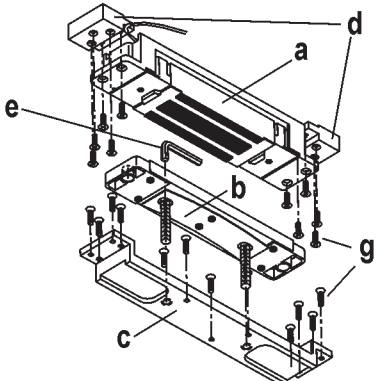
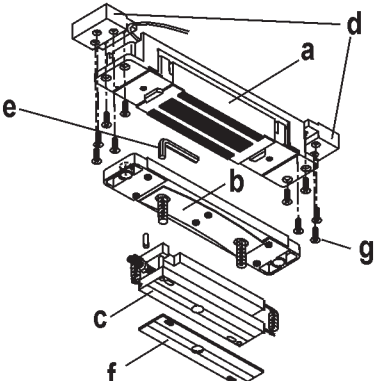
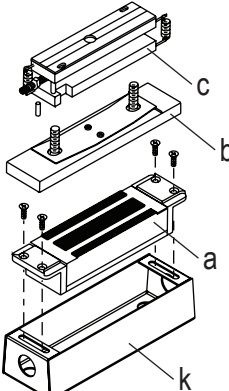
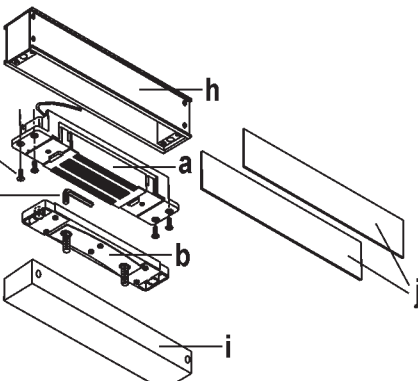
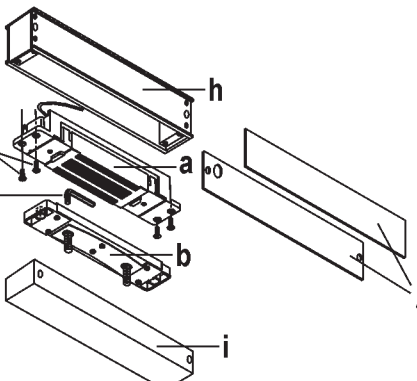
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# GF3000 SERIES INSTALLATION MANUAL

## Confirming the Box Contents

### Confirming the Box Contents

<p>GF3000(STANDARD)</p> 	<p>GF3000TRD</p> 	<p>GF3000BRD</p> 
<p>GF3000SM</p> 	<p>GF3000TJ</p> 	

a - MAGNETIC COIL ASSEMBLY  
b - ARMATURE  
c - ARMATURE MOUNTING ASSEMBLY  
d - MOUNTING TABS  
e - HEX WRENCH  
f - SHIM PLATE  
g - HARDWARE PACK  
h - MAGNETIC COIL HOUSING  
i - ARMATURE HOUSING  
j - FACE PLATES  
k - THRESHOLD BOX

# GF3000 SERIES INSTALLATION MANUAL

## *Introduction / Tools and Materials Needed / Contact Info*

---

### **Introduction**

This manual covers the complete installation and wiring instructions for the following GF3000 Series models:

#### **MORTISE:**

- GF3000 (Standard model)
- GF3000TRD (Top Rail Door)
- GF3000BRD (Bottom Rail Door)

#### **SURFACE MOUNT:**

- GF3000SM (Surface Mount)
- GF3000TJ (Top Jamb)

### **Tools and Materials Needed Not Included in Box**

Whichever model you are installing, you should have all of the following tools on hand:

- Pencil
- Tape Measure
- Hammer
- Center Punch
- Power Drill w/Set of Drill Bits
- Chisel
- Small Sawsall or other metal cutting saw
- Set of Hex (Allen) Wrenches
- Set of Philips Head Screwdrivers
- Electrical Tool Kit (containing: wire cutter/stripper, electrical tape, needle-nose pliers, etc.)

If you are installing a GF3000BRD, you might also need:

- Pavement Breaker or Demolition Hammer

**Contact Information:** 1-877-671-7011

# GF3000 SERIES INSTALLATION MANUAL

## Specifications

---

### Specifications:

#### Electrical

Input Voltage . . . . .	Filtered, regulated 12 or 24 VDC (auto voltage selection)
Input Current . . . . .	0.9 Amps at 12VDC, 0.45 Amps at 24VDC
Adjustable Time Delay (ATD) . . . . .	Adjustable from 2 to 30 seconds.
. . . . .	Factory default: expect approx. 3-5 seconds.
Automatic Relock Switch (ARS) . . . . .	Integral magnetic reed switch
Optional Monitoring Outputs (Standard, TRD, SM, and TJ)	
DSM . . . . .	Contact rating - 0.1 Amps maximum at 28VDC
MBS . . . . .	Contact rating - 0.2 Amps maximum at 30VDC
Optional Monitoring Outputs (BRD)	
DSM . . . . .	Contact rating -0.2 Amps maximum @ 30VDC
MBS . . . . .	Contact rating - 0.1 Amps maximum @ 24VDC

#### Mechanical

Mounting Position/Type . . . . .	Horizontally. Mortise and Surface. Non-handed
Shear Holding Force . . . . .	3000 pounds maximum
Door Thickness . . . . .	1-3/4" minimum
Plating . . . . .	Magnetic face and armature; nickel plated to resist corrosion
<u>Warranty</u> . . . . .	Magnetic coil: Lifetime    Electronics: 1 year limited
<u>Certifications/Compliance</u> . . . . .	UL# R12092; MEA# 222-96-E; CSFM# 3774-0544:107
<u>Shipping Weight</u> . . . . .	GF3000 - 6 Pounds;    GF3000TRD & BRD - 8 Pounds
Dimensions - Mortise Mount . . . . .	Magnet - 9.5L x 1.5W x 1.5H
. . . . .	Magnet w/Mounting Tabs - 11.56L x 1.5W x 1.5H
. . . . .	Armature - 8.38L x 1.38W x 0.5D
. . . . .	Armature Bracket - 10.63L x 1.38W x 1.0D
Dimensions - Surface Mount . . . . .	Magnet Housing - 9.81L x 1.25H x 1.5D
. . . . .	Armature Housing - 8.38L x 1.38W x 0.5D

### Operation:

A shear lock is designed to rely on the shear strength of steel for holding force. A strong magnet is energized that attracts an armature which overcomes an air gap to engage with the magnet. The magnet and the armature, besides being bonded by magnetic force, are also designed to mechanically interlock. This gives the system 3000 pounds of holding force. Because of this design, precise door and frame preparation is necessary. Also important is that the centerlines of the magnet and armature line up to form a vertical axis. It is also critical that the air gap be adjusted to be as close as possible without interfering with door operation. This ensures the best reliability possible.



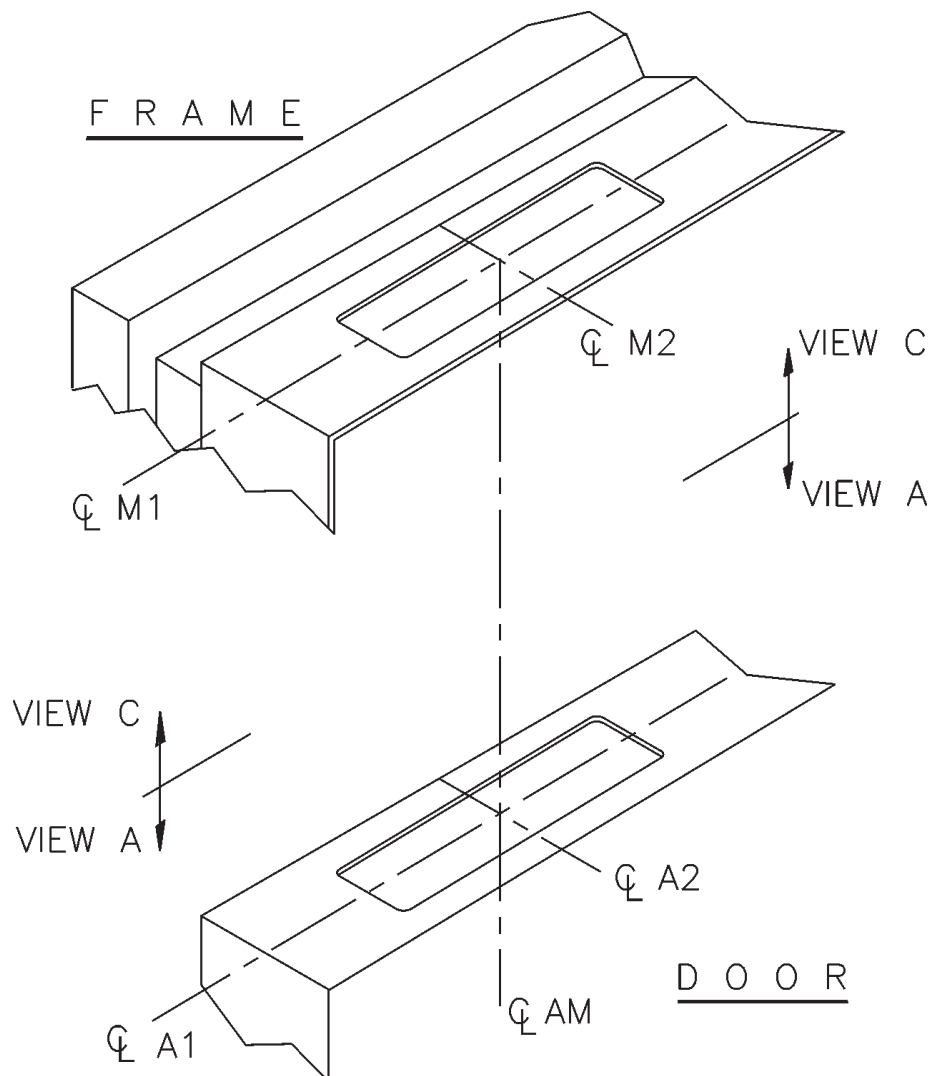
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Preparing the Frame and Door

#### 1) Establish Frame and Door Centerlines (Standard and TRD):

- For proper operation, it's critical to establish centerlines of magnet and armature assembly that line up to form a vertical axis. The figure below shows the centerline scheme for a standard GF3000 and a GF3000TRD. Note that centerlines for magnet (M1 and M2) are directly above centerlines for armature assembly (A1 and A2) thus forming a vertical axis (AM).
- Check door & frame for any structural member or hardware component that might interfere with magnet and armature mounting areas before selecting template location.
- Remove existing hung doors for template application and armature installation.
- The standard model GF3000 can be installed in a horizontal or vertical configuration.
- To achieve maximum resistance to forced entry, position as follows:
  - > Horizontal configuration - position unit closest to the latch side of door.
  - > Vertical configuration - positioning unit closest to the strike plate is recommended.
- In some applications, the door and frame may require reinforcement.

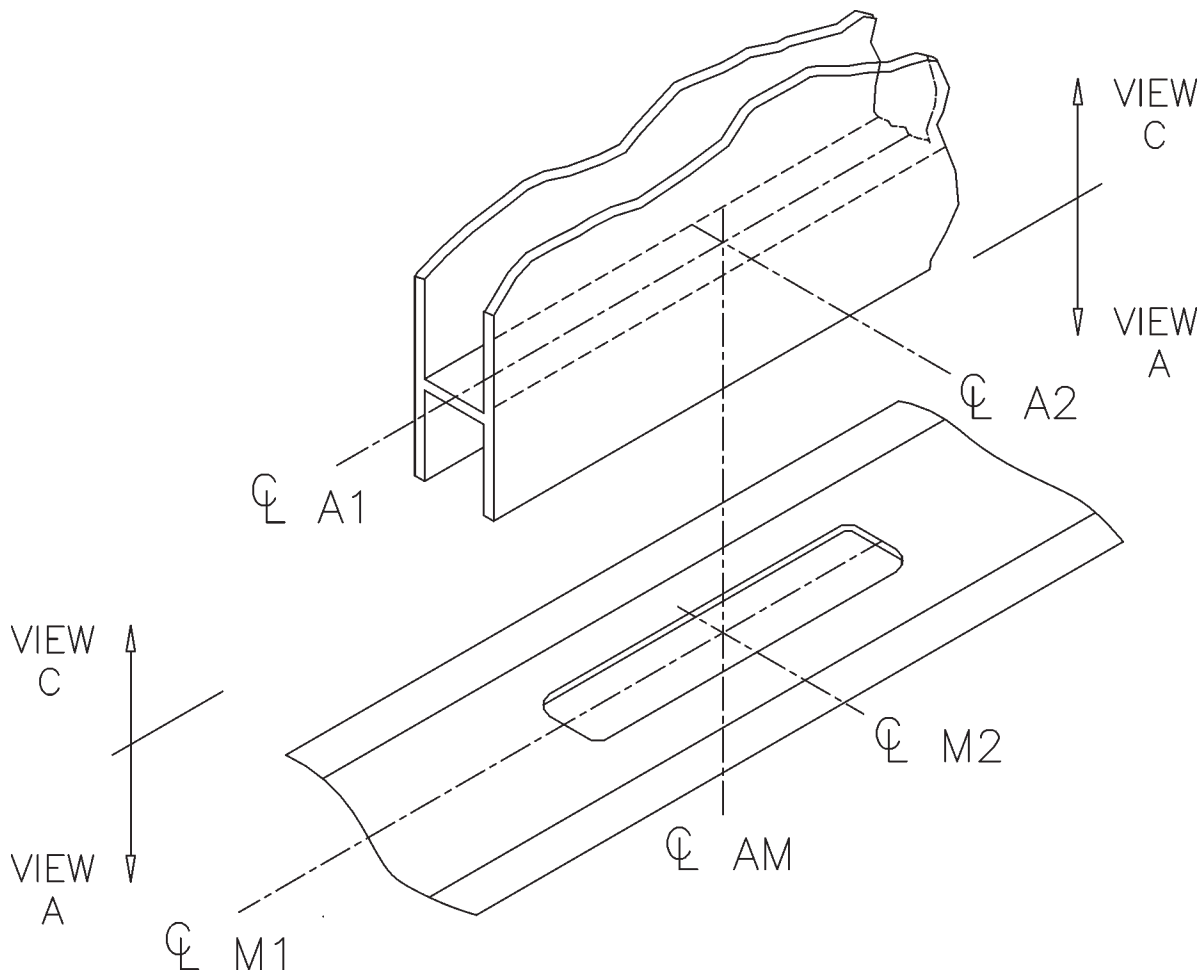


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 1) Establish Frame and Door Centerlines (BRD):

- For proper operation, it's critical to establish centerlines of the magnet and armature assembly that line up to form a vertical axis. The figure below shows the centerline scheme for a GF3000BRD. Note that centerlines for magnet (M1 and M2) are directly below centerlines for armature (A1 and A2) thus forming a vertical axis (AM).
- To achieve maximum resistance to forced entry, position unit closest to latch side of door.
- Adjusting screw must be accessible with a long bladed screwdriver when door is hung.
- Check both door & frame for any structural member or hardware component that might interfere with magnet and armature mounting areas before selecting template location.
- Existing hung doors will normally have to be removed for template application and armature installation.
- In some applications, the door and frame may require reinforcement.



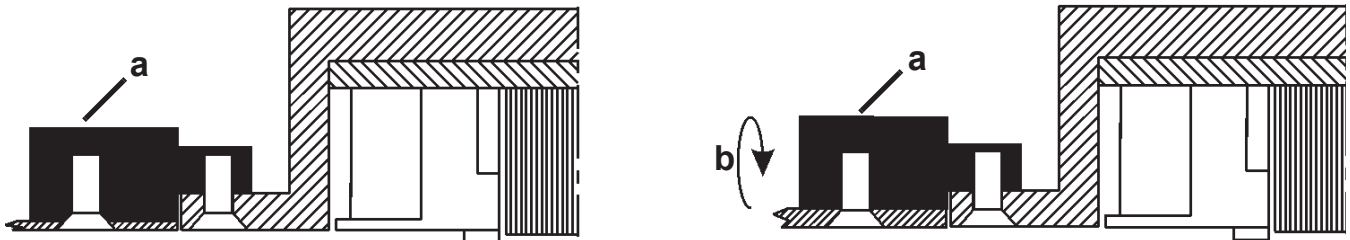
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Installing the Lock - Standard, TRD, TJ, SM

#### 1) Mounting Tabs (Standard, TRD):

Secure two mounting tabs (a) to ends of lock cutout in frame. Mounting tabs can be installed upside-down (b) so that they may be used with 16 gauge hollow metal or 1/8" thick aluminum frames.



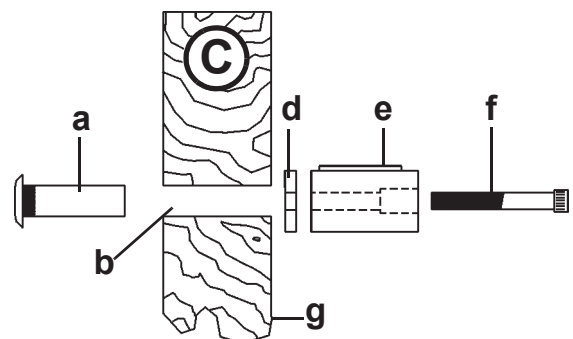
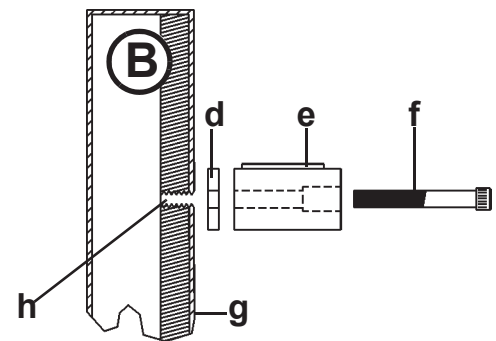
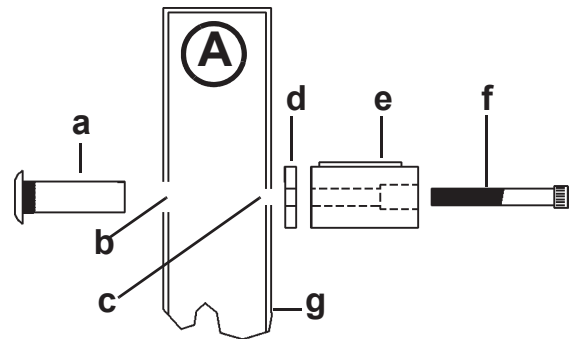
#### 2) Surface Mount Armature Housing Sex Bolt Hole Sizes (TJ, SM):

##### Door Types:

- A = Hollow Metal
- B = Reinforced
- C = Solid Wood

##### Hole Sizes and Parts:

- a = sex bolt
- b = 1/2" hole
- c = 1/4" hole
- d = mounting spacer
- e = armature
- f = 1/4-20 x 2
- g = inside of door
- h = 1/4-20 threaded hole (thru reinforced side of door only)



# GF3000 SERIES INSTALLATION MANUAL

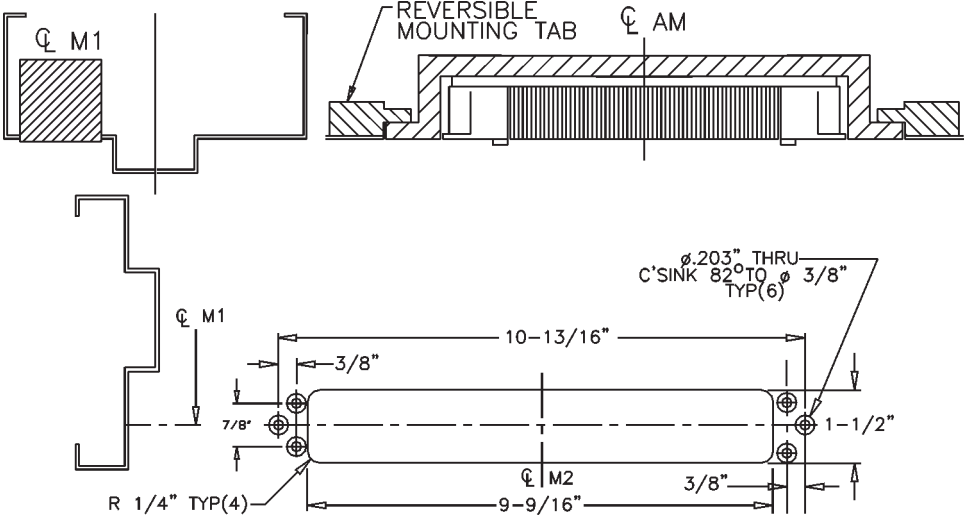
## Installing a GF3000 Series Lock

### • FRAME AND DOOR PREP - Standard, TRD, TJ, SM

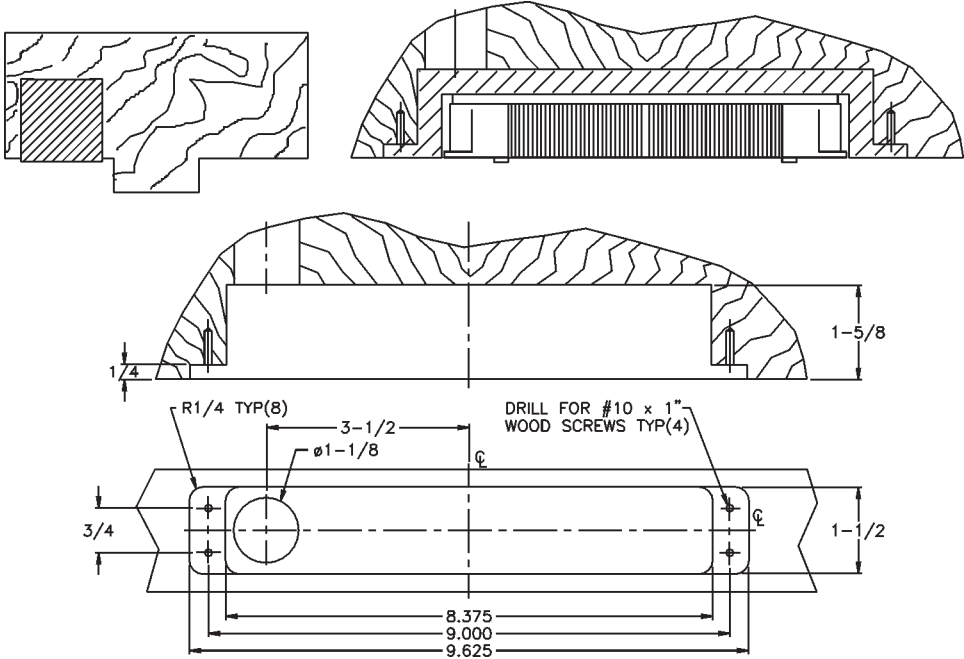
#### 3) Frame Prep (Standard and TRD):

- The frame prep is the same for the Standard and the TRD models. The door prep for the standard model has many options (see - ) depending on the depth of the channel (if any). The TRD model has a specific prep of its own (see - ). The lock should be located as close to the strike side as possible while still allowing room for the mounting tabs and screws.

#### Frame Prep - Hollow Metal or Aluminum



#### Frame Prep - Wood



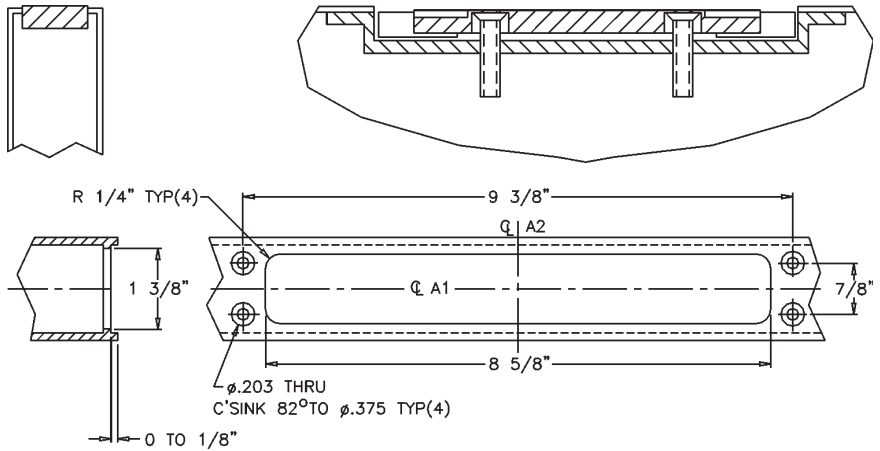
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 4) Door Prep (Standard and TRD):

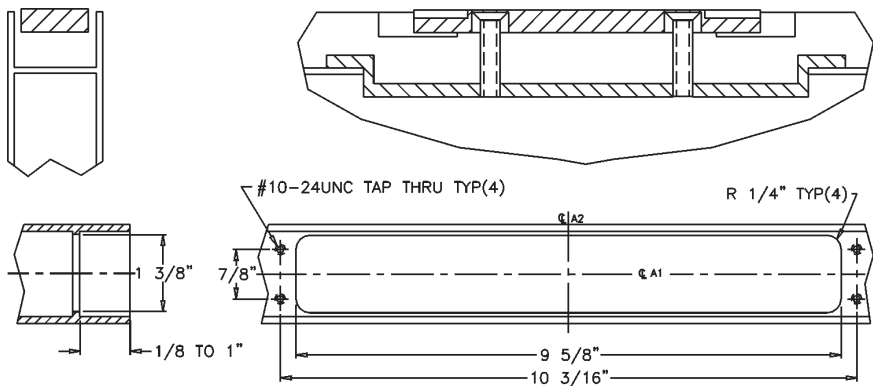
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: flush to 1/4"



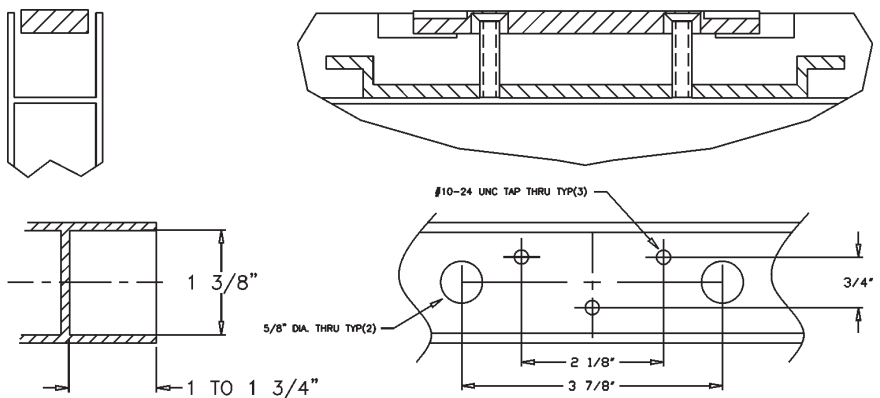
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1/4" to 1"



#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1/4" to 1-3/4"



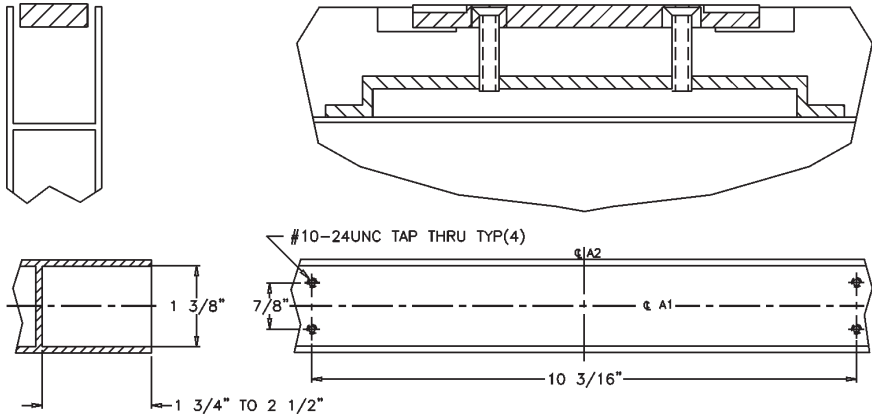
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Standard and TRD Door Prep (continued):

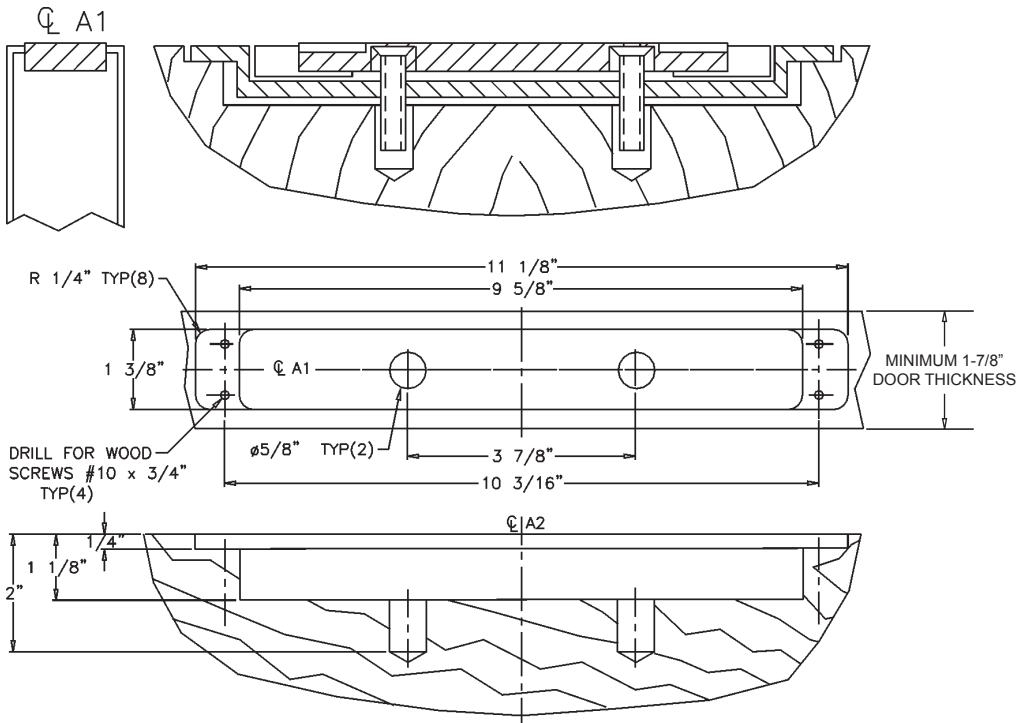
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1-3/4" to 2-1/2"



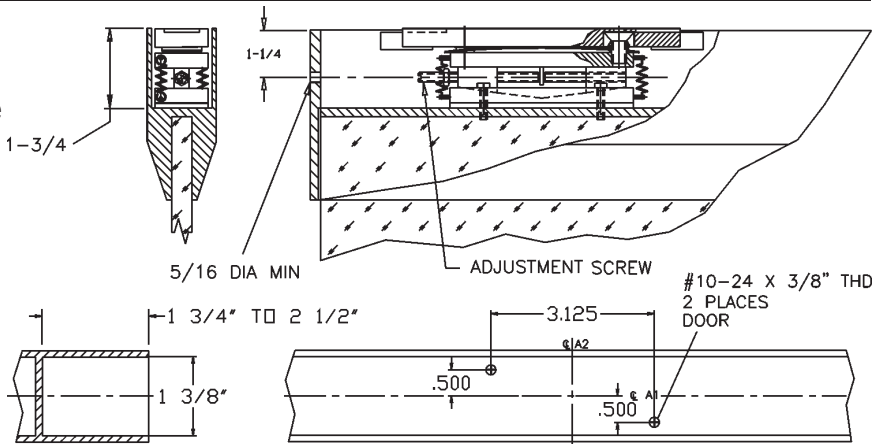
#### DOOR PREP

- Wood



#### DOOR PREP - TRD

- Hollow Metal or Aluminum door where the top adjustment is not accessible.
- Depth: 1-3/4"

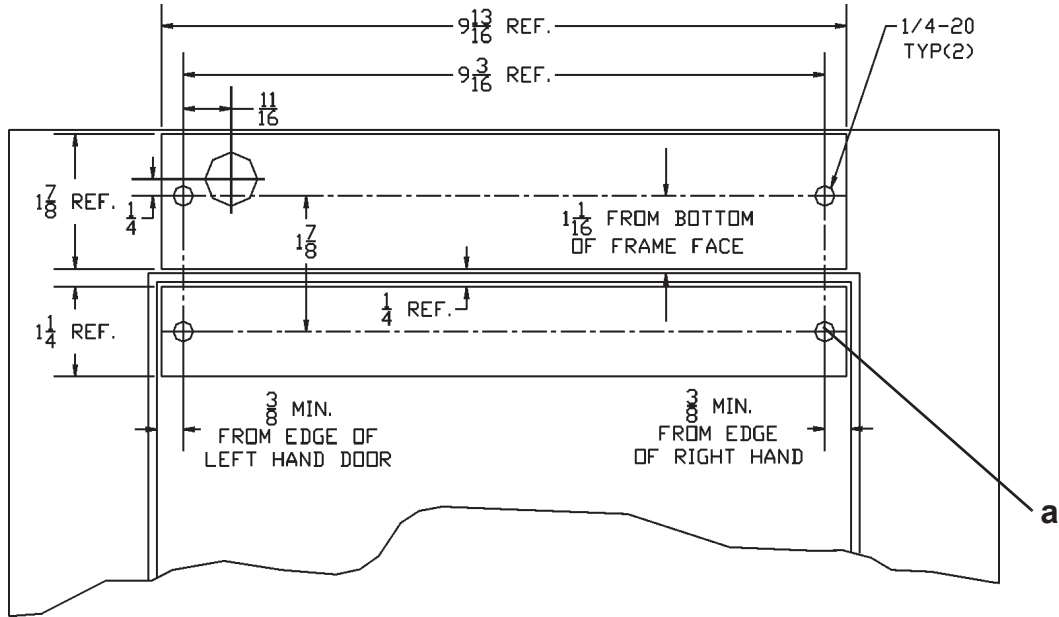


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 5) Template information (TJ):

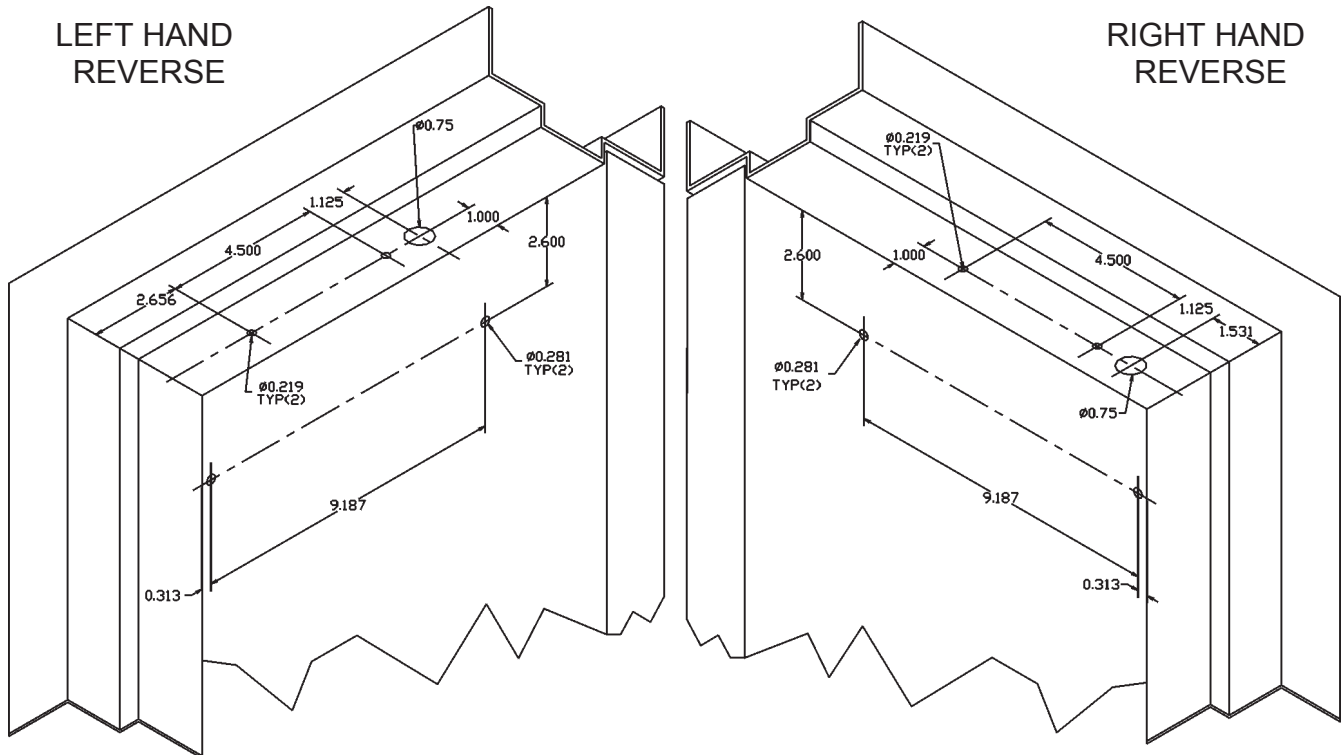
All dimensions in inches.



**NOTE: Hole (a) - size and type depends on door type and mounting style.**

### 6) Template information (SM):

All dimensions in inches.



# GF3000 SERIES INSTALLATION MANUAL

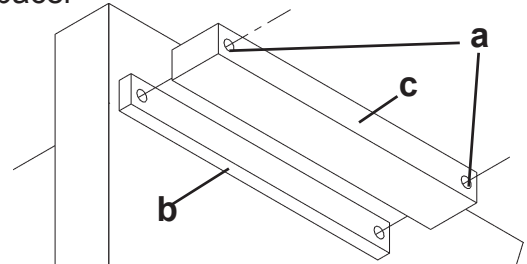
## Installing a GF3000 Series Lock

### Mounting the Lock - Standard, TRD, TJ, SM

After the door and frame have been prepared, do the following:

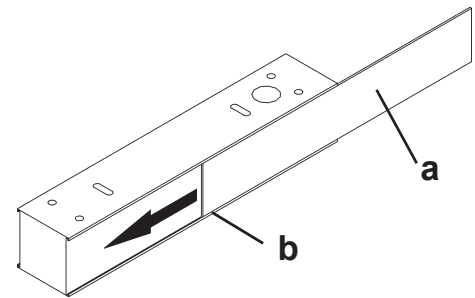
#### 1) Install Armature Mounting Spacer:

- Using two, 1/4 x 20 screws, secure mounting spacer (b) and armature housing (c) onto door.
  - > Use through-holes (a).



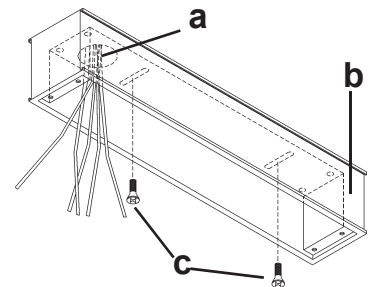
#### 2) Install Faceplate:

- Install faceplate (a) into magnet housing.
- Tighten set screws (b).



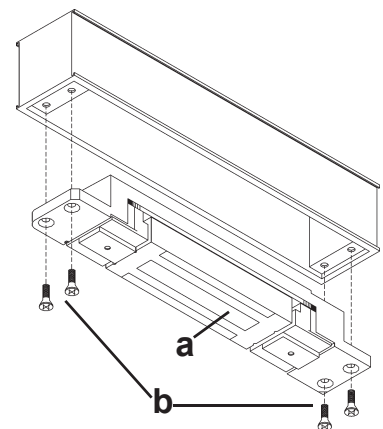
#### 3) Attach Magnet Housing to Frame:

- Carefully feed wires through access hole (a) in magnet housing (b).
- Using either two, 10 x 3/4 sheet metal screws or two, 10 x 1/2 machine screws (c), loosely attach magnet housing to frame.
  - > **DO NOT COMPLETELY TIGHTEN AT THIS TIME**



#### 4) Install Magnet:

- Make final wiring connections (see **Wiring Diagram: on page 21**).
- Insert GF3000 magnet (a) into magnet housing.
- Using four, 10-24 x 1/2 screws (b), secure mounting spacer and armature housing onto door.





# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Installing the Lock - BRD

#### • INSTALLING THE MAGNET AND ARMATURE

##### 1) Preparing the Floor for the GF3000BRD Magnet:

Since the GF3000BRD magnet is installed in the floor directly below the bottom rail of the door, a threshold box (that will hold the magnet) that is inset into a pocket (a) in the floor, and a trench (b) for the electrical conduit is required.

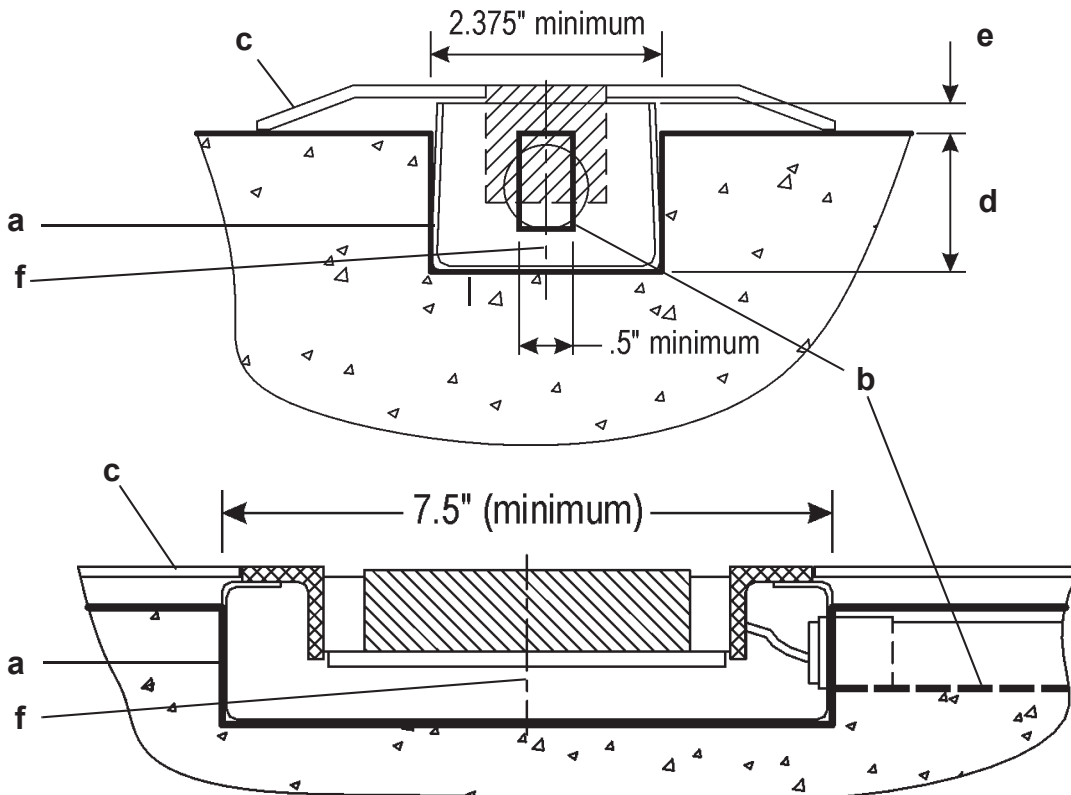
**NOTE: Retrofit Installations - You may find that conditions vary from site to site after the threshold plate (c) is removed. If a cement, stone, or other hard material is encountered, using a pavement breaker or demolition hammer might be useful for chiseling out the pocket and trench in the floor.**

Using tools applicable for conditions found at the site, create a pocket that is at least 2.375" wide x 7.5" long within the threshold area, centered directly below door's bottom rail and furthest away from hinges. Depth of this pocket (d) may vary from site to site. The guiding dimension for depth of the pocket is distance (e). Distance (e) is from top of the threshold box that is inset into the pocket to the underside of the threshold plate. Distance (f) is from centerline of the threshold box to the centerline of the door.

**IMPORTANT: Considerations to keep in mind for position of metal box are:**

- > When magnet and threshold are installed, magnet must not protrude above threshold.
- > You should be able to use box's shim washers to raise and lower magnet to proper level.
- > Box centerline (f) must be placed on centerline of door.

The trench for the conduit should be at least 1/2" wide and deep enough so that the conduit can be easily inserted into the 7/8" hole in end of box. Direction and length of the trench away from the metal box may vary from site to site.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

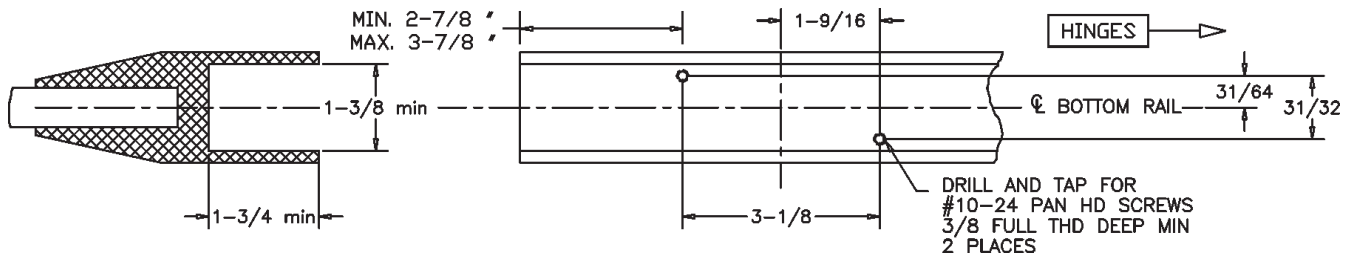
### 2) Installing the GF3000BRD Threshold Box:

After the pocket and trench are created, do the following:

- Feed 1/2" conduit into either 7/8" diameter hole in threshold box.
- Secure conduit with nut.
- Position box in pocket and conduit in trench.
- Pour concrete around threshold box and conduit and allow to cure.

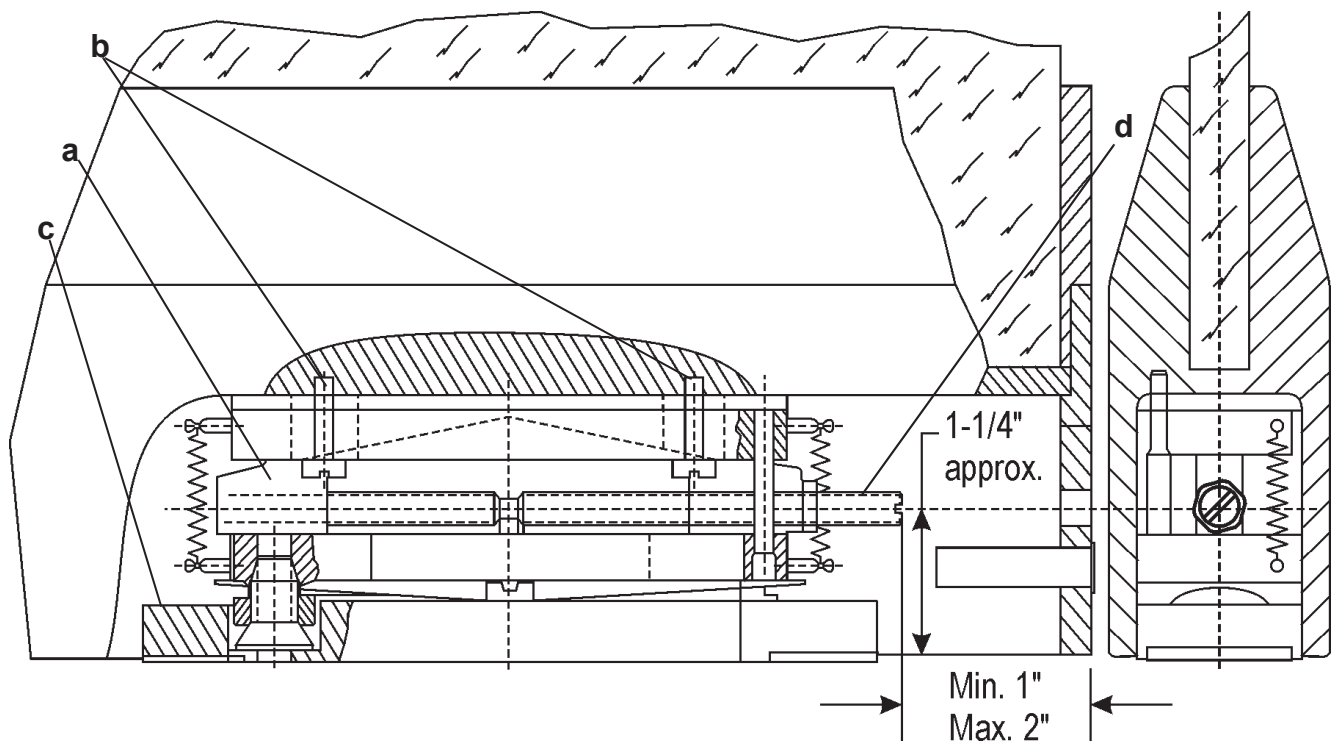
### 3) Preparing the Door for the Armature:

in the Door's Bottom Rail:



### 4) Mounting the GF3000BRD Armature in the Door's Bottom Rail:

- Mount armature mounting bracket assembly (a) to bottom rail using #10-24 x 3/4" Pan head screws (b) supplied.
- Mount armature assembly (c) to armature mounting bracket assembly (a)
- Remove end cap on door to expose adjusting screw (d). If door doesn't have a removable end cap, an access hole will have to be drilled in edge of door according to the approximate dimensions as shown.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

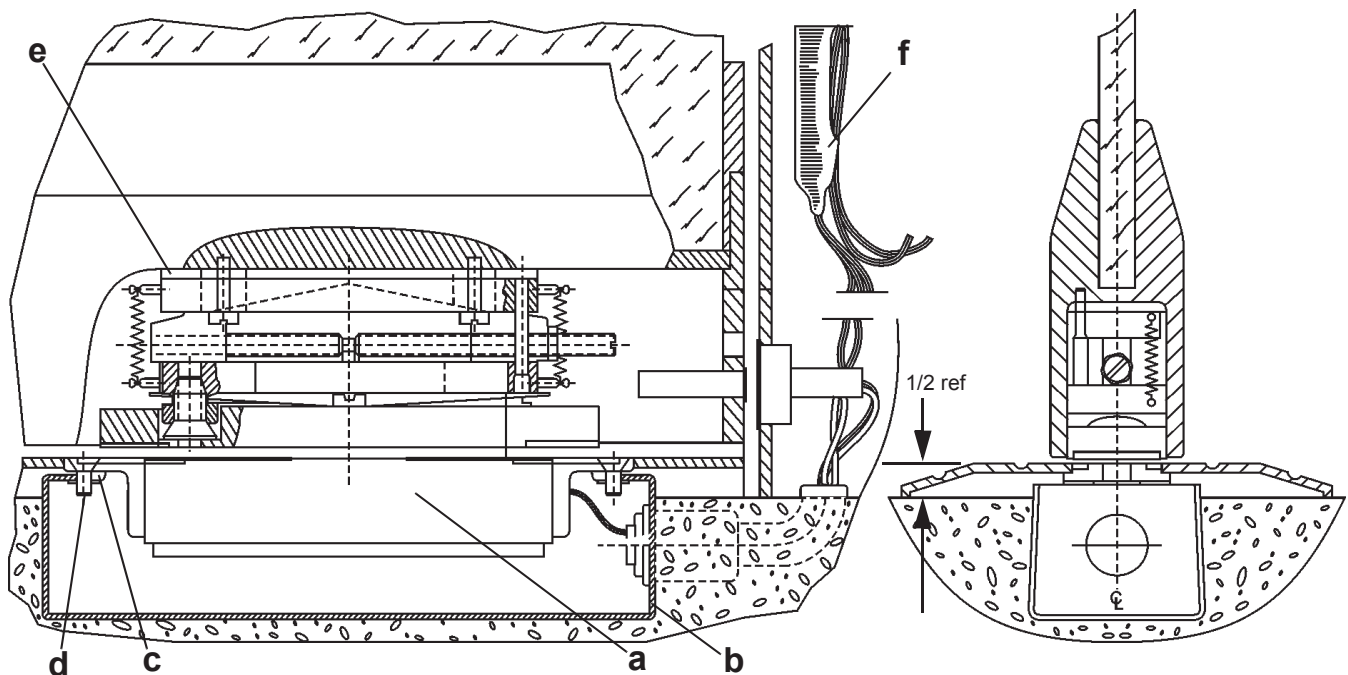
### 5) Mounting the GF3000BRD Magnet Into the Threshold Box:

- Mount magnet (a) to box (b) by placing two speed nuts (c) per slot, side by side in flanges of box.
- Line up magnet over speed nuts. Insert #10-24 x 1/2" flat head screws (d) into magnet brackets and through speed nuts. Align magnet, making sure centerlines of armature are on the centerlines of magnet. Tighten screws.
- If needed, add shims under magnet to bring magnet flush with top of threshold.

**NOTE: Top surface of magnet must not protrude above top surface of threshold.**

- Replace door on hinges.
- Adjust armature, using adjusting screw located in access hole so that the clearance gap of approx. 1/16" between magnet face and armature is achieved. It may be necessary to slightly re-adjust the gap to achieve proper locking action and spring return action when the magnet is de-energized.
- If door's bottom raildepth is greater than 1-3/4", spacers (e) may be needed (one, 1/8" thick spacer is supplied).
- Install door status switch into frame and actuating magnet into door (see **Door Status Monitor (DSM) - GF3000BRD on page 23.**).
- After all magnet adjustments have been completed, it is strongly recommended to fill the magnet box with a spray urethane foam insulation (available from most building supply companies) to keep water out.
- Make final wiring connections (see **Wiring Diagram: on page 22**

**NOTE: Mount Control Module (f) in a remote and dry location, and no more than 15 feet away from lock.**

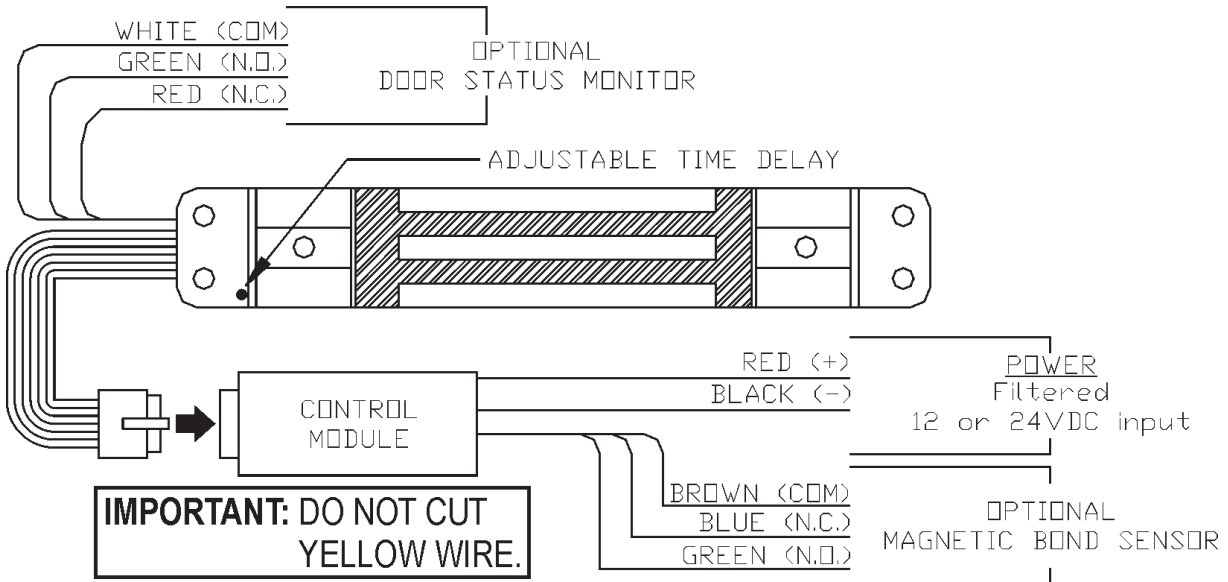


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Wiring the Lock-Standard, TRD, TJ, SM

#### 1) Wiring Diagram:



#### 2) Standard Features:

##### Operating Voltage

The GF3000 will operate only on filtered and regulated 12 or 24 volts DC. Automatic voltage selection circuitry is standard, eliminating the need for a voltage selection switch.

##### Automatic Relock Switch (ARS)

A built-in relock switch requires the door to be in the closed position before the magnet can be energized.

##### Adjustable Time Delay (ATD)

The ATD provides a time delay to relock that is adjustable from 2 to 30 seconds. The unit has been preset at the factory for a 3 second relock delay.

#### 3) To Adjust Relock Time Delay:

- 1) Refer to the wiring diagram above and note location of ATD arrow.
- 2) With door open, apply power.
- 3) Remove 5/64" hex head screw to allow access to recessed momentary pushbutton switch.
- 4) Using the hex wrench provided, depress and release the recessed switch one time for each second of delay required (max. =30 seconds/min.=2 seconds).

Example To set ATD to 5 seconds, depress the recessed switch 5 times.

**NOTE: If a mistake is made, wait 10 seconds, then repeat Step #4.**

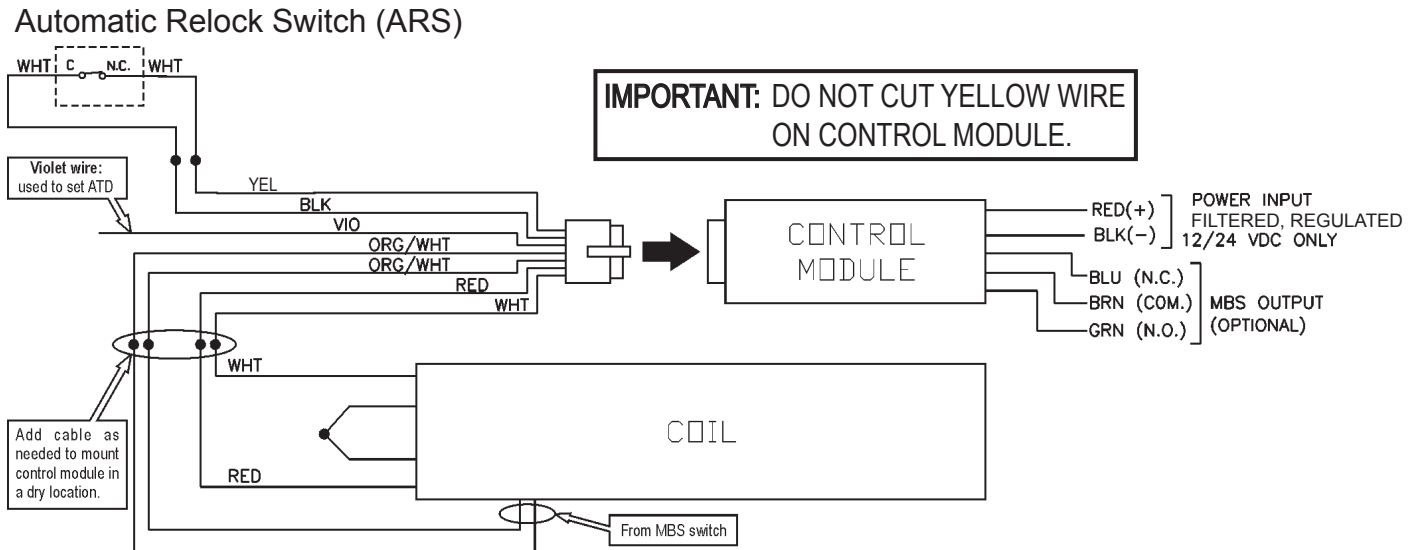
- 5) Reinstall hex head screw, after setting desired relock time delay.
- 6) Close door and verify delay.

# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Wiring the Lock - BRD

#### 1) Wiring Diagram:



#### 2) Standard Features:

##### Operating Voltage

The GF3000BRD will operate only on filtered and regulated 12 or 24 volts DC. Automatic voltage selection circuitry is standard, eliminating the need for a voltage selection switch.

##### Automatic Relock Switch (ARS)

A built-in relock switch requires the door to be in the closed position before the magnet can be energized.

##### Adjustable Time Delay (ATD)

The ATD provides a time delay to relock that is adjustable from 2 to 30 seconds. The unit has been preset at the factory for a 3 second relock delay.

#### 3) To Adjust Relock Time Delay:

- 1) Verify that the exposed yellow wire on the ARS is not shorting against anything.

**IMPORTANT: Do not cut yellow wire.**

- 2) With door open, apply power.
- 3) Touch the violet wire to the black ARS wire one time for each second of delay required (maximum = 30 seconds, minimum = 2 seconds).

Example To set ATD to 5 seconds, touch the violet wire to the black ARS wire 5 times.

**NOTE: If a mistake is made, wait 10 seconds, then repeat Step #4.**

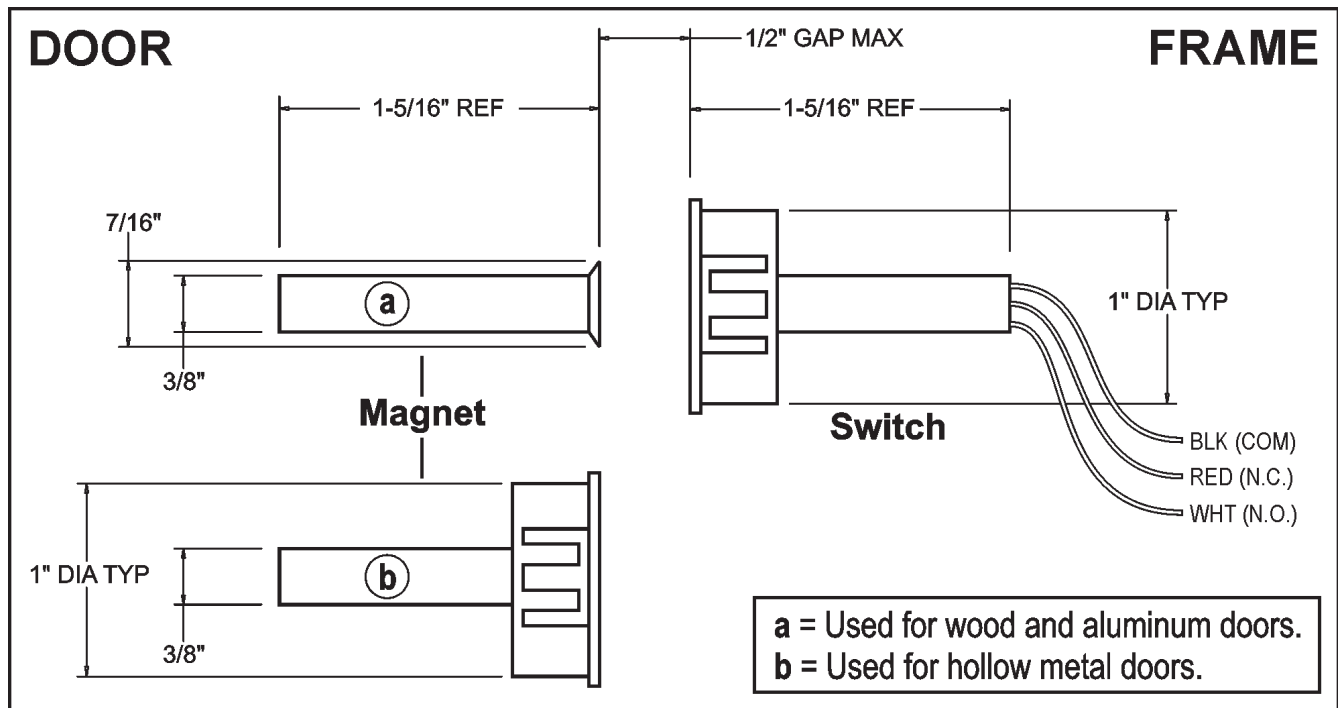
**NOTE: A pushbutton switch may be used if desired.**

- 4) Properly insulate the violet wire after setting desired relock time delay.
- 5) Close door and verify delay.
- 6) If OK, permanently connect and insulate the yellow wire on the ARS.

# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Door Status Monitor (DSM) - GF3000BRD



- Hole for switch: 1" diameter in frame.
- Hole for magnet:
  - > (a) Wood or Aluminum doors - 3/8" diameter
  - > (b) Hollow metal doors - 1" diameter
- Installation of magnet and switch must be concentric (common centerline).
- Switch insertion: snap-in fit.
- Magnet insertion:
  - > Wood or aluminum doors - press-in fit
  - > Hollow metal doors - snap-in fit
- If necessary, use epoxy.
- Contact Type: Single Pole/Double Throw (SPDT)
- Contact Rating: 28VDC @ 300 mA (max)
- With door closed, no more than 1/2" air gap is allowed between switch and magnet.

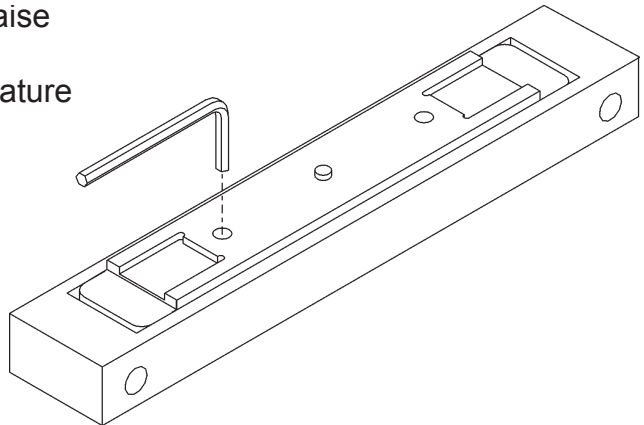
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Air Gap Adjustment

#### 1) Set Armature Height:

- Using the provided 7/32 hex wrench, raise or lower the armature as needed.
  - > Clearance between magnet and armature is recommended to be 1/8", and must be less than 1/4".

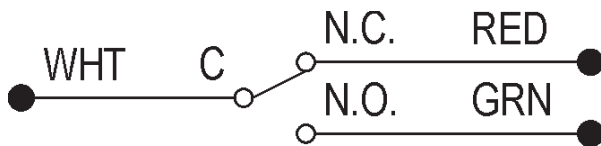


### Options

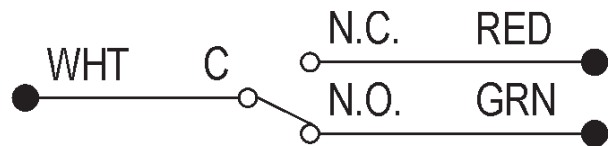
#### 1) Optional Monitoring Outputs:

##### Door Status Monitor (DSM)

The optional DSM provides a dry set of contacts for monitoring “door open” or “door closed” conditions.



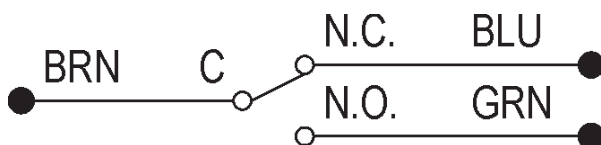
Door Open



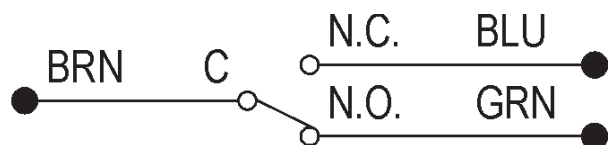
Door Closed

##### Magnetic Bond Sensor (MBS)

The optional MBS provides a dry set of contacts for monitoring “door locked” or “door unlocked” conditions. The MBS measures the magnetic holding force between the armature and the magnetic coil. Poor magnetic bond is the result of low voltage, foreign material between the surfaces of the magnetic coil and armature, or improper alignment of magnet and armature.



Poor Magnetic Bond



Good Magnetic Bond



44487098

# VON DUPRIN®

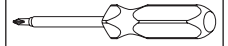
## QEL Wiring and Configuration Instructions with 900-2Q

**DISCONTINUED**

Tools for Install



5/8" Drill Bit



### ▲DANGER:

To avoid risk of electric shock, turn off AC power to power supply before installing or wiring option board

**Note:**

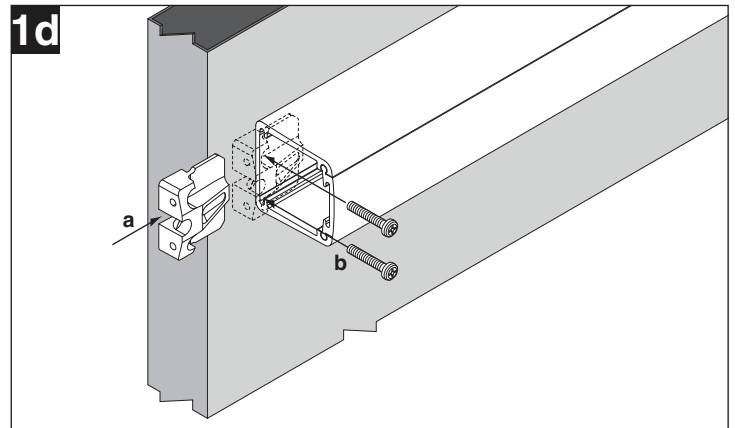
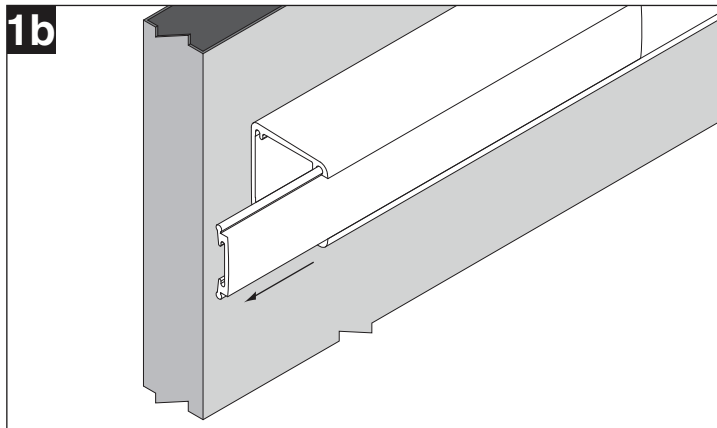
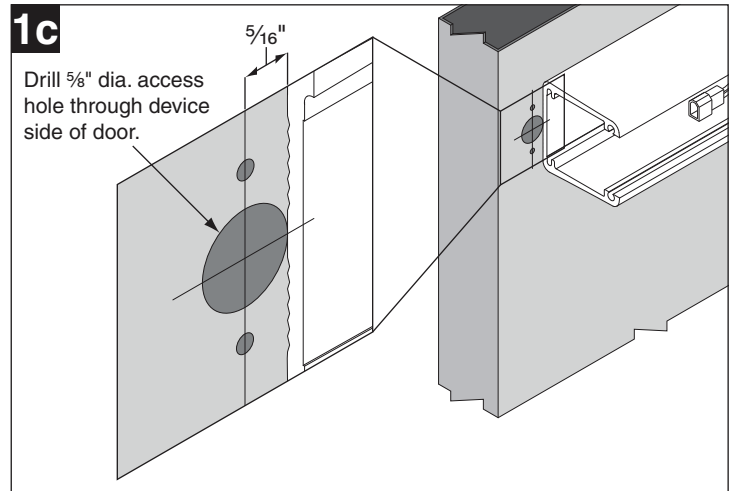
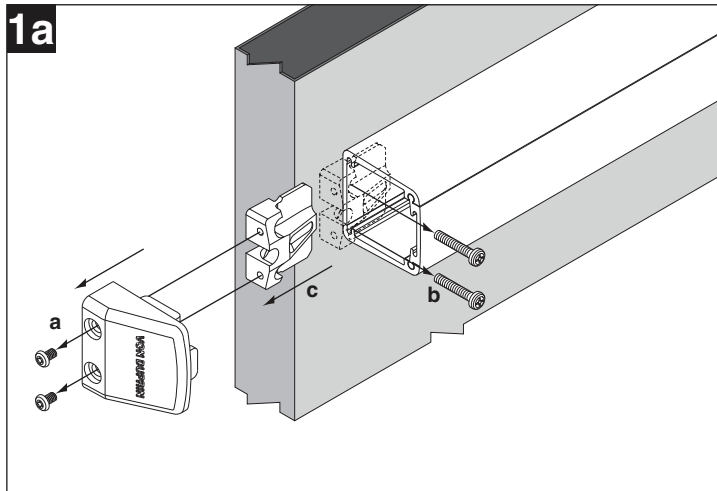
1. QEL must be powered by a PS900-Series Power Supply with 900-2Q board
2. QEL requires 18AWG minimum wire. Maximum wire run is 200' between power supply and QEL device.
3. QEL will NOT operate with a Von Duprin "4RL" or "2RS" power supply board.

### 900-2Q Specifications:

Inputs I1, I2	Dry Contacts required (Closed = Active) Connect control contacts between SC (Signal Common) and any input
Outputs O1, O2	<ul style="list-style-type: none"> <li>• 24VDC, 3A (wet) when AC powered</li> <li>• 19.2-26.4VDC when battery powered</li> <li>• May be used with PS914 to power EL device at 24VDC, 16A, 300ms</li> <li>• Maximum load cannot exceed power supply ratings or 3A for outputs combined</li> </ul>
Board Input Power	Board requires 0.08A max. of power supply output current to operate
Temperature Range	32°-120° F (0°- 49° C)
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15
Fire Alarm Input	Accepts 900-FA Fire Alarm Board (Optional)

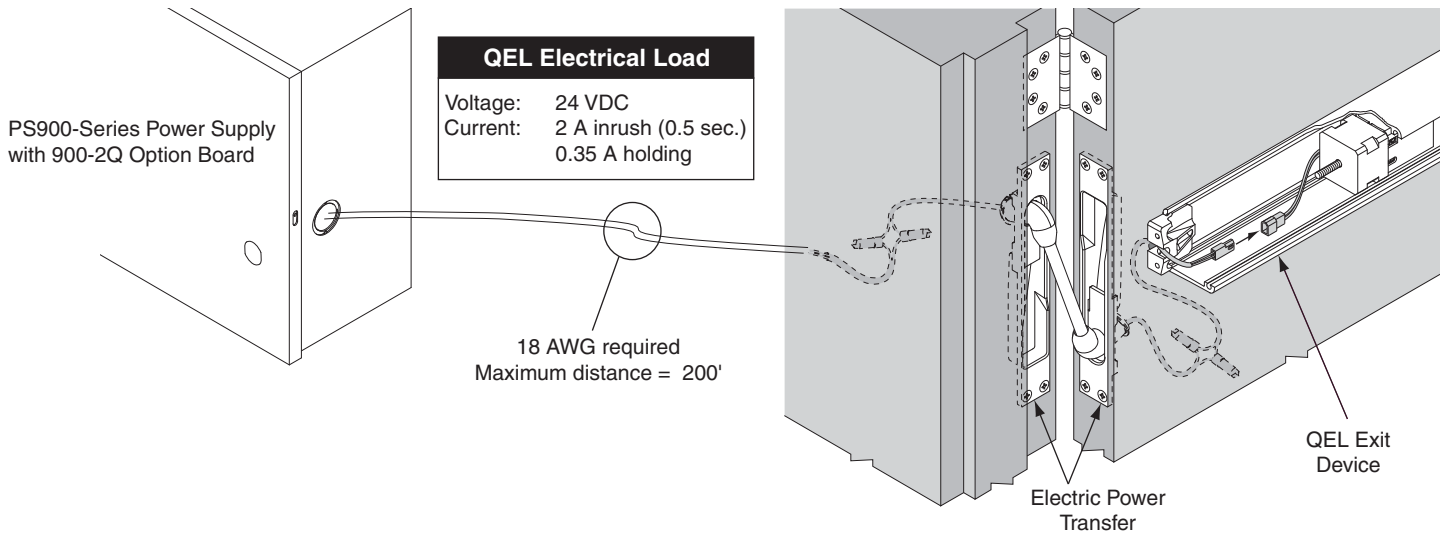
Refer to installation instructions for compatible supply models - PS902, PS904, PS906, and PS914.

## 1 DRILL WIRE ACCESS HOLE

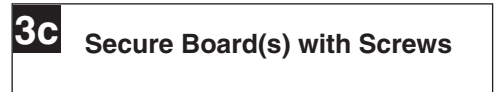
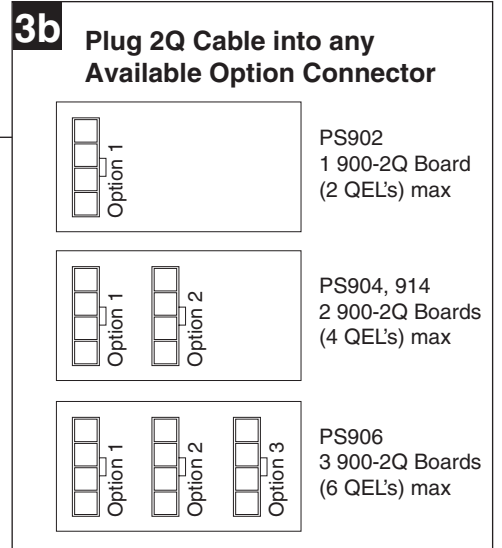
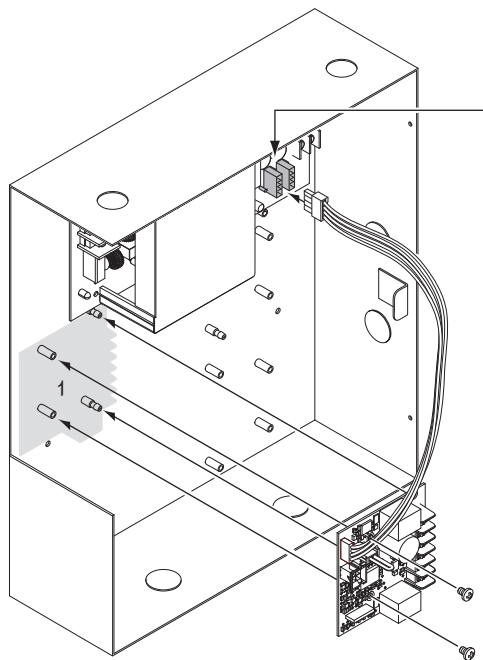
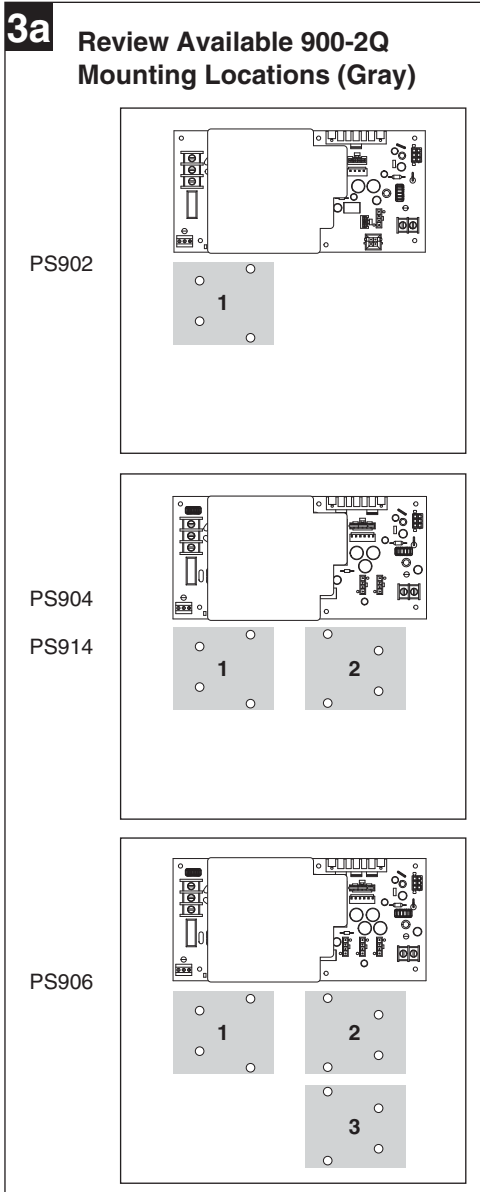




## 2 ROUTE TWO WIRES FROM QEL EXIT DEVICE TO POWER SUPPLY



## 3 INSTALL 900-2Q OPTION BOARD(S) INTO POWER SUPPLY

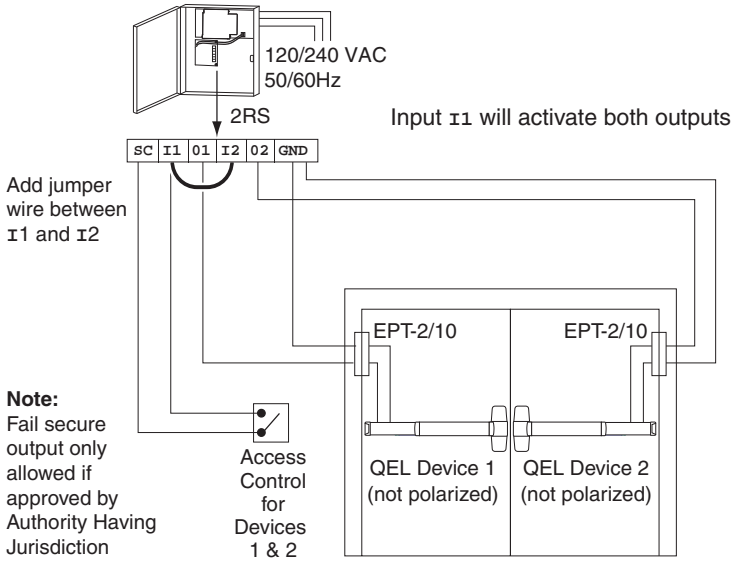


**Note:**  
 Power supply model needs to be set to 24VDC to operate this device

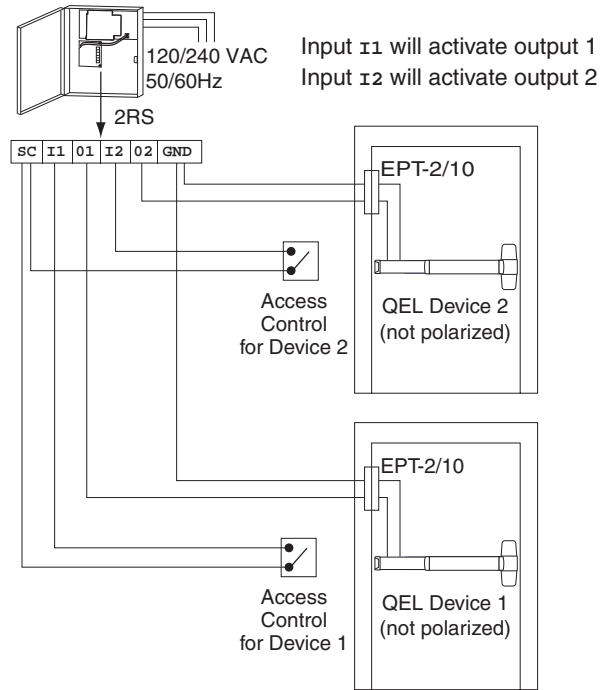
## 4 CONNECT INPUT AND OUTPUT WIRES TO 900-2Q OPTION BOARD

- QEL requires 18AWG minimum wire.
- Maximum wire run is 200' between power supply and QEL device.
- Maximum of 2 QEL devices per 900-2Q board.
- For auto operator with unlock delay of 1 second or less, connect both QEL to output 1.

### Sequential Mode - Typical Wiring

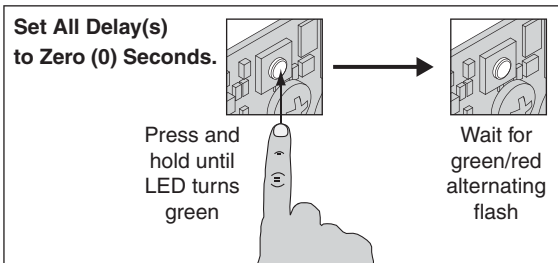
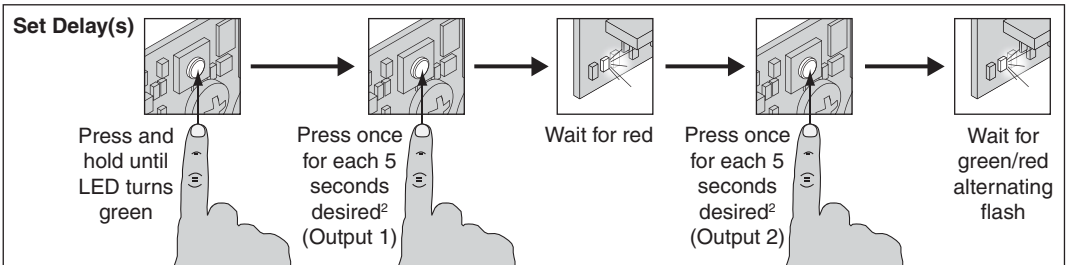
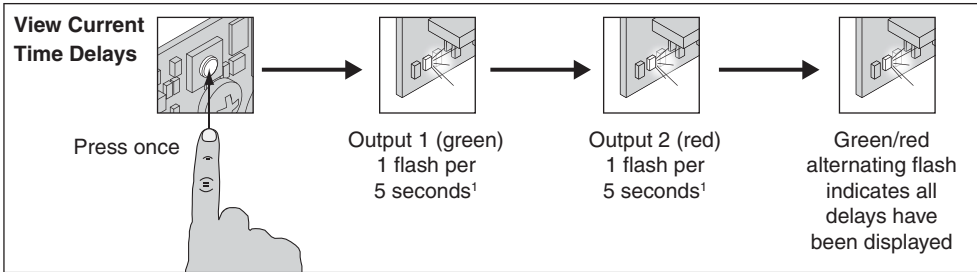
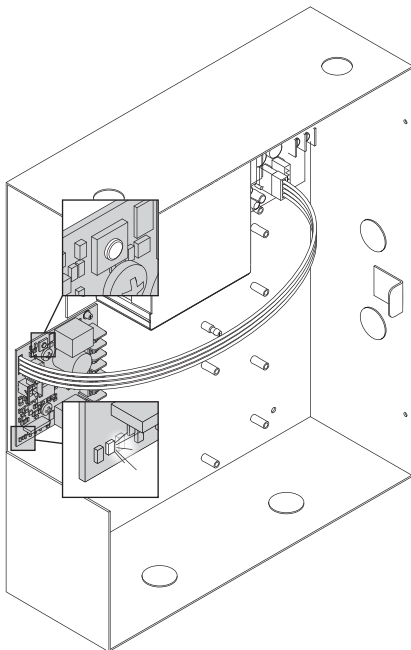


### Individual Mode - Typical Wiring



## 5 APPLY POWER TO POWER SUPPLY. IF 900-BB IS USED, THEN RECONNECT BATTERIES

## 6 SET TIME DELAYS ON 900-2Q BOARD



1. For example, 2 flashes = 10 seconds. If no delay has been set, no flashes will be displayed.

2. For example, 2 presses = 10 seconds. (Minimum time delay 5 seconds) (Maximum time delay 60 seconds) (Adjustable in 5 second increments)

## 7 CHECK OPERATION

- Activate input(s) and verify all QEL devices operate properly.  
NOTE: During the first activation, each device will perform a self calibration. This is normal.
- Check LED on the 900-2Q board for the following indications:

Output LEDs on 900-2Q Board	Indication
Solid	Input active
Flashing	Input has been released, and time delay is running

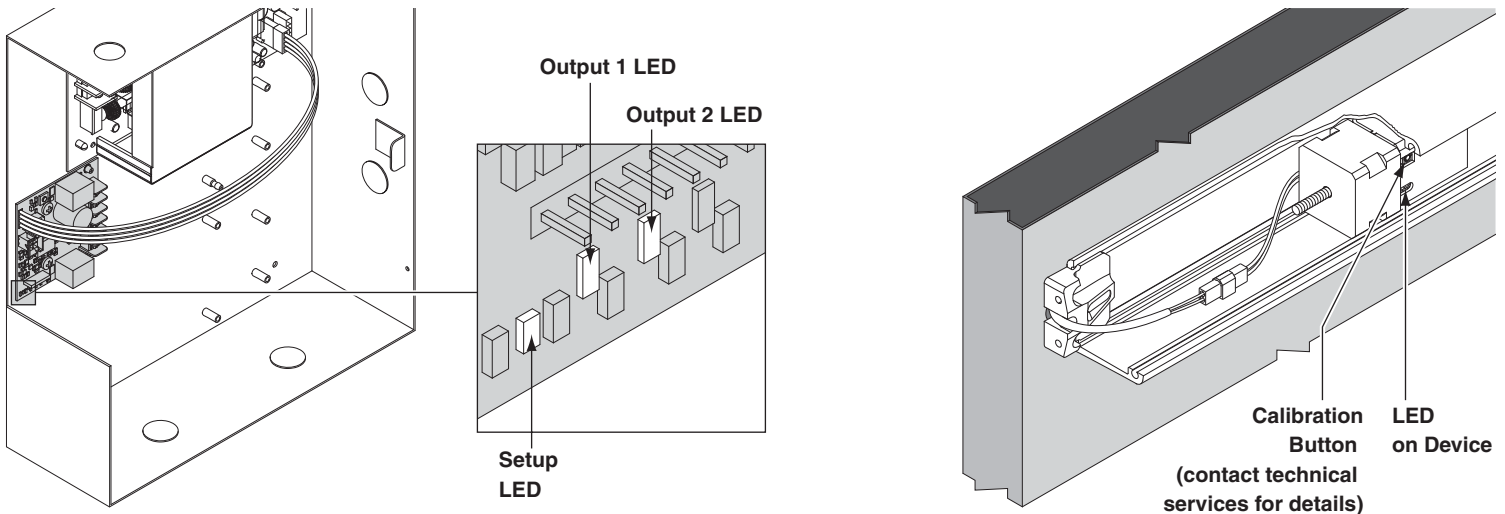
- If any device does not operate properly, see step 8 for troubleshooting.

## 8 IF NECESSARY, TROUBLESHOOT OPERATION

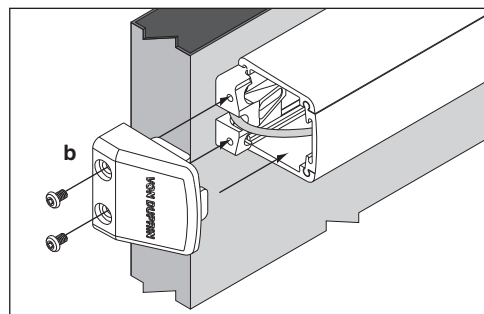
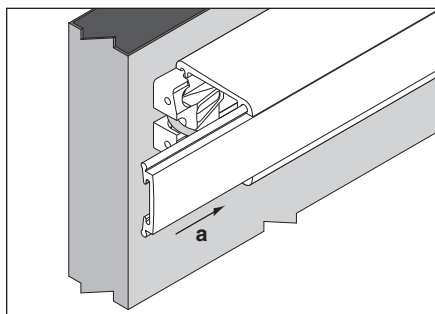
Maintain input and then check for the following indications:

NOTE: The setup LED flashes slowly to indicate 900-2Q board is powered.

If Output LED on 900-2Q Board is:	and LED on Device is:	Indication
Off	Off	Problem with input wiring or input device
Solid	Off	Problem with wiring between power supply and exit device
Solid	Solid green	No detectable failures
Solid	Flashing green	Adjustment in progress
Solid	Solid red	<b>Pushpad may vibrate when powered.</b> This indicates that rods or mortise lock are misadjusted. See rod or mortise lock adjustment in installation instructions. If necessary, go to <a href="http://www.vonduprin.com/installation_instruction_library.asp">www.vonduprin.com/installation_instruction_library.asp</a> or contact Technical Services at 1-877-671-7011
Solid	Flashing red	Contact Technical Services at 1-877-671-7011
Solid	Flashing green/red	Excessive tamper (automatically clears after 2 minutes)



## 9 REINSTALL COVER AND END CAP



**NOTE: WHEN INSTALLATION IS COMPLETE, SECURE ENCLOSURE DOOR WITH SCREWS OR KEYLOCK**



44487106

# PS-900 Series Option Boards

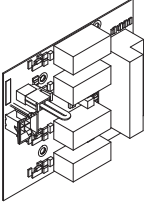
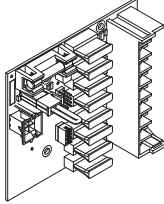
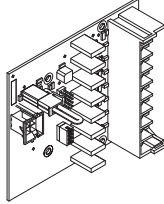


Installation Instructions

**⚠ DANGER ⚠**

To avoid risk of electric shock, turn off AC power to power supply before installing or wiring option board

This sheet covers:

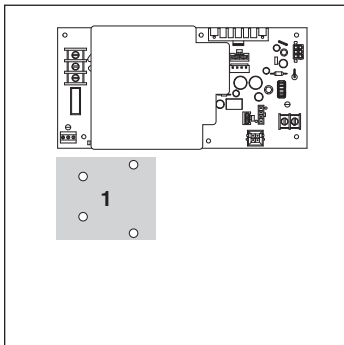
<p><b>900-4R</b> 4 Independently Controlled Relays</p>  <p>Page 2</p>	<p><b>900-8F</b> 8 Fuse Protected Outputs</p>  <p>Page 3</p>	<p><b>900-8P</b> 8 PTC Protected Outputs</p>  <p>Page 4</p>
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Refer to installation instructions for compatible supply models - PS902, PS904, PS906, and PS914.

## 1 INSTALL OPTION BOARD(S) INTO POWER SUPPLY

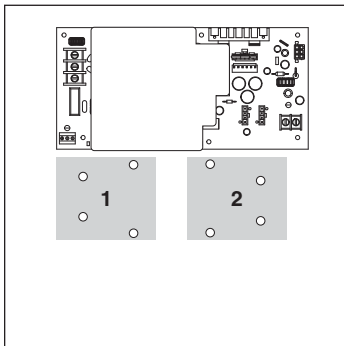
### a Review Available Board Mounting Locations (gray)

PS902

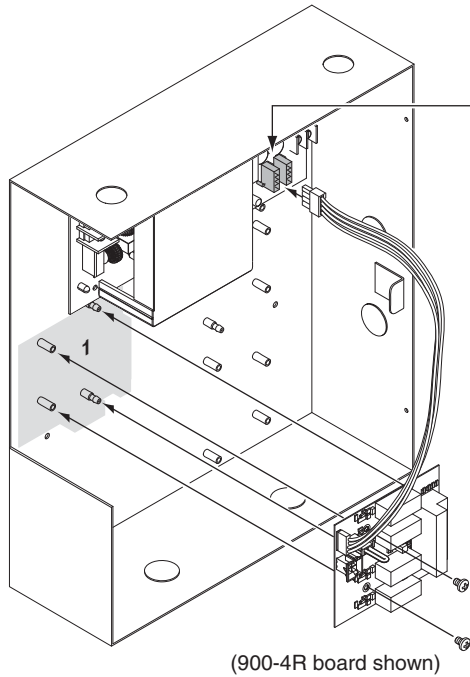
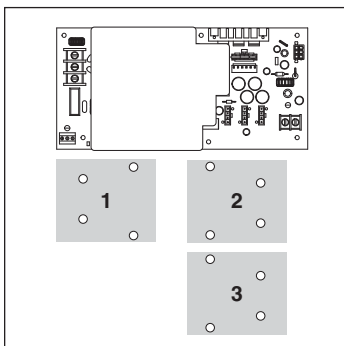


PS904

PS914



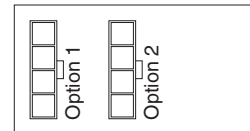
PS906



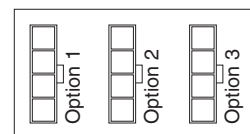
### b Plug Cable into any Available Option Connector



PS902



PS904, 914



PS906

### c Secure Board(s) with Screws

Customer Service

1-877-671-7011

www.allegion.com

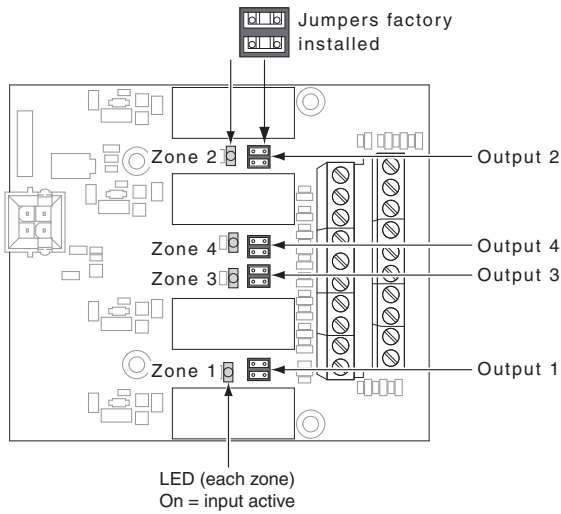
900-4R Specifications

Inputs I1-I4	Dry contacts required (Closed = Active) Connect control contacts between SC (Signal Common) and any input
Outputs O1-O4	• Form C contacts rated 30VDC, 3A (dry) • 12/24VDC, 3A (wet) when AC powered • 9.6-13.2VDC or 19.2-26.4VDC when battery powered • Maximum load cannot exceed power supply ratings or 6A for outputs combined
Board Input Power	Board requires 0.18A max. of power supply output current to operate
Temperature Range	32°-120° F (0°- 49° C)
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15
Fire Alarm Input	Accepts 900-FA Fire Alarm Board (Optional)

Function: Four independent dry-contact inputs control four Form C outputs

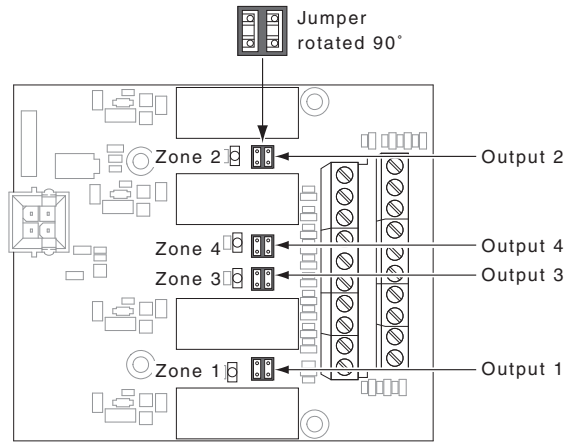
**Powered Outputs  
(Default)**

By default, all outputs provide 12/24VDC



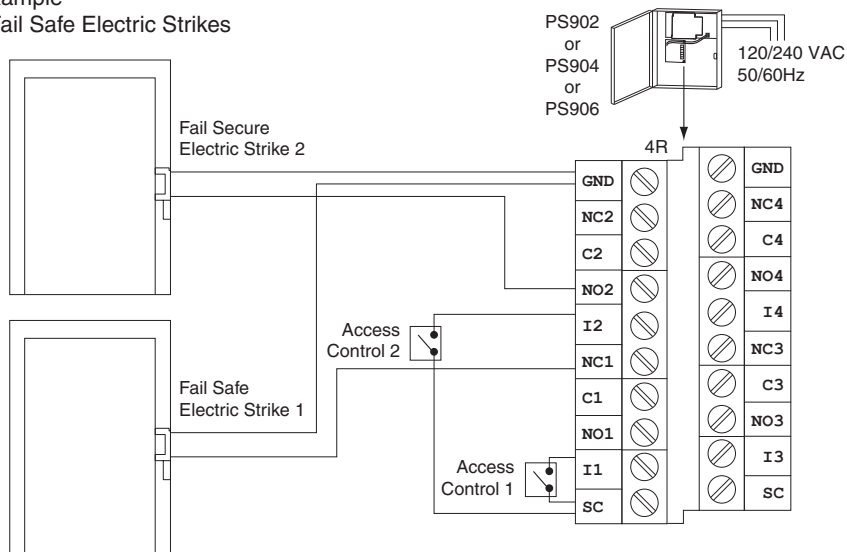
**Dry Contact Outputs  
(Optional)**

For dry contact outputs, remove appropriate jumpers and rotate 90°, then reinstall (Zone 1 - Zone 4)



900-4R Wiring Example

Fail Secure and Fail Safe Electric Strikes



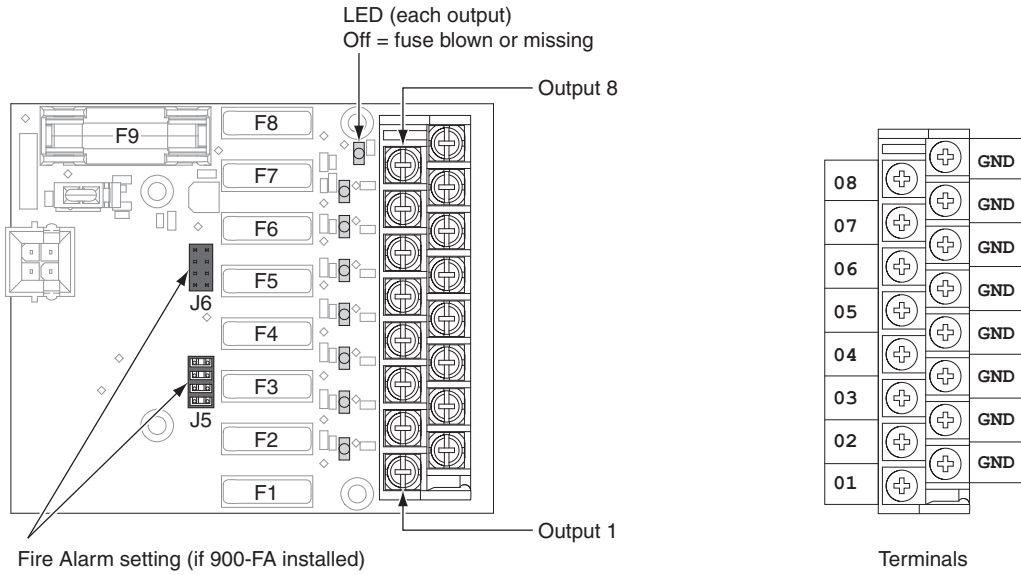
**Note:**  
Fail secure output only allowed if approved by Authority Having Jurisdiction

Refer to Wire Table (page 4)

900-8F Specifications

Each Output	<ul style="list-style-type: none"> <li>• Rated for supply maximum • 12/24VDC when AC powered • 9.6-13.2VDC or 19.2-26.4VDC when battery powered</li> <li>• Maximum load cannot exceed power supply ratings or 6A for outputs combined</li> </ul>	
Board Input Power	Board requires 0.045A max. of power supply output current to operate	
Temperature Range	32°-120° F (0°- 49° C)	
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15	
Fire Alarm Input	Accepts 900-FA Fire Alarm Board (Optional)	
F1 - F8	32V, 7.5A, ATO blade style	<b>⚠ CAUTION:</b> <b>For protection against risk of fire, replace fuse with same type and rating</b>
F9 Main Fuse	300V, 15A, 3AG style	

Function: Provides 8 independently-fused outputs.



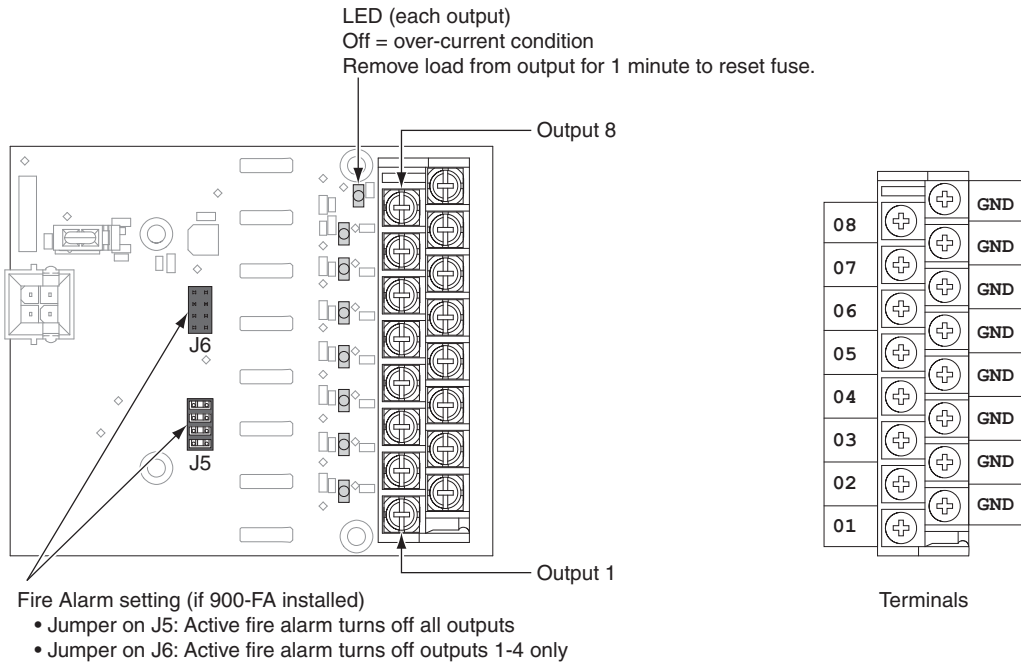
Refer to Wire Table  
(page 4)

**Note:**  
Fail secure output only allowed if approved  
by Authority Having Jurisdiction

900-8P Specifications

Each Output	<ul style="list-style-type: none"> <li>• 1.4A maximum</li> <li>• 12/24VDC when AC powered</li> <li>• 9.6-13.2VDC or 19.2-26.4VDC when battery powered</li> <li>• Maximum load cannot exceed power supply ratings or 6A for outputs combined</li> </ul>
Board Input Power	Board requires 0.045A max. of power supply output current to operate
Temperature Range	32°-120° F (0°- 49° C)
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15
Fire Alarm Input	Accepts 900-FA Fire Alarm Board (Optional)

Function: Provides 8 independent outputs, each protected by an automatically-resettable thermal fuse.



**Note:**  
Fail secure output only allowed if approved by Authority Having Jurisdiction

Wire Table: (Suggested maximum)

Wire Ga (AWG)	Device Current (Amps DC)	Output* (max. ft)	Input (max. ft)
14	0.3	850	1200
	0.5	500	
18	0.3	340	
	0.5	200	

\*Wiring allows for 10% voltage drop at device current at 12 or 24VDC  
Max. ft = one way distance between power supply and device.

**NOTE: WHEN INSTALLATION IS COMPLETE, SECURE ENCLOSURE DOOR WITH SCREWS OR KEYLOCK.**





44487080

# 900-4RL Option Board



Installation Instructions



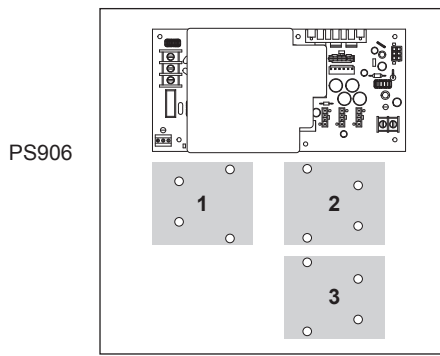
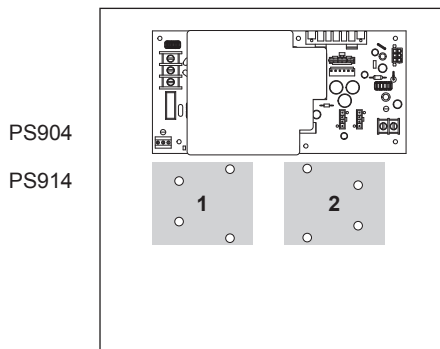
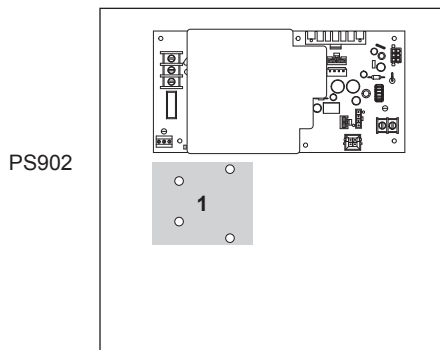
To avoid risk of electric shock, turn off AC power to power supply before installing or wiring option board.

### 900-4RL Specifications

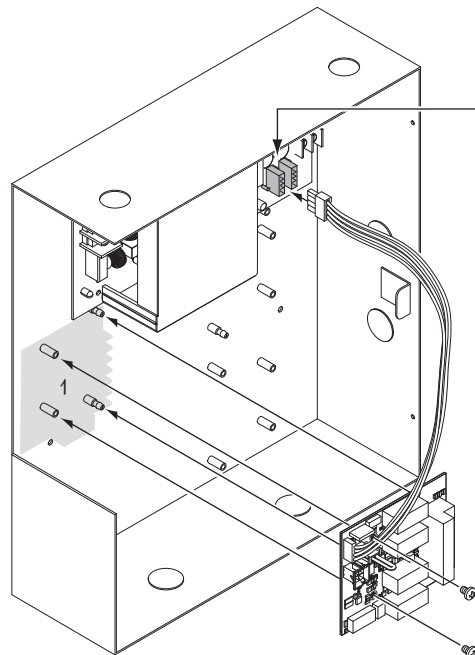
Inputs I1-I4	Dry contacts required (Closed = Active)
Outputs O1-O4	Connect control contacts between SC (Signal Common) and any input <ul style="list-style-type: none"> <li>• Form C contacts rated 30VDC, 3A (Dry)</li> <li>• 12/24VDC, 3A (Wet) when AC powered</li> <li>• 9.6-13.2VDC or 19.2-26.4VDC when battery powered</li> <li>• May be used with PS914 to power EL device at 24VDC, 16A, 300ms</li> <li>• Maximum load cannot exceed power supply ratings or 6A for outputs combined</li> </ul>
Board Input Power	Board requires 0.18A max. of power supply output current to operate
Temperature Range	32°-120°F (0°- 49° C)
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15
Fire Alarm Input	Accepts 900-FA Fire Alarm Board (Optional)

## 1 Install 4RL Board(S) into Power Supply

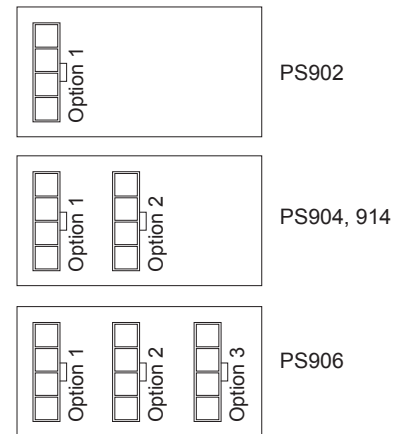
### 1a Review Available 900-4RL Mounting Locations (Gray)



Refer to installation instructions for compatible supply models - PS902, PS904, PS906, and PS914.



### 1b Plug 4RL Cable into any Available Option Connector



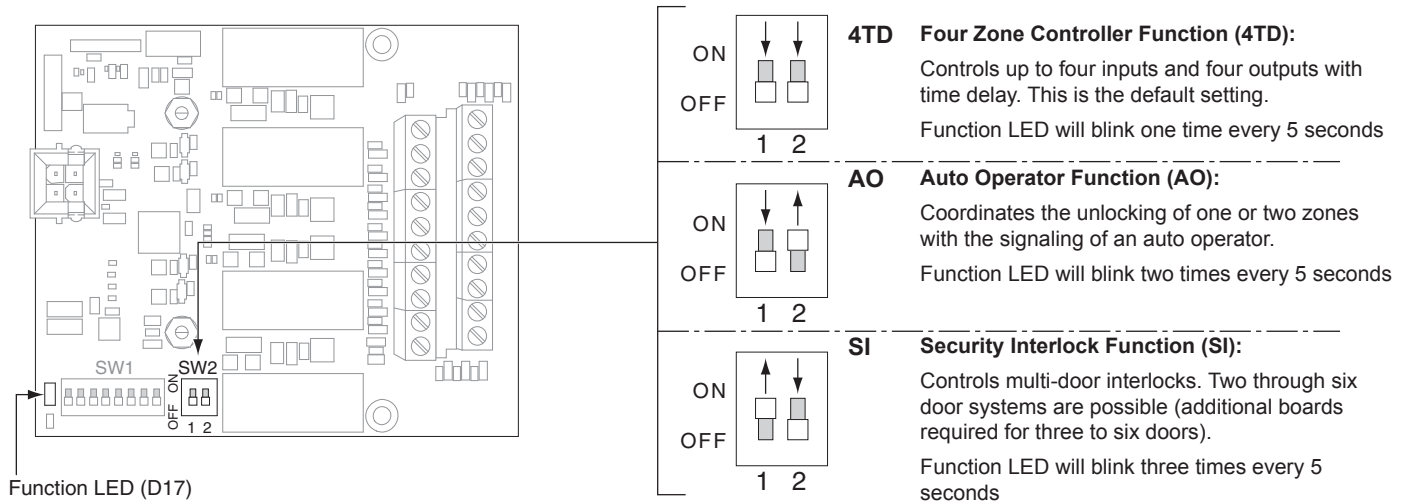
### 1c Secure Board(s) with Screws

#### NOTE

For UL listed installations, use only UL listed locks and strikes



## 2 Choose Function of 900-4RI Board by Setting SW2 Dip Switches



## 3 To Complete Configuration and Wiring, go to Appropriate Section

For 4TD: Go to pages 3-4

For AO: Go to pages 5-6

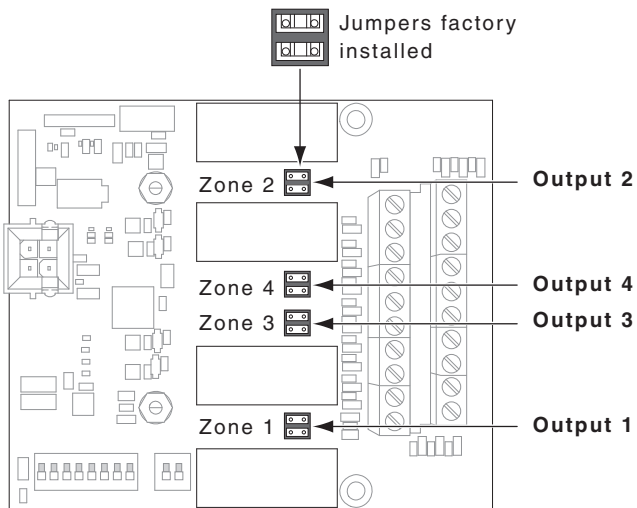
For SI: Go to pages 7-8

Basic Troubleshooting: Go to page 8

### (Optional) Dry Contact Configuration

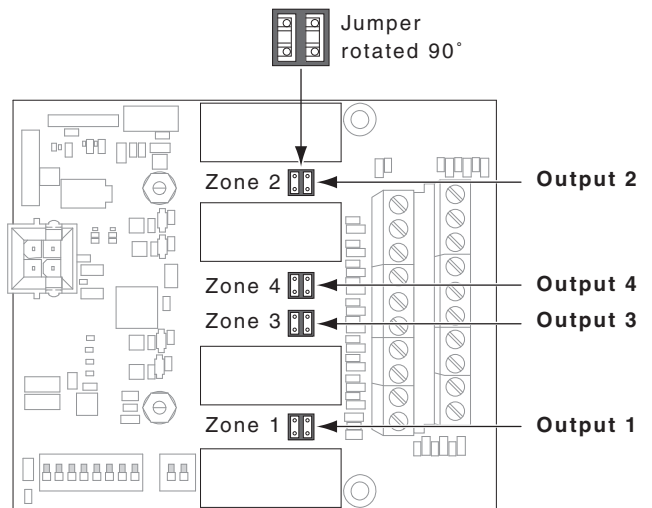
#### Powered Outputs (Default)

By default, all outputs provide 12/24VDC



#### Dry Contact Outputs (Optional)

For dry contact outputs, remove appropriate jumpers and rotate 90°, then reinstall (Zone 1 - Zone 4)

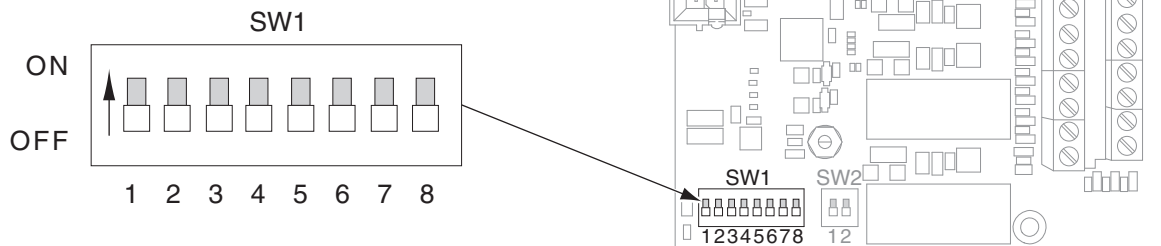


## 4TD - Set Time Delay Using SW1 Dip Switches

### Summary of Operation

- Output turns "ON" when input is activated (closed).
- Time delay begins when input is released (opened).
- Locking Device output will remain "ON" during time delay.
- If I1-I4 inputs are wired together, outputs will sequence.

DIP switches on SW1 can be turned "ON" by moving them in the direction that the arrow is pointing. Switches below shown in "OFF" position

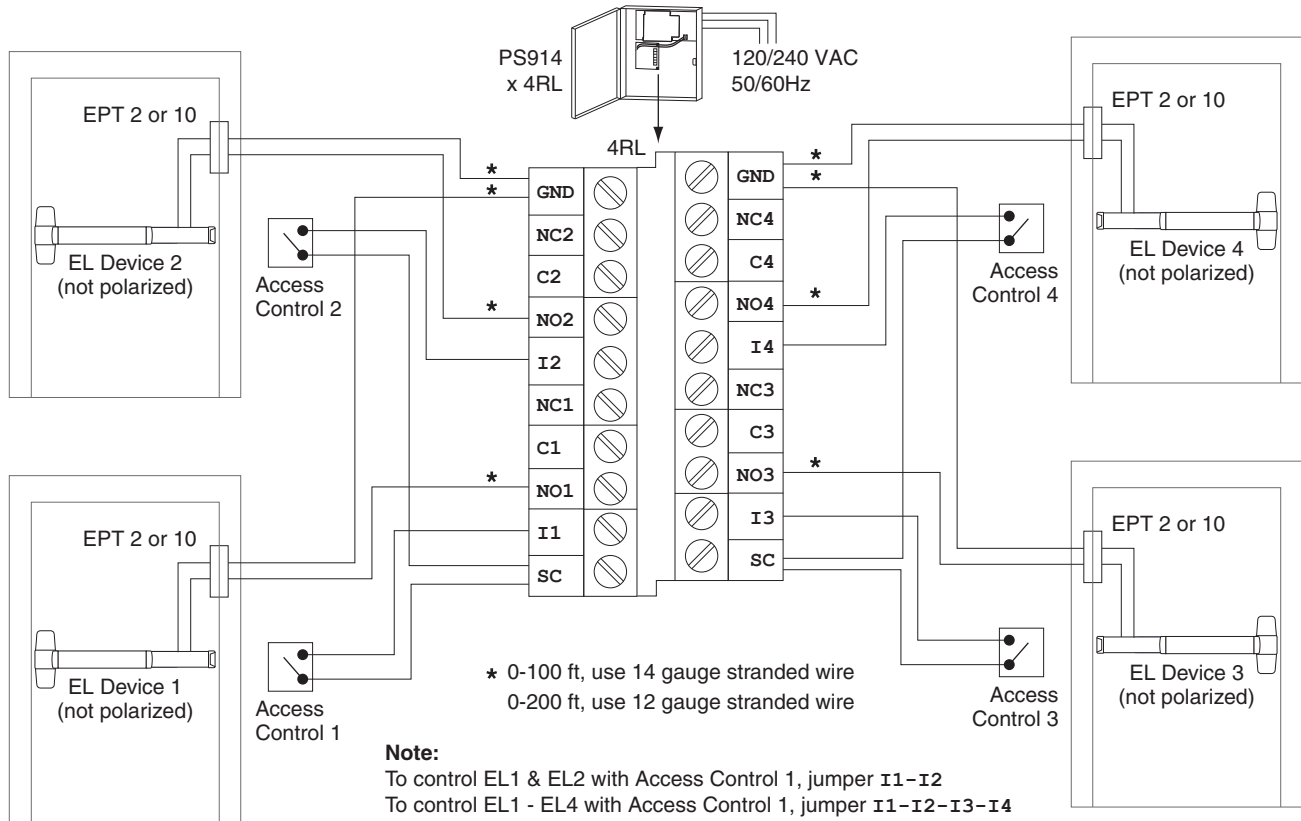


Switch		4TD DIP Switch Definitions	
Number	All switches shown in "OFF" position in wiring diagram		
Enable Time Delay	1	Turn "ON" to enable time delay for Locking Device 1	
Allows you to choose which outputs will have the below time delay.	2	Turn "ON" to enable time delay for Locking Device 2	
	3	Turn "ON" to enable time delay for Locking Device 3	
	4	Turn "ON" to enable time delay for Locking Device 4	
Set Time Delay	5	Adds 5 seconds to the time delay when "ON"	
(0-75 seconds, 5 second increments)	6	Adds 10 seconds to the time delay when "ON"	
0 Sec: Switches 5-8 "OFF"	7	Adds 20 seconds to the time delay when "ON"	
75 Sec: Switches 5-8 "ON"	8	Adds 40 seconds to the time delay when "ON"	

4TD Input / Output	
Terminal Block Definitions	
Input 1	Access Control 1
Input 2	Access Control 2
Input 3	Access Control 3
Input 4	Access Control 4
Output 1*	Lock 1
Output 2*	Lock 2
Output 3*	Lock 3
Output 4*	Lock 4

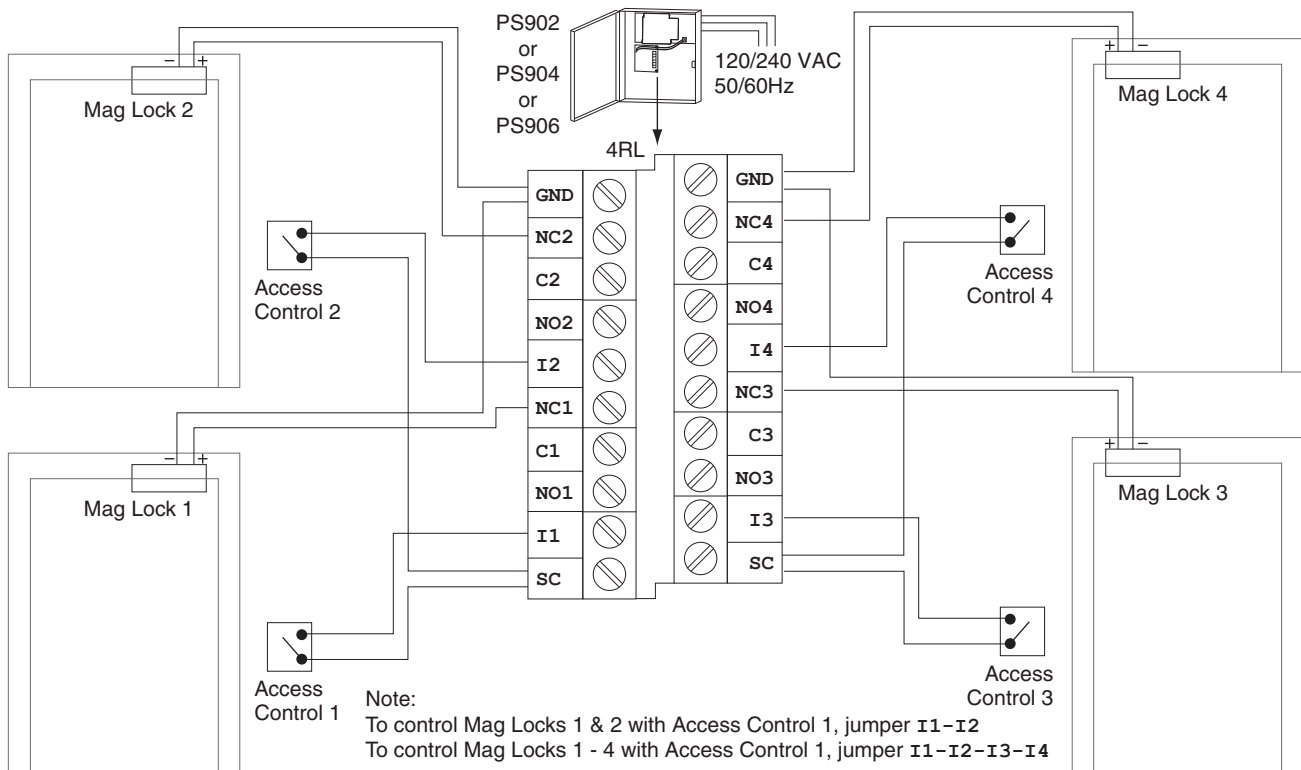
\*See page 2 for dry contacts

## 4TD - Wiring Example - Fail Secure



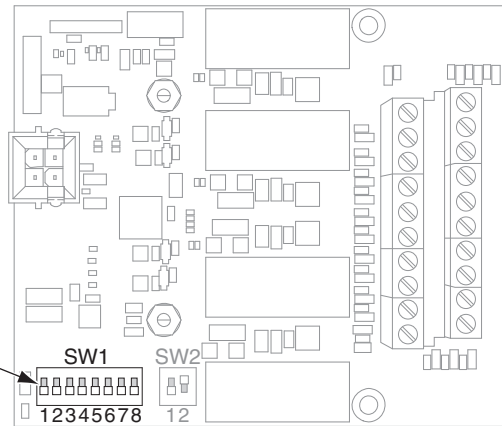
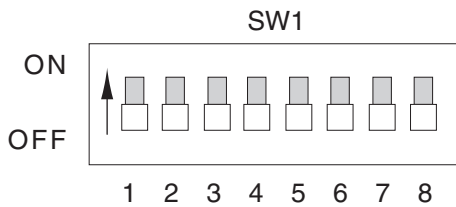
**Note:**  
Fail secure output only allowed if approved  
by Authority Having Jurisdiction

## 4TD - Wiring Example - Fail Safe



## AO - Set Configuration Using SW1 Switches

DIP switches on SW1 can be turned "ON" by moving them in the direction that the arrow is pointing. Switches below shown in "OFF" position



SW1 Switch	AO DIP Switch Definitions	
Number	All switches shown in "OFF" position in wiring diagram	
Set Auto Operator Signaling Option Determines when the auto operator signal will be active	1 Off	Operator is signaled when latch monitor switch becomes active. Monitor switch required
	2 Off	Operator is signaled 0.5 seconds after control switch becomes active. No monitor switch used.
	1 On	Operator is signaled 1.0 seconds after control switch becomes active. No monitor switch used.
	2 On	Operator is signaled 1.5 seconds after control switch becomes active. No monitor switch used.
	1 On	Operator is signaled 1.5 seconds after control switch becomes active. No monitor switch used.
	2 On	Operator is signaled 1.5 seconds after control switch becomes active. No monitor switch used.
Not Used	3	Not used
Set Individual Mode or Sequential Mode Individual Mode - One input will trigger one locking device. Sequential Mode - One input will trigger two locking devices.	4	Turn "OFF" (default) to enable Individual Mode (single doors). Turn "ON" to enable Sequential Mode (double doors).
	5	Adds 2 seconds to the time delay when "ON"
Set Time Delay* (0-30 seconds, 2 second increments) 0 Sec: Switches 5-8 "OFF" 30 Sec: Switches 5-8 "ON"	6	Adds 4 seconds to the time delay when "ON"
	7	Adds 8 seconds to the time delay when "ON"
	8	Adds 16 seconds to the time delay when "ON"
	* Time Delay begins when an input is released.	

AO INPUT / OUTPUT TERMINAL BLOCK DEFINITIONS	
Input 1	Access Control 1
Input 2	Lock Monitor 1
Input 3	Access Control 2
Input 4	Lock Monitor 2
Output 1*	Lock 1
Output 2*	AO Signal 1
Output 3*	Lock 2
Output 4*	AO Signal 2
*See page 2 for dry contacts	

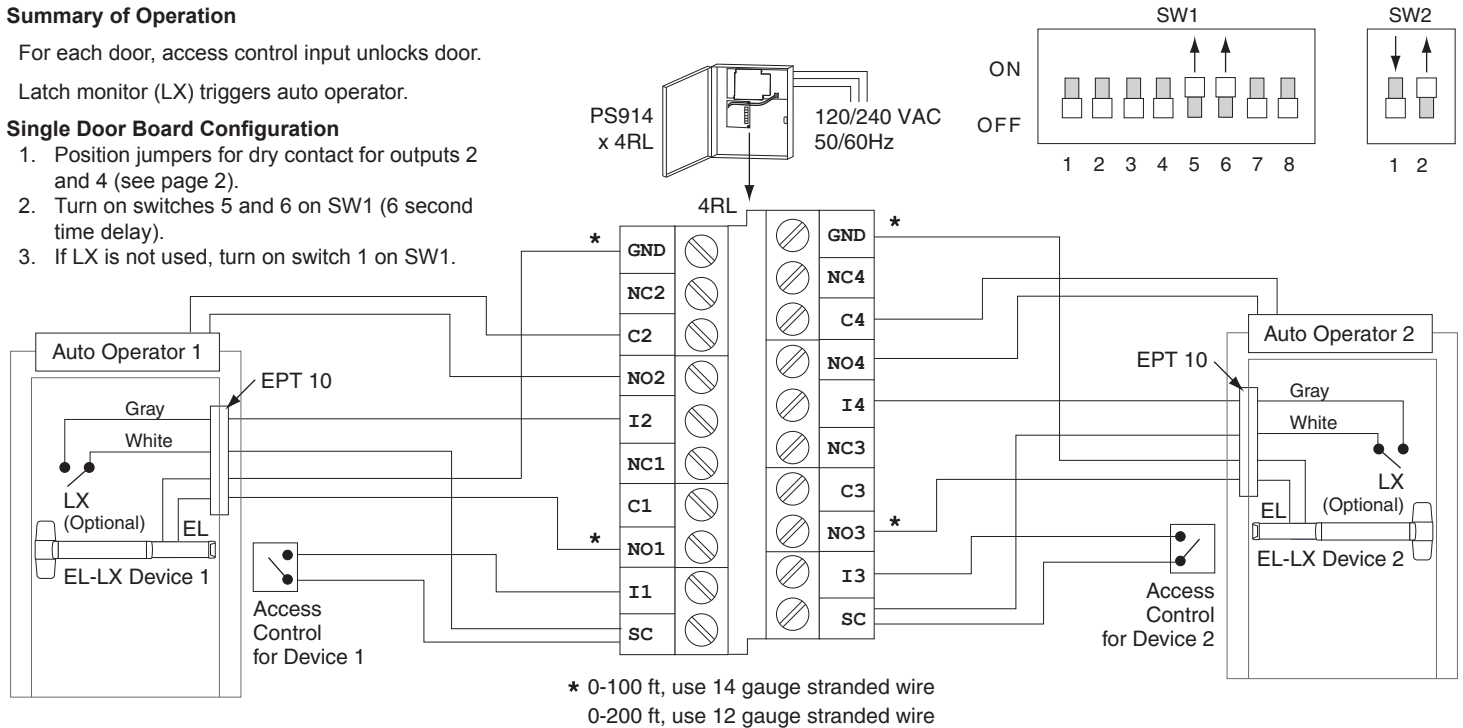
## AO - Wiring Example - Two Single Doors

### Summary of Operation

For each door, access control input unlocks door.  
 Latch monitor (LX) triggers auto operator.

### Single Door Board Configuration

1. Position jumpers for dry contact for outputs 2 and 4 (see page 2).
2. Turn on switches 5 and 6 on SW1 (6 second time delay).
3. If LX is not used, turn on switch 1 on SW1.



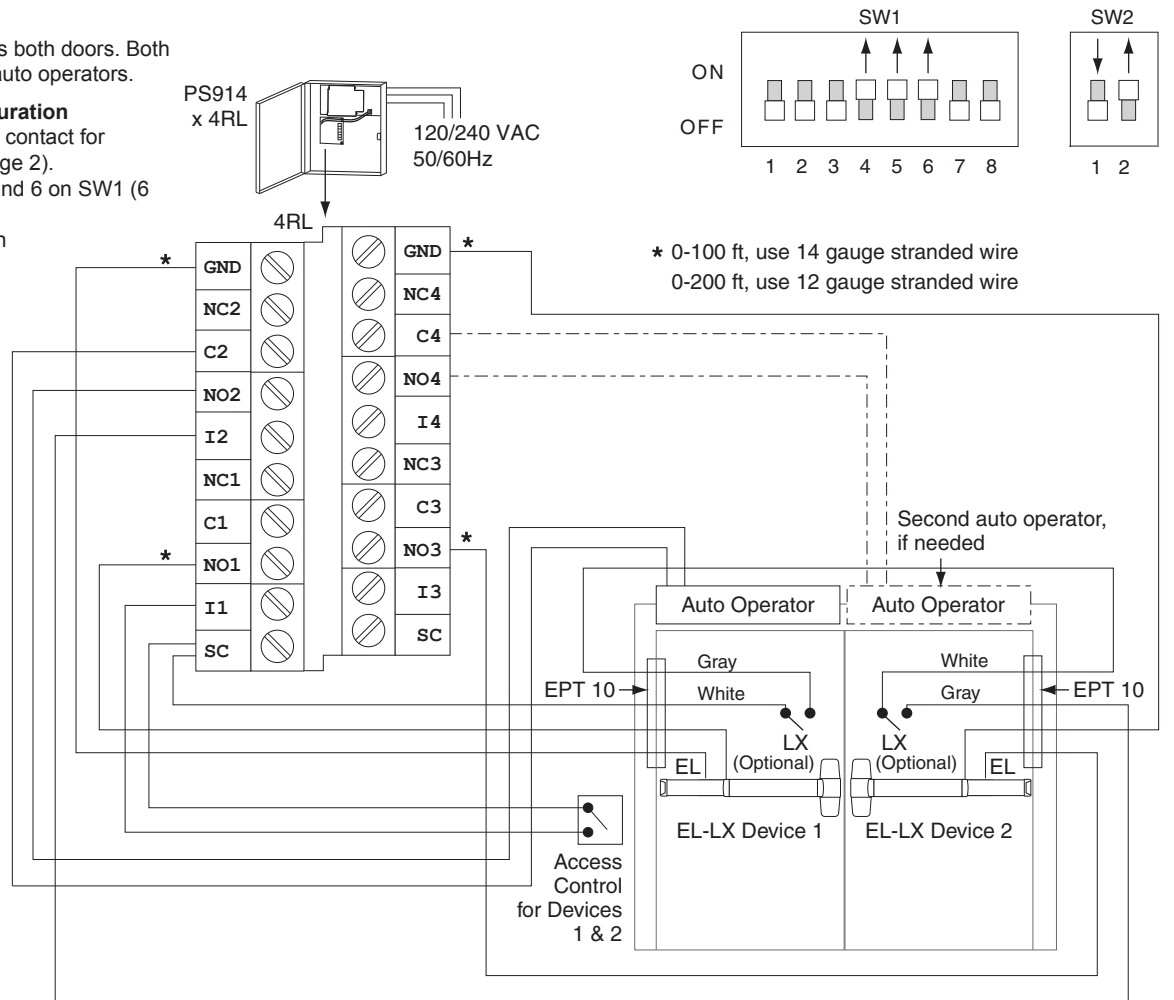
## AO - Wiring Example - Double Doors

### Summary of Operation

Access control input unlocks both doors. Both latch monitors (LX) trigger auto operators.

### Double Door Board Configuration

1. Position jumpers for dry contact for outputs 2 and 4 (see page 2).
2. Turn on switches 4, 5, and 6 on SW1 (6 second time delay).
3. If LX is not used, turn on switch 1 on SW1.



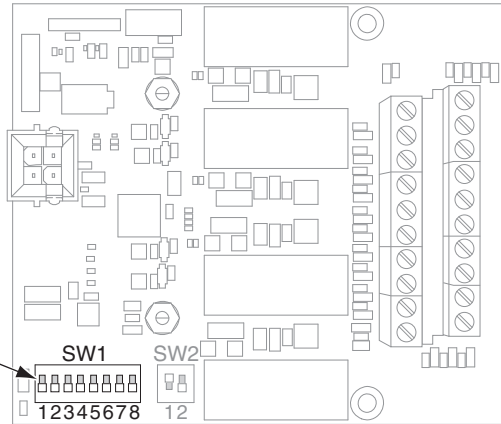
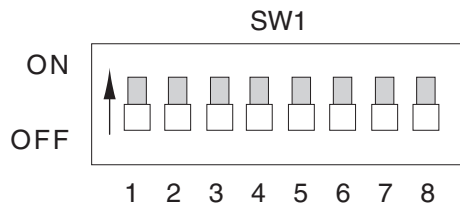
#### Note:

Fail secure output only allowed if approved by Authority Having Jurisdiction

Refer to Wire Table (page 7)

## SI - Configure SW1 DIP Switches

DIP switches on SW1 can be turned "ON" by moving them in the direction that the arrow is pointing. Switches below shown in "OFF" position



	Switch Number	SI DIP Switch Definitions
		All switches shown in "OFF" position in wiring diagram
Enable Time Delay Allows you to choose which outputs will have the below time delay.	1	Turn "ON" to enable time delay for Locking Device 1
	2	Turn "ON" to enable time delay for Locking Device 2
Enable Interlock	3	Turn "ON" to remove O2 from interlock (Allows a single independent door)
	4	Turn "ON" for global interlock (interlocks with other SI boards that have this switch "ON")
Set Time Delay (Output Active)* (0-30 seconds, 2 second increments) 0 Sec: Switches 5-8 "OFF" 30 Sec: Switches 5-8 "ON"	5	Adds 2 seconds to the time delay when "ON"
	6	Adds 4 seconds to the time delay when "ON"
	7	Adds 8 seconds to the time delay when "ON"
	8	Adds 16 seconds to the time delay when "ON"
*See page 2 for dry contacts		

### SI Input / Output Terminal Block Definitions

Input 1	Access Control 1
Input 2	Access Control 2
Input 3	Lock Monitor 1
Input 4	Lock Monitor 2
Output 1*	Lock 1
Output 2*	Lock 2
Output 3*	Follows Output 1 by .5 Sec
Output 4*	Follows Output 2 by .5 Sec
*See page 2 for dry contacts	

### Global Interlock Switch Setting Examples

SI Board #1		SI Board #2		SI Board #3		Application
SW1-3	SW1-4	SW1-3	SW1-4	SW1-3	SW1-4	
Off	Off	Off	Off	Off	Off	Each SI board is a standalone, 2-door interlock.
Off	On	Off	On	Off	On	6-door interlock by setting all boards "global".
Off	On	On	On			A three-door interlock, plus an additional independent door on output 2 of SI Board #2.
Off	On	Off	On	Off	Off	4-Door interlock (SI Board #1,2) and a standalone 2-door interlock (SI Board #3).

### Wire table (suggested maximum)

Wire Ga (AWG)	Device Current (Amps DC)	Output* (max. ft)	Input (max. ft)
14	0.3	850	1200
	0.5	500	
18	0.3	340	1200
	0.5	200	
12	Using EL device with EPT or Door Loop (PS914 required)	200	1200
14		100	
12	Using EL device with Electric Hinge/Pivot (PS914 required)	150	
14		75	

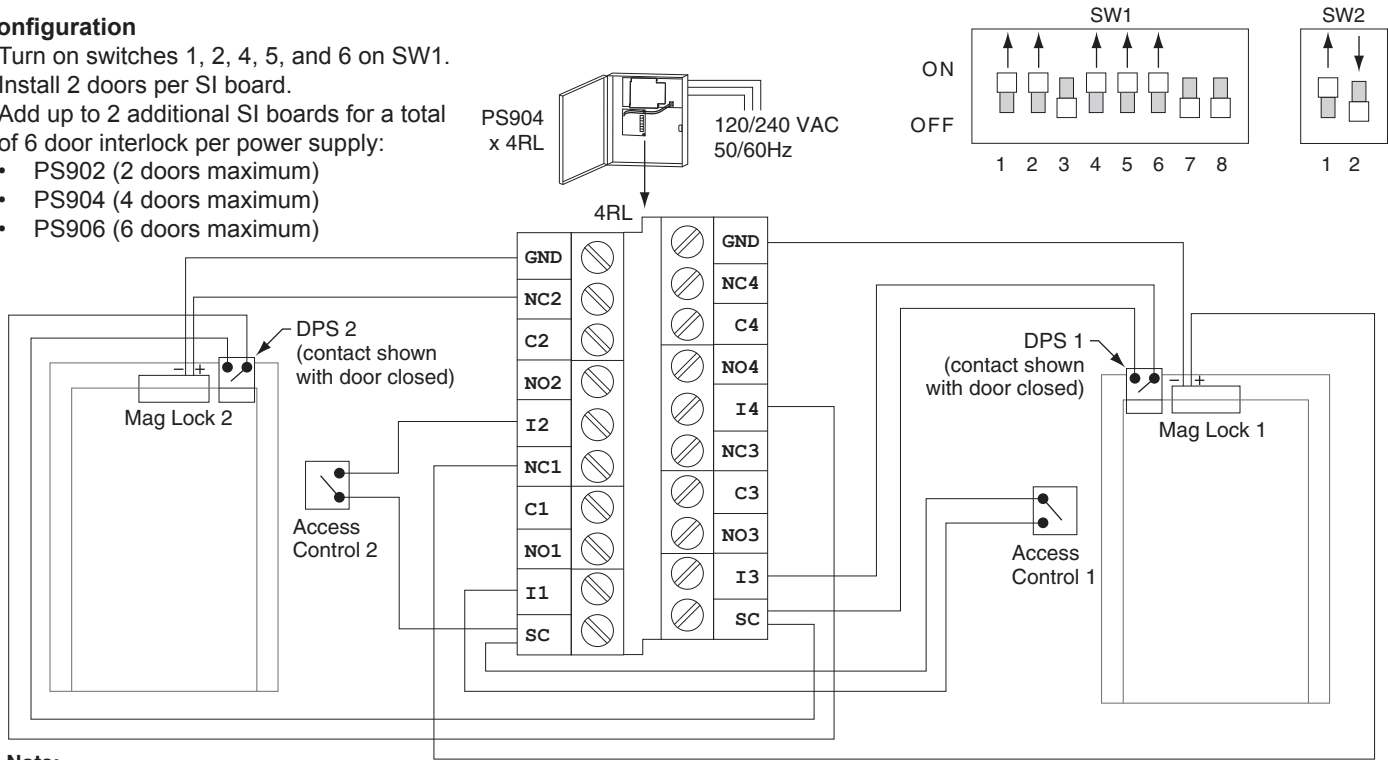
\*Wiring allows for 10% voltage drop at device current at 12 or 24VDC

Max. ft = one way distance between power supply and device

## SI - Wiring Example - 2 to 6 Door Interlock, Normally Locked

### SI Configuration

1. Turn on switches 1, 2, 4, 5, and 6 on SW1.
2. Install 2 doors per SI board.
3. Add up to 2 additional SI boards for a total of 6 door interlock per power supply:
  - PS902 (2 doors maximum)
  - PS904 (4 doors maximum)
  - PS906 (6 doors maximum)



#### Note:

Fail secure output only allowed if approved by Authority Having Jurisdiction

Refer to Wire Table (page 7)

## Basic Troubleshooting for All Functions

Symptom	Check
900-4RL Function LED (yellow) is not blinking, and inputs and outputs are inactive	Verify 900-4RL cable is plugged into an "option" connector on the main board. Check AC wiring and AC breaker. Check PS-900 main board F1 fuse. Use voltmeter to verify 12 VDC or 24 VDC output on PS-900 main board.
900-4RL Function LED (yellow) is blinking, but inputs and outputs are inactive	If 900-FA option is installed onto 900-4RL, verify fire alarm contacts are closed across FA1 and FA2. If 900-FA option is not installed, then verify jumper wire is installed into FA-JMPR connector on the 4RL board.
Inputs and outputs behaving incorrectly.	Verify 2-position DIP switch is set for proper function. Watch yellow LED to confirm 4RL function setting. See page 2. (Verify each DIP switch is pushed into its fully-on or fully-off position.) Verify 8-position DIP switch is set properly for your application. If you are unsure of proper settings, contact Technical Services for assistance. (Verify each DIP switch is pushed into its fully-on or fully-off position.) Verify wiring for all input and output hardware is connected to proper terminals. (Reminder: If 900-4RL is mounted in location 1, top terminals will be GND. If 900-4RL mounted in location 2 or 3, top terminals will be SC.)

### NOTE

**When installation is complete, secure enclosure door with screws or keylock.**



44487064

# 900-BB Battery Backup



Installation Instructions

### ⚠ DANGER: ⚠

To avoid risk of electric shock, turn off AC power to power supply before installing or wiring 900-BB board

## BATTERY SPECIFICATIONS

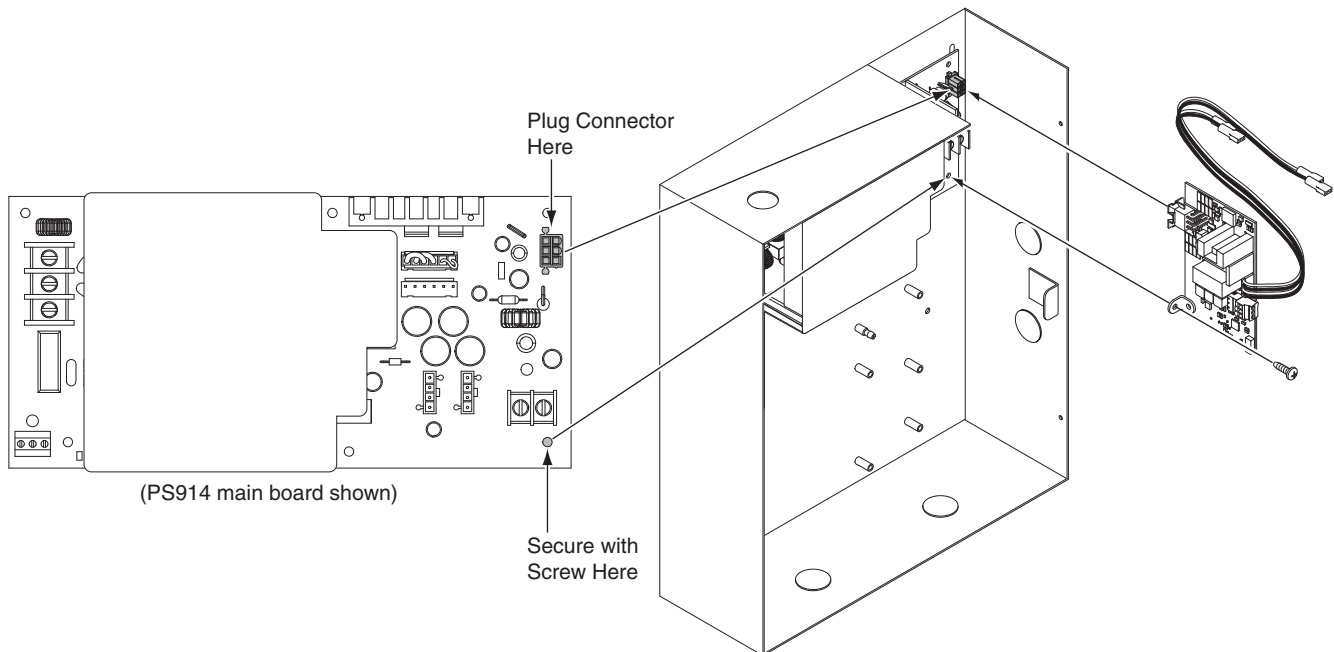
Battery Life	Model PS906 = 6A @ 24V Model PS904 = 4A @ 24V Model PS902 = 2A @ 24V Model PS914 = 4A @ 24V	} Suitable for Canadian Class IV standby power for access control	
Battery Type	12VDC, 7Ah Gel Sealed Rechargeable Battery (2 included) 5 Year Service Life		
Replacement Part Number	Schlage 991280		

### ⚠ CAUTION ⚠

Charge only Schlage 991280 batteries. Other types may burst, causing personal injury and damage. Observe the proper polarity when connecting the batteries.

Refer to installation instructions for compatible supply models - PS902, PS904, PS906, and PS914.

## 1 Install 900-BB onto main circuit board and secure with screw





## 2 Install and connect batteries

2a Turn On AC Breaker to Energize Power Supply

2b Place Batteries in Box with Terminals to the Left

2c Attach Wires from Battery Board  
 Red wires = (+)  
 Black wires = (-)

2d Verify That Battery LED is On  
 If LED is not on, cycle AC power off and then back on.

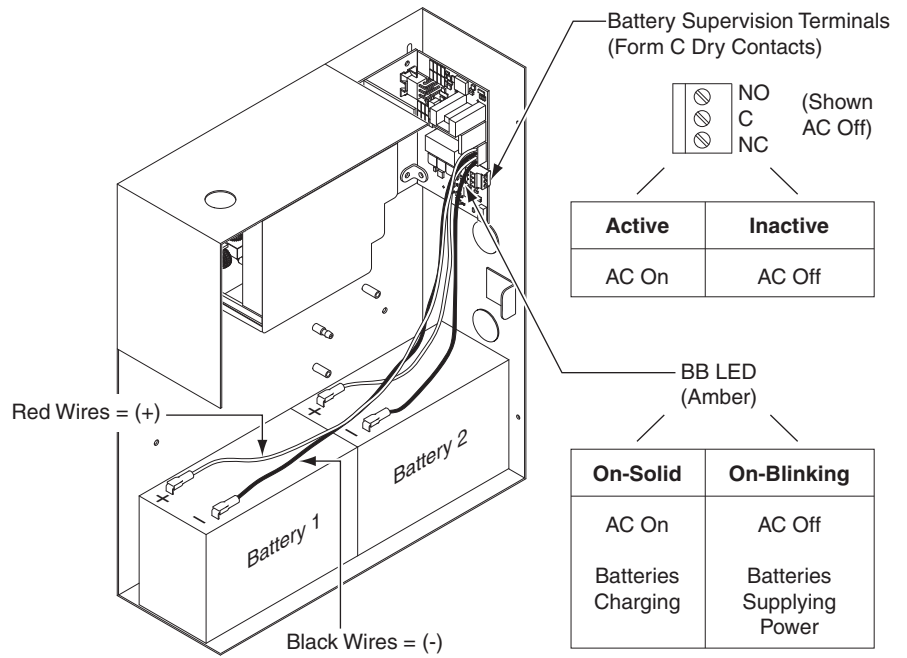
① **Note: Allow 24 hours for batteries to fully charge**



**WARNING**

**Incorrect connection may cause damage to the batteries**

① **Note: when installation is complete, secure enclosure door with screws or keylock.**



**Customer Service**

1-877-671-7011 [www.allegion.com](http://www.allegion.com)



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 44487064 Rev. 01/14-b

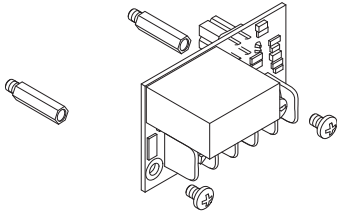


44487072

# 900-FA Fire Alarm Input



Installation Instructions

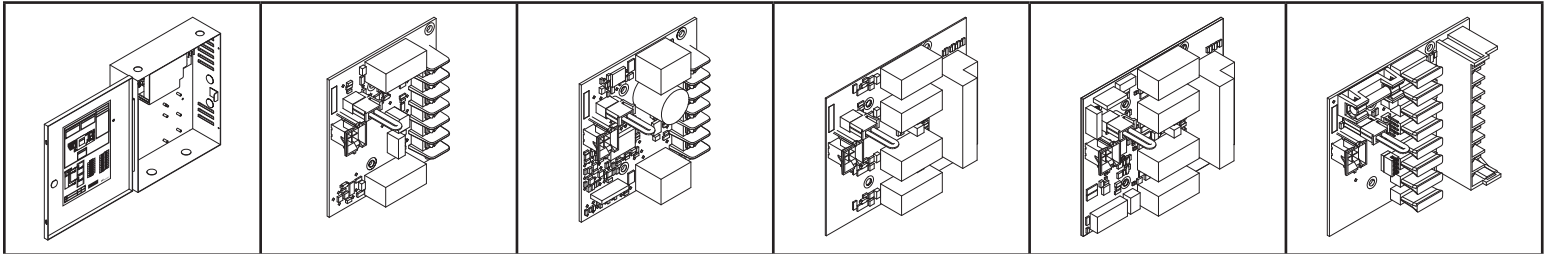


Input (Fire Alarm)	Dry contacts required (Closed = no fire alarm) Connect control contacts between FA1 and FA2
Output (Supervision)	30VDC, 1A resistive dry contact
Board Input Power	Board requires 0.05A max. of power supply output current to operate
Temperature Range	32°-120° F (0°- 49° C)
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15

The 900-FA Fire Alarm board can be installed on any one of the following power supply or option boards (refer to installation instructions):

**WARNING**

To avoid risk of electric shock, turn off AC power to power supply before installing or wiring 900-FA board. In the event a fire alarm is active, this board will remove power from the PS902 DC output and any 900-series option board output.



PS902 Power Supply

900 2RS (2 relay)

900-2Q  
(2 Relay w/com)

900-4R (4 Relay)

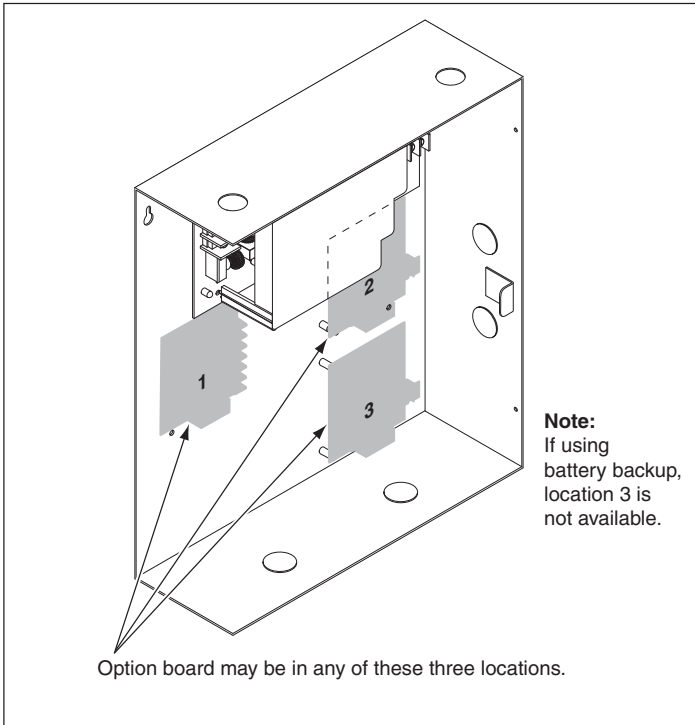
900-4RL  
(4 Relay w/logic)

900-8F (8 Zone,  
Distribution-fuse)  
900-8P (8 Zone,  
Distribution-PTC)

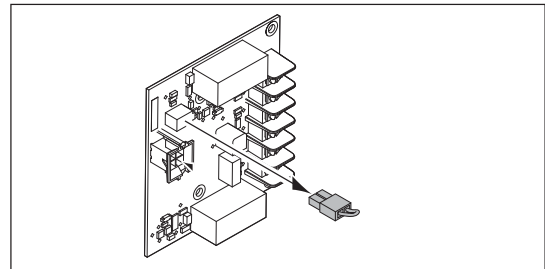
- If 900-FA was factory installed, go to step 2
- If installing to option board, go to 1a
- If installing to PS902 main board, go to 1b

## 1a If installing to option board

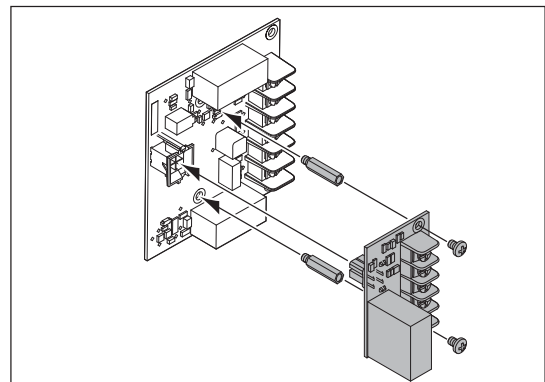
Choose Option Board where 900-FA is to be Installed



Remove Jumper from Option Board



Install 900-FA to Option Board

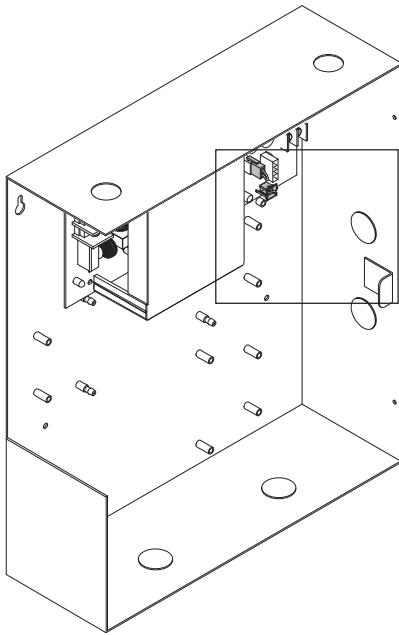


Customer Service

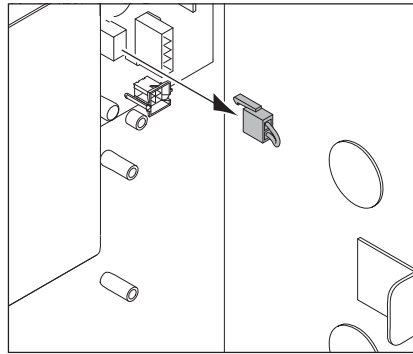
1-877-671-7011

www.allegion.com

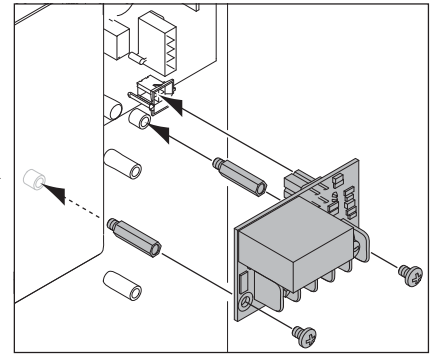
# 1b If installing to PS902 main board



## Remove Jumper



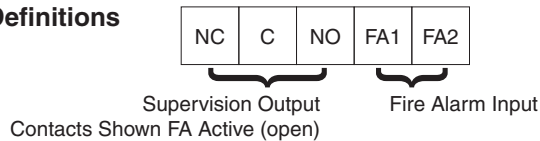
## Install 900-FA Here



**Note:** Complete power failure shall result in a fail safe operation. When connected to a fire alarm releasing control unit, total loss of power for the locking mechanisms shall be configured for a fail safe operation.

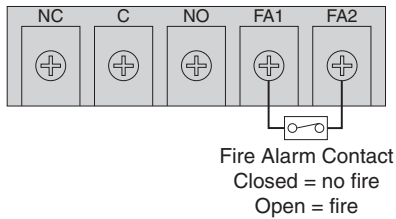
# 2 900-FA wiring

## Terminal Definitions

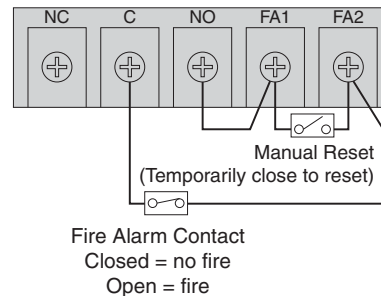


**Note:** Use 18 gauge wire for all wiring. Wire length dependent on physical layout.

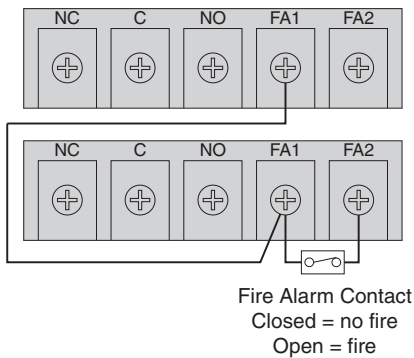
### One 900-FA Board - Automatic Reset



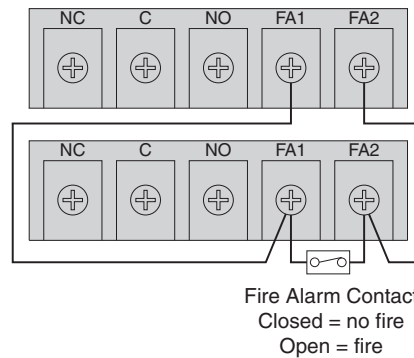
### One 900-FA Board - Manual Reset



### Two 900-FA Boards on one power supply Automatic Reset



### Two 900-FA Boards on two power supplies Automatic Reset



**NOTE: WHEN INSTALLATION IS COMPLETE, SECURE ENCLOSURE DOOR WITH SCREWS OR KEYLOCK**



44487023

# PS902



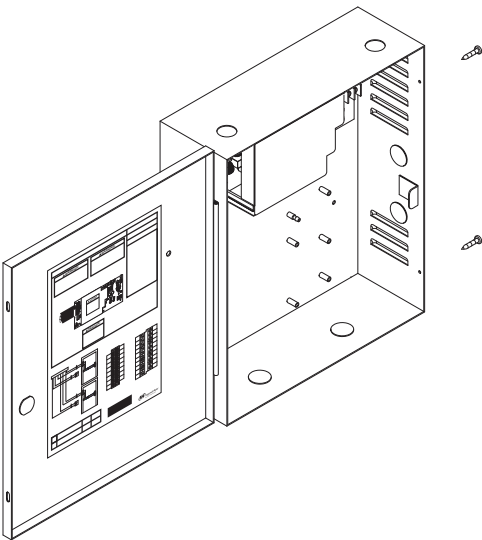
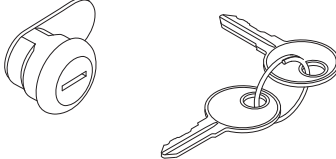
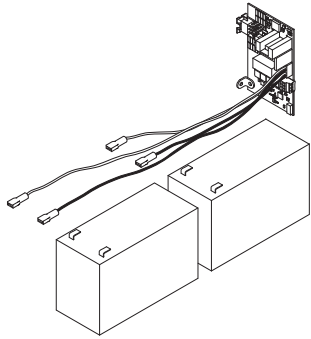
Power Supply

Installation Instructions

**⚠ DANGER ⚠**

**To avoid risk of electric shock, turn off AC power before installing or servicing PS902 power supply**

These instructions cover the following parts:

 <p>PS902 Power Supply - Pages 1-3</p>	 <p>900-KL Keylock (optional) - Page 2</p>
	 <p>900-BB Battery Backup (optional) - Page 3</p>

## PS902 Power Supply Specifications:

Input	120/240 VAC, 1.1 A, 50/60Hz, High Voltage Class 1 Wiring Required	
Output	2 Amp DC @ 12/24 VDC	
Enclosure	14" H x 12" W x 4" D (8 knockouts, 1/2" or 3/4" )	
Temperature Range	32°-120° F (0°- 49° C)	
Fuse	F1, T3.15A 250VAC	<b>⚠ CAUTION ⚠</b> <b>For protection against risk of fire, replace fuse with same type and rating</b>
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15, Class 2 Output	
Compatible Boards (Optional, 1 board maximum)	900-2RS 900-2Q 900-4R 900-4RL 900-8F 900-8P	INST. INSTRUCTIONS - 24125007 INST. INSTRUCTIONS - 44487098 INST. INSTRUCTIONS - 44487106 INST. INSTRUCTIONS - 44487080 INST. INSTRUCTIONS - 44487106 INST. INSTRUCTIONS - 44487106
Fire Alarm Input Board (Optional)	900-FA	INST. INSTRUCTIONS - 44487072
Battery Backup Board (Optional)	900-BB	INST. INSTRUCTIONS - 44487064

## Mounting notes

The PS902 must be installed in accordance with the article 760 of the National Electrical Code or NFPA 72, Canadian Electrical Code, or any other applicable codes.

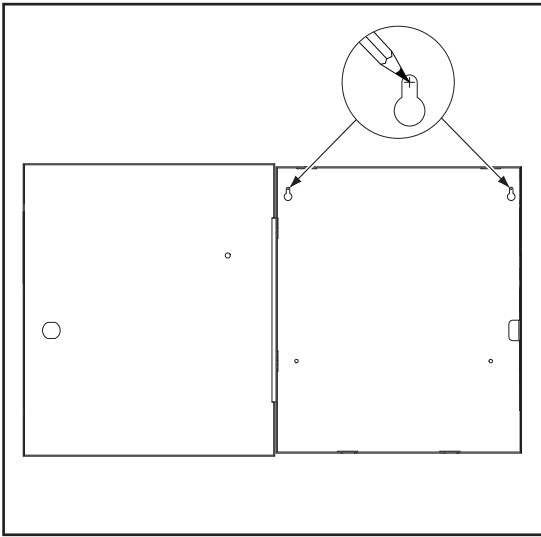
Install the PS902 indoors within the protected premises.

Check national and local codes for additional installation requirements.

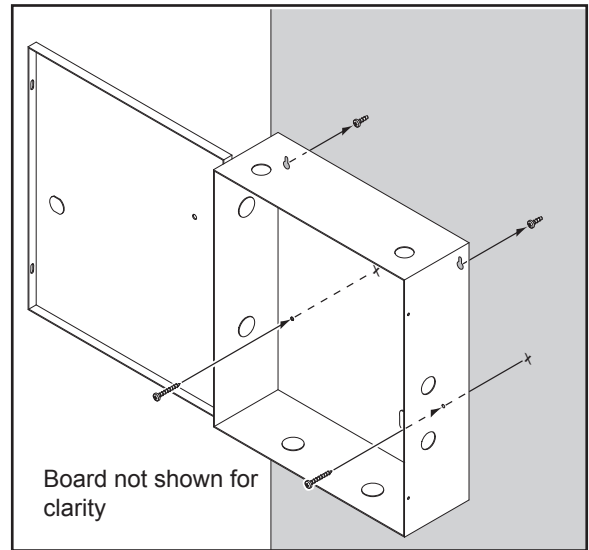
Enclosure must be firmly mounted to a solid surface using hardware suitable for the surface.

## 1 Mount power supply

### 1a Mark 2 Top Holes



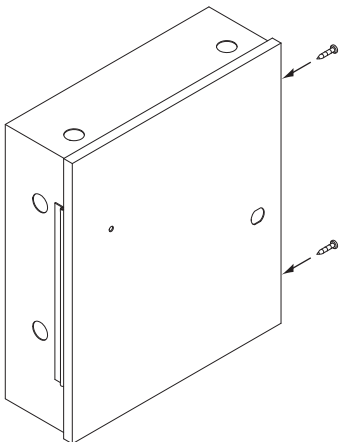
### 1b Secure Enclosure with 4 Screws



## 2 Secure enclosure door

### If No Keylock

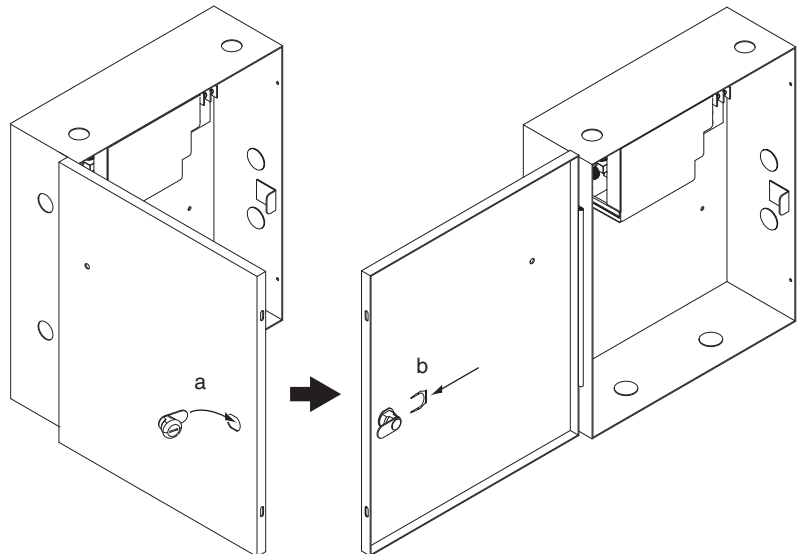
Enclosure will be secured with 2 screws as shown (done as last step)



OR

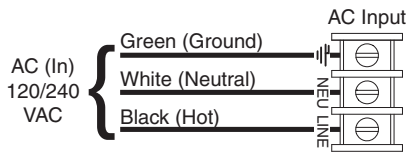
### If Keylock

Remove knockout and insert key cylinder, then slide in clip



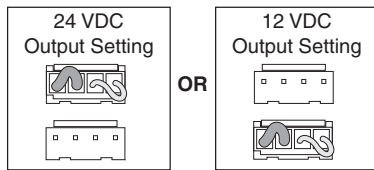
### 3 PS902 setup and testing

#### 3a Connect AC Wiring

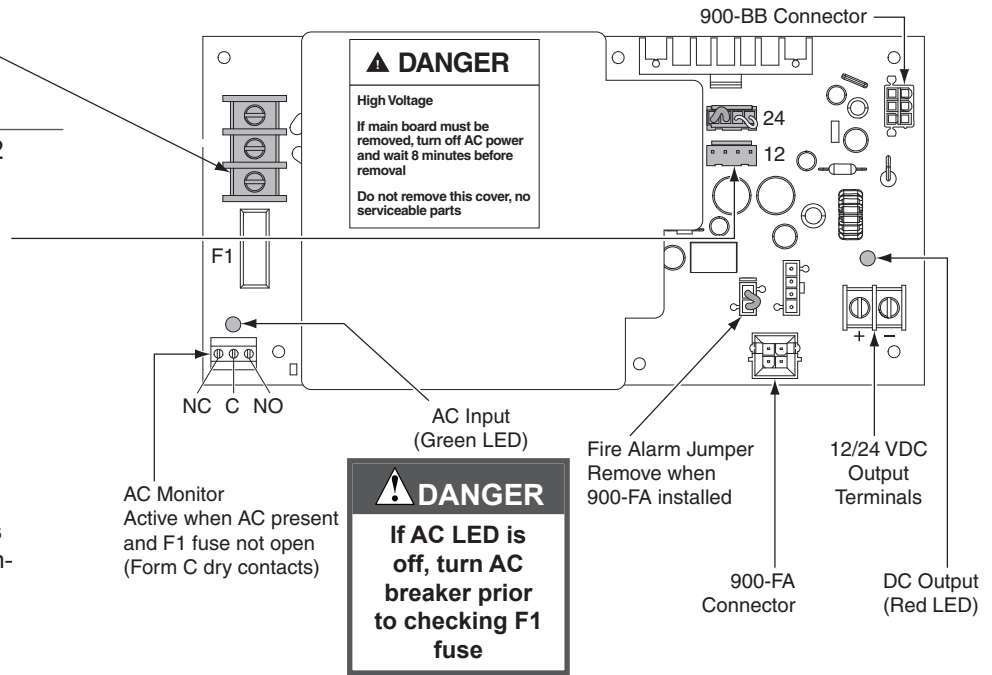


**⚠ DANGER ⚠**  
Ensure AC breaker is turned off

#### 3b Use Jumper to Select 24 VDC or 12 VDC Output



Note: Minimum of 1/4" separation between AC and DC wiring as well as power limited and non-power limited.



**⚠ DANGER**  
High Voltage  
If main board must be removed, turn off AC power and wait 8 minutes before removal  
Do not remove this cover, no serviceable parts

**⚠ DANGER**  
If AC LED is off, turn AC breaker prior to checking F1 fuse

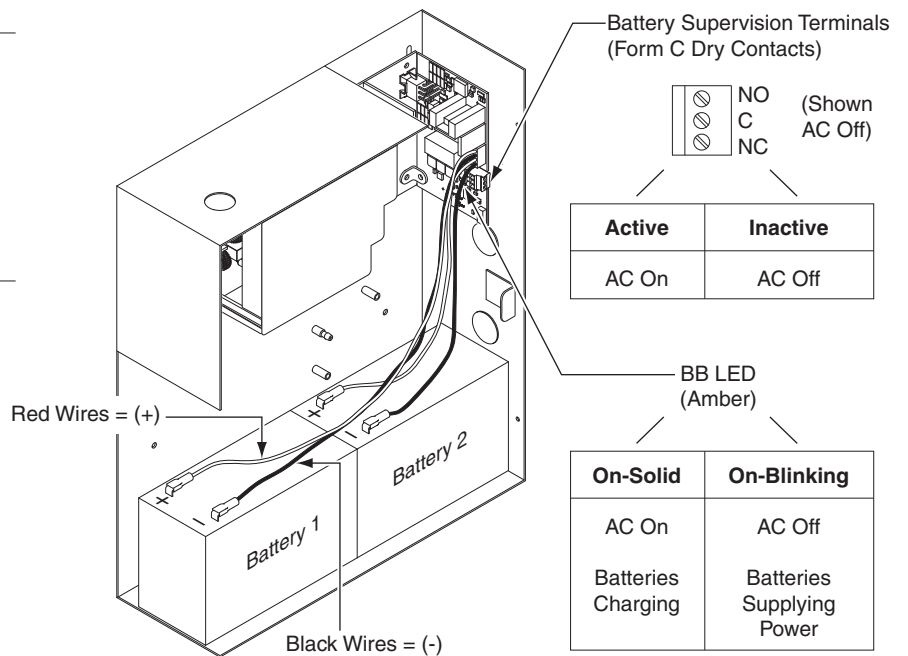
### 4 Install 900-BB battery backup (If Included)

Refer to 900-BB instructions for additional info

#### 4a Place Batteries in Box with Terminals to the left

#### 4b Attach Wire from Battery Board Red wires = (+) Black wire = (-)

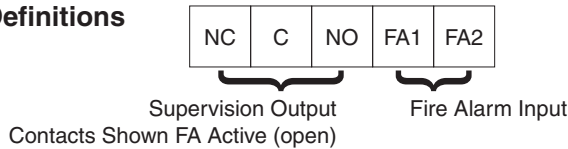
Note: allow 24 hours for batteries to fully charge



### 5 Turn on AC breaker to test power supply

- Verify AC LED is On = GREEN
- Verify DC LED is On = RED
- Verify BB LED (if applicable) is On = AMBER

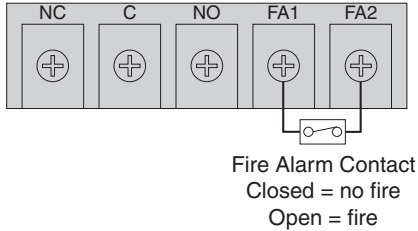
**Terminal Definitions**



**Note:** If FA is installed on PS902:

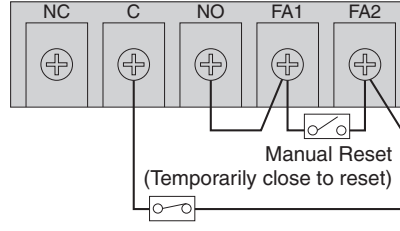
- Verify jumper J13 is removed
- Power will be removed from PS902 when fire alarm is active

**One 900-FA Board - Automatic Reset**

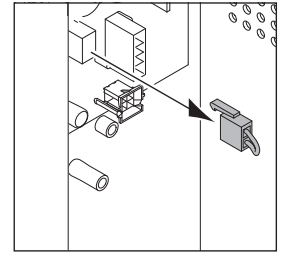


Fire Alarm Contact  
Closed = no fire  
Open = fire

**One 900-FA Board - Manual Reset**

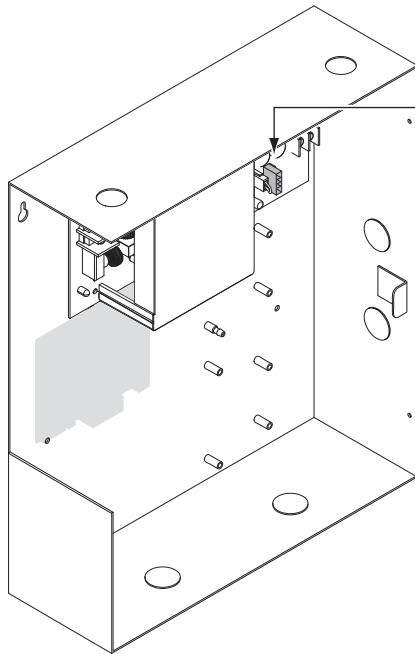


Fire Alarm Contact  
Closed = no fire  
Open = fire

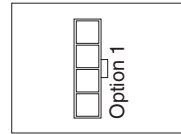


**Option Boards**

Refer to appropriate instructions if any board shown below is factory-installed



**Option Board to be Plugged into Option Connector**



- See option board installation instructions for wiring info

**Notes:**

1. When powering (2) QEL's with a PS902, both cannot be activated at the same time, they must be sequenced.
2. Latchbolt retraction of (2) sequenced QEL's requires more than 1 second to complete.
3. For double door QEL applications with auto operators, it is recommended to use a PS904, 906, or 914 power supply.

Available option boards:

900-2RS (2 Relay)	900-2Q (2 Relay w/com)	900-4R (4 Relay)	900-4RL (4 Relay w/logic)	900-8F (8 Zone Distribution-fuse)	900-8P (8 Zone Distribution-PTC)

**NOTE:** When installation is complete, secure enclosure door with screws (provided) or keylock

**Customer Service**

1-877-671-7011    www.allegion.com/us





44487031

# PS904



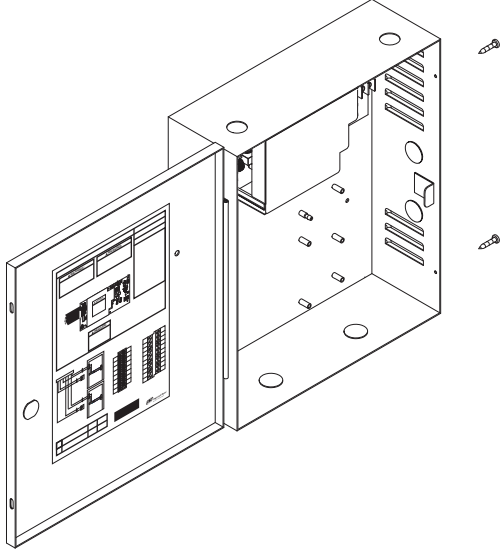
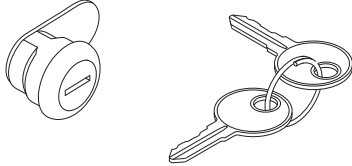
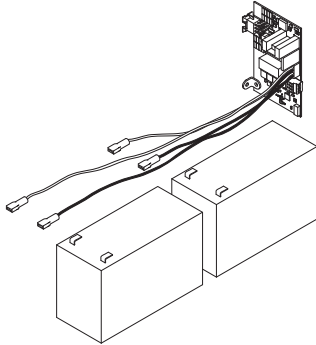
Power Supply

Installation Instructions

**⚠ DANGER ⚠**

**To avoid risk of electric shock, turn off AC power before installing or servicing PS904 power supply**

These instructions cover the following parts:

 <p>PS904 Power Supply - Pages 1-3</p>	 <p>900-KL Keylock (optional) - Page 2</p>
	 <p>900-BB Battery Backup (optional) - Page 3</p>

## PS904 Power Supply Specifications:

Input	120/240 VAC, 1.7 A, 50/60Hz, High Voltage Class 1 Wiring Required	
Output	4 Amp DC @ 12/24 VDC	
Enclosure	14" H x 12" W x 4" D (8 knockouts, 1/2" or 3/4" )	
Temperature Range	32°-120° F (0°- 49° C)	
Fuse	F1, T4A 250 VAC	<b>⚠ CAUTION ⚠</b> <b>For protection against risk of fire, replace fuse with same type and rating</b>
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15, Class 2 Output	
Compatible Boards (Optional, 2 boards maximum)	900-2RS 900-4R 900-4RL 900-8F 900-8P	INST. INSTRUCTIONS - 24125007 INST. INSTRUCTIONS - 44487106 INST. INSTRUCTIONS - 44487080 INST. INSTRUCTIONS - 44487106 INST. INSTRUCTIONS - 44487106
Fire Alarm Input Board (Optional)	900-FA (Requires one option board above)	INST. INSTRUCTIONS - 44487072
Battery Backup Board (Optional)	900-BB	INST. INSTRUCTIONS - 44487064



## Mounting Notes

The PS904 must be installed in accordance with the article 760 of the National Electrical Code or NFPA 72, Canadian Electrical Code, or any other applicable codes.

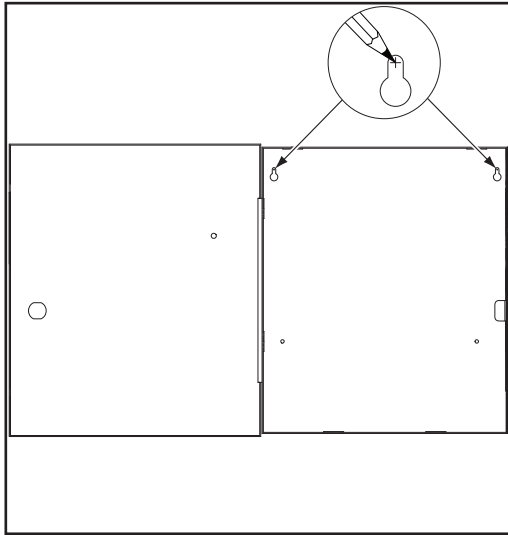
Install the PS904 indoors within the protected premises.

Check national and local codes for additional installation requirements.

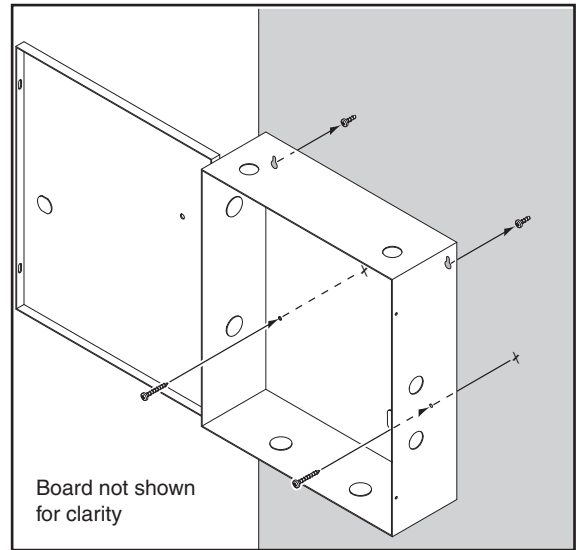
Enclosure must be firmly mounted to a solid surface using hardware suitable for the surface.

### 1 Mount Power Supply

#### 1a Mark 2 Top Holes



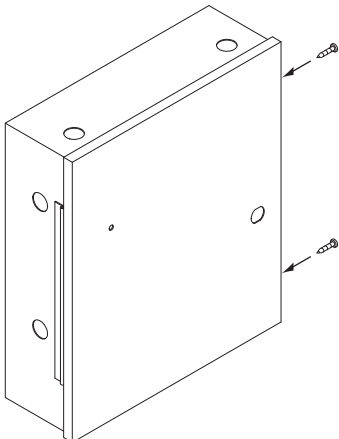
#### 1b Secure Enclosure with 4 Screws



### 2 Secure enclosure door

#### If No Keylock

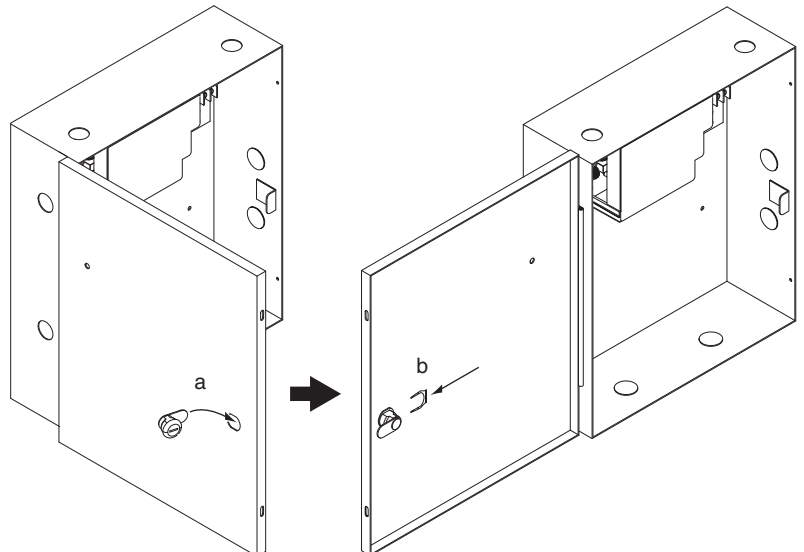
Enclosure will be secured with 2 screws as shown (done as last step)



OR

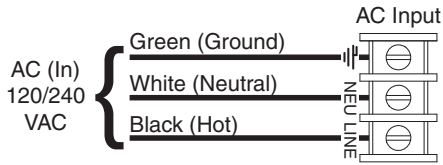
#### If Keylock

Remove knockout and insert key cylinder, then slide in clip



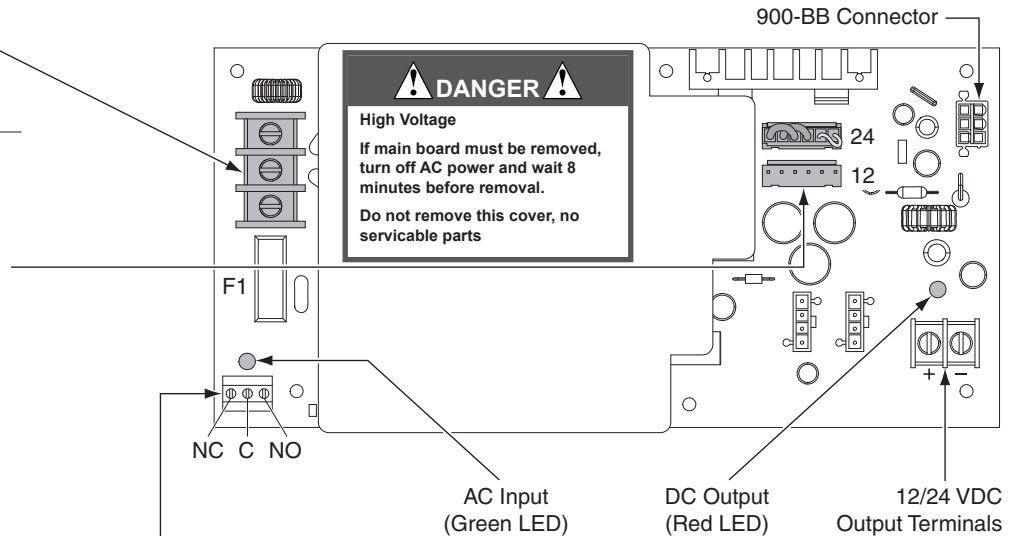
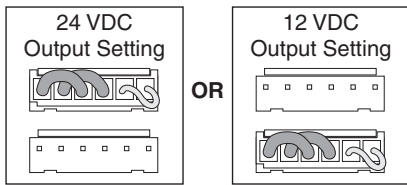
### 3 PS904 setup and testing

#### 3a Connect AC Wiring



**⚠ DANGER ⚠**  
Ensure AC breaker is turned off

#### 3b Use Jumper to Select 24 VDC or 12 VDC Output



Note: Minimum of 1/4" separation between AC and DC wiring as well as power limited and non-power limited.

AC Monitor  
Active when AC present  
and F1 fuse not open  
(Form C dry contacts)

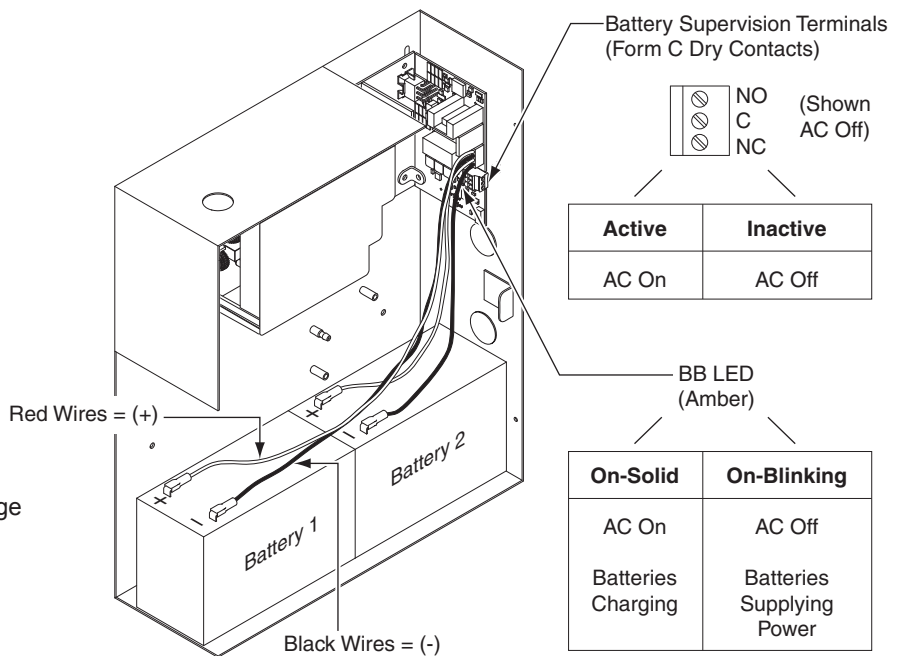
**⚠ DANGER ⚠**  
If AC LED is off, turn  
AC breaker prior to  
checking F1 fuse

### 4 Install 900-BB battery backup (if included)

Refer to 900-BB Instructions

#### 1a Place Batteries in Box with Terminals to the Left

#### 1b Attach Wires from Battery Board Red wires = (+) Black wires = (-)



Note: Allow 24 hours for batteries to fully charge

## 5 Turn on AC breaker to test power supply

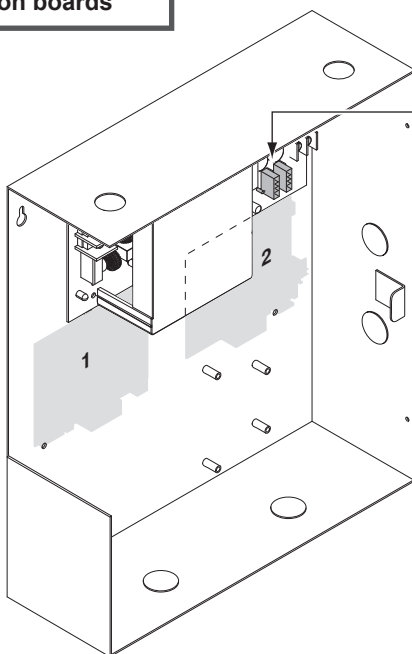
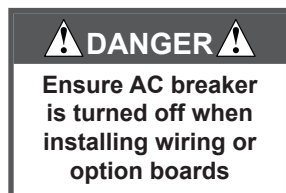
Verify AC LED is On = GREEN

Verify DC LED is On = RED

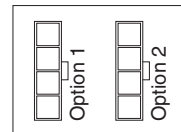
Verify BB LED (if applicable) is On = AMBER

### Option Boards

Refer to appropriate instructions if any board shown below is factory-installed

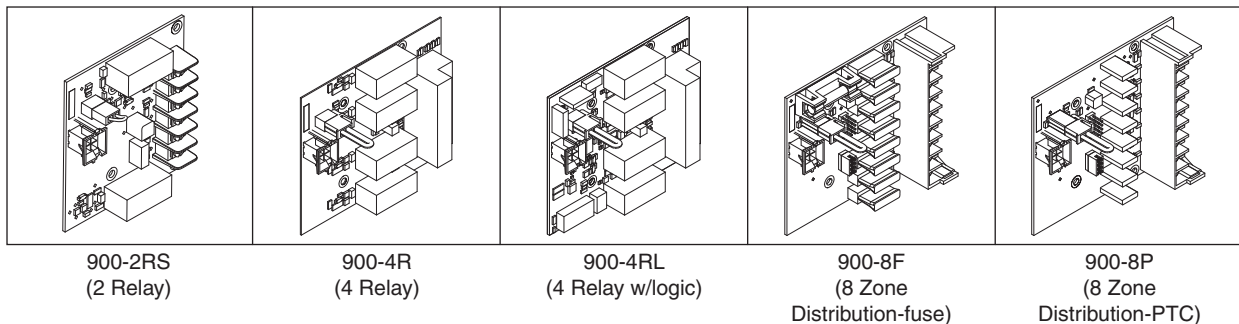


Option Boards may be Plugged into either Option Connector



• See option board installation instructions for wiring info

Available option boards:



Note: When installation is complete, secure enclosure door with screws (provided) or keylock.

### Customer Service

1-877-671-7011

[www.allegion.com/us](http://www.allegion.com/us)



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44487031 Rev. 06/14-d



44487049

Power Supply

# PS906

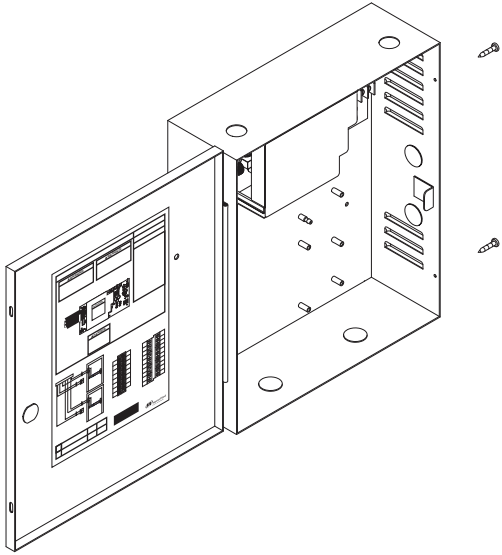
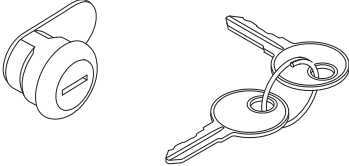
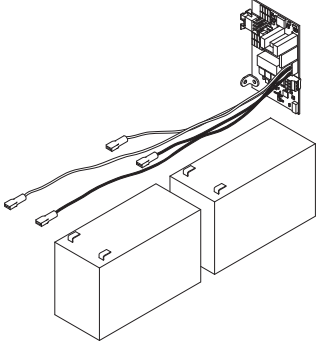


Installation Instructions

**⚠ DANGER ⚠**

**To avoid risk of electric shock, turn off AC power before installing or servicing PS906 power supply**

These instructions cover the following parts:

 <p>PS906 Power Supply - Pages 1-3</p>	 <p>900-KL Keylock (optional) - Page 2</p>
	 <p>900-BB Battery Backup (optional) - Page 3</p>

## PS906 Power Supply Specifications:

Input	120/240 VAC, 2.4 A, 50/60Hz, High Voltage Class 1 Wiring Required	
Output	6 Amp DC @ 12/24 VDC	
Enclosure	14" H x 12" W x 4" D (8 knockouts, 1/2" or 3/4" )	
Temperature Range	32°-120° F (0°- 49° C)	
Fuse	F1, T6.3A 250 VAC	<b>⚠ CAUTION ⚠</b> <b>For protection against risk of fire, replace fuse with same type and rating</b>
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15, Class 1 Output	
Compatible Boards (Optional, 3 boards maximum)	900-2RS 900-4R 900-4RL 900-8F 900-8P	INST. INSTRUCTIONS - 24125007 INST. INSTRUCTIONS - 44487106 INST. INSTRUCTIONS - 44487080 INST. INSTRUCTIONS - 44487106 INST. INSTRUCTIONS - 44487106
Fire Alarm Input Board (Optional)	900-FA (Requires one option board above)	INST. INSTRUCTIONS - 44487072
Battery Backup Board (Optional)	900-BB	INST. INSTRUCTIONS - 44487064
AC Monitor Output	Form C Contacts, 30 VDC, 1 Amp, Resistive Load	

## Mounting notes

The PS906 must be installed in accordance with the article 760 of the National Electrical Code or NFPA 72 Canadian Electrical Code, or any other applicable codes.

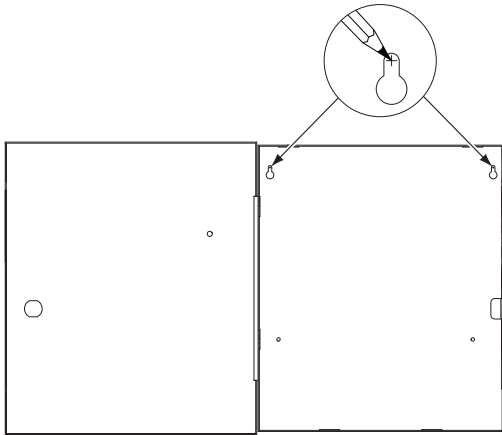
Install the PS906 indoors within the protected premises.

Check national and local codes for additional installation requirements.

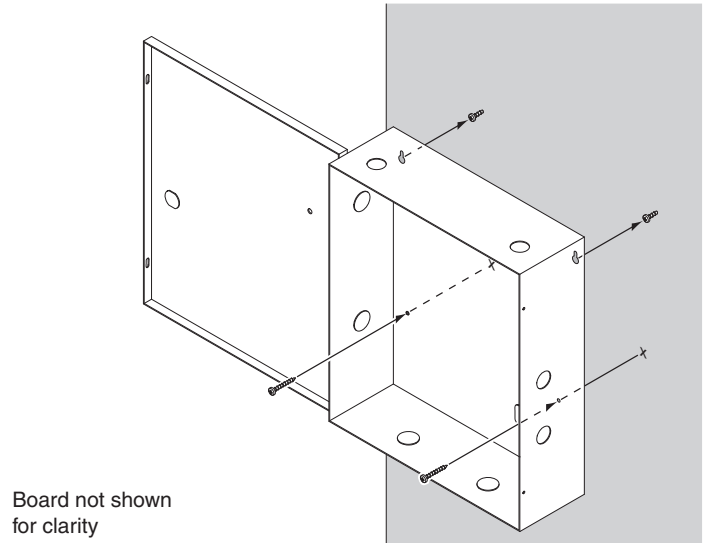
Enclosure must be firmly mounted to a solid surface using hardware suitable for the surface.

### 1 Mount power supply

#### 1a Mark 2 Top Holes



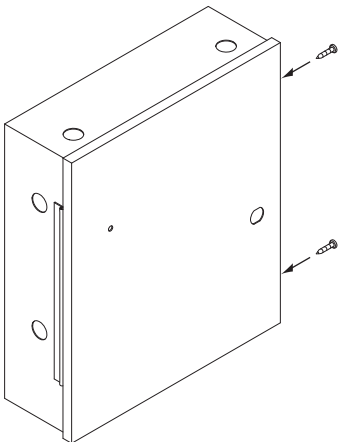
#### 1b Secure Enclosure with 4 Screws



### 2 Secure enclosure door

#### If No Keylock

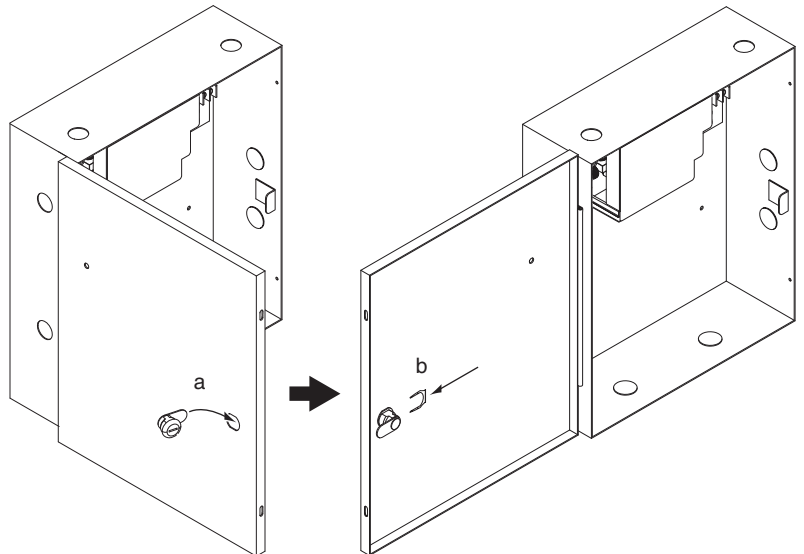
Enclosure will be secured with 2 screws as shown (done as last step)



OR

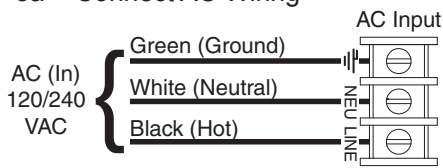
#### If Keylock

Remove knockout and insert key cylinder, then slide in clip



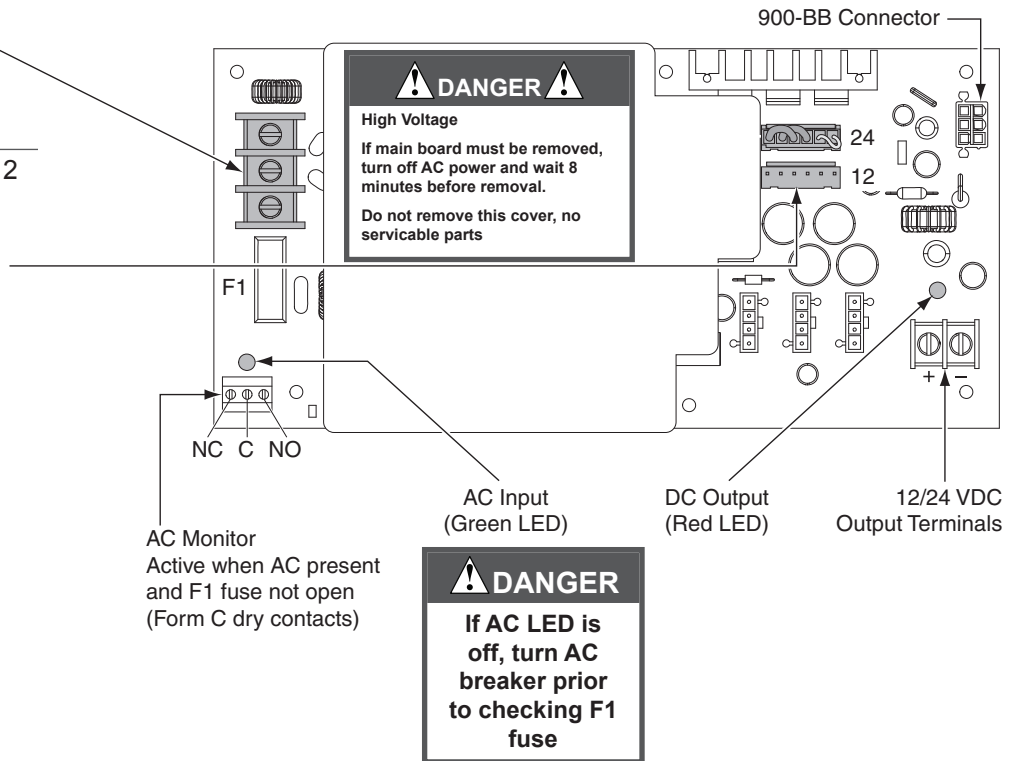
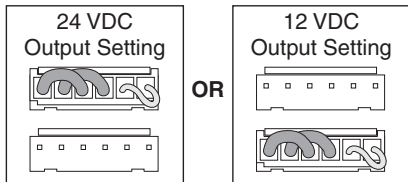
### 3 PS906 Setup and testing

#### 3a Connect AC Wiring



**⚠ DANGER ⚠**  
Ensure AC breaker is turned off

#### 3b Use Jumper to Select 24 VDC or 12 VDC Output



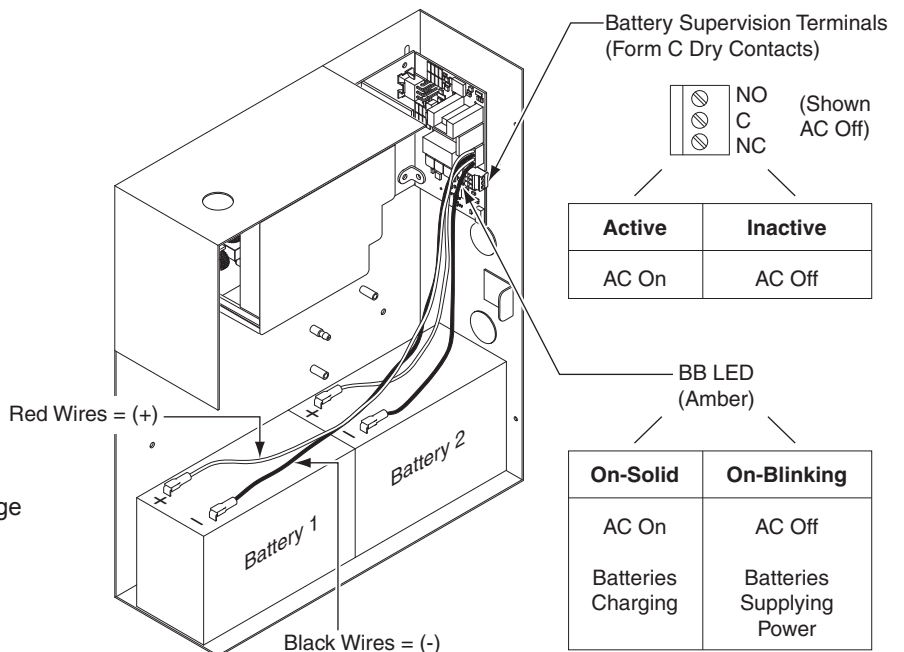
Note: Minimum of 1/4" separation between AC and DC wiring as well as power limited and non-power limited.

### 4 Install 900-BB Battery backup (if included)

Refer to 900-BB instructions for additional info

#### 4a Place Batteries in Box with Terminals to the Left

#### 4b Attach Wires from Battery Board Red wires = (+) Black wires = (-)



Note: Allow 24 hours for batteries to fully charge

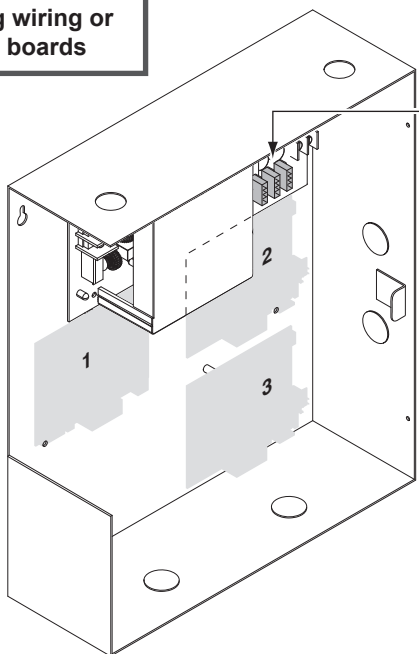
## 5 Turn on AC breaker to test power supply

- Verify AC LED is On = GREEN
- Verify DC LED is On = RED
- Verify BB LED (if applicable) is On = AMBER

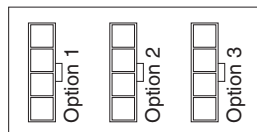
### Option boards

Refer to appropriate instructions if any board shown below is factory-installed

**⚠ DANGER ⚠**  
Ensure AC breaker is turned off when installing wiring or option boards

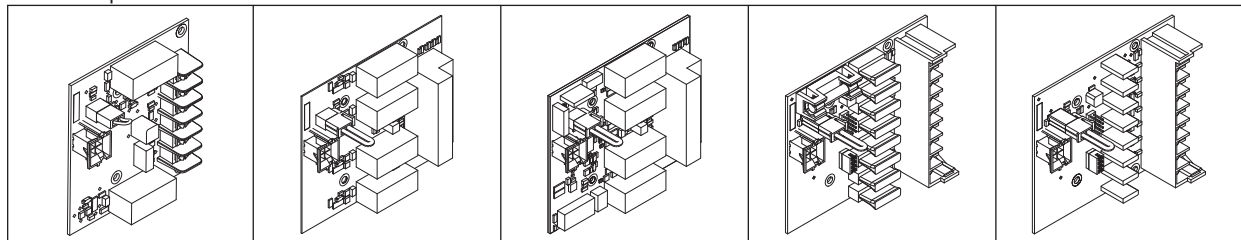


**Option Boards may be Plugged into any Available Option Connector**



- See option board installation instructions for wiring info

Available option boards:



900-2RS  
(2 Relay)

900-4R  
(4 Relay)

900-4RL  
(4 Relay w/logic)

900-8F  
(8 Zone  
Distribution-fuse)

900-8P  
(8 Zone  
Distribution-PTC)

**NOTE:** When installation is complete, secure enclosure door with screws (provided) or keylock.

### Customer Service

1-877-671-7011

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44487049 Rev. 06/14-d



44487056

# PS914

# VON DUPRIN®

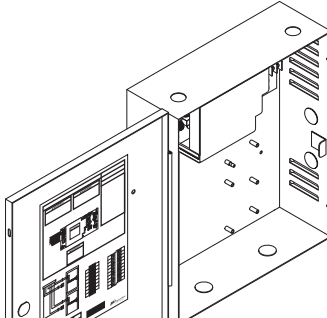
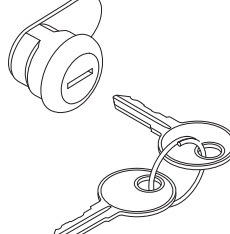
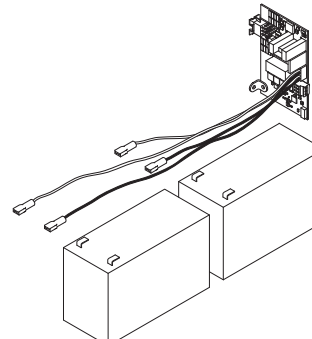
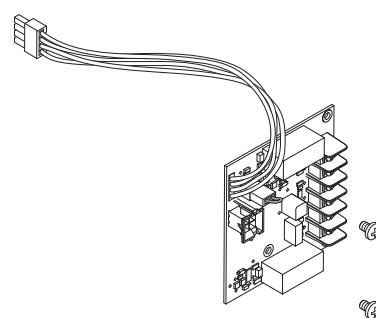
Power Supply

Installation Instructions

**⚠ DANGER ⚠**

**To avoid risk of electric shock, turn off AC power before installing or servicing PS914 power supply**

These instructions cover the following parts:

 <b>PS914</b> <b>Power Supply</b> Pages 1-3	 <b>900-KL Keylock</b> (optional) Page 2	 <b>900-BB Battery Backup</b> (optional) Page 3	 <b>900-2RS (optional) - Page 4</b> (2 Zone EL Control - Individual/Sequential)
--	--	--	--

### PS914 Power Supply Specifications:

Input	120/240 VAC, 1.4 A, 50/60Hz, High Voltage Class 1 Wiring Required	
Output	4 Amp DC @ 12/24 VDC May be used to power Von Duprin & Falcon EL device at 24VDC, 16A, 300ms	
Enclosure	14" H x 12" W x 4" D (8 knockouts, 1/2" or 3/4" )	
Temperature Range	32°-120° F (0°- 49° C)	
Fuse	F1, T6.3A 250 VAC	<b>⚠ CAUTION ⚠</b> <b>For protection against risk of fire, replace fuse with same type and rating</b>
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15, Class 2 Output	
Compatible Boards (Optional, 2 boards maximum)	900-2RS 900-2Q 900-4R 900-4RL 900-8F 900-8P	INST. INSTRUCTIONS - 44487056 INST. INSTRUCTIONS - 44487098 INST. INSTRUCTIONS - 44487106 INST. INSTRUCTIONS - 44487080 INST. INSTRUCTIONS - 44487106 INST. INSTRUCTIONS - 44487106
Fire Alarm Input Board (Optional)	900-FA (Requires one option board above)	INST. INSTRUCTIONS - 44487072
Battery Backup Board (Optional)	900-BB	INST. INSTRUCTIONS - 44487064
AC Monitor Output	Form C Contacts, 30 VDC, 1 Amp, Resistive Load	

### 900-2RS Specifications:

Inputs I1 , I2	Dry contacts required (Closed = Active) Connect control contacts between SC (Signal Common) and any input	
Outputs o1 , o2	<ul style="list-style-type: none"> <li>• 12/24VDC, 3A (wet) when AC powered</li> <li>• 9.6-13.2VDC or 19.2-26.4VDC when battery powered</li> <li>• May be used with PS914 to power EL device at 24VDC, 16A, 300ms</li> <li>• Maximum load cannot exceed power supply ratings or 3A for outputs combined</li> </ul>	
Board Input Power	Board requires 0.1A max. of power supply output current to operate	
Temperature Range	32°-120° F (0°- 49° C)	
Compliance	UL 294, ULC-S318, RoHS, & FCC Part 15	
Fire Alarm Input	Accepts 900-FA Fire Alarm Board (Optional)	



## Mounting notes

The PS914 must be installed in accordance with the article 760 of the National Electrical Code or NFPA 72, Canadian Electrical Code, or any other applicable codes.

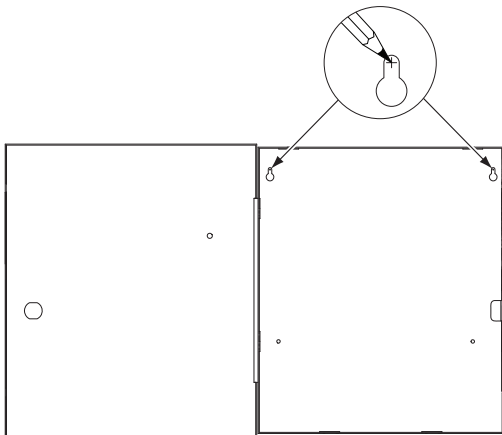
Install the PS914 indoors within the protected premises.

Check national and local codes for additional installation requirements.

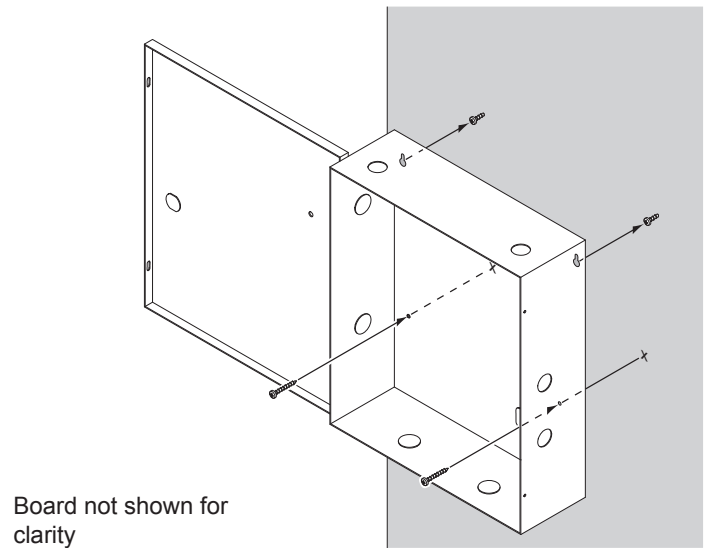
Enclosure must be firmly mounted to a solid surface using hardware suitable for the surface.

### 1 Mount power supply

#### 1a Mark 2 Top Holes



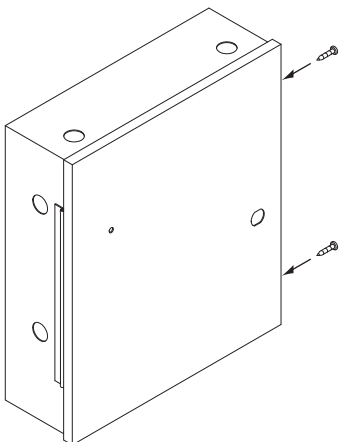
#### 1b Secure Enclosure with 4 Screws



### 2 Secure enclosure door

#### If No Keylock

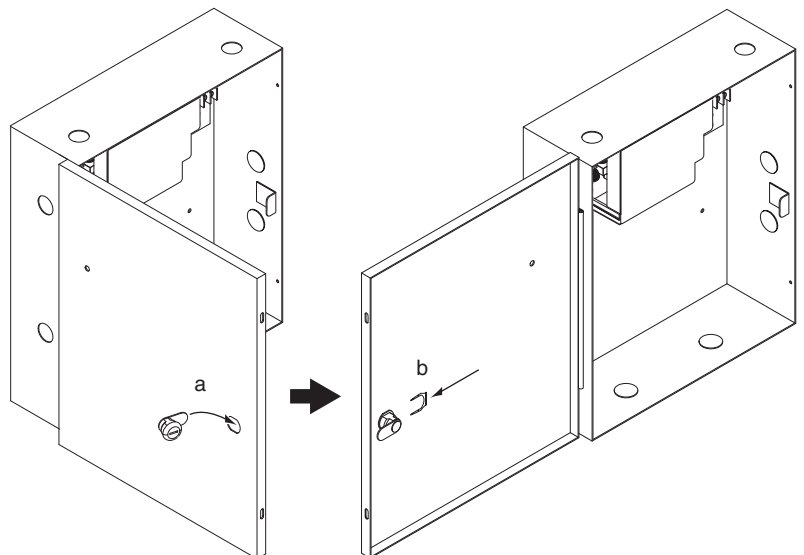
Enclosure will be secured with 2 screws as shown (done as last step)



OR

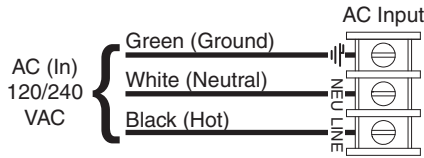
#### If Keylock

Remove knockout and insert key cylinder, then slide in clip

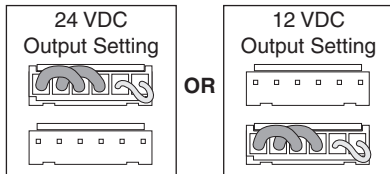


### 3 PS914 setup and testing

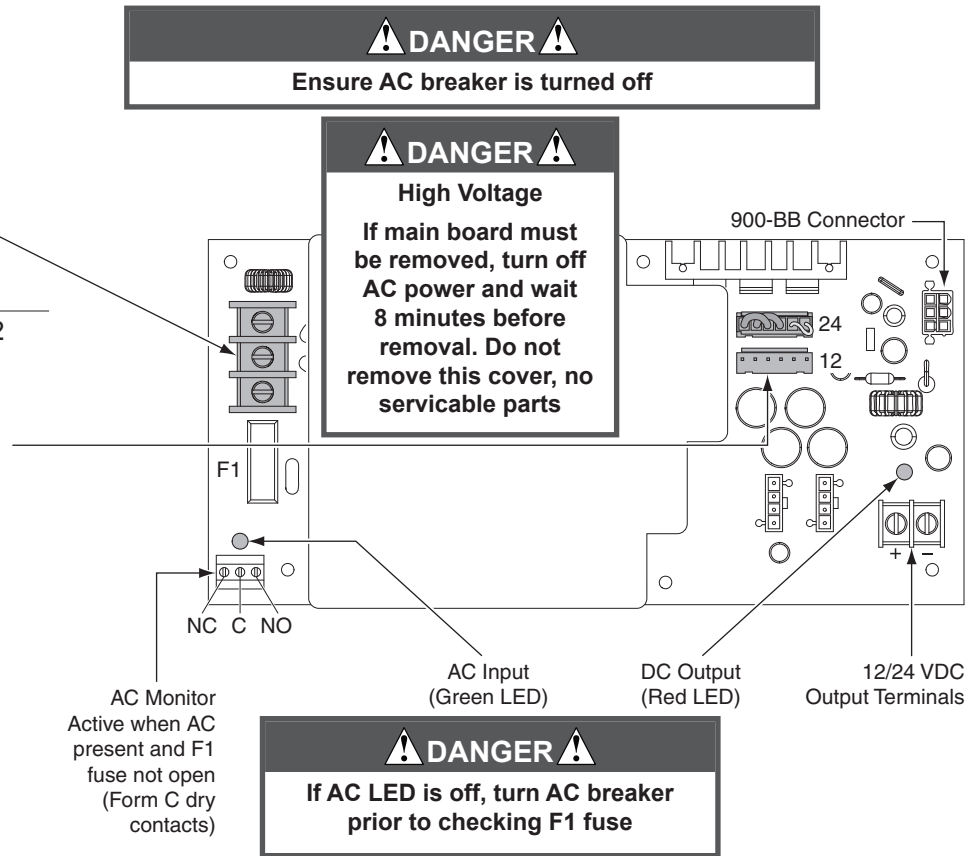
#### 3a Connect AC Wiring



#### 3b Use Jumper to Select 24 VDC or 12 VDC Output



Note: Minimum of 1/4" separation between AC and DC wiring as well as power limited and non-power limited.



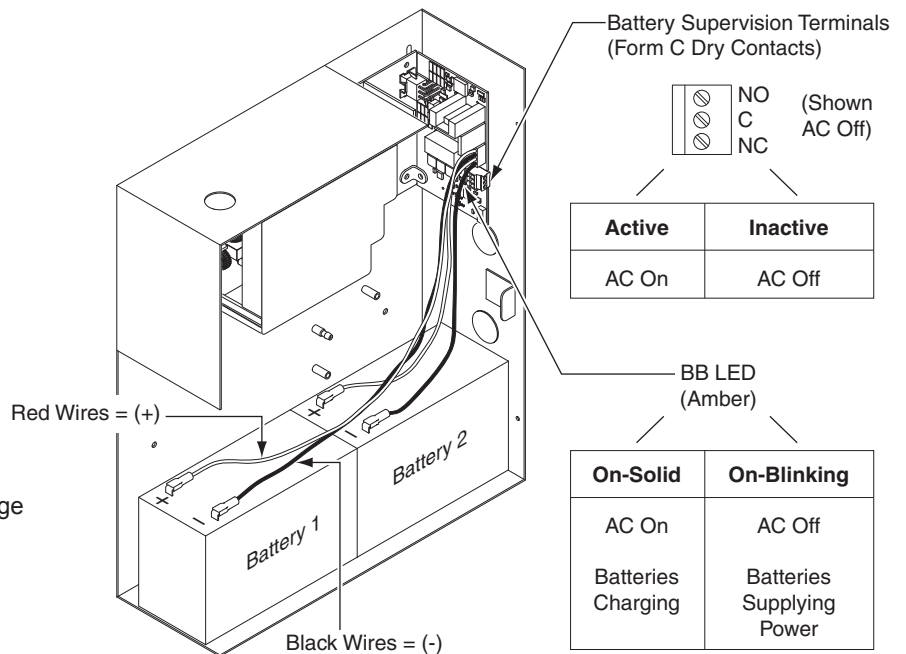
### 4 Install 900-BB battery backup (if included)

Refer to 900-BB instructions for additional info

#### 1a Place Batteries in Box with Terminals to the Left

#### 1b Attach Wires from Battery Board Red wires = (+) Black wires = (-)

Note: Allow 24 hours for batteries to fully charge

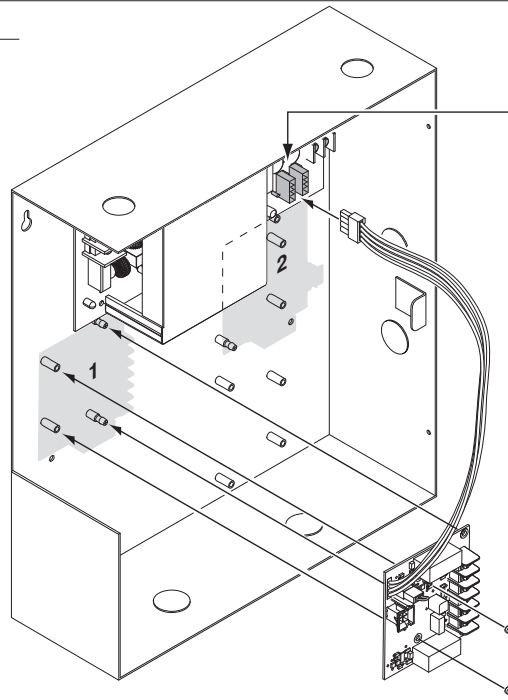
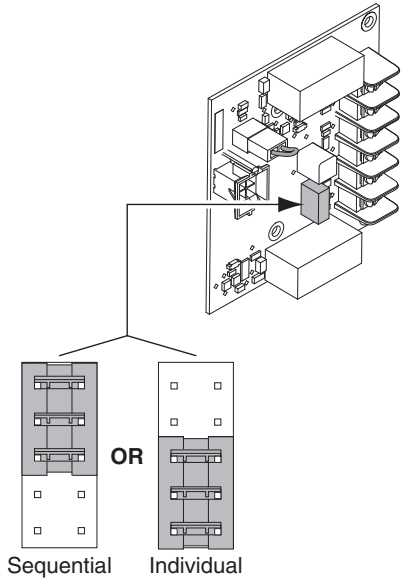


### 5 Turn on AC breaker to test power supply

- Verify AC LED is On = GREEN
- Verify DC LED is On = RED
- Verify BB LED (if applicable) is On = AMBER

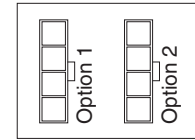
## 6 Install 900-2rs option board (if required)

### 6a Use Jumper to Select Function



**⚠ DANGER ⚠**  
**Ensure AC breaker is turned off when installing or wiring option boards**

### 6b Plug 2RS Cable into any Available Option Connector



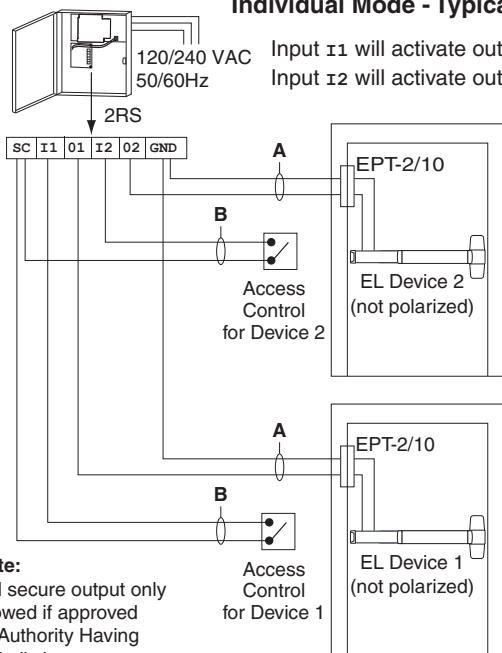
### 6c Secure Board with Screws

**Note:** 24VDC output setting required when EL device connected

If installing board in location 2, rotate board 180°

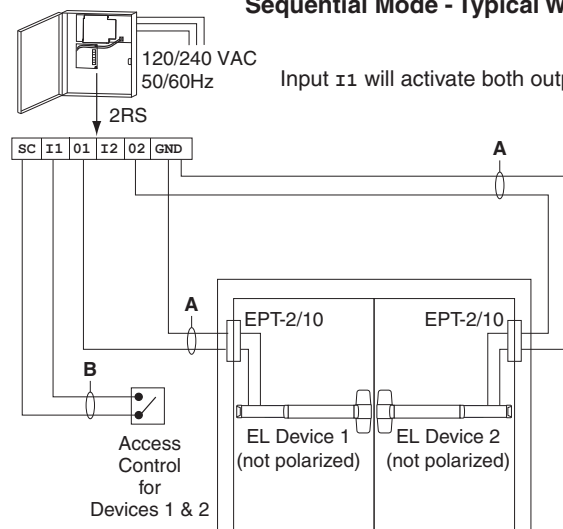
## 7 Connect wiring to 900-2rs option board

### Individual Mode - Typical Wiring



**Note:**  
 Fail secure output only allowed if approved by Authority Having Jurisdiction

### Sequential Mode - Typical Wiring



Wire table (suggested maximum)

Wire Ga (AWG)	Device Current (Amps DC)	Output* (max. ft)	Input (max. ft)
14	0.3	850	
	0.5	500	
18	0.3	340	1200
	0.5	200	
12	Using EL device with EPT or Door Loop (PS914 required)	200	
14		100	
12	Using EL device with Electric Hinge/Pivot (PS914 required)	150	
14		75	

\*Wiring allows for 10% voltage drop at device current at 12 or 24VDC  
 Max. ft = one way distance between power supply and device

## 8 IF PS-914 has other option boards, see their instructions

**NOTE: WHEN INSTALLATION IS COMPLETE, SECURE ENCLOSURE DOOR WITH SCREWS OR KEYLOCK**

Customer Service

1-877-671-7011 www.allegion.com/us

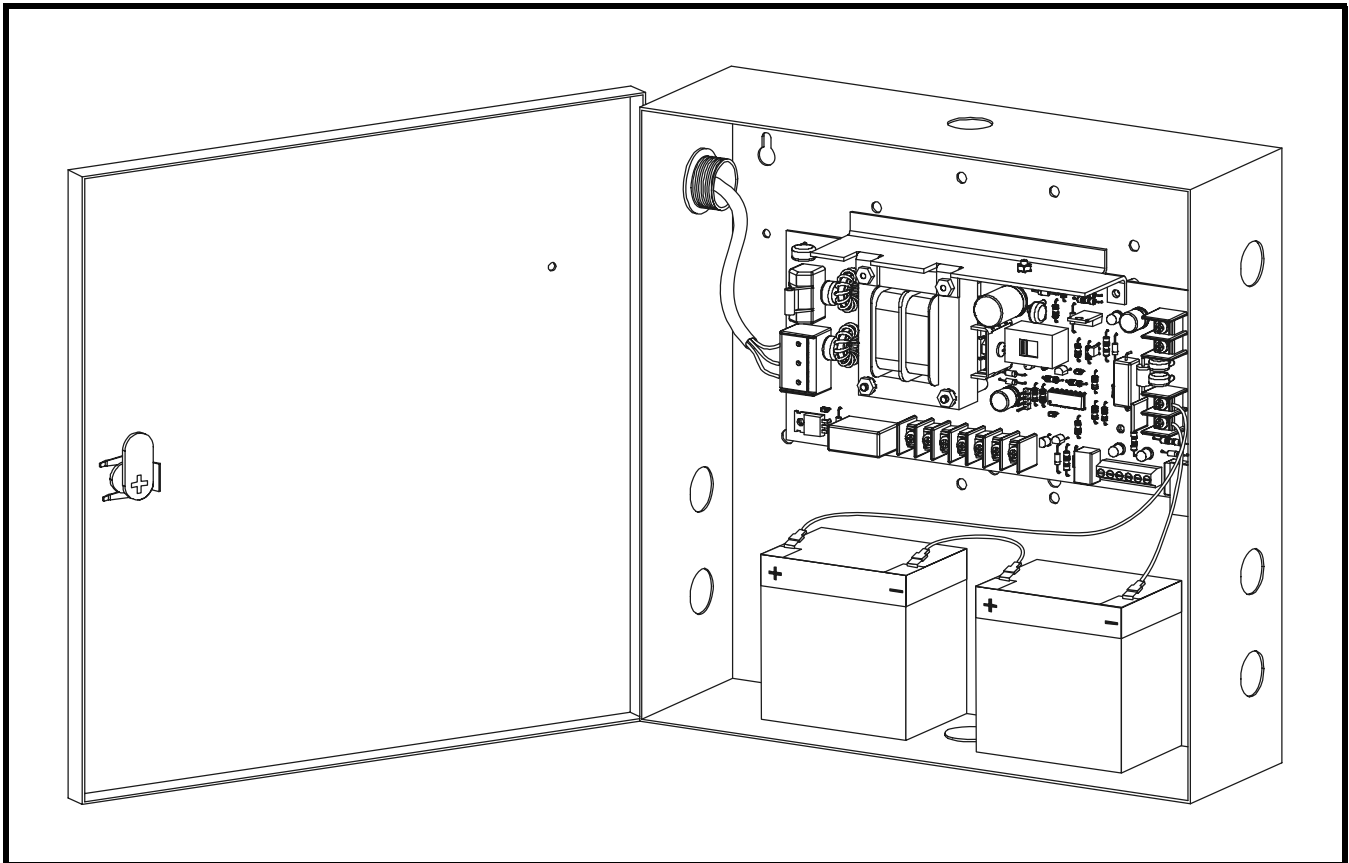




# 505 SERIES POWER SUPPLY

## INSTALLATION MANUAL

### 505ULAC



**Schlage Lock Company**  
575 Birch Street  
Forrestville, CT 06010  
technical support: 866-322-1237  
email: SESsupport@irco.com  
web: www.irsupport.net



# 505ULAC Installation Instructions

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# 505ULAC Installation Instructions

## *Description of Operation / BoM / Enclosure Features / UL*

---

### **Description of Operation**

The 505ULAC power supply converts an 110VAC/60 Hz input to a power limited DC output. Output voltage is field selectable for either 13.8 VDC @ 1.0A or 27.6 VDC @ 1.0A nominal. There are three indicator LED's present on power supply to monitor the status of the unit. A red LED is illuminated when there is a DC output on the DC+ and DC- terminals. There are two green led's present near the supervision terminal block. One LED indicates when a battery is connected, the other indicates the presence of A.C. line voltage. The supervision terminal block has connections for two relays each consisting of a Common, N.O., and N.C. contact. The contacts are rated 1A @ 28VDC. There is an EIR (Emergency Interface Relay) standard to the power supply. The purpose of the EIR relay is to cut power to the fail safe locks in an emergency situation.

The 505ULAC 12/24VDC Power Supply is intended for operation in a controlled environment.

### **Bill of Materials**

- Metal enclosure
- 505ULAC Printed Circuit Board
- Lid screw pack

**The following are optional items:**

- ◆ 12VDC Batteries
- ◆ Battery cables
- ◆ Cam lock with keys

### **Enclosure Features**

- Painted metal, with hinged, painted metal door
- Dimensions: 12" x 12" x 4"
- Extra "knockouts" on the top, bottom and sides.
- Mounting holes on the back surface.

**The following is an optional feature:**

- ◆ Door can be fitted with a cam lock.

### **UL**

- UL File Number: BP9350
- All interconnected devices must be UL listed.
- Devices not evaluated by: UL: CT1000, CT500, CL1000, CL500, 301+

# 505ULAC Installation Instructions

## Product Specifications

### Product Specifications

**Table 1: Product Specifications**

Electrical	Specification
Input Voltage	110VAC, 60Hz, 0.5 Amp
Output Voltage	1.0A @ 13.8VDC (+/- 5%) or 27.6VDC (+/- 5%) (field selectable) Filtered & Regulated
Output Current	1.0A @ rated voltage
Primary Fuse Size	800mA, Slo-Blo, 250V. 5x20mm
Battery Fuse Size	2.0A, Resettable
Secondary Protection	Output overload protected by the regulator circuit
Charging Circuit	Built-in Standard
Supervision Circuit	
AC Monitor	Power Limited. Form "C" Contacts.
Battery Monitor	Power Limited. Form "C" Contacts.
Mechanical	
Enclosure	12" x 12" x 4" Approx. Steel NEMA Grade 1 with conduit knockouts and hinged cover with lock down screws.
Color/Finish	Gray, Baked Enamel
Input Terminals	Barrier strip with (3) #6 screw terminals and protective cover,
Output Terminals	Barrier strip with (2) #6 screw terminals labeled DC(+), DC(-) Barrier strip with (2) #6 screw terminals labeled BAT(+), BAT(-) Barrier strip (7) #6 screw terminal labeled EIR
Optional	
Stand-by Battery Pack (1)	4.0A/Hour @ 12VDC (Rechargeable, Sealed, Lead Acid, Gel Cell)
Stand-by Battery Pack (2)	8.0A/Hour @ 12VDC or 4.0A/Hour @ 24VDC (Rechargeable, Sealed, Lead Acid, Gel Cell)
Key Lock Cover	Optional with 2 keys.
Warranty	
Warranty	1 Year Limited
Shipping Weight	
Power Supply	8 Pounds
Each Battery	4 Pounds
Environmental Conditions	
Operating Temperature & Relative Humidity	Indoor - 0°C and 49°C (32°F and 120°F) 85%, +/- 5%

# 505ULAC Installation Instructions

## Installing the 505ULAC

---

### 1) Installation Procedure

The 505ULAC must be installed in accordance with article 760 of the National Electrical Code or NFPA 72 as well as all applicable local codes.

**NOTE:** *Install the 505ULAC indoors within the protected premises.*

A.) Mounting holes are provided on the back surface of enclosure. Firmly mount the 505ULAC to a solid surface using hardware suitable for the surface.

**NOTE:** *Check national and local codes for installation requirements.*

B.) Output voltage selection is set at the factory for 12VDC. If required, change SW1 to 24VDC as shown in (**See Installation Diagram on page 6**).

C.) Connect AC power (110VAC, 50/60Hz) to terminals marked: LINE, GROUND (symbol), and NEUTRAL (**See Installation Diagram on page 6**).

D.) Connect devices to be powered to terminals marked: DC (+) and DC (-) (**See Installation Diagram on page 6**).

**NOTE:** *To avoid potential damage, measure output voltage before connecting devices.*

E.) For Access Control applications, stand-by batteries are optional.

- When stand-by batteries are not used, a loss of AC will result in the loss of output voltage.
- When stand-by batteries are used, they must be lead acid or gel type.

### 2) Wiring

- Wiring methods shall be in accordance with the National Electrical Code (ANSI/NFPA70), local codes, and the authorities having jurisdiction.
- Use metallic conduit for connection of the branch circuit to maintain grounding and bonding of the enclosure.
- Cabling and wire must be UL Listed and/or recognized wire suitable for the application.
- Only use stranded, multi-conductor, color coded wire, without splices.
  - ♦ Use 18AWG or larger for all low power connections (Battery, DC output, AC input).
  - ♦ Use 22AWG or larger for all power limited circuits (Battery Fail, AC Fail).
- Recommended minimum of two (2) spare conductors.

**WARNING:** *Keep power limited wiring separate from non-power limited wiring (110VAC / 60Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.*

**Table 2: Wire Selection Table**

Total Length of One Wire Run (Feet)	Load Current @ 12VDC				Load Current @ 24VDC			
	1/4A	1/2A	3/4A	1A	1/4A	1/2A	3/4A	1A
100	24	18	16	14	24	20	18	18
200	16	14	12	12	20	18	16	14
300	16	12	12	10	18	16	14	12
400	14	12	10	--	18	14	12	12
500	14	10	10	--	16	14	12	10

### 3) Tamper Switch

A tamper switch is required to be installed on the 505ULAC/510ULAC that will monitor the enclosure for unauthorized access. The tamper switch should be attached to a UL Listed burglar alarm system or a Listed local siren/annunciator. This will allow for compliance to UL294 Section 32.1.4.



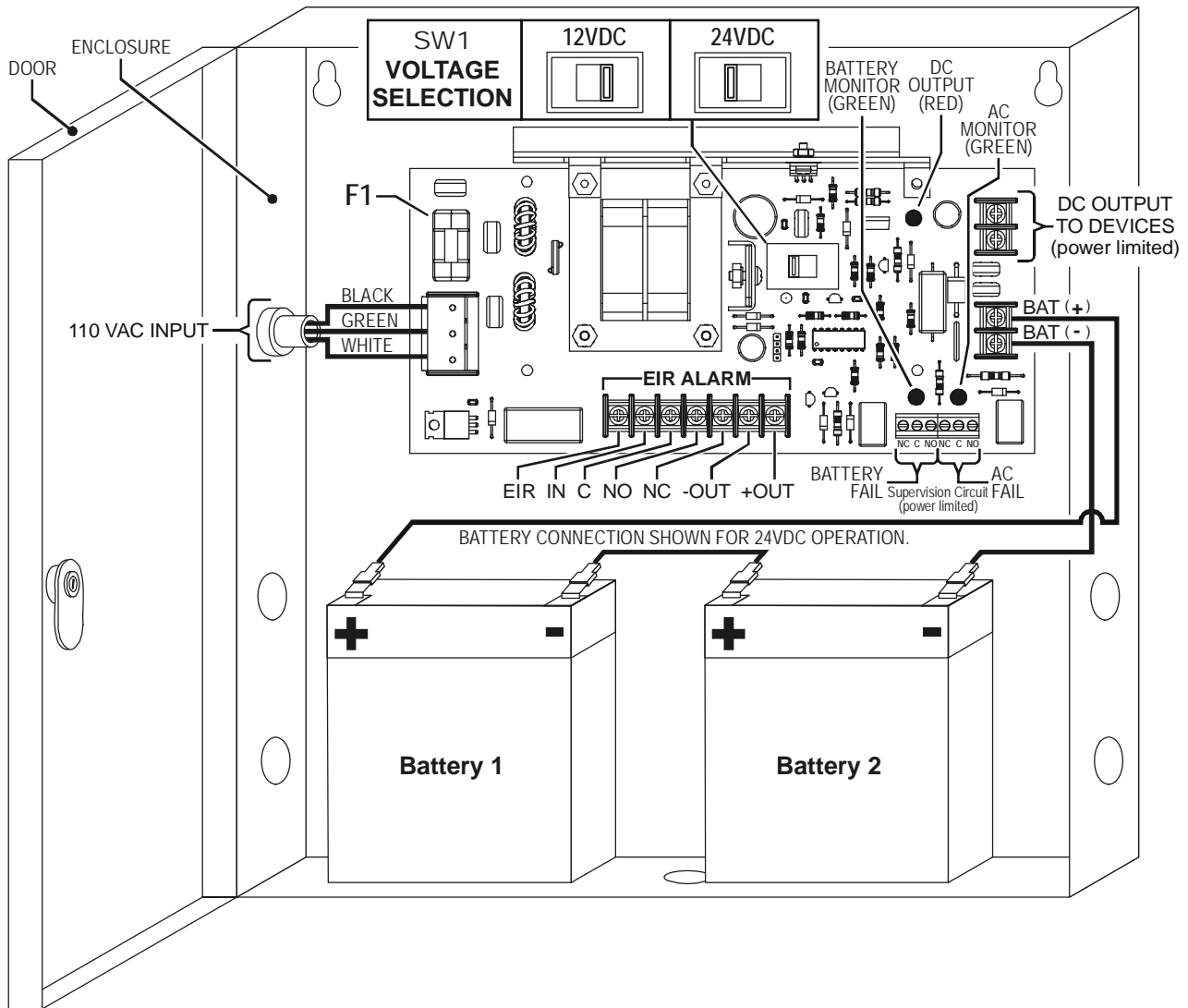
# 505ULAC Installation Instructions

## Installing the 505ULAC

### Installation Diagram

Refer to the diagram below when wiring the 505ULAC Power Supply. Stand-by batteries shown for 24VDC operation and are wired in series.

**Figure: 1. Installation Diagram**



**WARNING:** De-energize unit prior to servicing. For continued protection against fire hazard, replace fuse (F1) with the same type and rating (800mA, Slo-Blo, 250V). Replace fuse cover before energizing.

# 505ULAC Installation Instructions

## Stand-by Battery Installation / Terminal Identification

---

### Stand-by Battery Installation

- 1.) Verify field wiring is complete.
- 2.) Place batteries upright in bottom of enclosure (See *Installation Diagram* on page 6).
- 3.) Using the provided cables, connect batteries (See *Installation Diagram* on page 6).
- 4.) Turn on VAC line power input to power supply.

**Table 3: Stand-by Battery Power Selection Chart**

Current Load Draw (Amps)	12VDC SYSTEM			24VDC SYSTEM	
	Hours	Hours	Hours	Hours	Hours
1	4	8	16	4	8
0.5	8	16	32	8	16
0.33	12	24	48	12	24
0.22	18	36	72	18	36
0.16	25	50	100	25	50
Number of batteries required	1	2	4	2	4

*NOTE: Charging time is approximately 48 hours from deep discharge.*

### Terminal Identification

**Table 4: Terminal Identification**

Terminal Legend	Function / Description
Line, Ground, Neutral	110VAC, 50/60Hz input
DC (-), DC (+)	12VDC @ 1A continuous power limited output 24VDC @ 1A continuous power limited output
AC Fail NC C NO	Indicates loss of AC power, e.g. connect to alarm panel. Relay normally energized when AC power is present. Contact rating: 1A @ 28VDC
Battery Fail NO C NC	Indicates low battery voltage, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating: 1A @ 28VDC
BAT (-), BAT (+)	Stand-by battery connections

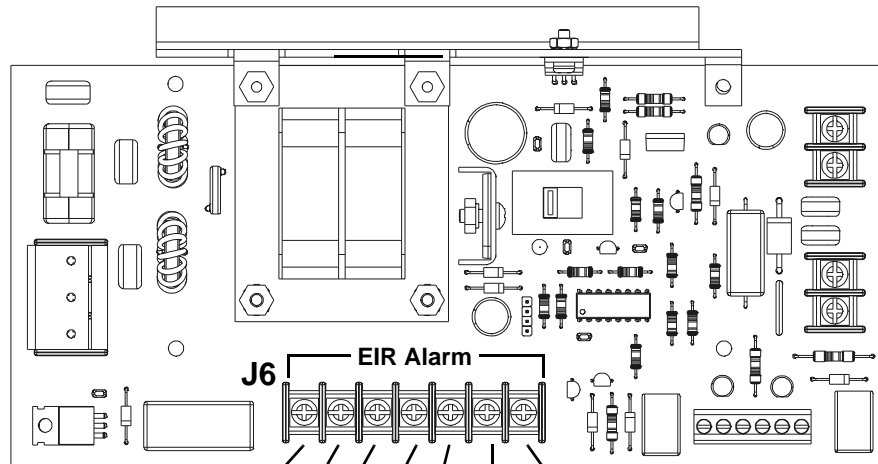
# 505ULAC Installation Instructions

## EIR Connection / LED Diagnostics / Maintenance

### EIR Connection

The purpose of the EIR circuit is to cut power to fail safe locks in an emergency situation. When using the EIR relay circuit to supply power to fail safe locks, such as electromagnetic locks, power must come from connector J6, terminals: **-OUT** & **+OUT** as shown below. Be sure to test all circuits for proper function after installation.

**Figure: 2. EIR Connection**



NORMALLY CLOSED DRY CONTACT FROM FIRE PANEL (BY OTHERS). CONTACT MUST OPEN UPON EMERGENCY. NOTE: IF THIS IS NOT USED, TERMINALS: "EIR" & "IN" MUST BE JUMPERED.

RELAY OUTPUT REFLECTS CONDITION OF EIR RELAY FOR SIGNAL OR CONTROL. RATED 5 A @ 30VDC.

OUTPUT POWER TO LOCKING SYSTEM WILL HAVE GROUND CONNECTION (-) REMOVED WHEN FIRE ALARM CONTACT OPENS ON TERMINALS: "EIR" & "IN".

### LED Diagnostics

**Table 5: LED Diagnostics**

DC OUTPUT (RED)	AC MONITOR (GREEN)	BATTERY MONITOR (GREEN)	POWER SUPPLY STATUS
ON	ON	ON	Normal Operation.
ON	ON	OFF	Batteries Disconnected or Discharged.
ON	OFF	ON	Unit on Back-up Battery.
OFF	ON	OFF	DC Output Shorted.
OFF	OFF	OFF	Unit De-energized.

### Maintenance

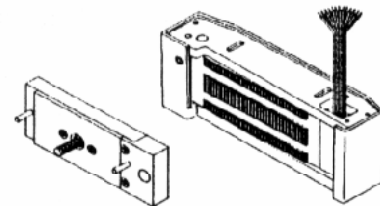
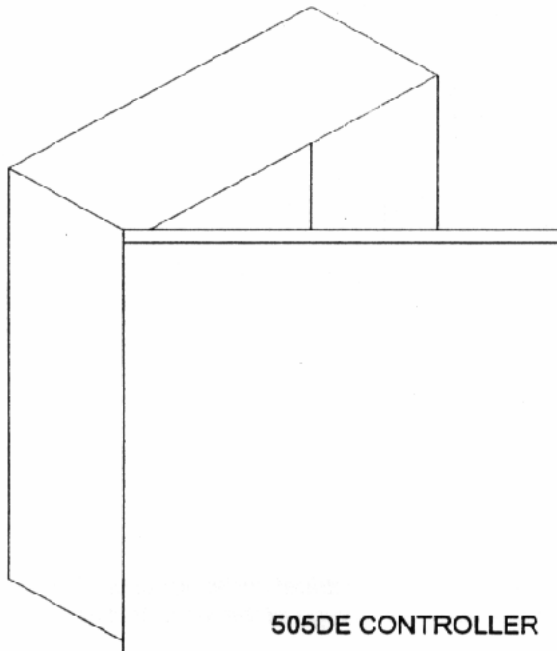
Unit should be tested at least once a year for proper operation. Perform test as follows:

**Output Voltage Test** - Under normal load conditions, the DC output voltage should be checked for proper voltage level (see power supply voltage output in the Product Specifications Chart).

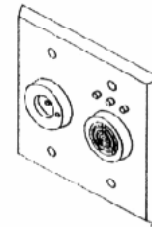
**Battery Test** - Under normal load conditions, check the following

- Battery is fully charged.
- Specified voltage at all battery terminals and PCB terminals marked BAT (+) & BAT (-). This ensures there are no breaks in the battery cables.

*NOTE: Expected battery life is 5 years. Change batteries every 4 years, or less if necessary.*



**301+ MAGNETIC LOCK**



**801TE MONITOR PANEL**

**Description of Operation:**

The **505DE** controller is a combination Access Control and Delayed Egress controller with integral power supply. This controller is intended to be connected to a fail-safe magnetic lock, a trigger switch to start the delayed egress cycle, a monitor panel to indicate status of the system, and an access device for authorized passage through the opening.

The **301 + PS** system combines the 505DE system with the 301 + Magnetic lock with internal trigger switch and the 801TE monitor panel to create a complete Access Control / Delayed Egress system.

The Access Control features incorporate Locknetics Pentagon Access circuitry for connection to Locknetics Pentagon keypads or TouchEntry readers. This feature allows up to 150 users with an option to allow 500 TouchEntry Keys. There is also an input for connection to other forms of access devices to utilize the controllers access and delayed egress features.

The Delayed Egress feature incorporates on board circuitry that complies with N.F.P.A. 101 Life Safety Codes as follows:

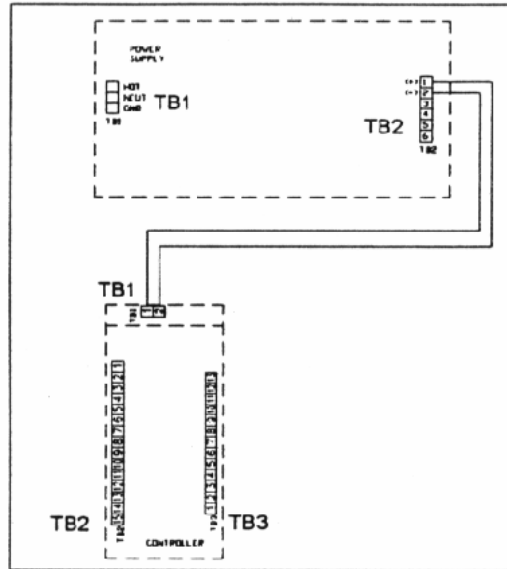
The lock will release within 15 seconds whenever a force of not more than 15 pounds is applied to the door for not more than 3 seconds. The lock will provide visual and audible indication that the delayed egress cycle has been activated. After the lock releases, it must be manually relocked by applying an external Reset signal to the controller.

The BOCA option configures the system to comply with the BOCA National Building Code for Delayed Egress as follows:

The lock will release within 15 seconds whenever a force of not more than 15 pounds is applied to the door for not more than 1 second. The lock will provide visual and audible indication that the delayed egress cycle has been activated. After the lock releases, it will relock automatically after the door has been opened and closed for at least 30 seconds. Any reopening of the door shall restart the 30 second relock cycle.

**The controller includes the following STANDARD FEATURES:**

- 12 / 24 VDC - 1 AMP Power Supply for locking system
- FIRE ALARM INPUT for direct connection to a N.O. or N.C. Fire Alarm contact
- LEGAL RELEASE INPUT to signal an authorized release of the lock
- RESET INPUT for a remote reset after violation conditions
- TRIGGER SWITCH INPUT to activate Delayed Egress Cycle
- ALARM CONTACTS for remote monitoring of alarm conditions
- ON-BOARD CONTROL CIRCUITRY to allow hook-up to remote TOUCH ENTRY READERS or PENTAGON KEYPADS for access control
- PROGRAMMABLE RELOCK DELAY provides setting of time that the lock is de-energized after a valid legal release
- PROGRAMMABLE NUISANCE DELAY to set the length of time the door must be pushed before the Delayed Egress cycle begins
- SELECTABLE NUISANCE DELAY ALERT to provide warning before the Delayed Egress Cycle begins
- SELECTABLE DELAYED EGRESS TIME to set the length of time before the door releases
- SELECTABLE UNLOCK ALARM - provides an audible warning whenever lock is de-energized
- ANTI-TAMPER SWITCH INPUT triggers alarm if external switch is activated
- MBS INPUT/OUTPUT for remote monitoring of secure and unsecure conditions
- PROGRAMMABLE DOOR PROPPED OPEN ALARM - triggers alarm output if door is held open too long (Door Status Switch Input required)
- FORCED DOOR ALARM - triggers alarm output if door opened without valid release signal (Door Status Switch Input required)
- ANTI-TAILGATE - initiates relock as soon as door is closed (Door Status Switch Input required)

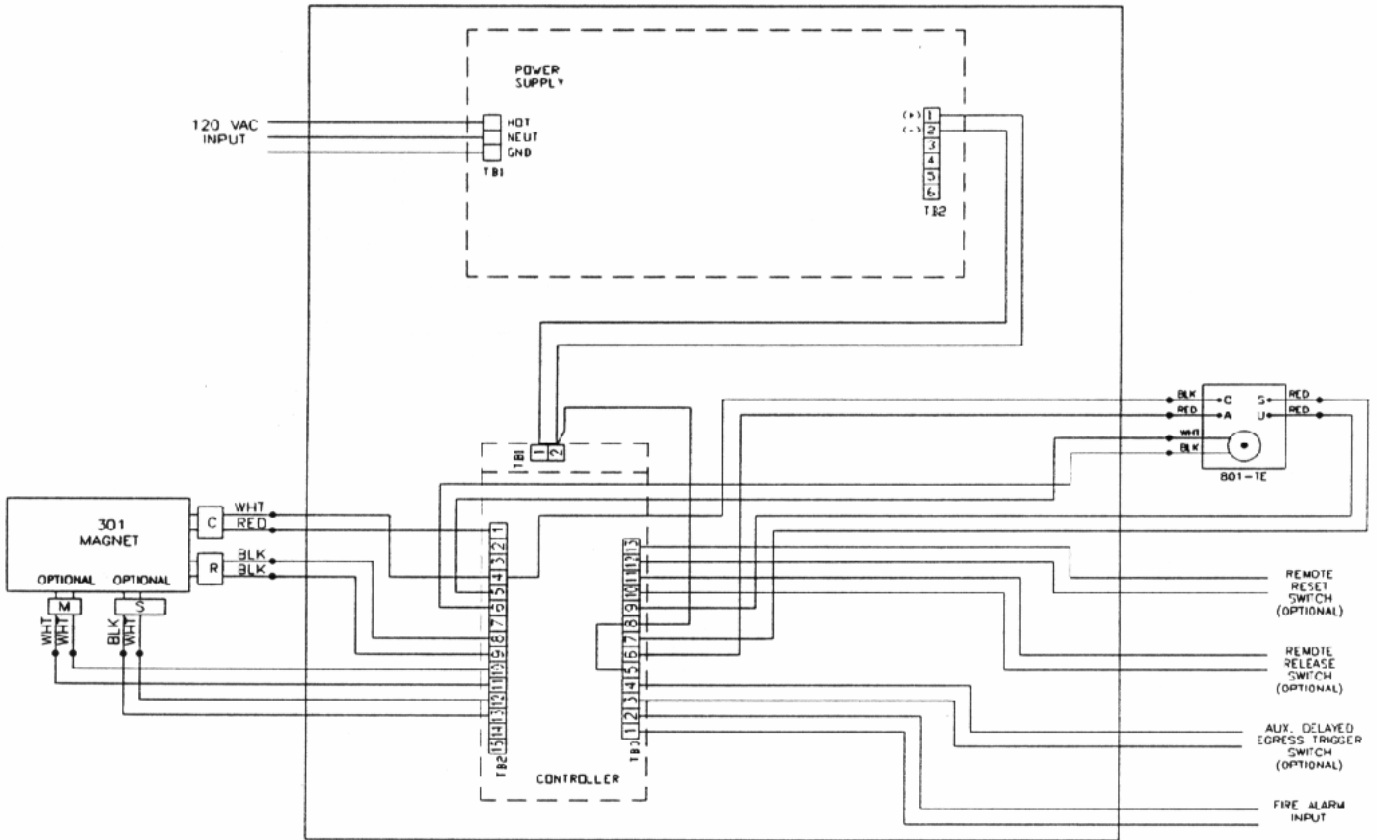


**WIRING** - All wiring must conform to applicable national, state, and local electrical codes for class 2 fire protection signaling and control devices. Use wiring of sufficient size to provide the required voltage at the lock. When installing cable, a minimum of two spare conductors is recommended.

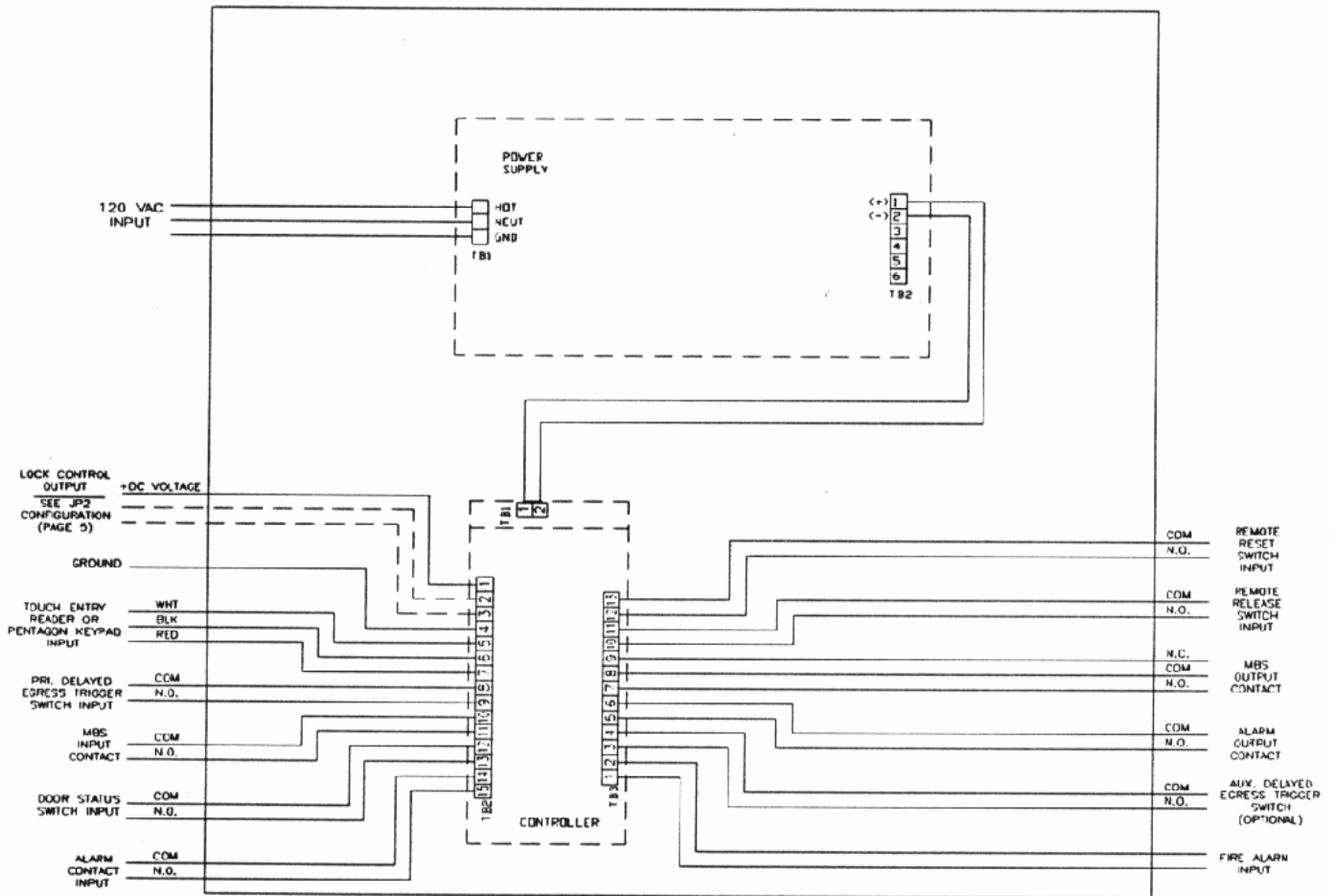
**NOTE** - Refer to **WIRING INFO** section for more information regarding connections to these terminals.

POWER SUPPLY		
BLOCK	TERMINAL	DESCRIPTION
TB1	1, 2 & 3	120 VAC POWER INPUT
TB2	1 & 2	OUTPUT VOLTAGE - 12 or 24 VDC - 1 AMP MAXIMUM
CONTROLLER		
TB1	1 & 2	12 OR 24 VAC/VDC POWER INPUT
TB2	1, 2 & 3	OUTPUT CONTACTS TO LOCK - DRY CONTACTS OR +DC VOLTAGE OUTPUT (see JP2 configuration on page 5)
	4	GROUND
	5, 6 & 7	TOUCH ENTRY READER OR PENTAGON KEYPAD INPUT
	8 & 9	PRIMARY DELAYED EGRESS TRIGGER SWITCH INPUT - NORMALLY OPEN DRY CONTACT
	10 & 11	MAGNETIC BOND SENSOR INPUT - NORMALLY OPEN DRY CONTACT
	12 & 13	DOOR STATUS SWITCH INPUT - NORMALLY OPEN DRY CONTACT
	14 & 15	ALARM CONTACT INPUT - NORMALLY OPEN DRY CONTACT
TB3	1 & 2	FIRE ALARM INPUT - NORMALLY OPEN OR NORMALLY CLOSED DRY CONTACT (SET SW1)
	3 & 4	AUXILLIARY DELAYED EGRESS TRIGGER SWITCH INPUT - NORMALLY OPEN DRY CONTACT
	5 & 6	ALARM CONTACT OUTPUT - NORMALLY OPEN DRY CONTACT
	7, 8 & 9	MAGNETIC BOND SENSOR OUTPUT - SPDT DRY CONTACT
	10 & 11	LEGAL RELEASE INPUT - NORMALLY OPEN DRY CONTACT
	12 & 13	RESET INPUT - NORMALLY OPEN DRY CONTACT

**301+PS WIRING**



**505DE WIRING**



SW1 FIRE ALARM INPUT SETTING (TB3 - TERMINALS 1 & 2)			
FUNCTION	FACTORY SETTING	SW1	FUNCTION
SET TO MATCH NON-ALARM STATE OF FIRE ALARM CONTACTS. LOCK WILL RELEASE UPON F.A. SIGNAL	NORMALLY CLOSED F.A. CONTACTS	DOWN	UP

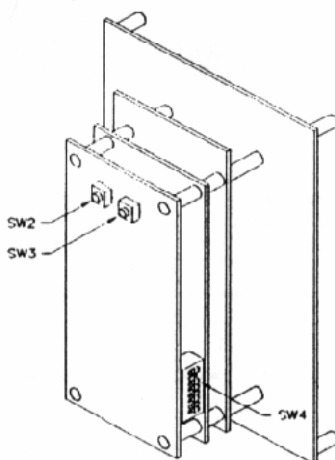
SW4 MODE SELECTOR SWITCH SETTINGS			
FUNCTION		SW 4 FACTORY SETTINGS	FUNCTION
NUISANCE ALERT <i>(Horn sounds during nuisance delay)</i>	ON		OFF
AUTO-RELOCK ON POWER UP AND AFTER FIRE ALARM RESET	ON		OFF
DOOR PROPPED OPEN and FORCED ENTRY ALARM <i>(Door Status Input required)</i>	ON		OFF
UNLOCK ALERT <i>(Horn sounds whenever door is unlocked)</i>	ON		OFF - NORMALOPER.
ANTI-TAILGATE <i>(Door Status Input required)</i>	ON		OFF
DELAYED EGRESS ACTIVATION BY PRIMARY TRIGGER INPUT <u>OR</u> AUXILLIARY TRIGGER INPUT	ON		BOTH OFF - DELAYED EGRESS ACTIVATION BY PRIMARY TRIGGER SWITCH INPUT ONLY
DELAYED EGRESS ACTIVATION BY PRIMARY TRIGGER INPUT <u>AND</u> AUXILLIARY TRIGGER INPUT	ON		
DELAYED EGRESS TIME <i>(30 seconds before unlocking)</i>	ON		OFF <i>(15 second delay)</i>

JP2 OUTPUT CONTACT CONFIGURATION	
THE JUMPER AT JP2 CONFIGURES THE OUTPUT CONTACTS AT TB2 TO PROVIDE EITHER A DC VOLTAGE OUTPUT TO OPERATE A LOCK DIRECTLY OR A SPDT DRY CONTACT OUTPUT TO CONTROL OTHER EQUIPMENT THAT MAY OPERATE FROM A DIFFERENT POWER SOURCE.	
	 <b>DC VOLTAGE OUTPUT</b> TB2 - #1 = POSITIVE TB2 - #4 = NEGATIVE
	 <b>SPDT DRY CONTACT OUTPUT</b> TB2 - #1 = CLOSED TB2 - #2 = COMMON TB2 - #3 = OPEN

POWER SUPPLY OUTPUT VOLTAGE JUMPER (LOCATED ON POWER SUPPLY BOARD)	
J2	12 VDC OUTPUT
J1	24 VDC OUTPUT

JP1 ON-BOARD HORN CONFIGURATION (LOCATED ON EDGE OF LOWER CONTROL BOARD)	
ON	ON BOARD HORN ENABLED
OFF	ON BOARD HORN DISABLED





---

**AUTOMATIC RELOCK DELAY** (factory default - 5 seconds)

The amount of time the lock remains unlocked after Authorized Release signal - programmable 0-30 seconds

- 1) Set SW4 #6 to OFF.
- 2) Press and release SW2.
- 3) Press SW3 once for each second of relock delay desired.  
(ex. 3 presses equals 3 seconds-15 presses equals 15 seconds-Up to 30 seconds) Each SW3 activation will cause the horn to beep.
- 4) Press SW2 and the relock delay will be stored in non-volatile memory.
- 5) The relock delay can be set to zero by eliminating Step 3.

---

**NUISANCE DELAY** (factory default = 1 second)

The amount of time the door must be pushed before triggering the Delayed Egress Cycle - programmable 0 - 3 seconds (BOCA option - non adjustable)

- 1) Press and release SW3, the LED will begin flashing RED
- 2) Press SW2 once for each second of nuisance delay desired, up to 3 seconds maximum.  
Each SW2 activation will cause the LED to flash GREEN and beep the horn.
- 3) Press SW3 and the nuisance delay will be stored in non-volatile memory.
- 4) It is not recommended to program this delay to zero but it can be accomplished by eliminating Step 2.

---

**DOOR PROPPED OPEN DELAY** (factory default = 60 seconds - Door Status Input required)

The amount of time before Alarm contacts close if door is held open past the relock delay - programmable 0-120 seconds

- 1) Set SW4 #6 to ON.
- 2) Press and release SW2, the LED will begin flashing YELLOW.
- 3) Press SW3 once for each second of door propped delay desired.  
(ex. 3 presses equals 3 seconds-45 presses equals 45 seconds-Up to 120 seconds)  
Each SW3 activation will cause the LED to flash RED and beep the horn.
- 4) Press SW2 and the door prop delay will be stored in non-volatile memory.
- 5) It is not recommended to program this delay to zero but it can be accomplished by eliminating Step 3.

---

**NOTES:**

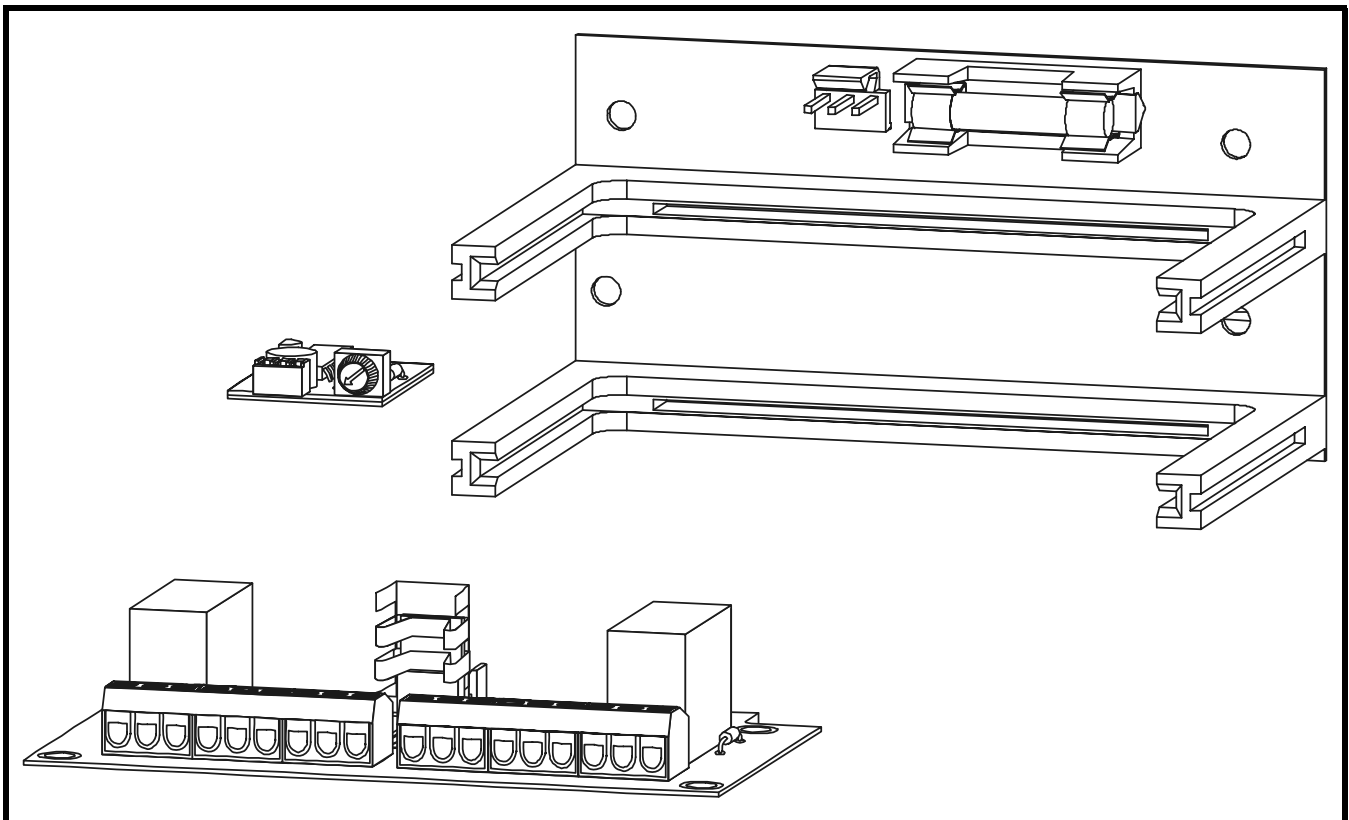
1. During programming, if no SW2 or SW3 action is detected in a 30 second period, the programming is cancelled.
2. All delays are stored in non-volatile memory to retain the settings when power is disconnected.



# 510 SERIES POWER SUPPLY

## INSTALLATION MANUAL

### 510ULAC ACCESSORIES



**Schlage Lock Company**  
575 Birch Street  
Forrestville, CT 06010  
technical support: 866-322-1237  
email: SESsupport@irco.com  
web: www.irsupport.net



# 510ULAC Accessories Installation Instructions

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# 510ULAC Accessories Installation Instructions

## Modular Options

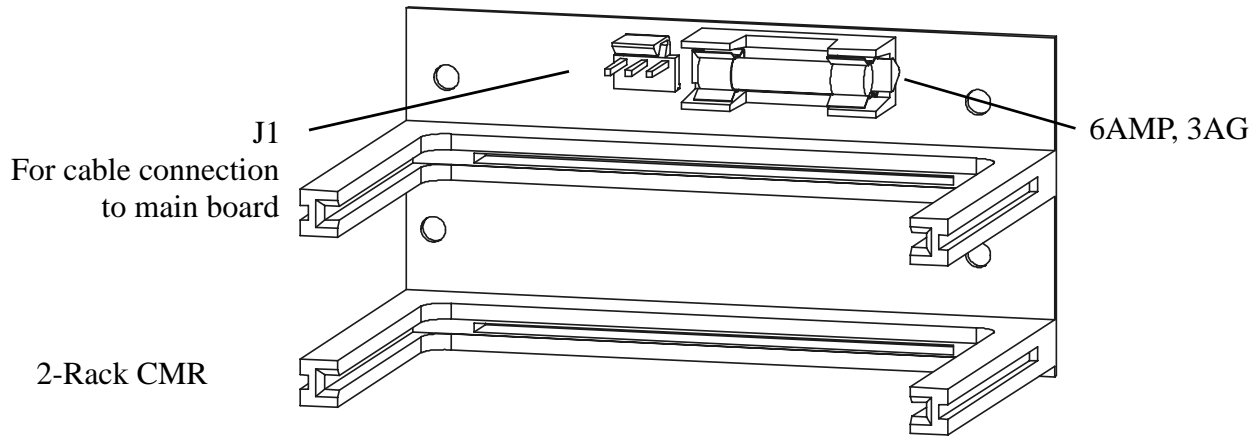
### MODULAR OPTIONS

#### 1) Control Module Rack (CMR)

- **Description:**

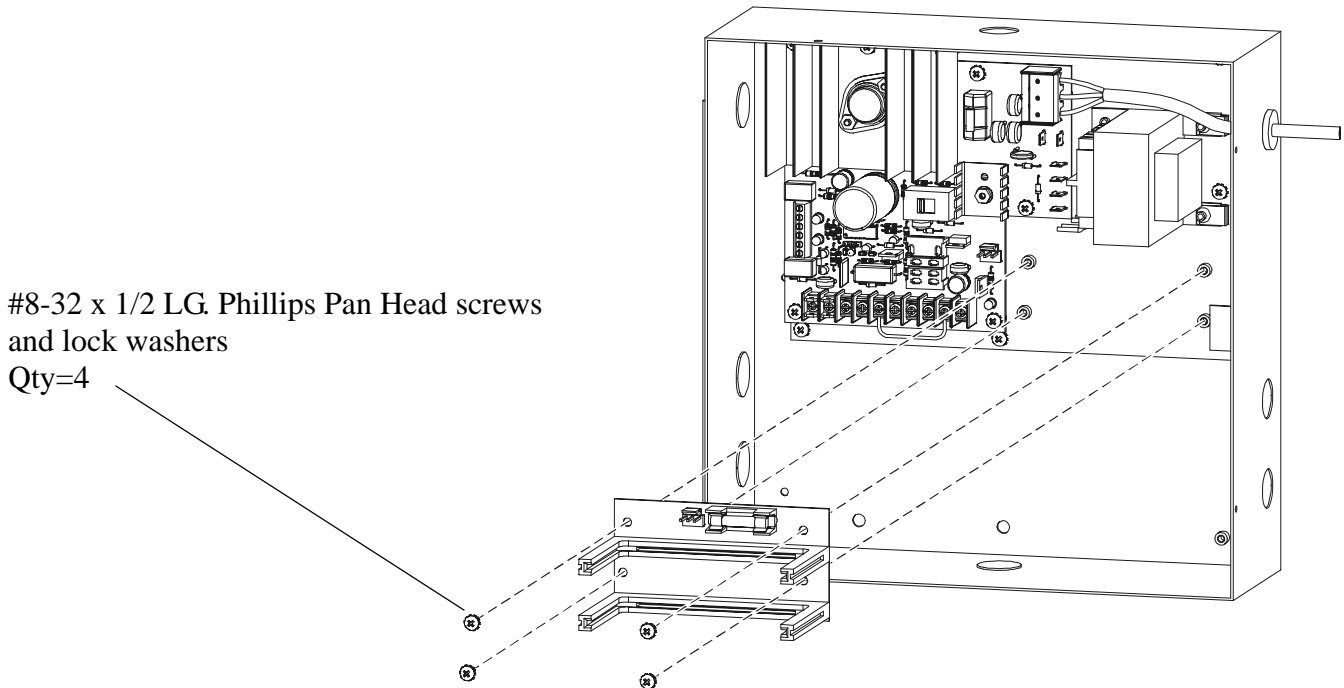
The CMR interfaces with the main board and power assembly via a 5" long plug-in cable. A CMR acts as a backplane for Dual Control Modules and Relay Control Modules.

- ♦ A 2-Rack CMR must first be installed when any Dual Control Modules or Relay Control Modules are to be used in your 510ULAC Power Supply.



- **Mounting a CMR to the Inside of the Cabinet:**

Refer to the illustration below when mounting a 2-Rack CMR into a 510ULAC cabinet:



# 510ULAC Accessories Installation Instructions

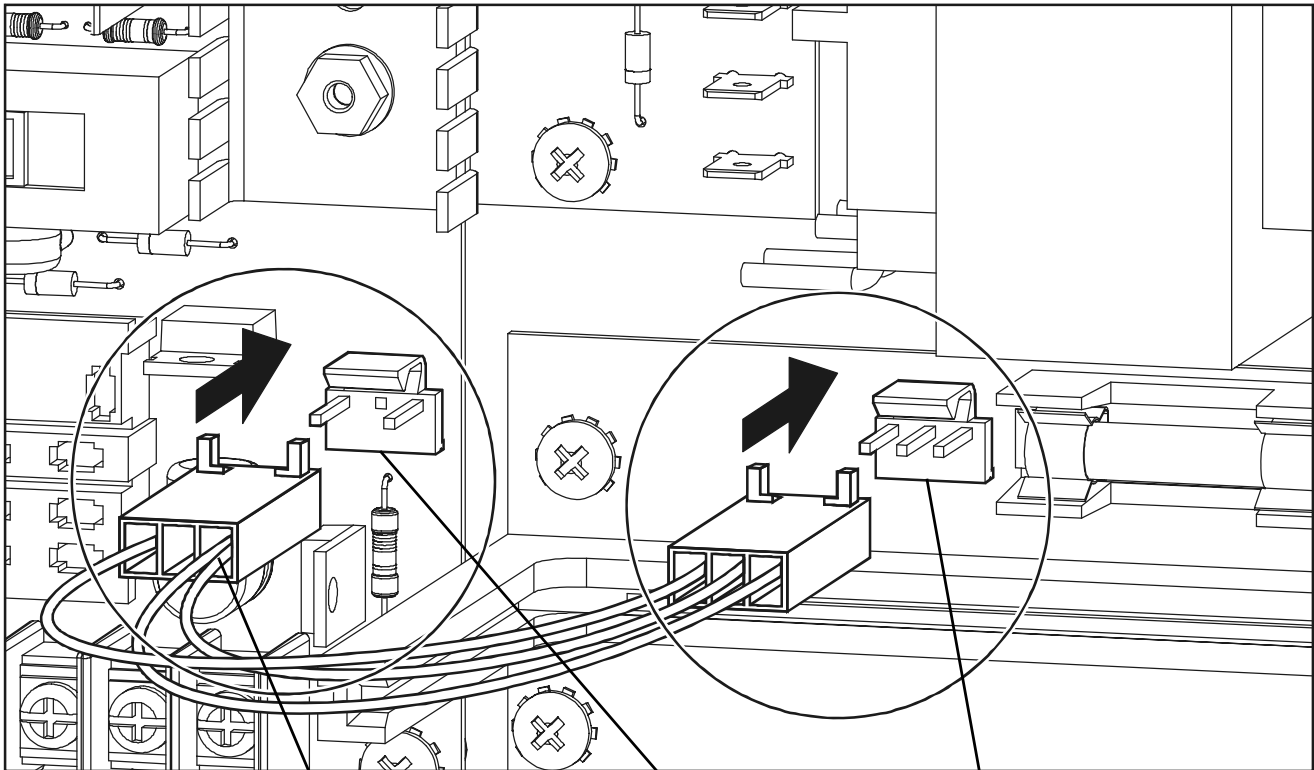
## Modular Options

---

### CMR (continued)

- **Interfacing a CMR to the Main Board:**

Using the 5" long cable assembly provided in the kit, refer to the illustration below for interfacing the 2-Rack CMR to the main board:



**Note that GREEN and WHITE wire are inserted into same hole in this connector. Center hole is plugged.**

**Main board  
J3**

**CMR  
J1**

# 510ULAC Accessories Installation Instructions

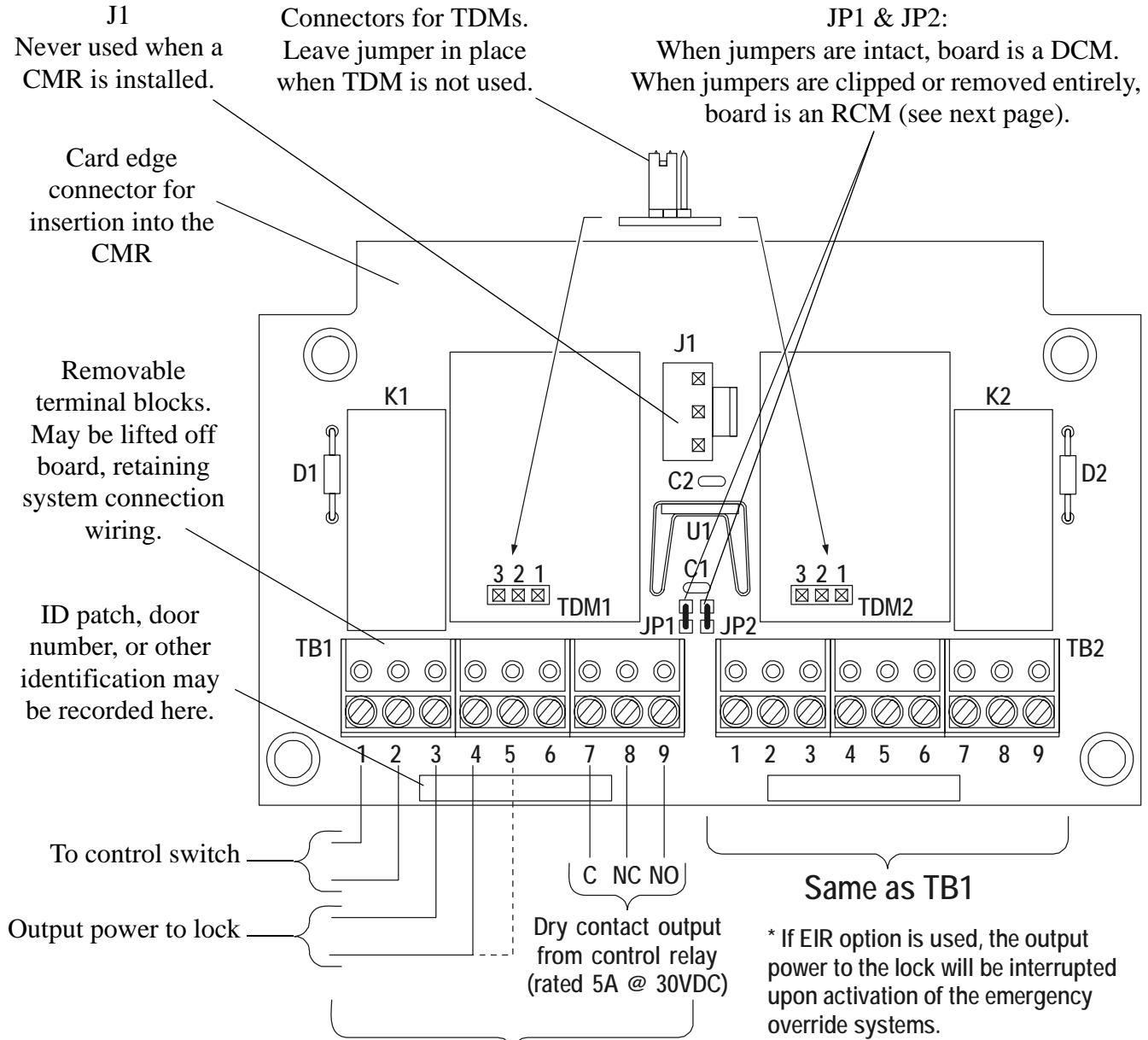
## Modular Options

### 2) Dual Control Module (DCM)

- Description:**

The DCM is a plug-in PCB providing separate sections for control of 2 individual doors. Each section includes a 9-position screw terminal block for output power, control connection and SPDT dry contact outputs (rated 5A@30VDC). A 3-pin header in each section is included to accept a Time Delay Module.

Each DCM provides circuitry and connection terminals for 2 individual locking systems.



For typical system connection, see **SYSTEM WIRING DIAGRAMS** on page 11

# 510ULAC Accessories Installation Instructions

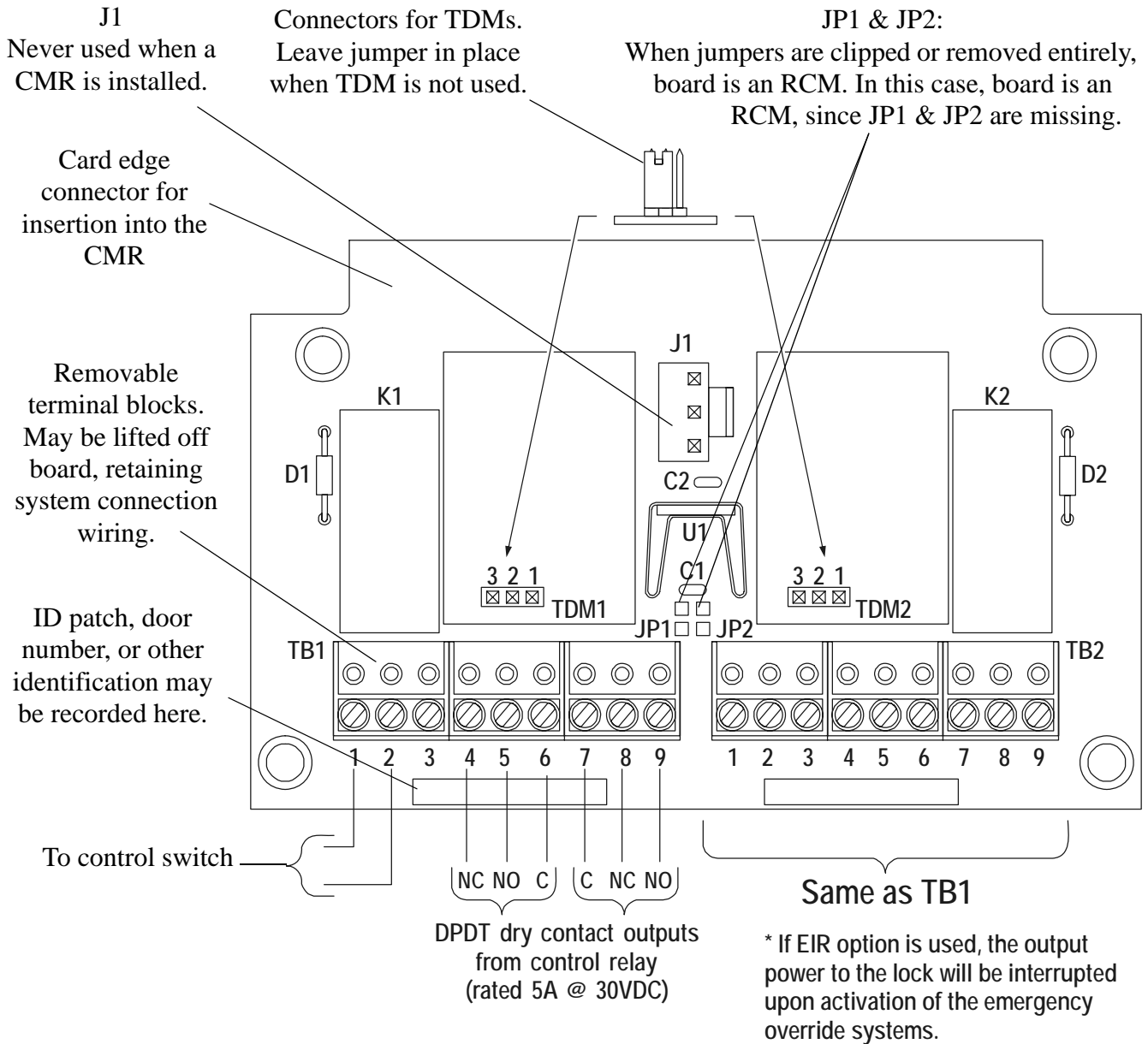
## Modular Options

### 3) Relay Control Module (RCM)

- Description:**

The RCM is a plug-in PCB providing separate sections for control of 2 individual doors. Each section includes a 9-position screw terminal block for control connection and DPDT dry contact outputs (rated 5A@30VDC). A 3-pin header in each section is included to accept a Time Delay Module.

Each RCM provides circuitry and connection terminals for 2 individual locking systems.



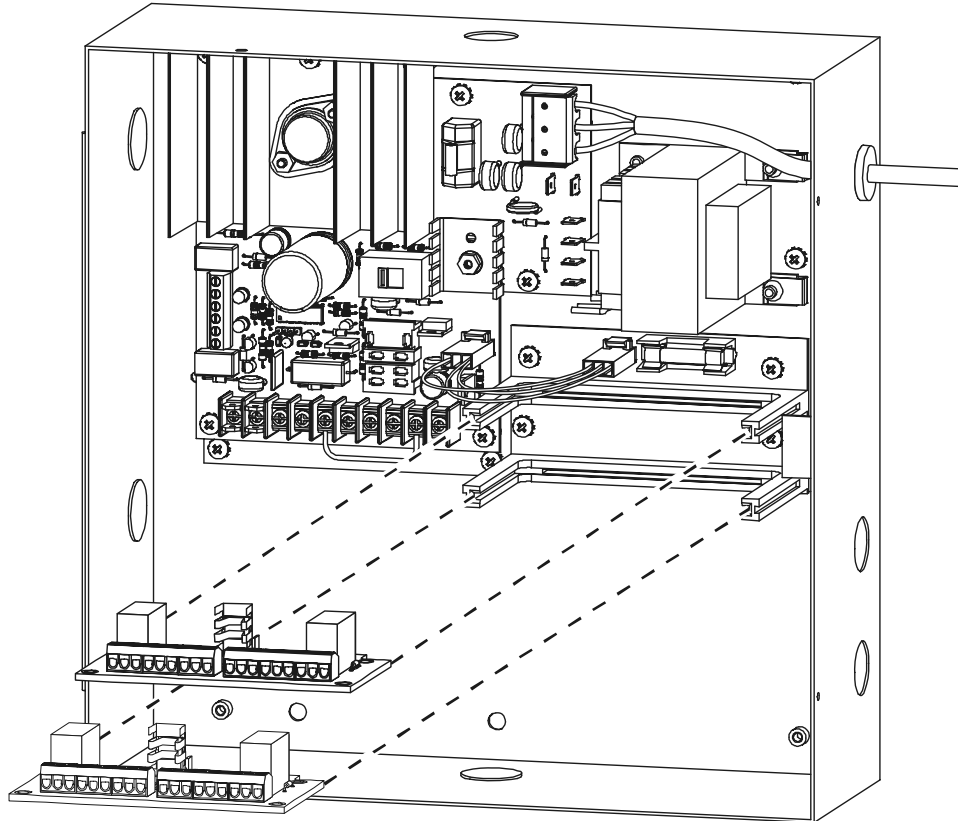
# 510ULAC Accessories Installation Instructions

## *Modular Options*

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- **Mounting DCM or RCM cards into the CMR:**  
Starting from the top slot downward, each DCM or RCM card pushes into a slot of the CMR with the component side facing the transformer.

A 2-rack CMR with 2 DCM (or RCM) cards being installed.





# 510ULAC Accessories Installation Instructions

## Modular Options

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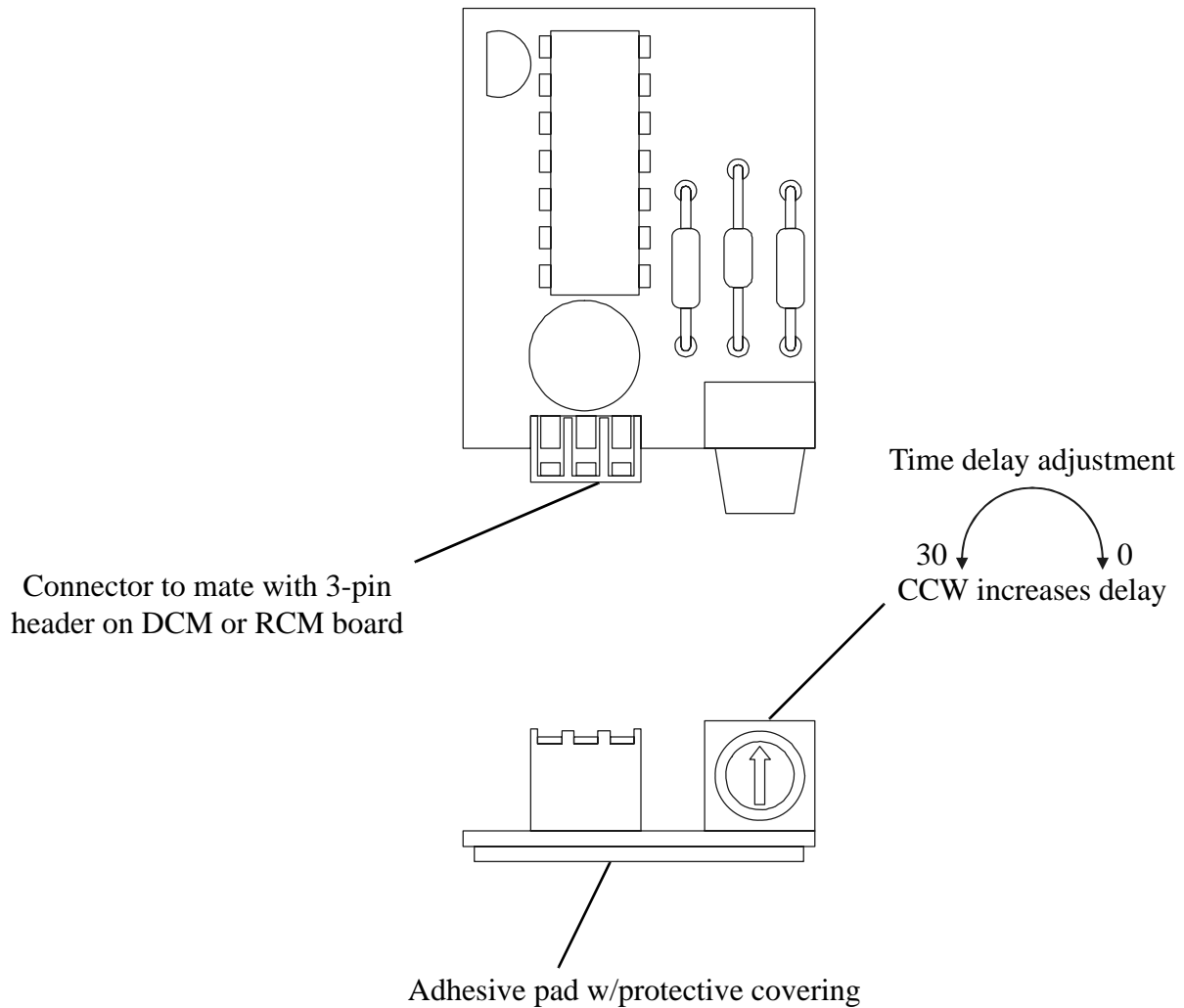
### 4) Time Delay Module (TDM)

- **Description:**

The TDM is a plug-in PCB providing an adjustable (0-30 seconds) delay on relock (DCM) or delay on state change (RCM).

A TDM can be added to each individual section of the DCM or RCM..

A separate TDM is needed for each locking system when this feature is required.



# 510ULAC Accessories Installation Instructions

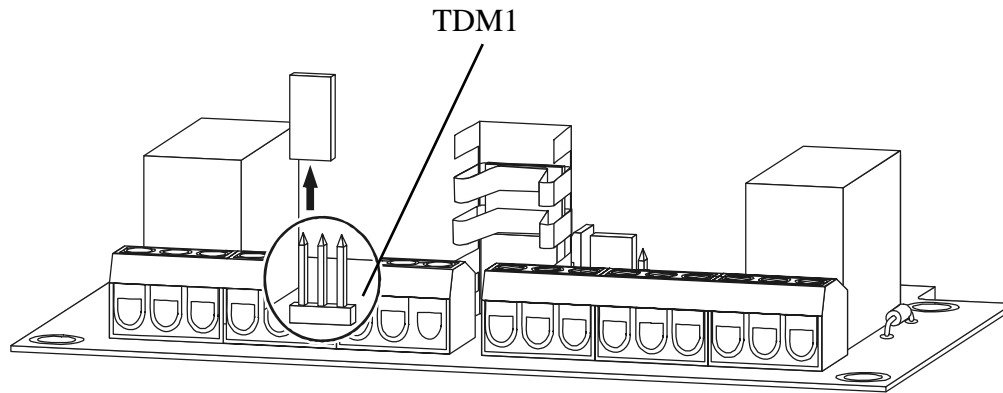
## Modular Options

- **Mounting a TDM to a DCM or RCM:**

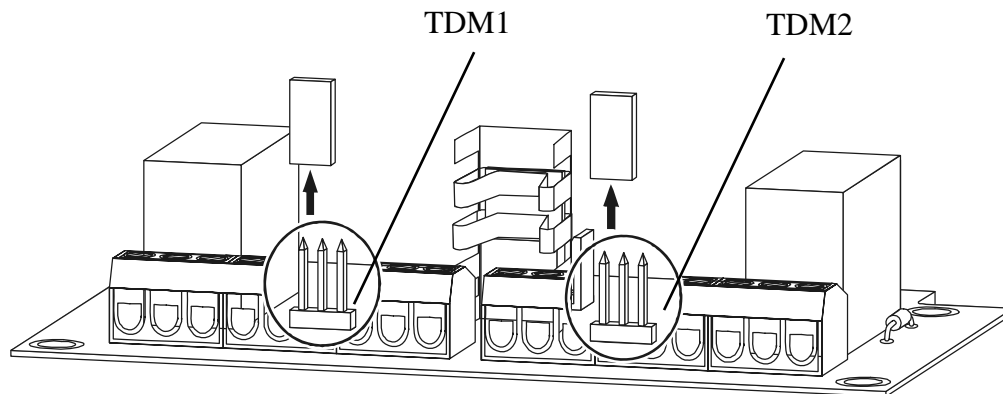
Each DCM or RCM will accept either a single or two TDMs.

The locations for mounting the TDM are marked TDM1 and TDM2.

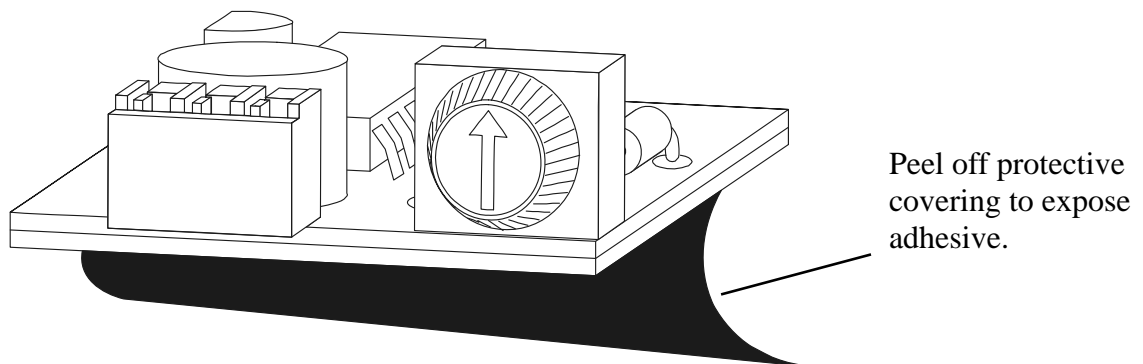
- 1.) If you are installing only one TDM, remove the jumper from TDM1



If you are installing two TDMs, remove the jumpers from TDM1 & TDM2.



- 2.) The protective covering should be removed from the underside of each TDM exposing an adhesive pad.



# 510ULAC Accessories Installation Instructions

## Modular Options

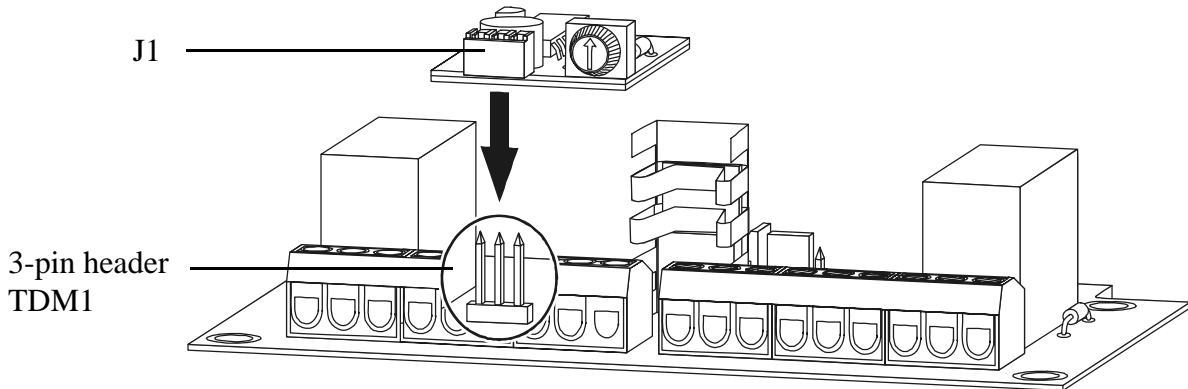
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- **Mounting a TDM to a DCM or RCM (continued):**

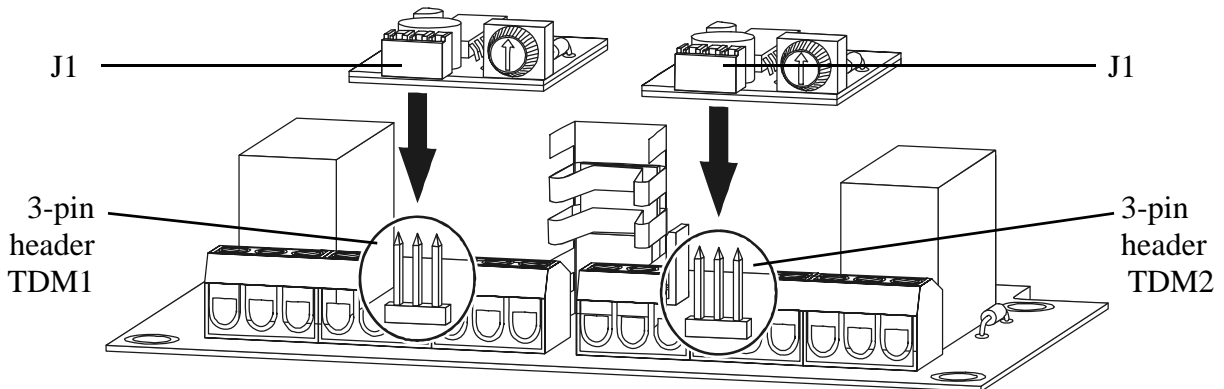
3. ) Place the TDM over the 3-pin header on the DCM or RCM and carefully press down to mate connector J1 on the TDM with the 3-pin header (TDM1) on the DCM or RCM. Apply a bit more pressure to create a bond between the adhesive on the underside of the TDM and the DCM or RCM. Repeat this procedure for TDM2 on the DCM or RCM if two TDMs are being installed.

Illustrations below apply to both DCM cards and RCM cards.

- ◆ 1 TDM being installed (onto TDM1).



- ◆ 2 TDMs being installed (one onto TDM1 and one onto TDM2).



# 510ULAC Accessories Installation Instructions

## System Wiring Diagrams

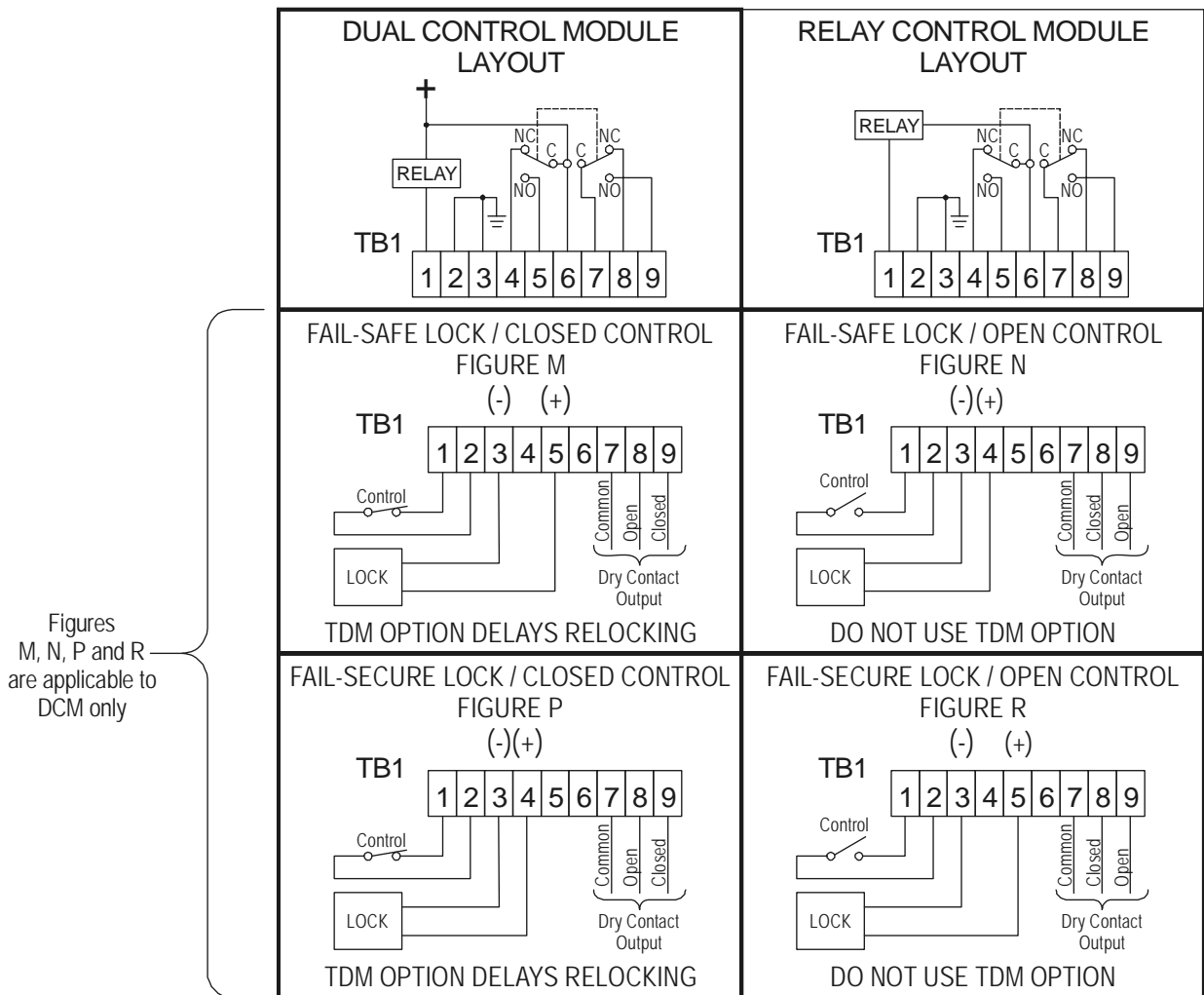
### SYSTEM WIRING DIAGRAMS

#### 1) Dual Control Modules & Relay Control Modules

- Description:**

Each DCM or RCM card has two terminal blocks (TB1 & TB2) for connecting two individual systems. If required, one system can be connected to TB1, and TB2 may be interfaced to provide other system operations (voltage and/or dry contact outputs). Unless noted, all connections shown may be repeated on TB2 for a second system. System types may also be mixed, i.e., one on TB1 and a different one on TB2.

DCM or RCM Terminal Block Normal Conditions (power supply. input power or bat. power on)



Figures M, N, P and R are applicable to DCM only

**NOTES:**

- 1) If EIR option is used, the output power to the lock will be interrupted upon activation of the emergency override system.
- 2) If the TDM option is used with a closed control, the lock will not relock until the preset time has expired.
- 3) All drawings show lock in secure state.

# 510ULAC Accessories Installation Instructions

## System Wiring Diagrams

### 2) Special System Wiring

FIGURE X: Wiring a DCM card for one locking system with two sets of dry contact outputs.

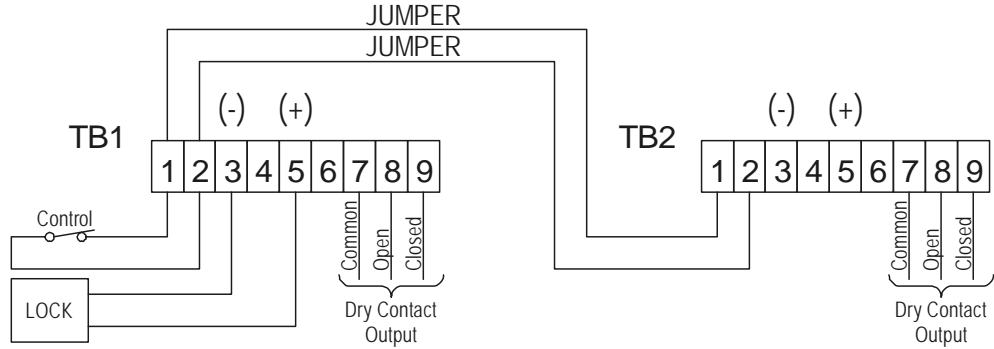
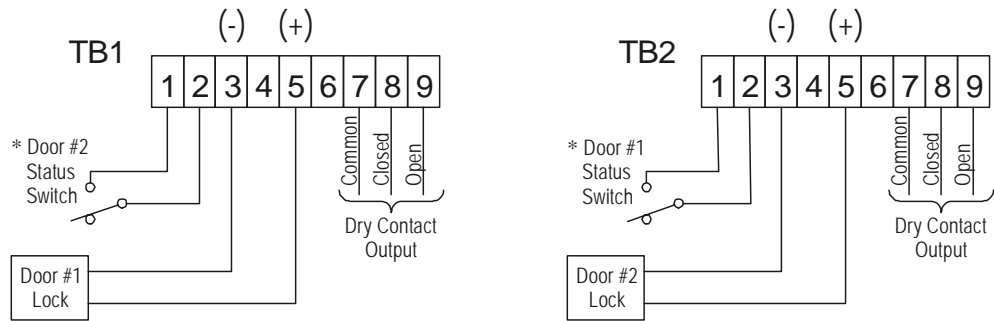


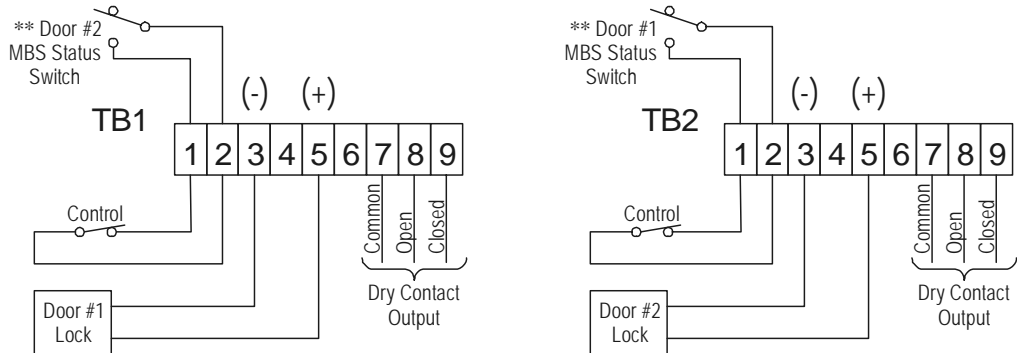
FIGURE Y: Safety interlock. Fail-safe locks - both doors normally closed and unlocked. Opening one door locks other door until the open door is relocked. Emergency unlock controls require a separate diagram.



NOTE: Do not use TDM option with this interlock.

\*Shown with door in closed position

FIGURE Z: Security interlock. Fail-safe locks - both doors normally closed and locked. Unlocking one door voids release for other door until unlocked door is relocked.



\*\*Shown with door in closed position

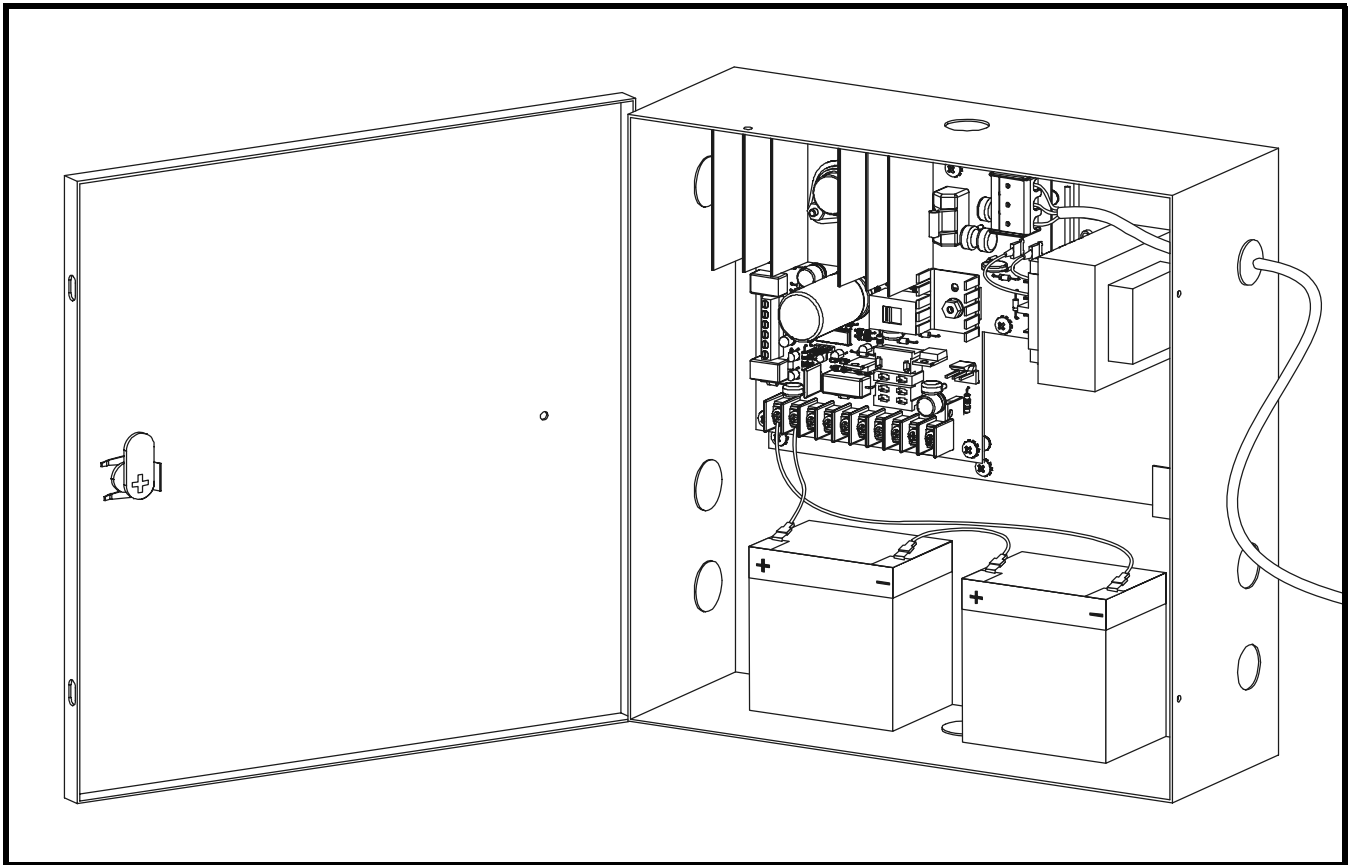
\* If EIR option is used, the output power to the lock will be interrupted upon activation of the emergency override system.



# 510 SERIES POWER SUPPLY

## INSTALLATION MANUAL

### 510ULAC



**Schlage Lock Company**  
575 Birch Street  
Forrestville, CT 06010  
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web: www.irsupport.net



# 510ULAC Installation Instructions

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# 510ULAC Installation Instructions

## *Description of Operation / BoM / Enclosure Features / UL*

---

### **Description of Operation**

The 510ULAC power supply converts an 110VAC/60 Hz input to a power limited DC output. Output voltage is field selectable for either 13.8 VDC @ 3.0A or 27.6 VDC @ 2.0A nominal. There are three indicator LED's present on power supply to monitor the status of the unit. A red LED is illuminated when there is a DC output on the DC+ and DC- terminals. There are two green led's present near the supervision terminal block. One LED indicates when a battery is connected, the other indicates the presence of A.C. line voltage. The supervision terminal block has connections for two relays each consisting of a Common, N.O., and N.C. contact. The contacts are rated 1A @ 28VDC.

The 510ULAC 12/24VDC Power Supply is intended for operation in a controlled environment.

### **Bill of Materials**

- Metal enclosure
- 510ULAC Printed Circuit Board
- Lid screw pack

**The following are optional items:**

- ◆ 12VDC Batteries
- ◆ Battery cables
- ◆ Cam lock with keys
- ◆ EIR

**The following are optional items not evaluated by UL:**

- ◆ CMR
- ◆ DCM
- ◆ TDM
- ◆ RCM

### **Enclosure Features**

- Painted metal, with hinged, painted metal door
- Dimensions: 12" x 12" x 4"
- Extra "knockouts" on the top, bottom and sides.
- Mounting holes on the back surface.

**The following is an optional feature:**

- ◆ Door can be fitted with a cam lock.

### **UL**

- UL File Number: BP9350
- All interconnected devices must be UL listed.



# 510ULAC Installation Instructions

## Product Specifications

### Product Specifications

**Table 1: Product Specifications**

Electrical	Specification
Input Voltage	110VAC, 60Hz, 1.25 Amp
Output Voltage	13.8VDC (+/- 5%) or 27.6VDC (+/- 5%) (field selectable) Filtered & Regulated
Output Current	3.0A @ 13.8VDC or 2.0A @ 27.6VDC
Primary Fuse Size	1.25A, Slo-Blo, 250V, 5x20mm
Battery Fuse Size	4.0A, Resettable
Secondary Protection	Output overload protected by the regulator circuit
Charging Circuit	Built-in Standard
Supervision Circuit	
AC Monitor	Power Limited. Form "C" Contacts.
Battery Monitor	Power Limited. Form "C" Contacts.
Mechanical	
Enclosure	12" x 12" x 4" Approx. Steel NEMA Grade 1 with conduit knockouts and hinged cover with lock down screws.
Color/Finish	Gray, Baked Enamel
Input Terminals	Barrier strip with (3) #6 screw terminals and protective cover,
Output Terminals	Barrier strip with (2) #6 screw terminals labeled DC(+), DC(-) Barrier strip with (2) #6 screw terminals labeled BAT(+), BAT(-) Barrier strip (7) #6 screw terminal labeled EIR
Optional	
Stand-by Battery Pack (1)	4.0A/Hour @ 12VDC (Rechargeable, Sealed, Lead Acid, Gel Cell)
Stand-by Battery Pack (2)	8.0A/Hour @ 12VDC or 4.0A/Hour @ 24VDC (Rechargeable, Sealed, Lead Acid, Gel Cell)
EIR	Contact rating: 3.0A @ 30VDC
Key Lock Cover	Optional with 2 keys.
Warranty	
Warranty	1 Year Limited
Shipping Weight	
Power Supply	12 Pounds
Each Battery	4 Pounds
Environmental Conditions	
Operating Temperature & Relative Humidity	Indoor - 0°C and 49°C (32°F and 120°F) 85%, +/- 5%

# 510ULAC Installation Instructions

## Installing the 510ULAC

---

### 1) Installation Procedure

The 510ULAC must be installed in accordance with article 760 of the National Electrical Code or NFPA 72 as well as all applicable local codes.

*NOTE: Install the 510ULAC indoors within the protected premises.*

A.) Mounting holes are provided on the back surface of enclosure. Firmly mount the 510ULAC to a solid surface using hardware suitable for the surface.

*NOTE: Check national and local codes for installation requirements.*

B.) Output voltage selection is set at the factory for 12VDC. If required, change SW1 to 24VDC as shown in (**See Installation Diagram on page 6**).

C.) Connect AC power (110VAC, 50/60Hz) to terminals marked: LINE, GROUND (symbol), and NEUTRAL (**See Installation Diagram on page 6**).

D.) Connect devices to be powered to terminals marked: DC (+) and DC (-) (**See Installation Diagram on page 6**).

*NOTE: To avoid potential damage, measure output voltage before connecting devices.*

E.) For Access Control applications, stand-by batteries are optional.

- When stand-by batteries are not used, a loss of AC will result in the loss of output voltage.
- When stand-by batteries are used, they must be lead acid or gel type.

### 2) Wiring

- Wiring methods shall be in accordance with the National Electrical Code (ANSI/NFPA70), local codes, and the authorities having jurisdiction.
- Use metallic conduit for connection of the branch circuit to maintain grounding and bonding of the enclosure.
- Cabling and wire must be UL Listed and/or recognized wire suitable for the application.
- Only use stranded, multi-conductor, color coded wire, without splices.
  - ♦ Use 18AWG or larger for all low power connections (Battery, DC output, AC input).
  - ♦ Use 22AWG or larger for all power limited circuits (Battery Fail, AC Fail).
- Recommended minimum of two (2) spare conductors.

**WARNING: Keep power limited wiring separate from non-power limited wiring (110VAC / 60Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.**

**Table 2: Wire Selection Table**

Total Length of One Wire Run (Feet)	Load Current @ 12VDC				Load Current @ 24VDC			
	1/4A	1/2A	3/4A	1A	1/4A	1/2A	3/4A	1A
100	24	18	16	14	24	20	18	18
200	16	14	12	12	20	18	16	14
300	16	12	12	10	18	16	14	12
400	14	12	10	--	18	14	12	12
500	14	10	10	--	16	14	12	10

### 3) Tamper Switch

A tamper switch is required to be installed on the 505ULAC/510ULAC that will monitor the enclosure for unauthorized access. The tamper switch should be attached to a UL Listed burglar alarm system or a Listed local siren/annunciator. This will allow for compliance to UL294 Section 32.1.4.

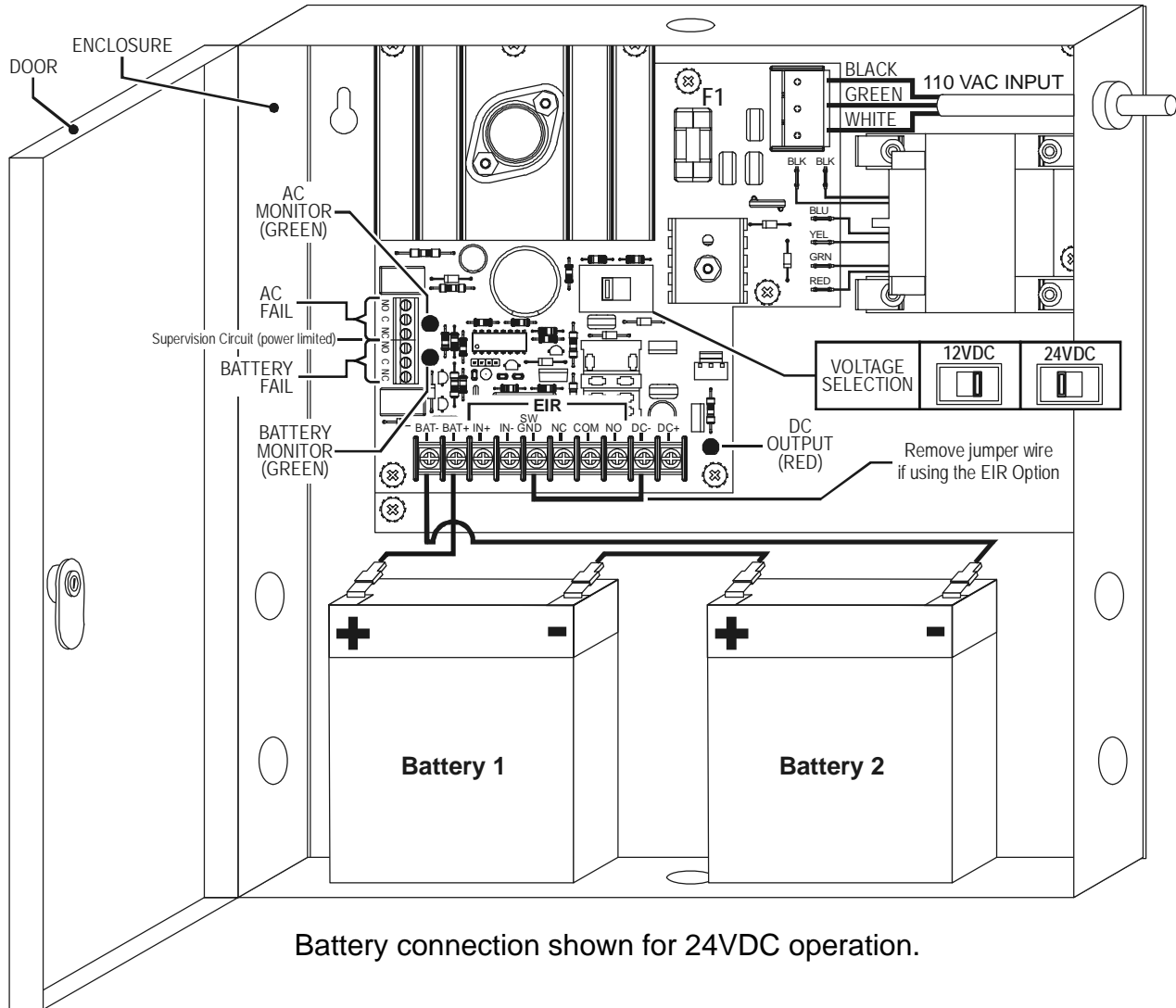
# 510ULAC Installation Instructions

## Installing the 510ULAC

### Installation Diagram

Refer to the diagram below when wiring the 510ULAC Power Supply. Stand-by batteries shown for 24VDC operation and are wired in series.

**Figure: 1. Installation Diagram**



Battery connection shown for 24VDC operation.

**WARNING:** De-energize unit prior to servicing. For continued protection against fire hazard, replace fuse (F1) with the same type and rating (1.25A, Slo-Blo, 250V). Replace fuse cover before energizing.

# 510ULAC Installation Instructions

## Stand-by Battery Installation / Terminal Identification

---

### Stand-by Battery Installation

- 1.) Verify field wiring is complete.
- 2.) Place batteries upright in bottom of enclosure (See *Installation Diagram* on page 6).
- 3.) Using the provided cables, connect batteries (See *Installation Diagram* on page 6).
- 4.) Turn on VAC line power input to power supply.

**Table 3: Stand-by Battery Power Selection Chart**

Current Load Draw (Amps)	12VDC SYSTEM		24VDC SYSTEM	
	Hours	Hours	Hours	Hours
3	2.5	5	n/a	n/a
2	4	8	2	4
1	8	16	4	8
0.5	16	32	8	16
0.33	24	48	12	24
0.22	36	72	18	36
0.16	50	100	25	50
Number of batteries required	2	4	2	4

Battery capacity for emergency standby with 2 batteries at least 2.5 hours at 12VDC @ 3A.

Battery capacity for emergency standby with 2 batteries at least 2 hours at 24VDC @ 2A.

*NOTE: Charging time is approximately 48 hours from deep discharge.*

### Terminal Identification

**Table 4: Terminal Identification**

Terminal Legend	Function / Description
Line, Ground, Neutral	110VAC, 50/60Hz input
DC (-), DC (+)	12VDC @ 3A continuous power limited output 24VDC @ 2A continuous power limited output
AC Fail NC C NO	Indicates loss of AC power, e.g. connect to alarm panel. Relay normally energized when AC power is present. Contact rating: 1A @ 28VDC
Battery Fail NO C NC	Indicates low battery voltage, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating: 1A @ 28VDC
BAT (-), BAT (+)	Stand-by battery connections

# 510ULAC Installation Instructions

## EIR Connection / LED Diagnostics / Maintenance

### EIR Connection (optional)

The purpose of the EIR circuit is to cut power to fail safe locks in an emergency situation. When using the EIR relay circuit to supply power to fail safe locks, such as electromagnetic locks, power must come from connector J4, terminals: DC- & DC+ as shown below. Be sure to test all circuits for proper function after installation.

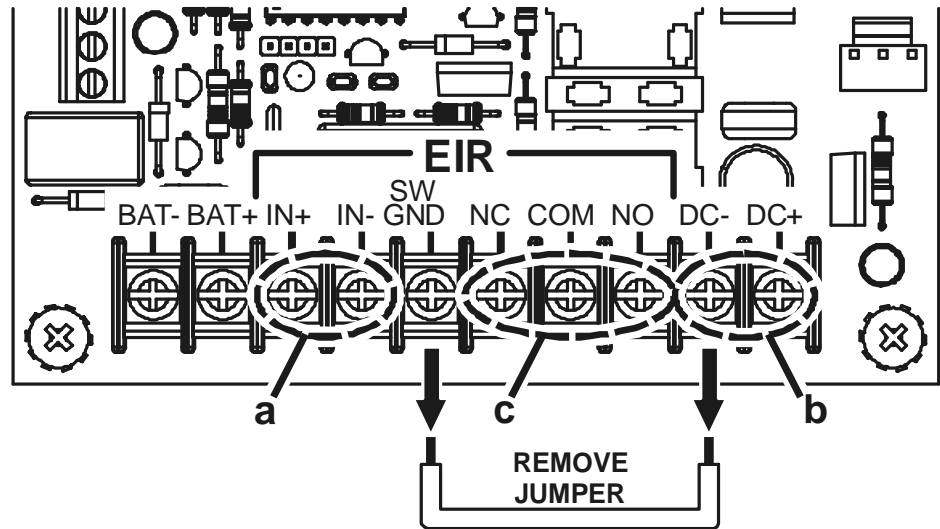
**\* NOTE:** Jumper from SW GND to DC- must be removed when using EIR.

**Figure: 2. EIR Connection**

(a) NORMALL CLOSED DRY CONTACT FROM FIRE PANEL (BY OTHERS). CONTACT MUST OPEN UPON EMERGENCY.

(b) OUTPUT POWER TO LOCKING SYSTEM WILL HAVE GROUND CONNECTION (-) REMOVED WHEN FIRE ALARM CONTACT OPENS ON TERMINALS: IN+ & IN-.

(c) RELAY OUTPUT REFLECTS CONDITION OF EIR RELAY FOR SIGNAL OR CONTROL. RATED 3.0A @ 30VDC.



**\* NOTE**

### LED Diagnostics

**Table 5: LED Diagnostics**

DC OUTPUT (RED)	AC MONITOR (GREEN)	BATTERY MONITOR (GREEN)	POWER SUPPLY STATUS
ON	ON	ON	Normal Operation.
ON	ON	OFF	Batteries Disconnected or Discharged.
ON	OFF	ON	Unit on Back-up Battery.
OFF	ON	OFF	DC Output Shorted.
OFF	OFF	OFF	Unit De-energized.

### Maintenance

Unit should be tested at least once a year for proper operation. Perform test as follows:

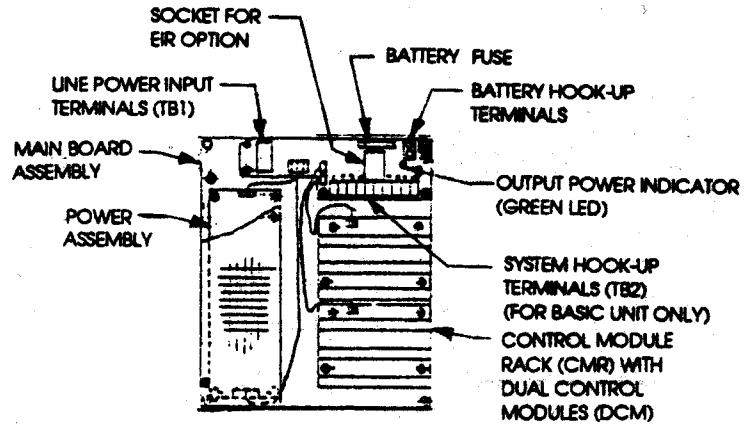
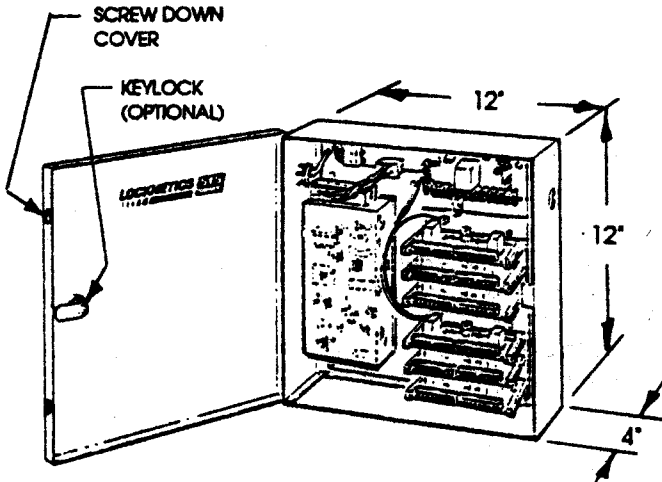
**Output Voltage Test** - Under normal load conditions, the DC output voltage should be checked for proper voltage level (see power supply voltage output in the Product Specifications Chart).

**Battery Test** - Under normal load conditions, check the following

- Battery is fully charged.
- Specified voltage at all battery terminals and PCB terminals marked BAT (+) & BAT (-). This ensures there are no breaks in the battery cables.

**NOTE:** Expected battery life is 5 years. Change batteries every 4 years, or less if necessary.

# 515 SERIES POWER SUPPLY INSTRUCTION MANUAL



The 515 Series Power Supply/Controller may be purchased in three basic configurations with a variety of options. This page describes features common to all units. See Page 2 for details of specific units.

### EACH UNIT IS SHIPPED WITH THE FOLLOWING ITEMS:

(1) Power Supply, (1) Instruction Manual, Additional optional items as per purchase order.

### SPECIFICATIONS

#### ELECTRICAL:

INPUT POWER: 110VAC, 60HZ, 2.0 AMP MAX  
 OUTPUT VOLTAGE: 12 VDC Nominal (13.8 VDC)  
 24 VDC Nominal (27.6 VDC)  
 Filtered & Regulated  
 OUTPUT CURRENT: 10 AMP MAX @ 13.8 VDC  
 5 AMP MAX @ 27.6 VDC  
 PRIMARY FUSE SIZE: 6.3 AMP (NON-REMOVABLE)  
 BATTERY FUSE SIZE: 12A, 3AG  
 SECONDARY PROTECTION: Output overload  
 protected by the regulator circuit.  
 CHARGING CIRCUIT: Built-in standard

#### OPTIONAL BATTERY PACK:

SBP12: 4 Amp/Hour @ 12VDC  
 SBP24: 4 Amp/Hour @ 24VDC  
 BATTERY TYPE: Rechargeable  
 Sealed Lead Acid  
 CHARGING TIME: Approx. 48 hours  
 from deep discharge.

#### MECHANICAL:

ENCLOSURE: 12" x 12" x 4" Steel NEMA Grade 1  
 with conduit knockouts and hinged  
 cover with lock down screws.  
 COLOR/FINISH: Beige, Baked Enamel  
 WEIGHT: 9 pounds  
 INPUT TERMINALS: Barrier strip with  
 (2) #6 screw terminals  
 with protective cover  
 (1) #10 ground screw.  
 OUTPUT TERMINALS: Barrier strip with  
 (10) #6 screw terminals.  
 (basic unit only)

#### OPTIONS DESIGNATIONS:

SBP12 = Standby Battery Pack, 12V 4AH  
 SBP24 = Standby Battery Pack, 24V 4AH  
 CAB = Cable Kit, Battery  
 KLC = Key Lock Cover w/two keys  
 Other Options = See Page 3

### DESCRIPTION OF OPERATION:

With line power applied, a green LED on the circuit board will be illuminated. This indicates constant power on output terminals TB2-2 & 5 and - 9 & 10. When batteries are included, power may be present on output terminals with the green LED illuminated and no line power present. When line power is present the built-in recharging circuit will keep the batteries charged.

#### APPROVALS:

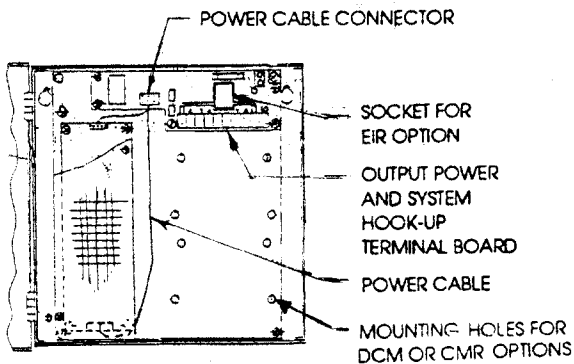
Under UL  
 evaluation.

#### INDEX

#### PAGE

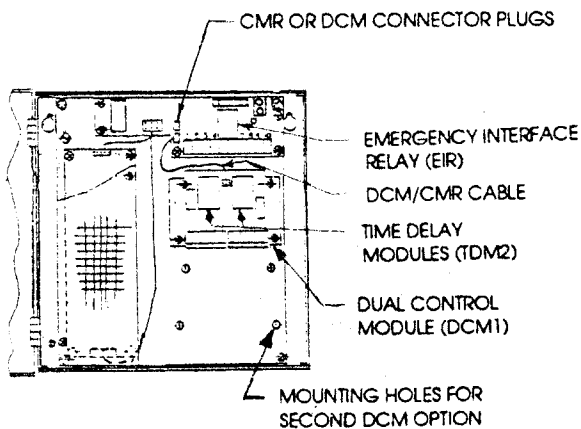
1 SPECIFICATIONS  
 2 BASIC CONFIGURATIONS  
 3 MODULAR OPTIONS  
 4 DCM/CMR DETAILS  
 5 TDM/EIR DETAILS  
 6 STANDBY OPTIONS  
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9 TROUBLE SHOOTING  
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 14 WIRING - DCM OPTION  
 15 WIRING - DCM OPTION  
 16 INSTALLATION NOTES

**BASIC POWER SUPPLY**

Shown: 515

Basic unit without options provides output power from screw terminals. Power is controlled by switches hooked-up from external system. The EIR plug-in relay may be added to provide interfacing fail-safe locks with an emergency override or master control system.

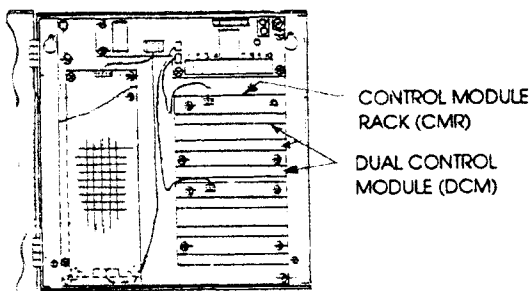


**BASIC POWER SUPPLY** with one or two Dual Control Module (DCM1 or DCM2) without Control Module Rack.

Shown: 515-DCM1-TDM2-EIR

The addition of a Dual Control Module (DCM1) provides output power, control hook-up and relay dry contact outputs for two individual doors. Plug-in modules (TDM2) provide adjustable relock time delays. The EIR plug-in relay allows interfacing fail-safe locks with an emergency override system (i.e., fire panel, master control, etc.).

The 515 will allow mounting one or two Dual Control Modules without the use of the control module rack option.



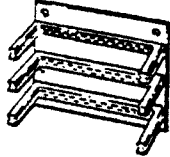
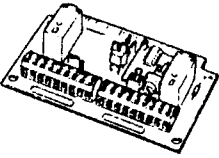
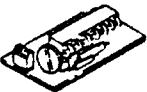
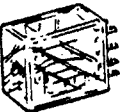


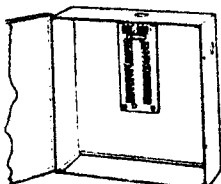
**BASIC POWER SUPPLY** with one or two Control Module Racks (CMR1 or CMR2) and up to six Dual Control Modules.

Shown: 515-DCM6-CMR2-EIR

Same as above with addition of the Control Module Racks. Each rack allows for expansion of up to three Dual Control Modules for control of up to six individual doors. Time Delay Modules may be added for specific doors.

**NOTES:**

1. These products require connection to AC line voltage. Installation and all electrical connections (high and low voltage) should be performed by qualified electrical personnel.
2. EIR OPTION: Emergency Interface Relay module provides interface with fire or other emergency systems. Releases fail-safe locks upon alarm condition.
3. See Page 3 for detail description of modular options.

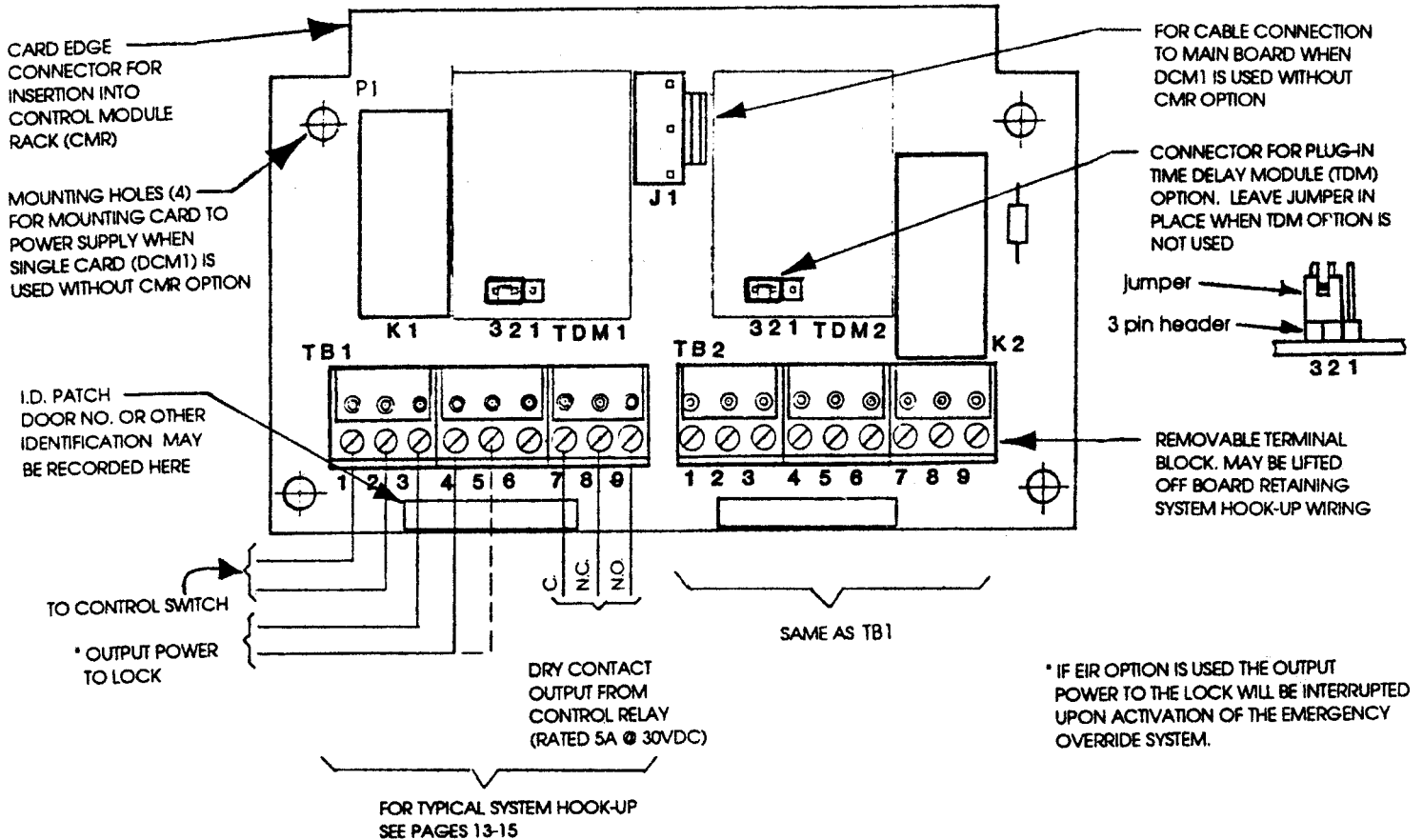
 <p><b>CMR1</b> CONTROL MODULE RACK</p>	<p>The Control Module Rack interfaces with the main board and power assembly via a ten inch long plug-in cable assembly. It accepts up to three Dual Control Modules (DCM).</p>
 <p><b>DCM1</b> DUAL CONTROL MODULE</p>	<p>The Dual Control Module is a plug-in pc card providing separate sections for control of two individual doors. Each section includes a nine position screw terminal block for output power, control hook-up and SPDT dry contact outputs (rated 5A @ 30 VDC). Included is a plug to accept a Time Delay Module (TDM) for each section. A plug for interfacing a single card (without the CMR option) to the main board and power assembly is included.</p>
 <p><b>TDM1</b> TIME DELAY MODULE</p>	<p>The Time Delay Module is a plug-in pc card providing an adjustable (0-30 seconds) delay on relock. It may be added to each individual section of the DCM card.</p>
 <p><b>EIR</b> EMERGENCY INTERFACE RELAY MODULE</p>	<p>The EIR is a plug-in relay allowing interfacing with fire or other emergency override systems. Upon opening a closed dry contact from an override system, the EIR will cut power at designated output power terminals on the 515 power supply, and/or DCM card. The EIR also provides SPDT dry contact outputs (rated 10A @ 30 VDC).</p>
 <p><b>SBP12</b> <b>SBP24</b> STANDBY BATTERY PACK</p>	<p>The SBP12 option provides one 12 VDC, 4 Amp/Hour battery for 12 VDC systems. The SBP24 option provides a pair of 12 VDC, 4 A/H batteries for 24 VDC systems (provides 24 VDC, 4 A/H). Additional batteries may be used to increase the Amp/Hour output.</p>
 <p><b>CAB</b> CABLE KIT FOR BATTERIES</p>	<p>The cable kit provides hardware for the proper hook-up of up to two batteries. It consists of (2) quick connect terminals and (4) one foot long leads with quick connect lugs (2-red, 2-black).</p>
 <p><b>SBE</b> STANDBY BATTERY ENCLOSURE</p>	<p>The SBE is a 12" x 12" x 4" steel NEMA Grade 1 enclosure with conduit knockouts and hinged cover with lock down screws. It will hold up to eight SBP batteries, and provides a fused circuit board with screw type output terminals. Quick connect type terminals are provided for easy hook-up of batteries for 12 or 24 VDC configurations.</p>



**515 SERIES POWER SUPPLY  
DUAL CONTROL MODULE (DCM)  
CONTROL MODULE RACK (CMR)**

**DUAL CONTROL MODULE (DCM)**

Each Dual Control Module (DCM) provides circuitry and hook-up terminals for two individual locking systems.



**MOUNTING:**

**ONE OR TWO MODULES:** (OPTION DCM1 or DCM2)

Each DCM is mounted to the 515 base plate with (4) #8-32 x 1/2 LG. Phillips Pan Head screws and lockwashers. The DCM terminal blocks should be oriented away from the main board assembly. The supplied ten inch long cable assembly interconnects the DCM to the main board from DCM plug J1 to main board plug J1/J2.

**MULTIPLE MODULES** (OPTIONS DCM3-CMR1 OR DCM4(5)(6)-CMR2)

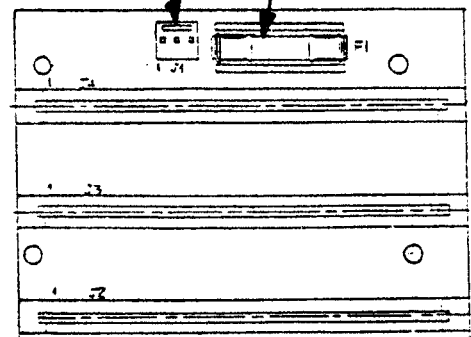
When using three or more DCM's the Control Module Rack option is necessary. Each DCM pushes into the card guide connector with the component side facing the main board assembly.

**CONTROL MODULE RACK (CMR)**

Each CMR is mounted with (4) #8-32 x 1/2 LG. Phillips Pan Head screws and lockwashers. The CMR plug J1 should be oriented toward the main board assembly. The supplied ten inch long cable assembly interconnects the CMR to the main board from CMR plug J1 to main board plug J1/J2. It will accept up to three DCM cards (connectors J2, J3, J4).

FOR CABLE CONNECTION TO MAIN BOARD

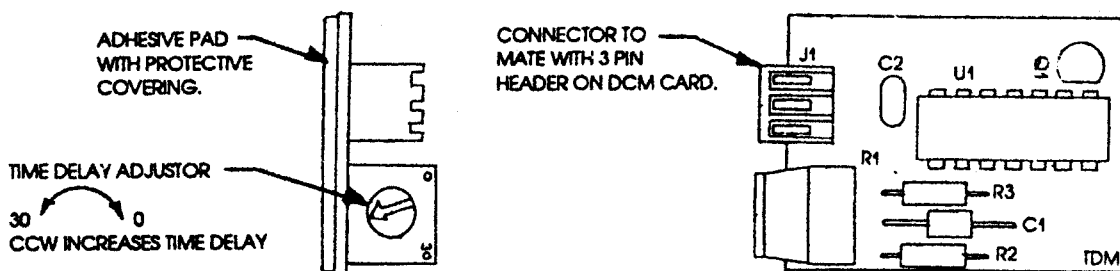
6 AMP. 3AG FUSE



# 515 SERIES POWER SUPPLY TIME DELAY MODULE (TDM) EMERGENCY INTERFACE RELAY (EIR)

## TIME DELAY MODULE (TDM)

Each Time Delay Module (TDM) provides an adjustable Time Delay to delay the relock cycle from 0 to 30 seconds. A separate TDM is needed for each locking system when this feature is required.

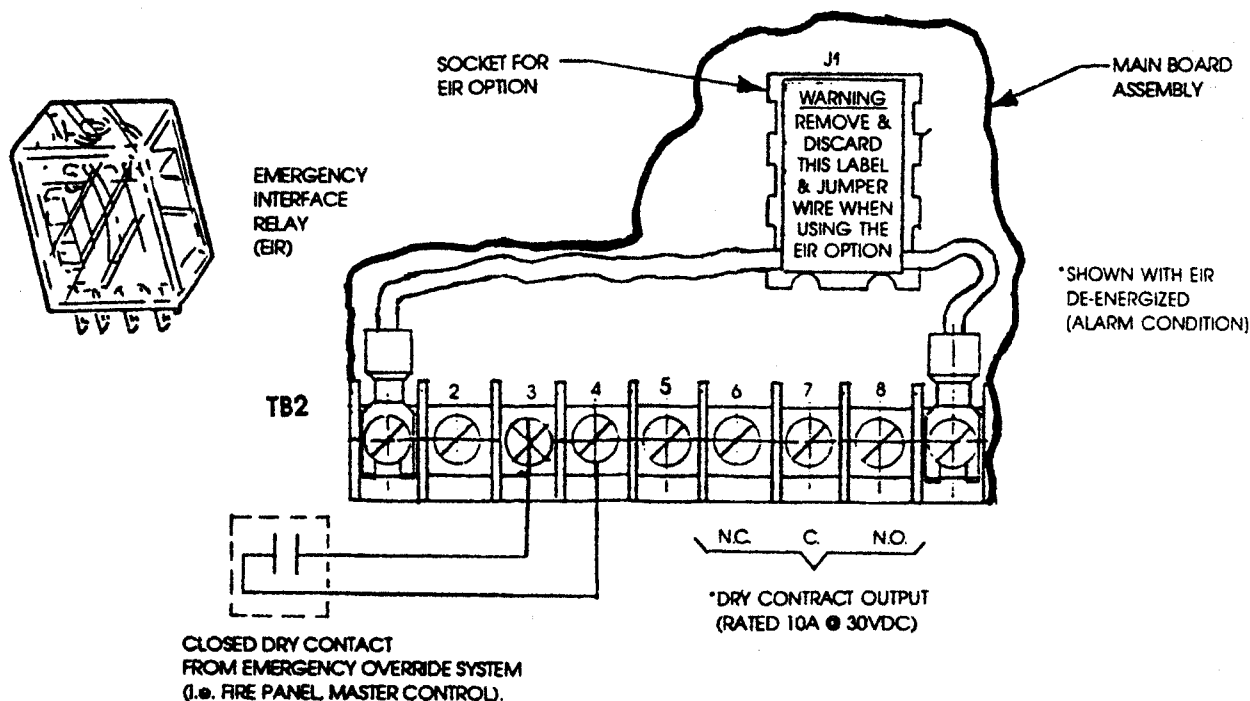


### MOUNTING:

Each Door Control Module (DCM) will accept one or two Time Delay Modules (TDM). The locations for mounting the TDM are marked TDM1 and TDM2. The jumper on pins 2 & 3 of the 3 pin header must be removed before plugging in the TDM. The protective covering should be removed from the TDM, exposing an adhesive pad. The TDM may then be placed over the 3 pin header to mate with the TDM J1 connector. Gentle pressure will secure the TDM in place.

## EMERGENCY INTERFACE RELAY (EIR)

The EIR provides a means of interrupting all designated power outputs whenever an emergency override system is activated. It also provides a SPDT dry contact output to monitor this condition or operate other system equipment.



### MOUNTING:

Disconnect the orange jumper wire from terminals TB2-1 and -9. Peel the attached label from the EIR socket and discard the jumper and label. Plug-in the EIR. Hook-up the closed dry contact from the emergency override system as shown.

### WARNING:

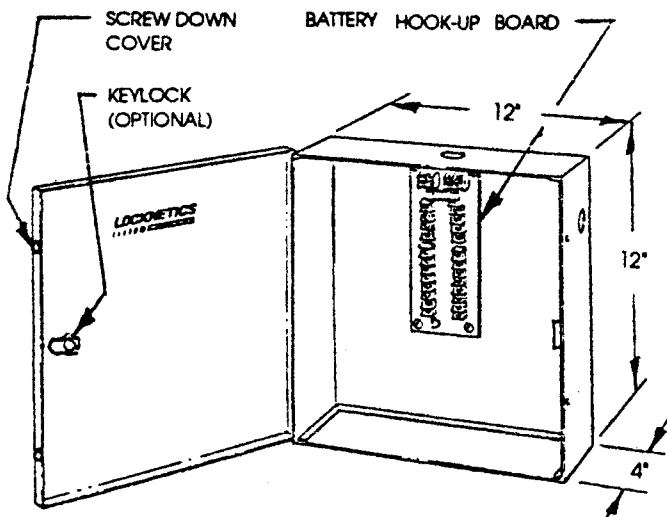
Provisions must be made to test the emergency override system. Activation of the emergency override must cause failure of power to the fail-safe locking device.

Standby power options are supplied as ordered and packaged separate. Each option is shipped with the following items:

OPTION	SHIPPED WITH
SBP12	(1) 12V, 4 AMP/Hour rechargeable sealed lead acid battery.
SBP24	(2) 12V, 4 AMP/Hour rechargeable sealed lead acid battery.
CAB	(2) Quick connect terminals and (4) One foot leads with quick connect lugs (2-red, 2-black)
SBE	(1) 12" x 12" x 4" standby battery enclosure with fused hook-up board.

**STANDBY BATTERY ENCLOSURE (SBE)**

The 515 Power Supply does not allow space for battery storage. When ordering standby power batteries, it is recommended to use the Standby Battery Enclosure (SBE) for convenient storage and ease of hook-up. Multiple SBP12 or SBP24 battery options may be stored, up to eight batteries total. One Cable Kit (CAB) is required for each pair of batteries.



**SPECIFICATIONS**

**ELECTRICAL:**

FUSE SIZE: 12A, 3AG

**MECHANICAL:**

ENCLOSURE: 12" x 12" x 4" Steel NEMA Grade 1 with conduit knockouts and hinged cover with lock down screws.

COLOR/FINISH: Beige, Baked Enamel

WEIGHT: 7 pounds (enclosure)

WEIGHT: 4 pounds (each battery)

INPUT TERMINALS: Barrier strip with Quick Connect Terminals.

OUTPUT TERMINALS: Barrier strip with (4) #6 screw terminals.

**OPTIONS:**

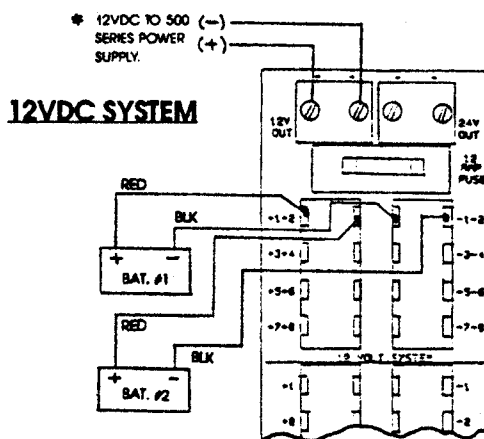
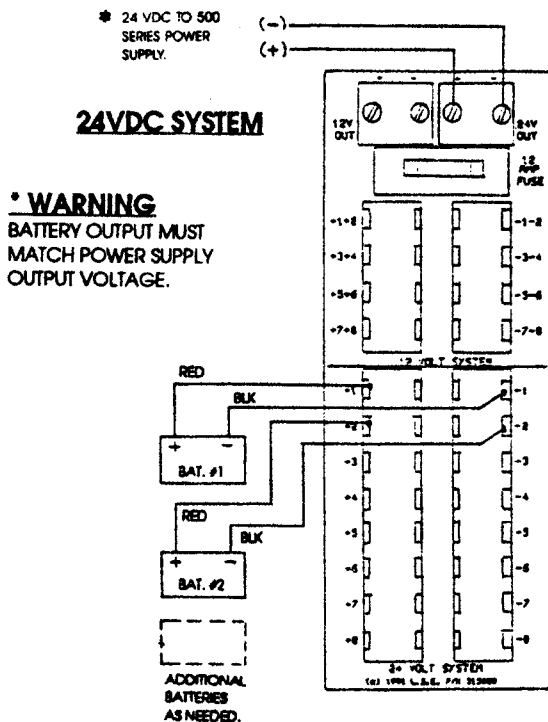
KLC = Key Lock Cover with two keys

**STANDBY TIME IN HOURS**

CURRENT DRAW IN AMPS	12VDC SYSTEM NO. OF BATTERIES				24VDC SYSTEM NO. OF BATTERIES			
	2	4	6	8	2	4	6	8
10.0	.20	.40	.60	.80	--	--	--	--
8.0	.44	.88	1.3	1.8	--	--	--	--
5.0	.84	1.7	2.6	3.4	.42	.84	1.3	1.7
4.0	1.2	2.4	3.6	4.8	.6	1.2	1.8	2.4
2.0	3	6	9	12	1.5	3	4.5	6
1.0	6	12	18	24	3	6	9	12
.50	12	24	36	48	6	12	18	24
.25	36	72	108	144	18	36	54	72

**INSTALLATION - SBE**

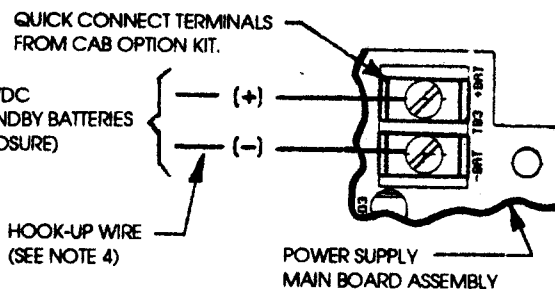
1. Determine the output voltage of the 515 and hook-up batteries to the appropriate terminal blocks as shown. (12VDC or 24VDC)
2. Set batteries upright in bottom of power supply enclosure.
3. Check battery hook-up for correct polarity. Output voltage may be measured at output terminals at top of hook-up board. Fully charged batteries will read 13.8V for 12V system or 27.6V for 24V system (unloaded).
4. Run output wires from output terminals to the 500 Series Power Supply. Use Class 1 wiring between battery enclosure and power supply.



**INSTALLATION - S15**

5. Turn off 110VAC line power to power supply.
6. Install quick connect terminals under screws of power supply main board assembly TB3.
7. Hook-up interconnection leads from SBE terminals.

**CAUTION:** Observe Polarity - Incorrect hook-up could cause personal injury or damage to components.



**TEST**

8. Without 110VAC line power, batteries may provide power for proper operation of locking system. If system fails to operate, or operates erratically, restore line power. Batteries may need up to 48 hours to recharge to full capacity. After recharging, system may be retested without line power to insure battery system is operating.
 

**WARNING:** (Systems with emergency interface relay option-EIR)  
Provisions must be made to test the emergency override system. Activation of the emergency override must cause failure of power to the fail-safe locking device.
9. If system operates properly, 110VAC line power should be restored immediately to prevent unnecessary drain on batteries
10. With 110VAC line voltage applied, the 500 series power supply recharging circuit can be checked for proper operation at the battery hook-up terminals (TB3).  
Meter readings, without batteries connected, should be:  
Approx. 13.8VDC for 12VDC units  
Approx. 27.6VDC for 24VDC units
11. If other than factory supplied batteries are used select only rechargeable sealed lead acid batteries. Batteries larger than 4 Amp/Hour will require longer recharge time.

**SUGGESTED INSTALLATION PROCEDURE:**

- 1) Read all supplied documents.
- 2) Follow installation sequence as outlined below.
- 3) **CAUTION:** Use extreme care - high voltage line power may be present. All high voltage installation and service to be performed by qualified electricians.
- 4) Additional installation guidelines on Page 16.

**MOUNTING**

Mounting holes are provided in the back surface of the enclosure. Firmly secure the box to a solid surface with a minimum size of #8 mounting hardware. Check national and local codes for installation requirements.

**OUTPUT (SYSTEM) HOOK-UP:**

Total all system loads (current draw). Do not exceed rated output of power supply. Make all system wiring connections to:

Basic Power Supply: TB2, Terminals 1-10 (See Pages 10-12).

Dual Control Module: TB1 and TB2, Terminals 1-9 (See Pages 13-15).

or, if applicable, follow hook-up drawings supplied with job.

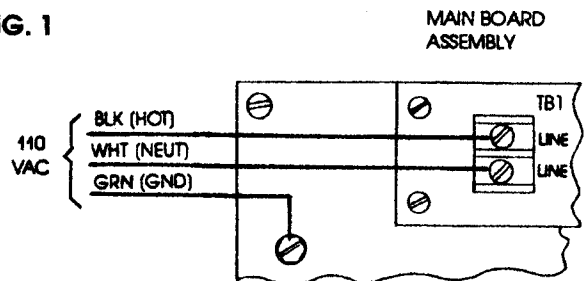
**NOTE:** ALL LOW VOLTAGE WIRING TO BE MINIMUM 18 AWG STRANDED MULTI-CONDUCTOR COLOR CODED WIRE WITHOUT SPLICES. A MINIMUM OF TWO (2) SPARE CONDUCTORS IS RECOMMENDED. WIRING TO CONFORM TO APPLICABLE NATIONAL, STATE AND LOCAL ELECTRICAL CODES FOR CLASS 2 SIGNALING AND CONTROL DEVICES.

**INPUT POWER HOOK-UP:**

**Standard Units:**

1. Before wiring line power to power supply, check that this procedure is in compliance with local codes regarding high voltage hook-up.
2. **CAUTION:** Determine that no power is present on 110VAC input line before starting any hook-up work.
3. Lift the yellow protective cover and wire 110VAC line to TB1 and ground screw as shown in Figure 1.

**FIG. 1**



**TEST**

1. With line power present, the green LED on the power supply circuit board should illuminate. This indicates that low voltage power is present on main board assembly TB2, Terminals 2 & 5 and 9 & 10. (Ref. Page 100 and DCM (Card(s) TB1 and TB2, Terminals 3 and 4 or 3 and 5 (Ref. Page 13).
2. Locking system should operate as per applicable system wiring diagram used for hook-up.
3. If problems exist refer to Trouble Shooting, Page 9.

**BATTERY INSTALLATION (Optional)**

1. If unit is shipped with the Battery Pack option, refer to Page 7 for installation and test.

**POWER SUPPLY TROUBLE-SHOOTING**

1. The Power Supply may run hot under full load. This condition is normal.
2. When a blown fuse is found, an attempt should be made to identify and correct any problem that caused its failure before replacing it. Replacement fuses of other than ratings specified may damage the unit or prove hazardous. Fuse failure may be caused by:

FUSE	SIZE	LOCATION	POSSIBLE CAUSE OF FAILURE
F1	6.3A (FIXED)	POWER BOARD	DAMAGED POWER ASSEMBLY
F1	12A, 3AG	MAIN BOARD	WRONG BATTERY HOOK-UP, SHORT OR OVERLOAD
F1	6A, 3AG	CMR BOARD	SHORT OR OVERLOAD
FUSE	12A, 3AG	SBE BOARD	WRONG BATTERY HOOK-UP

3. Before trouble shooting check all plug-in connections, i.e., DCM or CMR cable, DCM, TDM, EIR.

PROBLEM	POSSIBLE CAUSE	ACTION TO TAKE
NO OUTPUT POWER (GREEN LED NOT LIT)	NO LINE POWER BLOWN PRIMARY FUSE POWER BOARD OR MAIN BOARD CABLE	CHECK & PROVIDE LINE POWER RETURN UNIT RECONNECT CABLE
NO OUTPUT POWER (GREEN LED LIT)	EIR OR EIR JUMPER MISSING EIR INPUT NOT CONNECTED OR OPEN DCM1 OR CMR1 CABLE MISSING OR UNPLUGGED CMR1 FUSE BLOWN OR MISSING DCM NOT PROPERLY SEATED OR INSTALLED WRONG DCM TDM JUMPER MISSING OR ON WRONG PINS TDM NOT SEATED OR MISSING	REPLACE CHECK & CORRECT REPLACE OR PLUG IN CHECK & REPLACE CORRECT REPLACE OR CORRECT REPLACE OR CORRECT
LOCK NOT WORKING OR WORKS ERRATICALLY	IMPROPER HOOK-UP IMPROPER OUTPUT VOLTAGE LOW OUTPUT VOLTAGE DUE TO EXCESSIVE LOAD LOW VOLTAGE AT LOCK DUE TO INSUFFICIENT WIRE SIZE	CHECK WIRING DIAGRAM & HOOK-UP WIRING CHECK OUTPUT VOLTAGE AND LOCK RATING REDUCE LOAD INCREASE HOOK-UP WIRE SIZE

**DURING STANDBY BATTERY OPERATION (NO LINE POWER)**

NO OUTPUT POWER (GREEN LED NOT LIT)	BATTERIES NOT CONNECTED BLOWN BATTERY FUSE	CONNECT BATTERIES CHECK & REPLACE FUSE (SEE NOTE 2)
LOCK NOT WORKING OR ERRATIC (LED MAY BE DIM)	WEAK BATTERIES BATTERY HOOK-UP WRONG	RESTORE PRIMARY POWER & ALLOW BATTERIES TO RECHARGE CHECK & CORRECT BATTERY HOOK-UP
LOW OUTPUT VOLTAGE	EXCESSIVE LOAD PULLING BATTERIES DOWN OLD OR DAMAGED BATTERIES	REDUCE LOAD CHECK RECHARGING OUTPUT (SEE GENERAL NOTES ON BATTERY INSTALLATION PAGE 7) REPLACE BATTERIES, IF NECESSARY

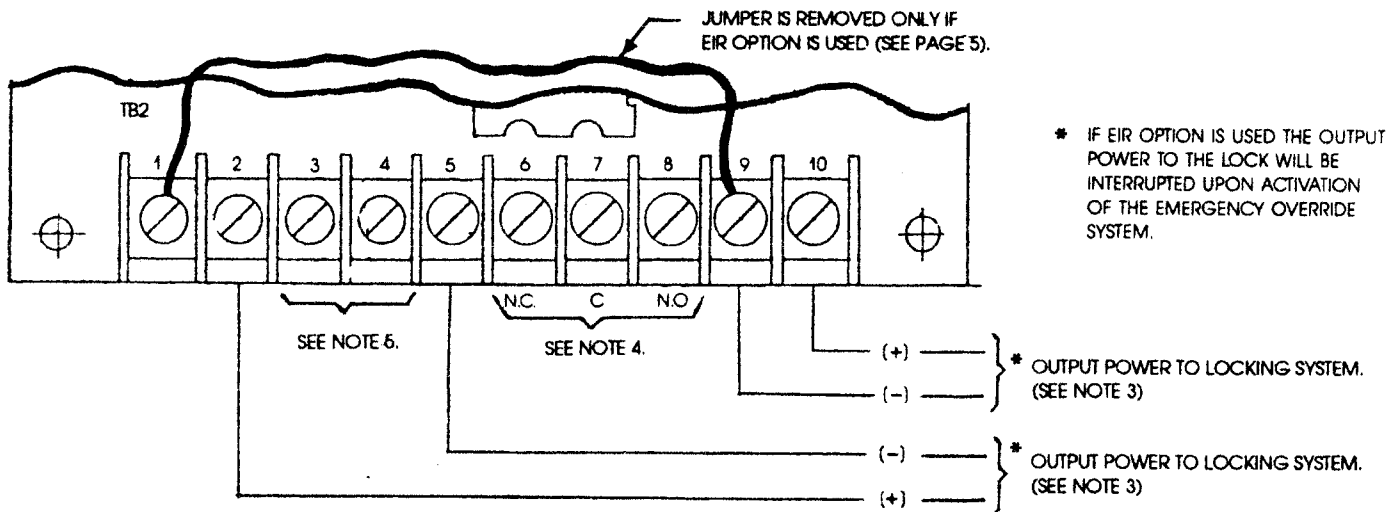
**GENERAL NOTES (ALL UNITS):**

- External control switches must have contacts rated to handle the total load being switched.
- Hook-up wire should be 18 AWG minimum. Actual wire size calculations should be based on total length of wire run from power supply to locking device. Wire size should allow no more than 5% voltage drop. High current should be run over separate pairs.

**WIRE SIZE SELECTION**

TOTAL ONE-WAY LENGTH OF WIRE RUN (FT.)	LOAD CURRENT @ 24V						LOAD CURRENT @ 12V						
	1/2A	1A	2A	3A	4A	5A	1/2A	1A	2A	4A	6A	8A	10A
25	26	22	20	18	16	16	22	20	16	14	12	10	10
50	22	20	16	14	14	12	20	16	14	10	10	--	--
100	20	18	14	12	10	10	18	14	12	--	--	--	--
150	18	16	12	10	10	--	16	12	10	--	--	--	--
200	18	14	12	10	--	--	14	12	--	--	--	--	--
250	16	14	12	10	--	--	14	10	--	--	--	--	--
300	16	12	10	--	--	--	12	10	--	--	--	--	--

**DESCRIPTION OF OUTPUT TERMINAL BLOCK (TB2)  
(MAIN BOARD ASSEMBLY)**



- Output power is available from main board terminals TB2-2 & -5 and/or TB2-9 & -10. If only one set of terminals is used, high current draw may require a wire size that is impractical. (Refer to Wire Size Selection chart).

It may be desirable to divide the load by using both sets of output terminals. This would reduce the current draw on the wire runs, allowing a more practical wire size.

- Dry contact output available only with EIR option. Contacts are shown with EIR de-energized (Alarm condition-open input contacts at Terminals 3 and 4). Contacts can be used to monitor the alarm condition or operate other system equipment (Ref. Page 5). Contact Rating: 10A @ 30VDC.
- Terminals for closed dry contact hook-up from emergency override system, i.e. fire panel, master control. DO NOT USE WITHOUT EIR OPTION (Ref. Page 5).

See Pages 11 & 12 for basic power supply wiring diagrams. (Units without DCM options)  
See Pages 13 - 15 for multi-door wiring diagrams. (Units with DCM options)

**FAIL-SAFE LOCKS/CLOSED CONTROL CONTACTS**

FIGURE A

MAIN BOARD (TR2)

- SINGLE LOCK (OR MULTIPLE LOCKS)
- INDIVIDUAL CONTROL

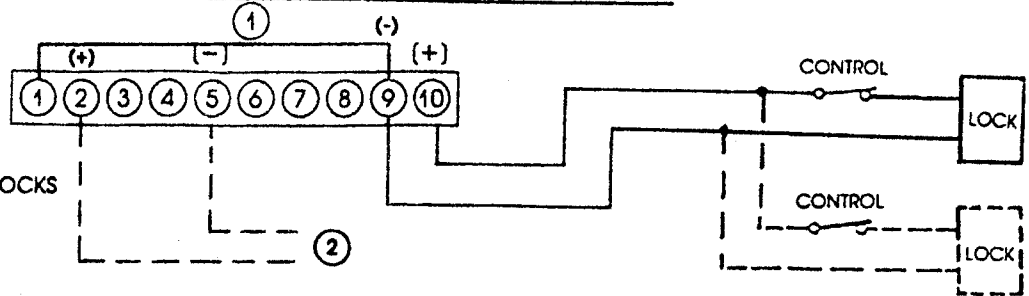


FIGURE B

- DOUBLE LOCK OR MULTIPLE SINGLE LOCKS
- SINGLE CONTROL
- LOCKS WIRED IN PARALLEL IN VICINITY OF LOCKS.

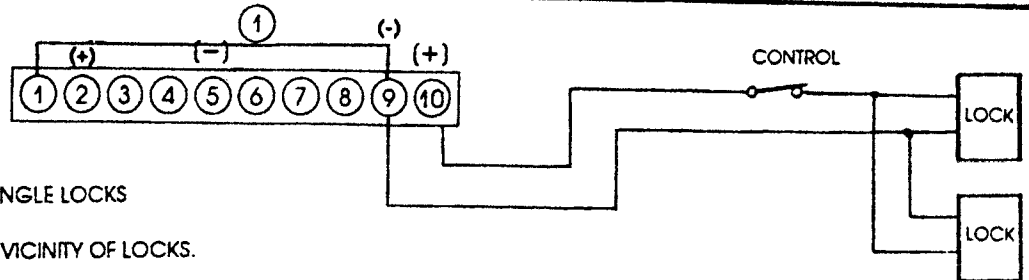
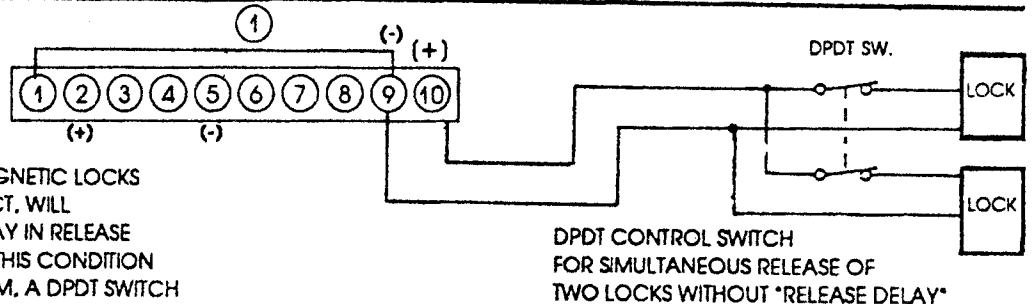


FIGURE C

OCCASIONALLY, TWO MAGNETIC LOCKS RELEASED BY ONE CONTACT, WILL EXHIBIT A 1-2 SECOND DELAY IN RELEASE OF ONE OF THE LOCKS. IF THIS CONDITION IS PERCEIVED AS A PROBLEM, A DPDT SWITCH SHOULD BE USED TO ELIMINATE THE DELAY.



DPDT CONTROL SWITCH FOR SIMULTANEOUS RELEASE OF TWO LOCKS WITHOUT "RELEASE DELAY"

**FAIL-SECURE LOCKS/OPEN CONTROL CONTACTS**

FIGURE D

- SINGLE LOCK (OR MULTIPLE LOCKS)
- INDIVIDUAL CONTROL

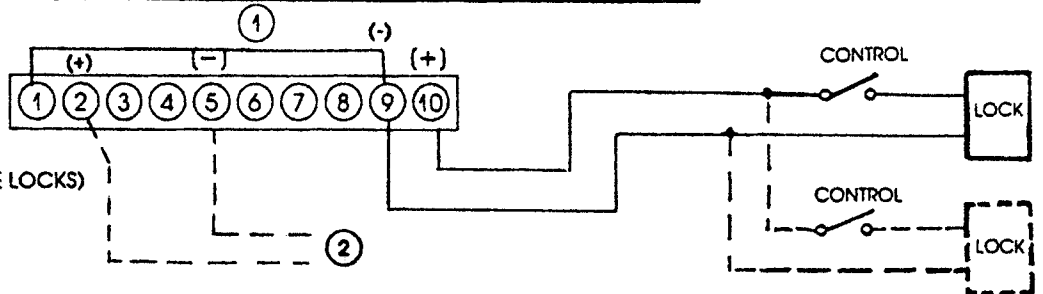
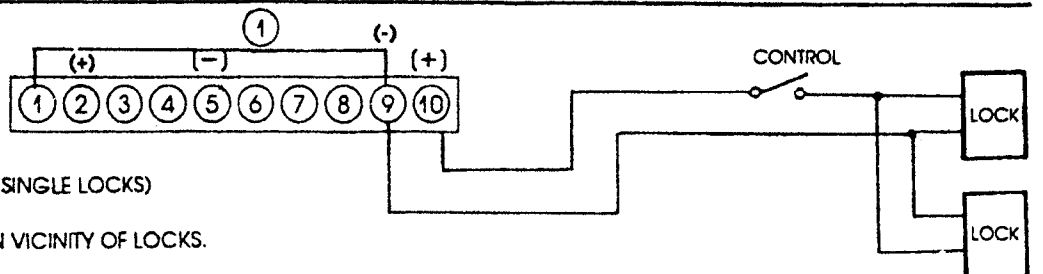


FIGURE E

- DOUBLE LOCK (OR MULTIPLE SINGLE LOCKS)
- SINGLE CONTROL
- LOCKS WIRED IN PARALLEL IN VICINITY OF LOCKS.



① FACTORY JUMPER WIRE REQUIRED WHEN EIR OPTION IS NOT ORDERED.  
② ALTERNATE OUTPUT TERMINALS TO DIVIDE CURRENT (SEE PAGE 10, NOTE 3).



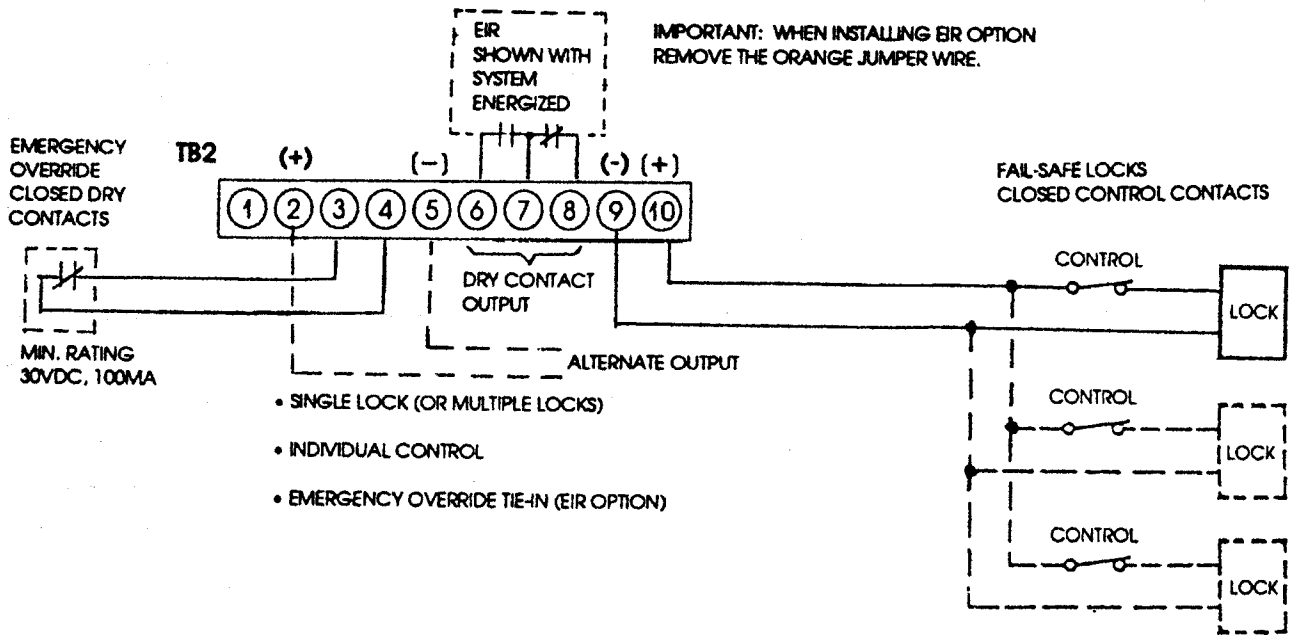
**FIRE SYSTEM TIE-IN**

In some installations, it may be required by code that the locking device (fail-safe type) be immediately unlocked upon actuation of an approved fire emergency system.

The Emergency Interface Relay (EIR) option is a plug-in relay allowing interfacing with fire or other emergency override systems. Upon opening a closed dry contact from an override system, the EIR will cut power at designated output power terminals on the main board assembly, and/or DCM card. The EIR also provides SPDT dry contact outputs (rated 10A @ 30 VDC) to monitor this condition or operate other system equipment.

Whenever this installation is required, check with the Authority Having Jurisdiction for approval of the proposed system hook-up.

FIGURE F



**MONITORING SYSTEM WIRING**

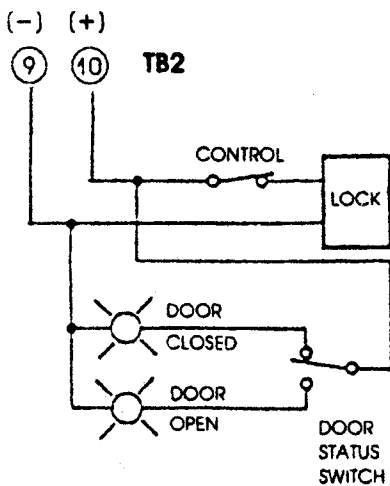


FIGURE G DOOR STATUS

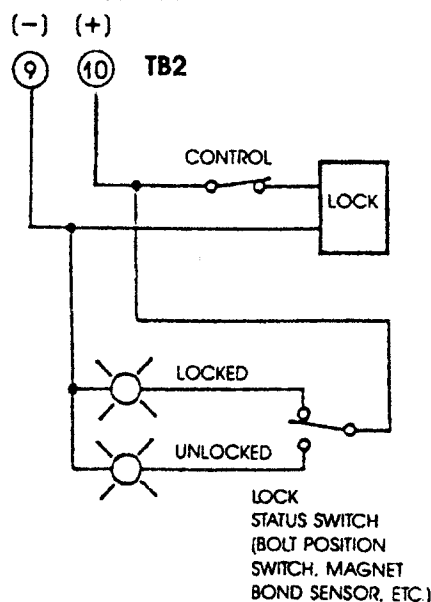


FIGURE H LOCK STATUS

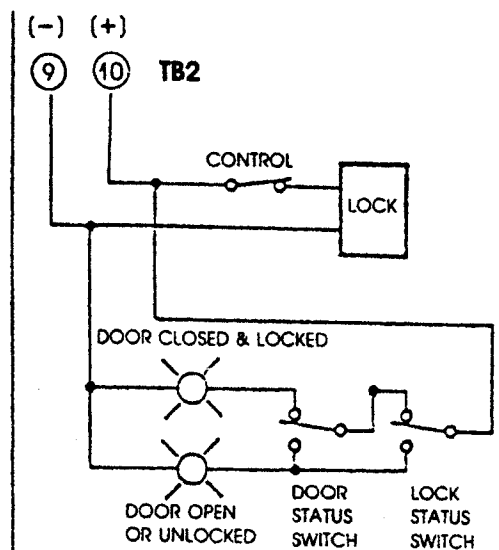


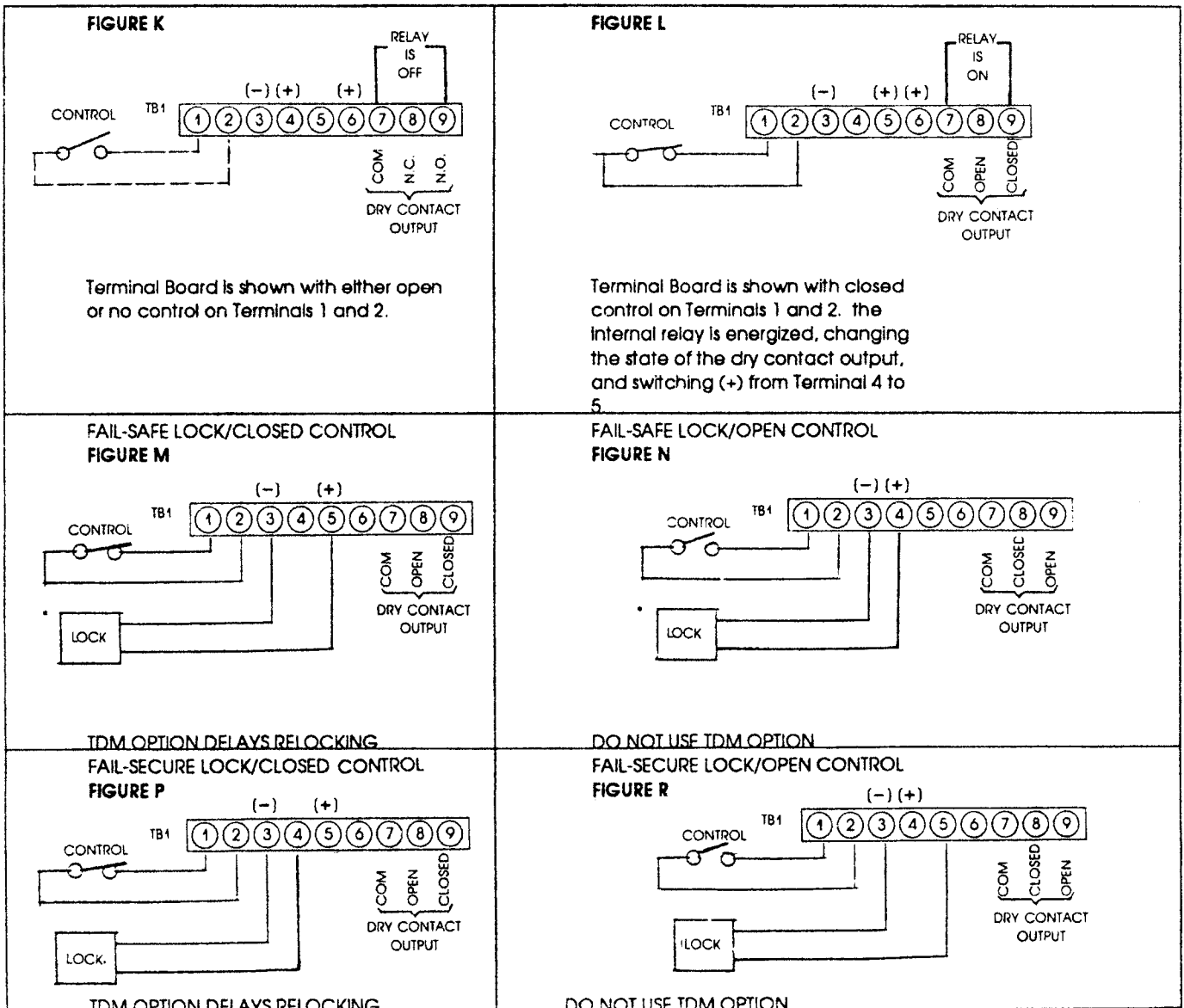
FIGURE J DOOR & LOCK STATUS

**DESCRIPTION**

Each DCM Card provides two terminal boards (TB1 and TB2) for hook-up of two individual systems. If required, one system can be hooked-up to TB1, and TB2 may be interfaced to provide other system operations (voltage and/or dry contact outputs). Unless noted, all system hook-ups shown may be repeated on TB2 for a second system. Systems may also be mixed, i.e. one type system on TB1 and a different type on TB2.

Note: All controls wired to Terminals 1 and 2 must have contacts rated 50 mA, 12 VDC minimum.

DCM Terminal Board Normal Conditions (Power Supply input power or battery power on).



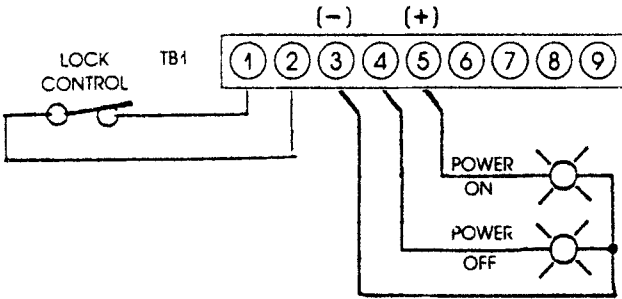
**NOTES:**

1. If EIR option is used, the output power to the lock will be interrupted upon activation of the emergency override system.
2. If the TDM option is used with a closed control the lock will not relock until the preset time has expired.
3. All drawings show lock in secure state.

**MONITORING SYSTEM WIRING**

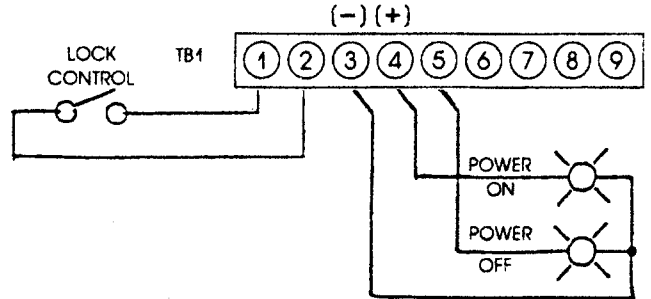
SYSTEMS WITH CLOSED CONTROLS  
 OUTPUT POWER STATUS

**FIGURE S**

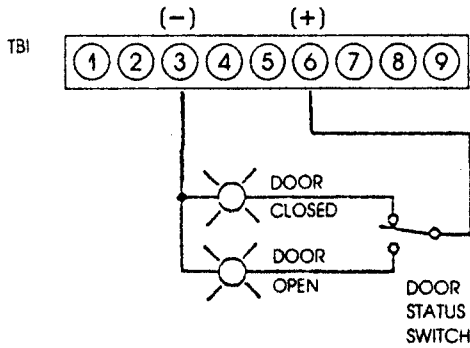


SYSTEMS WITH OPEN CONTROLS  
 OUTPUT POWER STATUS

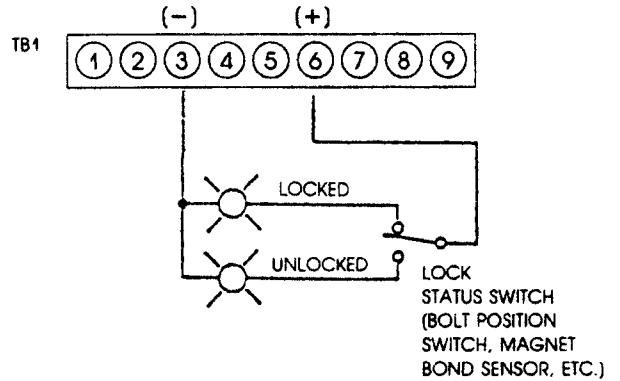
**FIGURE T**



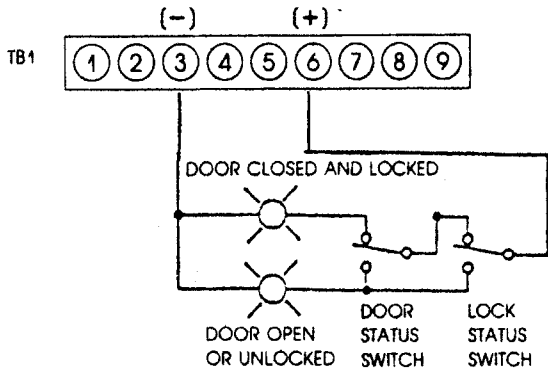
**FIGURE U DOOR STATUS**



**FIGURE V LOCK STATUS**



**FIGURE W DOOR & LOCK STATUS**

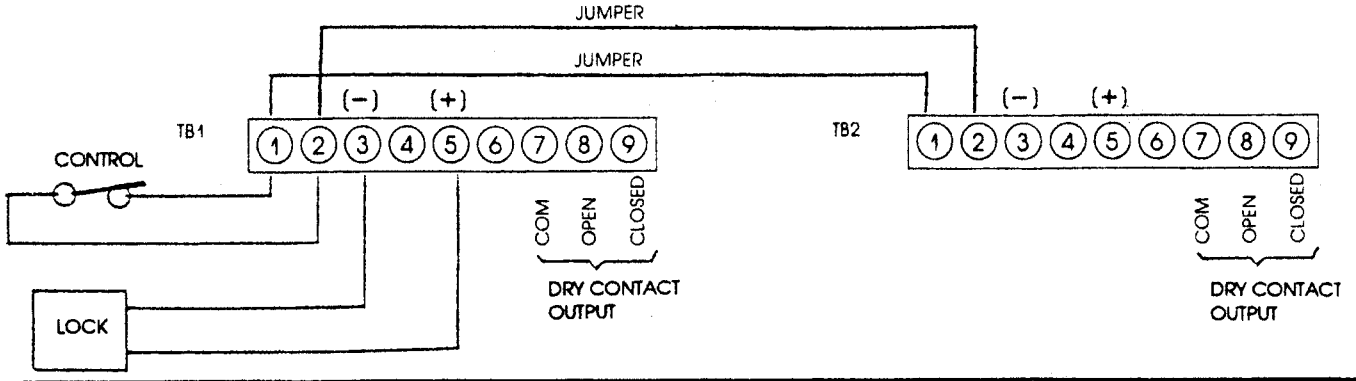


**NOTES:**

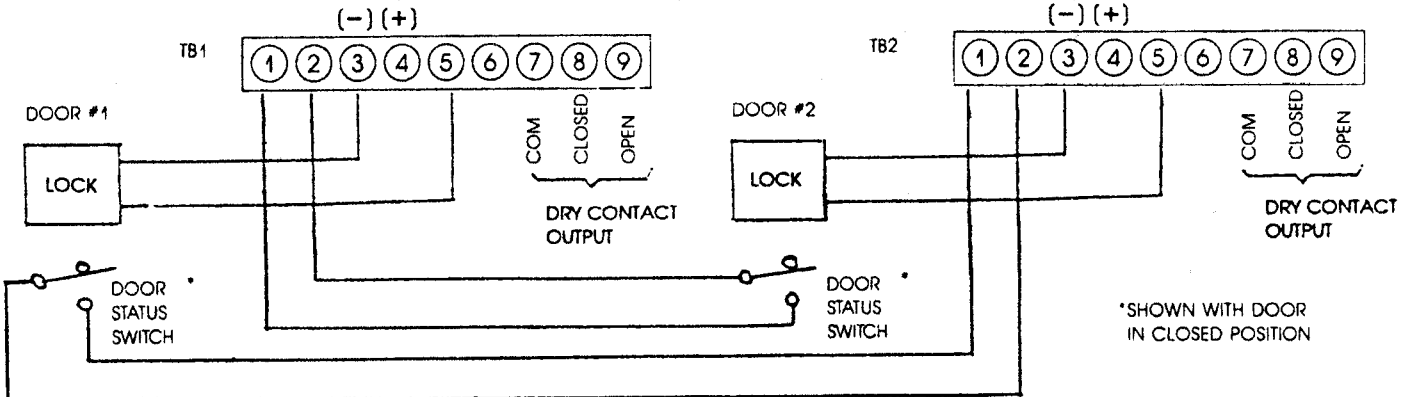
1. Above monitoring circuits may be added to locking circuits. Locks may require options as noted in diagrams.
2. Indicator light voltage must match power supply output voltage.

**SPECIAL SYSTEM WIRING**

**FIGURE X** Wiring a DCM card for one locking system with two sets of dry contact outputs.

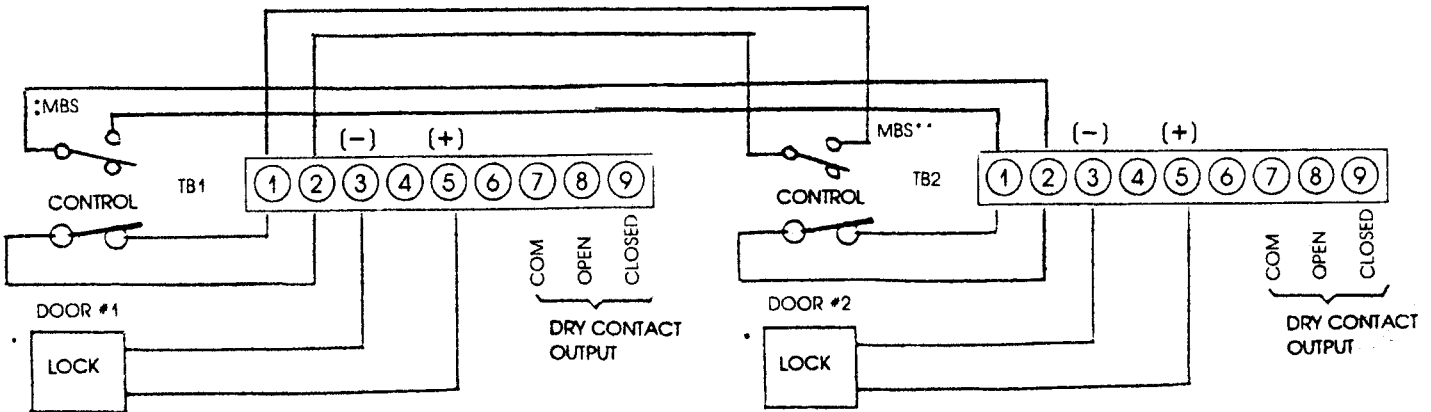


**FIGURE Y** Safety interlock. Fail-safe locks - both doors normally closed and unlocked. Opening one door locks other door until the open door is reclosed. Emergency unlock controls require a separate diagram.



NOTE: DO NOT USE TDM OPTION WITH THIS INTERLOCK.

**FIGURE Z** Security interlock. Fail-safe locks - both doors normally closed and locked. Unlocking one door voids release for other door until unlocked door is relocked.



\*\* SHOWN WITH LOCK IN SECURE CONDITION.

• If EIR option is used the output power to the lock will be interrupted upon activation of the emergency override system.

**LINE POWER INSTALLATION**

Recommended wire size is 12 or 14 AWG, 3 conductor (trade sizes 12/3 or 14/3). The branch circuit should be fused for 15 AMP maximum.

Note that the enclosure is provided with industry standard, 7/8" diameter knockouts. One specific knockout (top of enclosure) is provided for electrical service entry providing a short, direct routing to the terminal block. A industry standard electrical fitting, not provided, is specified below in the instructions for each type of cable entry.

For Flexible Metallic Conduit. Use 1/2" trade size conduit with a 1/2" EMT or Flex connector with paint piercing castellated nut, Heyco P/N 3049 or equivalent.

For Armored Cable. Use a UL listed 3/8" trade size BX connector with paint piercing castellated nut, Heyco P/N 3041 or equivalent.

For Non-metallic Sheathed Cable. Use a UL listed, 3/8" trade size, clamp type ("Romex") connector with paint piercing castellated nut, Heyco P/N 3042 or equivalent.

**ENCLOSURE COVER GROUNDING**

Always use cover screws (2) with paint piercing external tooth lockwasher as supplied. This hardware provides proper cover grounding.

**MOUNTING**

When mounting to wood surface use 3/4" minimum plywood and a minimum of #8 x 3/4 long wood screws.

### DESCRIPTION

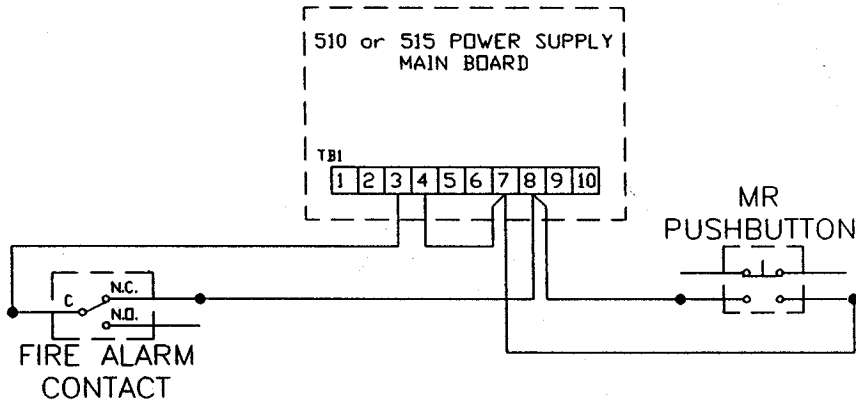
The Manual Reset (MR) option includes a momentary push-button combined with the EIR option of the 510 & 515 power supplies. This push-button will be attached to the cover of the power supply and must be pressed to reset the power supply after a fire alarm emergency has been triggered.

### OPERATION

The normally closed fire alarm contact will be connected to terminals 3 & 8 of TB1 of the main board. After applying 120 VAC to the input of the power supply, the MR push-button will need to be pressed to latch the EIR relay. At this point, the output voltage will be present.

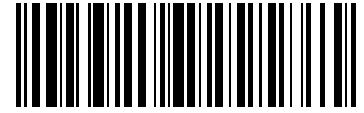
After the fire alarm has been triggered, the EIR relay will drop out which will disable the output power. After the fire alarm condition has been cleared, the output voltage will not be present until the MR push-button has been pressed.

The MR push-button and fire alarm contact must be wired as shown below for proper operation:



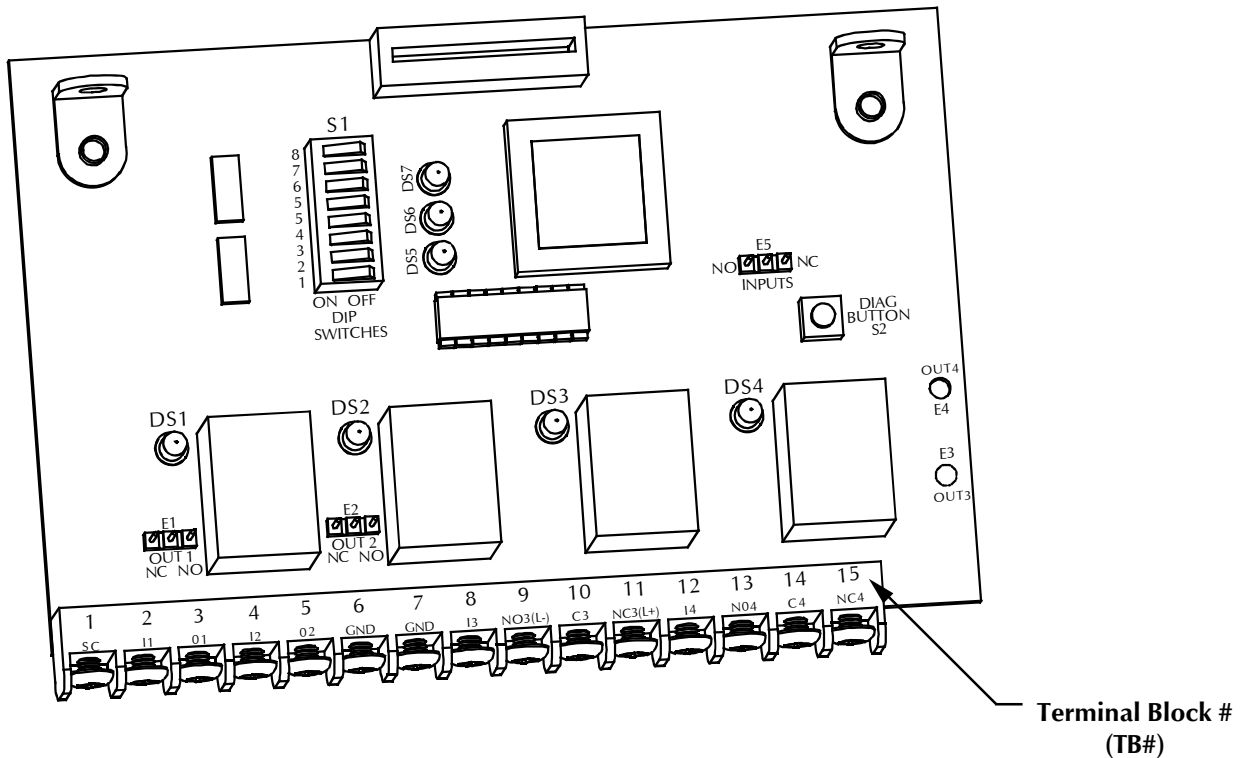
# VON DUPRIN

## Installation Instructions



941356-00


### Option Boards for PS873



*These instructions are for the following model numbers:*

- 873-4TD:** Four Zone Controller with time delay
- 873-AO:** Auto operator signaling for two zones
- 873-SI:** Security Interlock
- 873-AL:** Alarm and monitor function for two zones
- 873-AC:** Access control for one zone with magnetic lock

*See label on bottom of board to identify model number.*



## DANGER

To avoid risk of electric shock,  
remove AC power from PS873  
before installing or wiring any  
option board.



## SPECIFICATIONS:

**Power Requirements:** Von Duprin PS873 Power Supply.  
(Refer to Von Duprin instructions 941352 for information on PS873 and 873-BB.)

**INPUTS:** **I1 (TB2), I2 (TB4), I3(TB8), I4 (TB12)**  
Controlled using Normally Open (NO) or Normally Closed (NC) contacts.  
Maximum input current: 50 mA at 24 VDC.

**OUTPUTS:** **O1 (TB3), O2 (TB5)**  
Maximum rating: 24 VDC, 2A or 12 VDC, 4A maximum.  
Can be configured as NC or NO using E1 and E2.  
Compatible with Von Duprin EL devices.  
(See notes 1-3.)

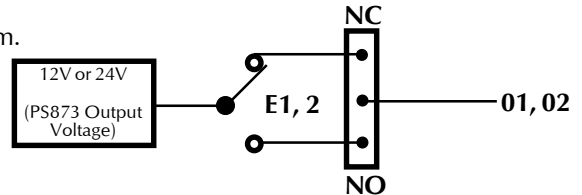


Diagram of Outputs 01 and 02

**NO3 (TB9), C3 (TB10), NC3 (TB11) and NO4 (TB13), C4(TB14), (TB15)**  
Maximum rating: 24 VDC, 2A or 12 VDC, 4A maximum.  
Form C contacts available.  
Can be configured as dry contacts using E3 and E4.  
Compatible with Von Duprin EL devices.  
(See notes 1-3.)

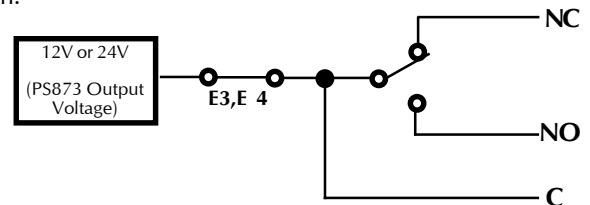


Diagram of Outputs 03 and 04

### Notes:

1. Sum of all output currents (01-04) & PS873 DC output must not exceed 2A at 24 VDC or 4A at 12 VDC.
2. During battery backup (873-BB required), output voltage rating is: 10.8 - 12.0 VDC or 22 - 24 VDC.
3. For UL listed systems, all input and output devices must be UL Listed and compatible with the above ranges.

## WIRING GUIDE:

Device	Maximum Wire Run
Von Duprin EL Device	100' of 14 AWG wire, or 200' of 12 AWG wire
Von Duprin 12V Maglock	130' of 18 AWG wire, or 300' of 14 AWG wire
Von Duprin 24V Maglock	500' of 18 AWG wire

## DEFINITIONS:

**FAIL SAFE:** Upon ultimate power loss, the locking device will unlock.

**FAIL SECURE:** Upon ultimate power loss, the locking device will remain locked. Install after consulting with local authority having jurisdiction. Listed panic hardware may be required to allow emergency exit from the secured area.

**NO:** Normally open  
**NC:** Normally closed  
**C:** Common



# INSTALLATION



## DANGER

To avoid risk of shock, disconnect AC power from PS873 before installing or wiring logic boards.



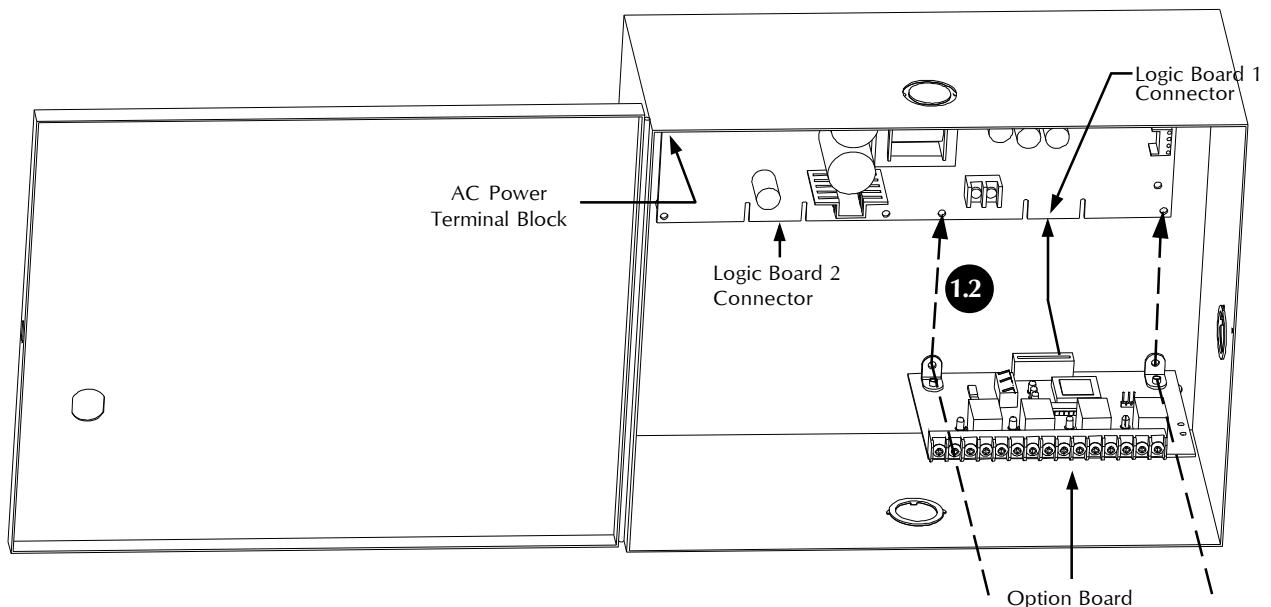
## CAUTION

If using 873-BB Battery Backup option, unplug all four wires from battery terminals before installing or wiring Logic Boards.

- 1** If option board was installed on PS873 at the factory, go to Step **2**.

### INSTALLING OPTION BOARD:

- 1.1** Disconnect AC Power from PS873 (See Von Duprin Instructions 941352 for more PS873 information). If using 873-BB Battery Backup Option, unplug all four wires from batteries.
- 1.2** Connect option board to the PS873 connector "Logic Board 1." Secure with two #6-32x5/8" screws.



- 1.3** If installing a second option board on the PS873, use PS873 connector "Logic Board 2". Secure with two screws.

- 2** Refer to Table.

TO WIRE MODEL#	GO TO PAGE#
873-4TD	4
873-AO	6
873-SI	8
873-AL	12
873-AC	14

# 873-4TD

Four Zone Controller with Time Delay - Controls up to four outputs with four inputs.

## 3 Wiring and Configuring Logic Board

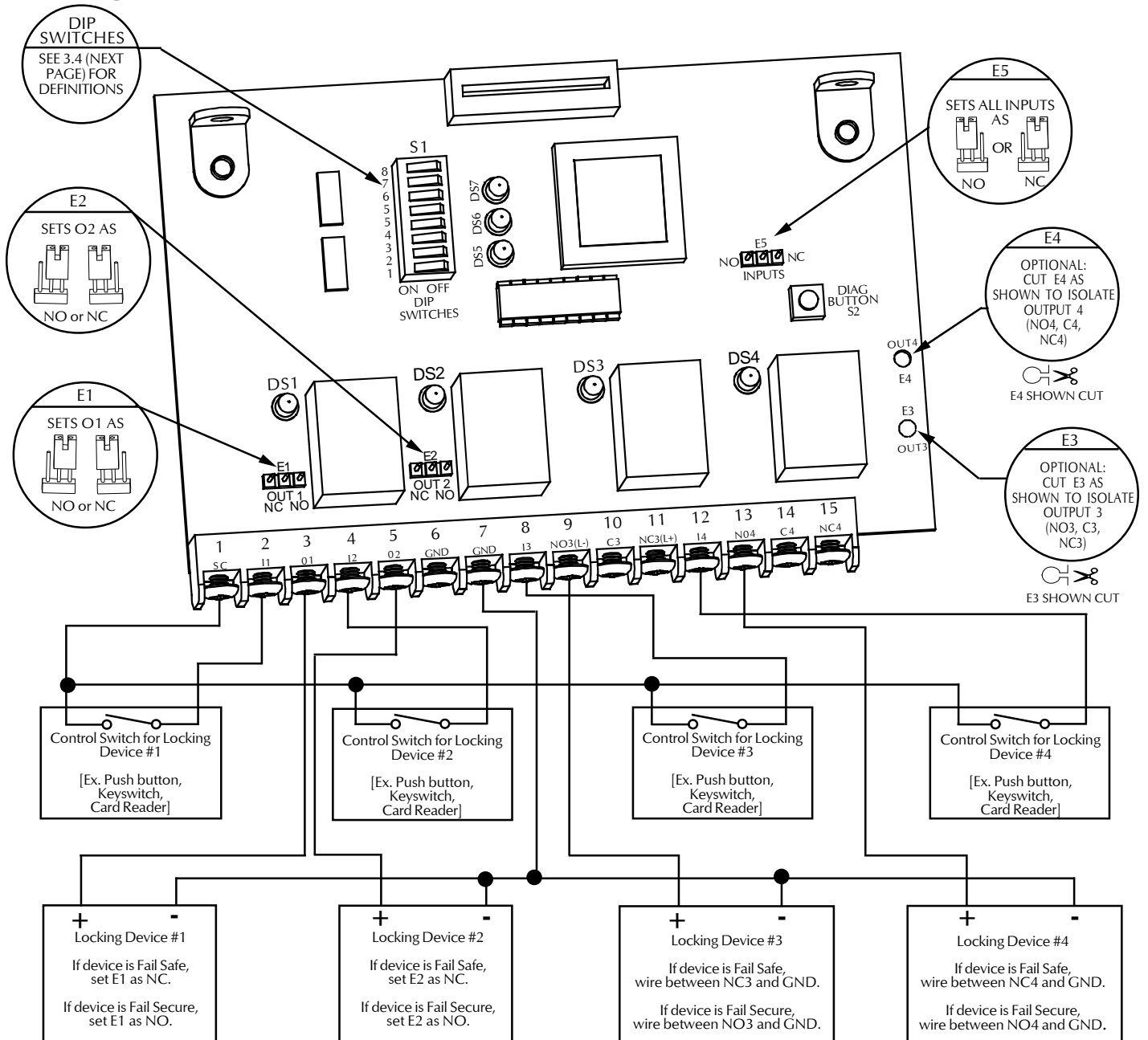
3.1 Set E1, E2, E3, E4, E5 (see diagram below)

3.2 Set Dip Switches

3.3 Wire devices as shown below.

**⚠ DANGER**  
To avoid risk of electric shock, remove AC power from PS873 before wiring 873-4TD.

**⚠ CAUTION**  
If using 873-BB Battery Backup option, unplug all 4 wires from battery terminals before wiring 873-4TD.



**Note:** Controlling two or more inputs with one switch will automatically sequence the corresponding outputs. Up to eight EL's per PS873 can be sequenced if two 873-4TD's are installed.

### 3.4 SET DIP SWITCHES

	SWITCH NUMBER	873-4TD DIP SWITCH DEFINITIONS All switches shown in "ON" position in wiring diagram.
Set Time Delay* (0-75 seconds, 5 second increments)  0 Sec: Switches 5-8 "OFF" 75 Sec: Switches 5-8 "ON"	8	Adds 40 seconds to the time delay when "ON"
	7	Adds 20 seconds to the time delay when "ON"
	6	Adds 10 seconds to the time delay when "ON"
	5	Adds 5 seconds to the time delay when "ON"
Enable Time Delay  Allows you to choose which outputs will have the above time delay.	4	Turn "ON" to enable time delay for Locking Device 4
	3	Turn "ON" to enable time delay for Locking Device 3
	2	Turn "ON" to enable time delay for Locking Device 2
	1	Turn "ON" to enable time delay for Locking Device 1

\* Locking Device output will remain "ON" during time delay.  
Time Delay begins when an input is released.

### 3.5 873-4TD EXAMPLE

#### YOUR REQUIREMENTS:

- (A) - Normally open control switches I1 - I4
- (B) - Locking Device 1 is fail safe; needs a 35 second time delay
- (C) - Locking Device 2 is fail secure; does not need a time delay
- (D) - Locking Device 3 is fail safe; does not need a time delay
- (E) - Locking Device 4 is fail secure; needs a 35 second time delay

JUMPER	DIP SWITCH	SETTING	PURPOSE, (REQUIREMENT SATISFIED)
E1		NC	Sets control of locking device 1 to Fail Safe, (B)
E2		NO	Sets control of locking device 2 to Fail Secure, (C)
E5		NO	Sets control switches as NO, (A)
	8	OFF	Sets 35 second time delay, (B, E)
	7	ON	
	6	ON	
	5	ON	
	4	ON	Enables device 4 time delay, (E)
	3	OFF	Disables device 3 time delay, (D)
	2	OFF	Disables device 2 time delay, (C)
	1	ON	Enables device 1 time delay, (B)
			Locking device 3 wired to NC3, (D)
			Locking device 4 wired to NO4, (E)

### 3.6 Go to Page 16!

# 873-AO

**Auto Operator Function** - Coordinates the unlocking of one or two zones with the signaling of an auto operator.

## 3 Wiring and Configuring Logic Board

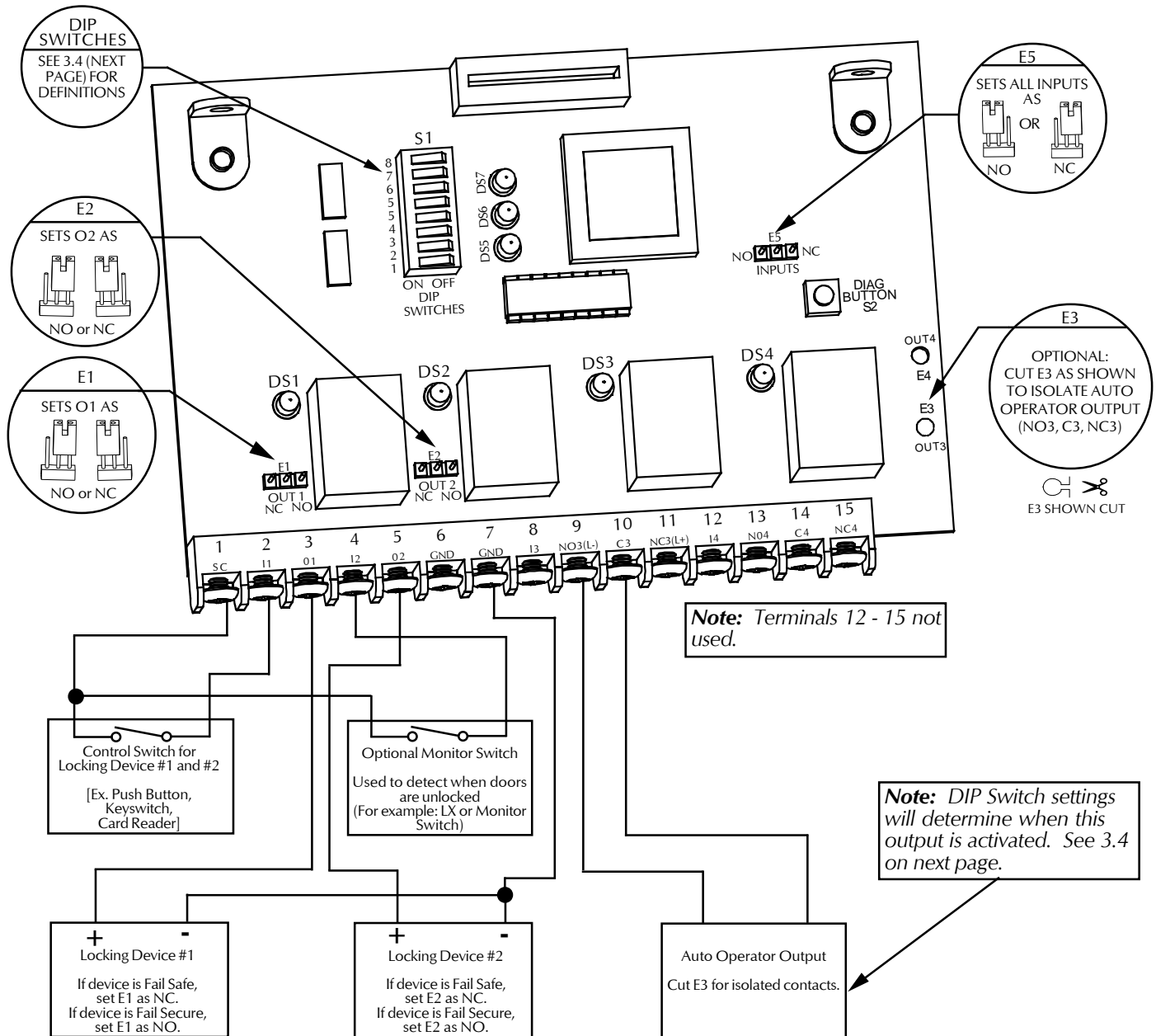
**3.1** Set E1, E2, E3, E4, E5 (see diagram below)

**3.2** Set Dip Switches

**3.3** Wire devices as shown below.

**⚠ DANGER**  
To avoid risk of electric shock, remove AC power from PS873 before wiring 873-AO.

**⚠ CAUTION**  
If using 873-BB Battery Backup option, unplug all 4 wires from battery terminals before wiring 873-AO.



**Note:** Locking devices #1 and #2 are automatically sequenced 0.5 seconds apart.

### 3.4 Set DIP Switches

	Switch Number	873-AO Dip Switch Definitions All switches shown in "ON" position in wiring diagram
Set Time Delay* (0-30 seconds, 2 second increments)  0 Sec: 5-8 "off" 30 Sec: 5-8 "on"	8	Adds 16 seconds to the time delay when "ON"
	7	Adds 8 seconds to the time delay when "ON"
	6	Adds 4 seconds to the time delay when "ON"
	5	Adds 2 seconds to the time delay when "ON"
Not Used	4	
	3	
Set Auto Operator Signaling Option  Determines when the Auto Operator signal (03) will be active	2 Off 1 Off	Operator is signaled when monitor switch becomes active. Monitor Switch Required.
	2 Off 1 On	Operator is signaled 0.5 seconds after control switch becomes active. No Monitor Switch used.
	2 On 1 Off	Operator is signaled 1.0 seconds after control switch becomes active. No Monitor Switch used.
	2 On 1 On	Operator is signaled 1.5 seconds after control switch becomes active. No Monitor Switch used.

\* Locking devices are unlocked and Auto Operator output is active during time delay. Time delay begins when the input is released.

### 3.5 873-AO EXAMPLE

#### YOUR REQUIREMENTS:

- (A) - Normally Open Input
- (B) - Two fail safe outputs
- (C) - Isolated contacts required to signal operator
- (D) - No lock sensing used, so operator will be signaled one second after a valid input
- (E) - Doors must stay open for 10 seconds

JUMPER	DIP SWITCH	SETTING	PURPOSE, (REQUIREMENT SATISFIED)
E1		NC	Sets control of Locking Device 1 as Fail Safe, (B)
E2		NC	Sets control of Locking Device 2 as Fail Safe, (B)
E3		CUT	Cut for isolated contacts for operator, (C)
E5		NO	
	8	OFF	Sets 10 Second Time Delay, (E)
	7	ON	
	6	OFF	
	5	ON	
	2	ON	Sets 1 second time delay between receiving an input and signaling the auto operator, (D)
	1	OFF	

### 3.6 Go to Page page 16!

# 873-SI

Security Interlock Function - Controls multi-door interlocks. (Two, three or four-door systems possible.)

## 3 Wiring and Configuring Logic Board

**⚠ DANGER**  
To avoid risk of electric shock, remove AC power from PS873 before wiring 873-SI.

**⚠ CAUTION**  
If using 873-BB Battery Backup option, unplug all 4 wires from battery terminals before wiring 873-SI.



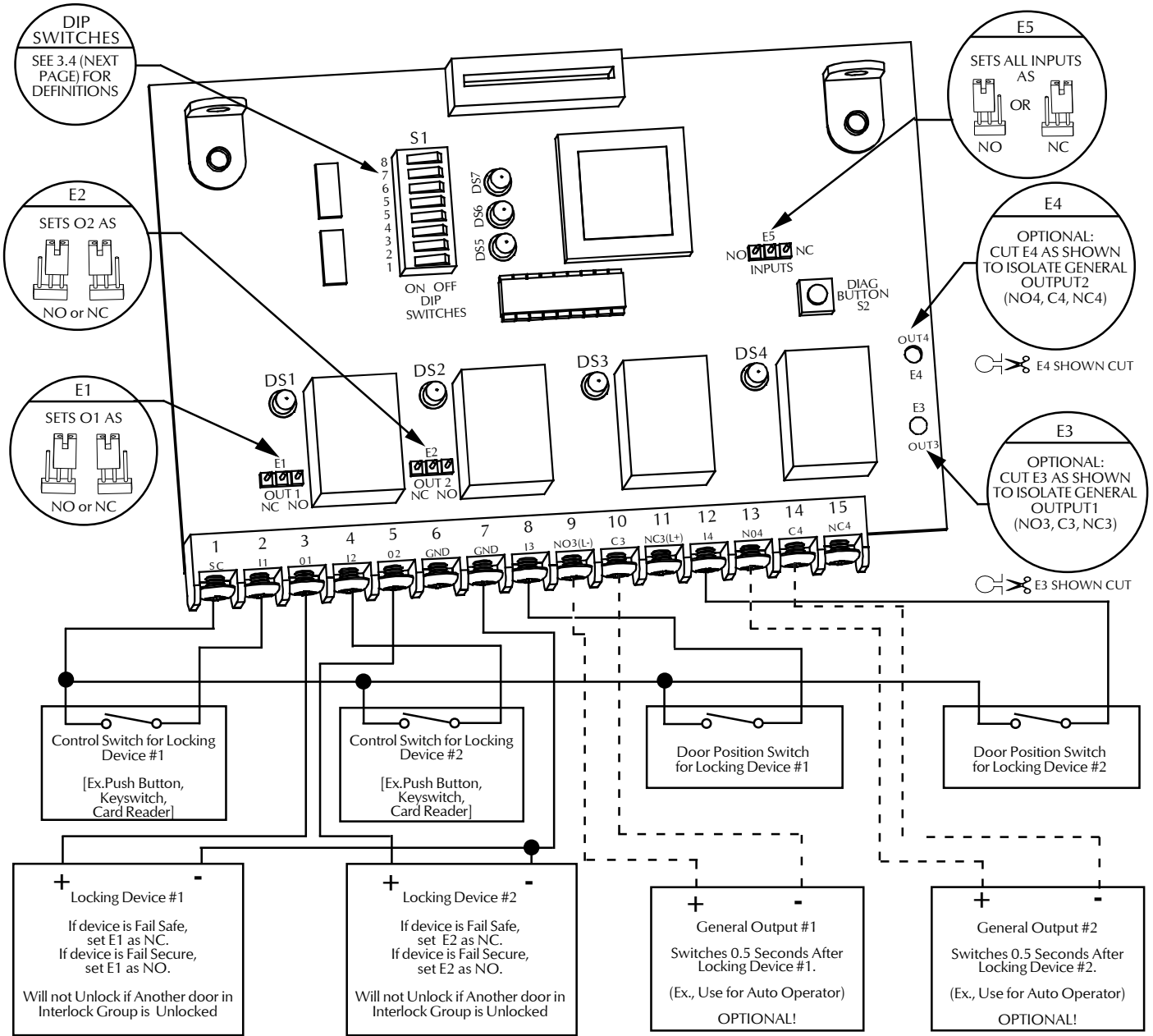
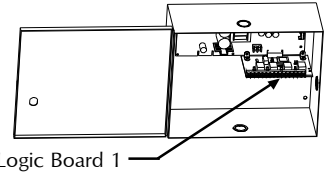
For 2 door interlocks, do steps 3.1 through 3.5.

For 3 or 4 door interlocks, do steps 3.1 through 3.11. (Two 873-SI boards required.)

**3.1** Identify 873-SI board plugged into PS873 connector "Logic Board 1".

**3.2** Set DIP Switches, and set E1, E2 and E5 as shown below.

**3.3** Wire devices as shown below.



### 3.4 873-SI DIP SWITCH DEFINITIONS

	Switch Number	873-SI DIP Switch Definitions All switches shown in "ON" position in wiring diagram
Set Time Delay* (0-30 seconds, two second increments)  0 Sec: 5-8 "off" 30 Sec: 5-8 "on"	8	Adds 16 seconds to the time delay when "ON"
	7	Adds 8 seconds to the time delay when "ON"
	6	Adds 4 seconds to the time delay when "ON"
	5	Adds 2 seconds to the time delay when "ON"
Must be set to "OFF"	4	Set to "OFF"
	3	Set to "OFF"
Enable Time Delay  Allows you to choose which outputs will have the above time delay	2	Turn "ON" to enable time delay for Locking Device #2
	1	Turn "ON" to enable time delay for Locking Device #1

\* Locking Device output will remain "ON" during time delay.  
Time delay begins when an input is released.



For two-door interlocks, see example below.

For three and four-door interlocks, continue at **3.6**

## 873-SI EXAMPLE FOR TWO-DOOR INTERLOCK

### YOUR REQUIREMENTS:

- (A) - Normally Open control inputs
- (B) - Two Fail Safe devices need to be interlocked
- (C) - Locking device 1 needs a 20 second time delay
- (D) - Locking device 2 has no time delay

THEN SET:

JUMPER	DIP SWITCH	SETTING	PURPOSE, (REQUIREMENT SATISFIED)
E1		NC	Sets Locking Device 1 as Fail Safe, (B)
E2		NC	Sets Locking Device 2 as Fail Safe, (B)
E5		NO	Sets Control Switches for NO, (A)
	8	ON	Sets 20 second time delay, (C)
	7	OFF	
	6	ON	
	5	OFF	
	4	OFF	
	3	OFF	
	2	OFF	Disables time delay for device 2, (D)
	1	ON	Enables 20 second time delay for device 1, (C)

**3.5** Two-door wiring is complete, go to page 16!

# 873-SI THREE AND FOUR-DOOR INTERLOCKS

3.6

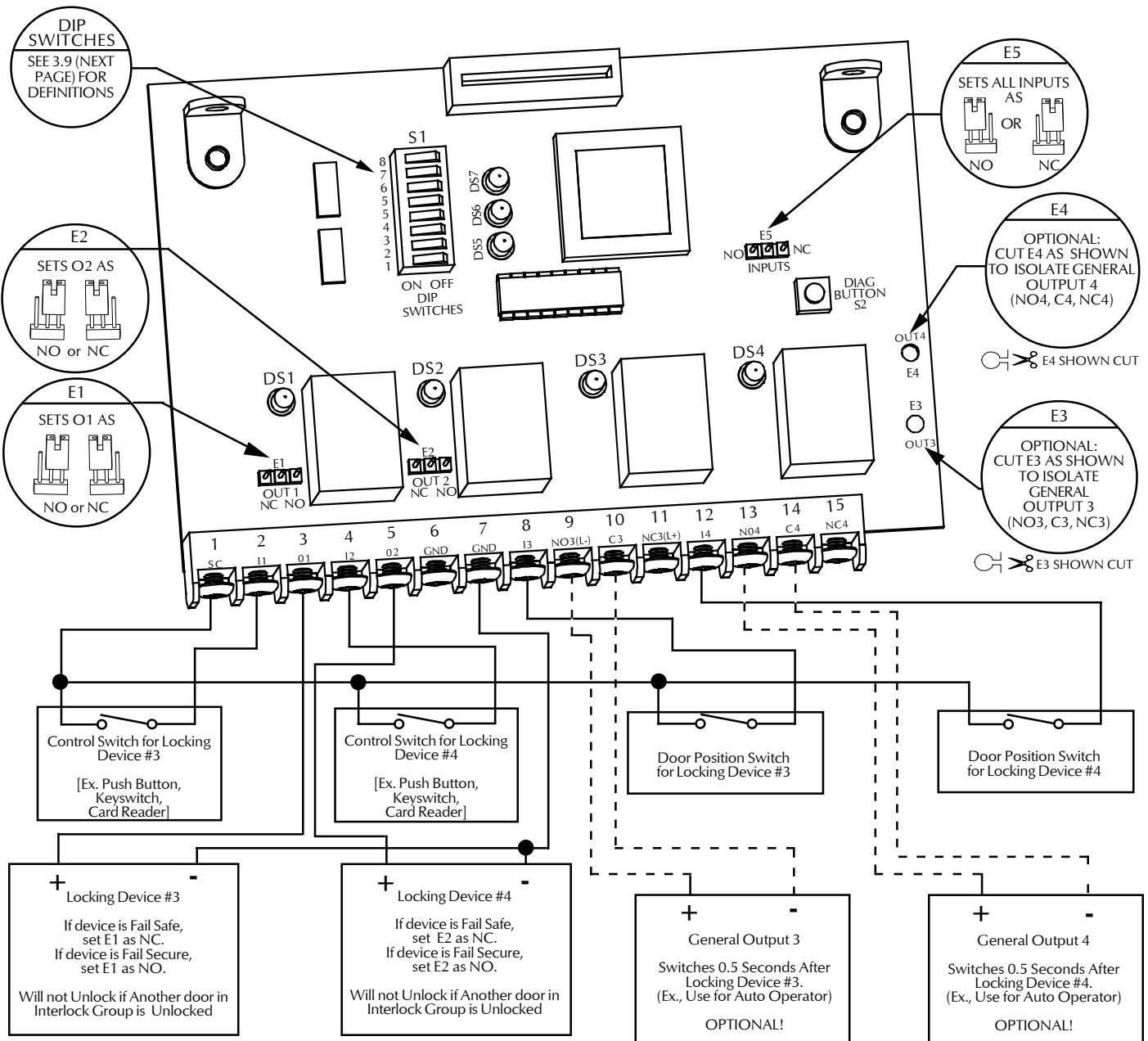
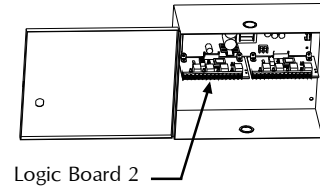
You can now add up to two more doors to the interlock group. First, identify the second 873-SI board, which is plugged into PS873 connector "Logic Board 2".

3.7

On Logic Board 2, Set E1, E2 and E5 and set DIP Switches as shown below.

3.8

Wire devices as shown below.





### 3.9 SET DIP SWITCHES FOR LOGIC BOARD 2

	Switch Number	873-SI DIP Switch Definitions All switches shown in "ON" position in wiring diagram.
Set Time Delay* (0-30 seconds, 2 second increments)  0 Sec: 5-8 "off" 30 Sec: 5-8 "on"	8	Adds 16 seconds to the time delay when on
	7	Adds 8 seconds to the time delay when on
	6	Adds 4 seconds to the time delay when on
	5	Adds 2 seconds to the time delay when on
Select Interlock Group	4	Turn "OFF" to add Device 4 to the Logic Board 1 interlock group Turn "ON" to add Device 4 to the Logic Board 2 Interlock group.
	3	Turn "OFF" to add Device 3 to the Logic Board 1 interlock group. Turn "ON" to add Device 3 to the Logic Board 2 interlock group.
Enable Time Delay  Allows you to choose which outputs will have the above time delay.	2	Turn "ON" to enable time delay for Locking Device 4
	1	Turn "ON" to enable time delay for Locking Device 3

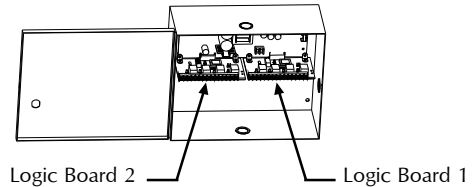
\* Locking Device output will remain "ON" during time delay.  
Time delay begins when an input is released.

## 873-SI EXAMPLE FOR THREE-DOOR INTERLOCK

3.10

### YOUR REQUIREMENTS:

- (A) - Four Fail Safe devices
- (B) - All inputs are NO
- (C) - Devices 1, 2 and 3 are interlocked together
- (D) - Device 4 operates independently
- (E) - Devices 1, 2 and 3 have 10 second time delay
- (F) - Device 4 has no time delay



### Logic Board 2

### Logic Board 1

Jumper	DIP Switch #	Setting	Purpose (Requirement Satisfied)	Jumper	DIP Switch #	Setting	Purpose (Requirement Satisfied)
E1		NC	Sets Device 3 as Fail Safe (A)	E1		NC	Sets Device 1 as Fail Safe (A)
E2		NC	Sets Device 4 as Fail Safe (A)	E2		NC	Sets Device 2 as Fail Safe (A)
E5		NO	Sets Control Switches for Devices 3 & 4 as NO (B)	E5		NO	Sets Control Switches for Devices 1 & 2 as NO (B)
	8	OFF	Sets 10 second time delay (E)		8	OFF	Sets 10 second time delay (E)
	7	ON					
	6	OFF					
	5	ON					
	4	ON	Keeps Device 4 independent (D)		4	OFF	Interlock Devices 1 and 2 (C)
	3	OFF	Add Device 3 to the Logic Board 1 interlock group (C)		3	OFF	
	2	OFF	Disables Device 4 time delay (F)		2	ON	Enables Device 2 time delay (E)
	1	On	Enables Device 3 time delay (E)		1	ON	Enables Device 1 time delay (E)

## 873-SI EXAMPLE FOR FOUR-DOOR INTERLOCK

3.11

To add Device 4 to the three-door interlock group in the above example, simply turn "OFF" DIP Switch 4 of Logic Board 2.

3.12

**Go to page 16!**

# 873-AL

**Alarm Function - Controls one or two outputs with one or two inputs. A signaling output (momentary or latched) is activated if door is forced open, or held open longer than optional time delay.**

## 3 Wiring and Configuring Logic Board

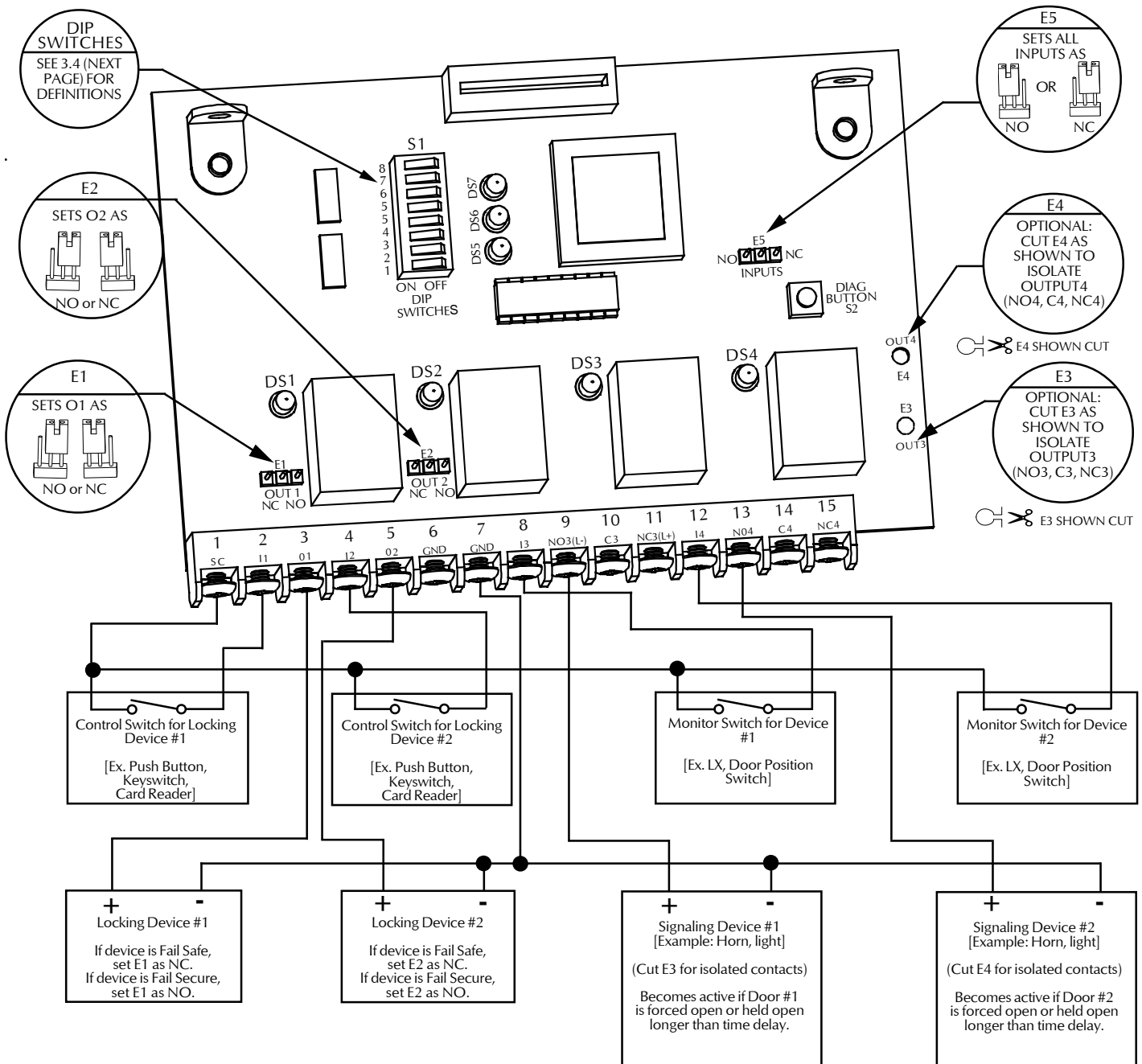
3.1 Set E1, E2, E3, E4 and E5.

3.2 Set DIP Switches.

3.3 Wire devices as shown below.

**⚠ DANGER**  
To avoid risk of electric shock, remove AC power from PS873 before wiring 873-AL.

**⚠ CAUTION**  
If using 873-BB Battery Backup option, unplug all 4 wires from battery terminals before wiring 873-AL.



### 3.4 SET DIP SWITCHES

	Switch Number	873-AL DIP Switch Definitions All switches shown in "ON" position in wiring diagram.
Set Time Delay* (0-75 seconds, 5 second increments)  0 Sec: 5-8 "off" 75 Sec: 5-8 "on"	8	Adds 40 seconds to the time delay when "ON"
	7	Adds 20 seconds to the time delay when "ON"
	6	Adds 10 seconds to the time delay when "ON"
	5	Adds 5 seconds to the time delay when "ON"
Set method for clearing the signaling device output	4 OFF 3 OFF	Clear Signaling Output by closing the door
	4 ON 3 ON	Clear Signaling Output by activating the controlling input of the device in alarm
	4 ON 3 OFF	Clear by activating the controlling input of the device in alarm or alarm will reset after 2 minutes automatically
Enable Time Delay Allows you to choose which outputs will have the above time delay.	2	Turn "ON" to enable time delay for Locking Device 2
	1	Turn "ON" to enable time delay for Locking Device 1

\* Locking Device output will remain "ON" during time delay.  
Time delay will begin when an input releases.

### 3.5 873-AL EXAMPLE

#### YOUR REQUIREMENTS:

- (A) - Normally Open Control Switches
- (B) - Device 1 is fail safe; needs a 25 second time delay
- (C) - Device 2 is fail secure; does not need a time delay
- (D) - Clear alarm by activating control switch of device in alarm

#### THEN SET:

JUMPER	DIP SWITCH	SETTING	PURPOSE, (REQUIREMENT SATISFIED)
E1		NC	Sets control of Locking Device 1 as Fail Safe, (B)
E2		NO	Sets control of Locking Device 2 as Fail Secure, (C)
E5		NO	Sets Input Switches as NO, (A)
	8	OFF	Sets 25 second time delay, (B)
	7	ON	
	6	OFF	
	5	ON	
	4	ON	Sets Alarm Clear option, (D)
	3	ON	
	2	OFF	Disables Device 2 time delay, (C)
	1	ON	Enables Device 1 time delay, (B)

### 3.6 Go to Page 16!

# 873-AC

**Access Control Function:** Provides one zone access control for electrical devices that do not have mechanical override (such as magnetic locks).

**873-FA (Fire Alarm Input)** option must be installed on PS873 power supply and wired to NC fire alarm contacts.

**NC Relay Contacts are required from the following:** Access Control device, Motion Detector, Override button contacts.

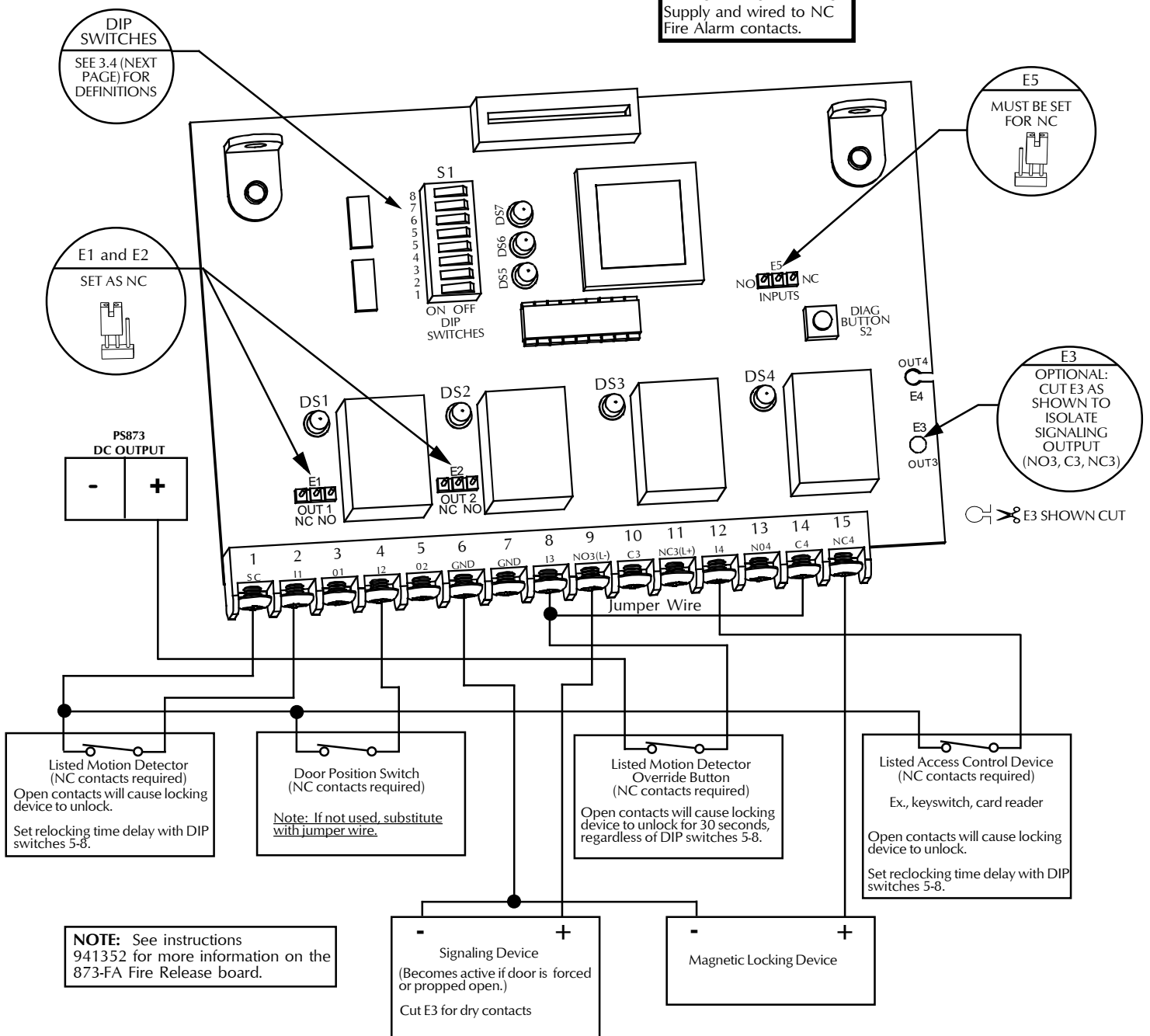
## Wiring and Configuring Logic Board

- 3.1 Set E1, E2, E3, E4, E5 (see diagram below)
- 3.2 Set Dip Switches (see Dip Switch table on page four).
- 3.3 Wire devices as shown below.

**DANGER**  
To avoid risk of electric shock, remove AC power from PS873 before wiring 873-AC.

**CAUTION**  
If using 873-BB Battery Backup option, unplug all 4 wires from battery terminals before wiring 873-AC.

**DANGER**  
873-FA option must be installed on PS873 Power Supply and wired to NC Fire Alarm contacts.



### 3.4 Set DIP Switches.

Set Time Delay* (0-75 seconds, 5 second increments)  0 Sec: 5-8 "OFF" 75 Sec: 5-8 "ON"	Switch Number	873-AC DIP Switch Definitions All switches shown in "ON" position in wiring diagram.
		8
7		Adds 20 seconds to the time delay when "ON"
6		Adds 10 seconds to the time delay when "ON"
5		Adds 5 seconds to the time delay when "ON"
Set method for clearing Signaling Output	4 ON	Clear Alarm with valid Access Control Input
	4 OFF	Clear Signaling by closing the door
End Rearm**	3	Turn "ON" to enable End Rearm option.
Not Used	2	
	1	

\* Magnetic Lock remains unlocked during time delay.  
Time delays begins when an input is released.

\*\* END REARM MODE: (Door Position Switch required). If door open and closes during time delay, then door will automatically relock in 2.5 seconds after the door closes.

### 3.5 873-AC EXAMPLE

#### YOUR REQUIREMENTS:

- (A) - Magnetic lock on an egress door with card reader control
- (B) - 25 second time delay when motion detector or card reader activated
- (C) - No End Rearm option
- (D) - Must provide valid card reader input to clear an alarm

#### THEN SET:

Jumper	DIP Switch	Setting	Purpose (Requirement Satisfied)
E5		NC	Sets Input Switches as NC.
	8	OFF	Sets 25 second time delay, (B)
	7	ON	
	6	OFF	
	5	ON	
	4	ON	Sets Alarm Clear option, (D)
	3	ON	Disable End Rearm option, (C)

### 3.6 Go to page 16!

## 4 Test Installation.

**Note:** For steps 4.1 and 4.2, refer to Von Duprin PS873 instructions #941352 for additional information on the PS873 Power Supply and 873-BB Battery Backup option.

- 4.1 Apply AC voltage to PS873 terminal block labeled "AC".
- 4.2 If using 873-BB Battery Backup option, reconnect the four wires to the battery terminals. (One wire pair per battery; red wire to (+) and black wire to (-).
- 4.3 Test ALL devices associated with the system for proper operation.

Your test should verify that:

- **All outputs (locking devices, signaling devices, etc.) respond appropriately to all inputs (card readers, pushbuttons, monitoring switches, etc.)**
- **Active fire alarm contacts immediately unlock all devices.**
- **All time delays are correct.**
- **Signaling outputs (ex. horns) can be cleared correctly (873-AL and 873-AC functions only)**
- **End Rearm feature works correctly (873-AC function only)**

## 5 LED Definitions and Troubleshooting

### 5.1 Option Board LED Descriptions

LED Descriptions		
DS1	Red	"ON" when output 1 is closed (powered)
DS2	Red	"ON" when output 2 is closed (powered)
DS3	Red	"ON" when output 3 is closed (powered)
DS4	Red	"ON" when output 4 is closed (powered)
DS5	Green	"ON" when one or more inputs are active
DS6	Red	Flashes during time delay countdown. On solid during active fire alarm condition.
DS7	Yellow	One flash per second indicates proper operation. Three flashes per second indicate factory mode. Turn AC power off, then on, to clear factory mode.

**⚠ DANGER**

*To avoid risk of shock, remove AC power (and disconnect 873-BB if applicable) while correcting wiring problems.*

**⚠ DANGER**

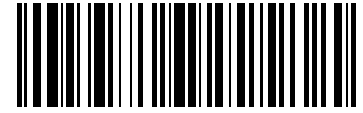
*If Troubleshooting is unsuccessful, remove AC power from PS873 (and disconnect 873-BB if applicable), then consult factory.*

**5.2 Troubleshooting**

SYMPTOM	PROBLEM	SOLUTION
DS7 (Yellow LED) not flashing	Option board does not have power.	Apply AC voltage to PS873. Green LED on PS873 should be illuminated.
* Outputs not responding to inputs * DS5 (Green LED) does not illuminate when an input is active * DS6 (Red LED) is "OFF"	Incorrect input switch wiring	Each input switch must be wired between Signal Common (TB1) and an input terminal (TB2, 4, 8 or 12).  Refer to wiring diagram and check input switch wiring.
	Incorrect E5 setting	Jumper E5 must be set as NO or NC to match type of input switch. <u>ALL</u> input switches on the same logic board must be of the same type (either NO or NC).
* Outputs not responding to inputs * DS5 (Green LED) illuminates when an input becomes active, and * DS6 (Red LED) is "OFF"	Incorrect output wiring	All outputs should be wired between an output terminal (O1, O2, NO3, NC3, NO4, NC4) and GND (Exception: If O3 or O4 configured for dry contacts, then wire contacts in series with external device). Refer to correct wiring diagram and check wiring.
	Incorrect E1 or E2 jumper setting	Jumpers E1 and E2 configure outputs O1 and O2, respectively, as NO or NC. Verify E1 and E2 are set correctly. Note: LED's DS1-DS4 illuminate when outputs O1-O4, respectively, are active. If an LED indicates that the proper output is active, then there may be a problem with the device.
* Outputs not responding to inputs * DS5 (Green LED) is "ON"	DS5 "ON" means one of the inputs is already active	Determine which input is active, correct the input so that it is inactive, then go to Step 4 to re-test the system.
* Outputs not responding to inputs * DS6 (Red LED) flashing.	A time delay is active.	Wait for time delay to expire, then retest the application.
* Outputs not responding properly to inputs * Problems not covered above	Other wiring problem	Refer to wiring diagram and carefully check all wiring. See "Wiring Guide" on page 2.
	Incorrect jumper setting	Refer to correct wiring diagram and verify E1, E2, E3, E4 and E5 are set properly. (Note: not all jumpers are used for every logic board function).
Incorrect time delays	Incorrect DIP Switch setting	Refer to correct wiring diagram and verify DIP Switches have been set correctly for all options and time delays.
Incorrect logic board functionality		
*Outputs not responding to inputs *DS6 (Red LED) on solid	873-FA board is in active fire alarm mode	Clear fire alarm condition
DS7 (Yellow) flashing approximately 3 times per second.	Logic board in factory mode	Turn AC power off, then on.

# VON DUPRIN®

## Installation Instructions



941032-00

# PS861 Series Power Supply

### Models Available

PS861 Power Supply  
PS861B Power Supply with Battery Backup  
PS861K Power Supply with Keylock  
PS861BK Power Supply with Battery Backup and Keylock  
PS861FR Power Supply with Fire Release

### Notes

1. The battery option board and batteries can be ordered separately.
2. The fire release board can be ordered separately.
3. All models listed above are 120 VAC input. To order 240 VAC input, add a "-240" suffix to the PS861 model number.

**In the event of trouble,  
contact your local service representative:**

\_\_\_\_\_ (name)

\_\_\_\_\_ (street address)

\_\_\_\_\_ (city, state and zip code)

\_\_\_\_\_ (telephone number)

#### DANGER

HIGH VOLTAGE  
PRESENT ON AC  
INPUT.

#### CAUTION

For protection against risk of fire, replace fuse with 2.5 ampere, 250 VAC slow-blow fuse (F1). Connect only to circuits protected by 20 A or less fuse or breaker.

#### NOTE

Power supply shipped as 24 VDC. For 12 VDC operation, see Steps 3.3 and 4.1.

#### NOTE

This power supply cannot be used with Von Duprin EL or CX exit devices.

## 1.0 Specifications

**Input:** 120 VAC, 0.6 A, 50/60 Hz  
240 VAC, 0.3 A, 50/60 Hz (240 VAC option, not field configurable)

**Output:** 12 VDC, 2 A or 24 VDC, 1 A, regulated output  
24 VDC, 0.95 A, regulated output with fire release board  
Protected with 2.5 A slow-blow (1-1/4" x 1/4") fuse  
Accepts 12 to 24 AWG wire  
To be used with any 12 VDC or 24 VDC UL listed locking or releasing device

**Fire Alarm Contacts:** 0.050 A

**Enclosure:** 10" high x 10" wide x 4" deep hinged cover box  
Six (6) 1/2" diameter knockouts total on sides and back  
Optional keylock available

**Battery Backup:** Three (3) hour backup time at 100% load rating, seven (7) hours at 50% load rating  
Two (2) 4AH lead acid batteries

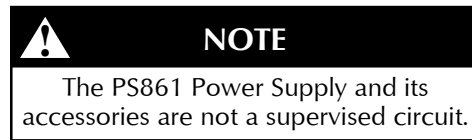
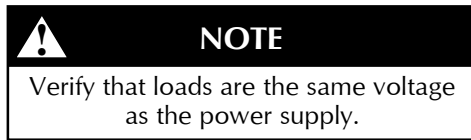
## 2.0 Mounting

Mount in an area which allows free air circulation to allow for proper ventilation. Mount with appropriate hardware (screws or bolts) through each of the four (4) mounting holes in the rear of the enclosure.

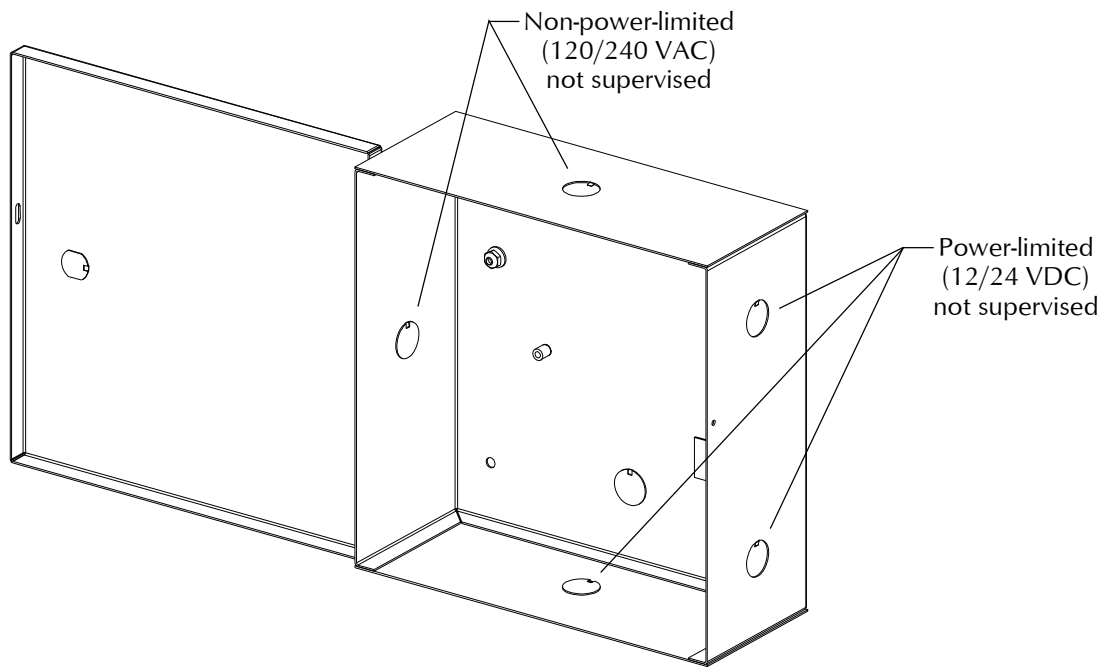


### 3.0 Wiring

- 3.1. Ensure AC breaker is open before connecting AC power to the power supply.
- 3.2. For all supply connections, use wires suitable for at least 90 degrees C (194 degrees F).
- 3.3. Select 12 VDC or 24 VDC in the **DC OUTPUT SELECTION** area on the power supply board by moving the four (4) position jumper to **12 V** or **24 V** position (Figure 2, opposite page).
- 3.4. Maintain 1/4" spacing minimum between power-limited and non-power-limited wiring inside and outside of enclosure.
- 3.5. Connect the load to the **DC OUTPUT** terminals + (positive) and – (negative) through the knockouts indicated in Figure 1.



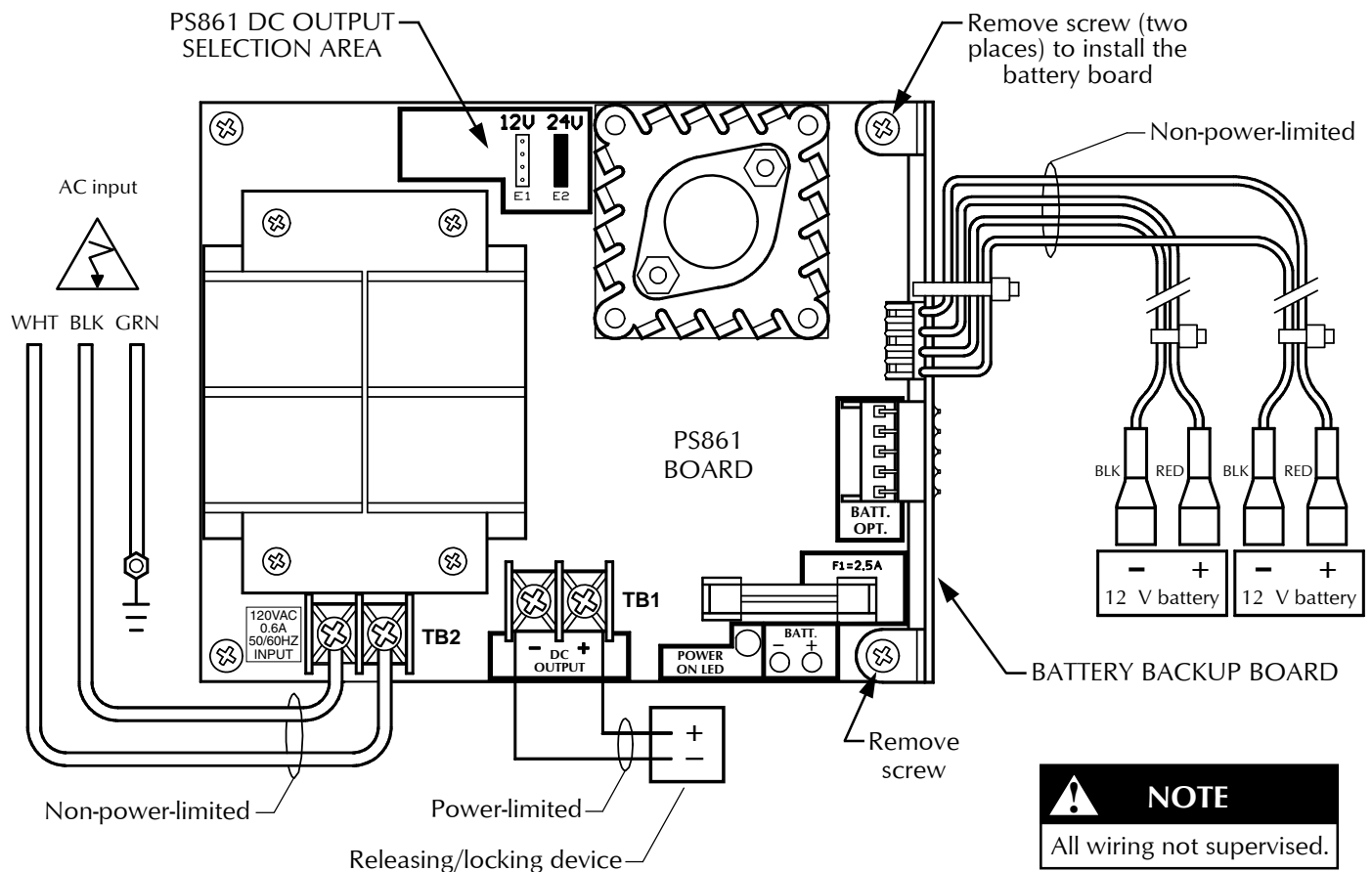
- 3.6. Connect AC input wires to AC input terminals through the knockouts indicated in Figure 1.
- 3.7. Secure field ground conductor under chassis ground nut.
- 3.8. Close breaker to turn on the power supply; the red **POWER ON LED** should be illuminated.



**Figure 1**

### 4.0 Battery Backup Option

- 4.1. Select 12 or 24 VDC in the **DC OUTPUT SELECTION** area of the battery backup board by moving the six (6) position jumper to **12V** or **24V** (Figure 2, opposite page).
- 4.2. Remove the two (2) right hand PS861 board mounting screws located in the enclosure. Install the battery option board by plugging it into the **BATT. OPT.** connector then reinstall the mounting screws.
- 4.2. Route red and black wire pairs from battery backup board to batteries. Be careful to connect red to + (positive) and black to – (negative) battery terminals. Place batteries in bottom of enclosure in an **upright position only**.



**Figure 2.** Installing and Wiring the Battery Backup Board

## 5.0 Battery Maintenance and Replacement

- 5.1. Perform maintenance every six months.
- 5.2. Disconnect AC input.
- 5.3. Configure field devices to draw maximum amount of current.
- 5.4. If voltage falls below 20.4 V during the next three (3) hours, replace batteries.
- 5.5. Discard old batteries per local hazardous waste regulations. Install new Von Duprin part number 010869-00 batteries (see Step 4.2).

**⚠ DANGER**

CHARGE ONLY VON DUPRIN PART NUMBER 010869-00 BATTERIES. OTHER TYPES MAY BURST CAUSING PERSONAL INJURY AND DAMAGE. OBSERVE PROPER POLARITY WHEN CONNECTING BATTERIES.

## 6.0 Keylock Option

The keylock option consists of a one (1) piece lock with two (2) keys.

6.1. With a screwdriver, remove the keylock knockout located on the enclosure door.

6.2. Rotate the key fully clockwise in the lock then insert the lock through the knockout with the locking lever pointing toward the right hand side of the door. Snap into place.

## 7.0 Fire Release Option (24 V Operation Only)

7.1. Configure power supply and battery option (if applicable) for 24 VDC output (see Steps 3.3 and 4.1).

7.2. Install the fire release board as shown in Figure 3.

7.3. Connect the fire release board red wire to + (positive) and black wire to – (negative) **DC OUTPUT** on the PS861 board.

7.4. Connect the load to the **DC OUTPUT** terminals + (positive) and – (negative) on the fire release board.

7.5. Connect normally closed fire alarm contacts to the **FIRE ALARM CONTACTS** terminals on the fire release board.

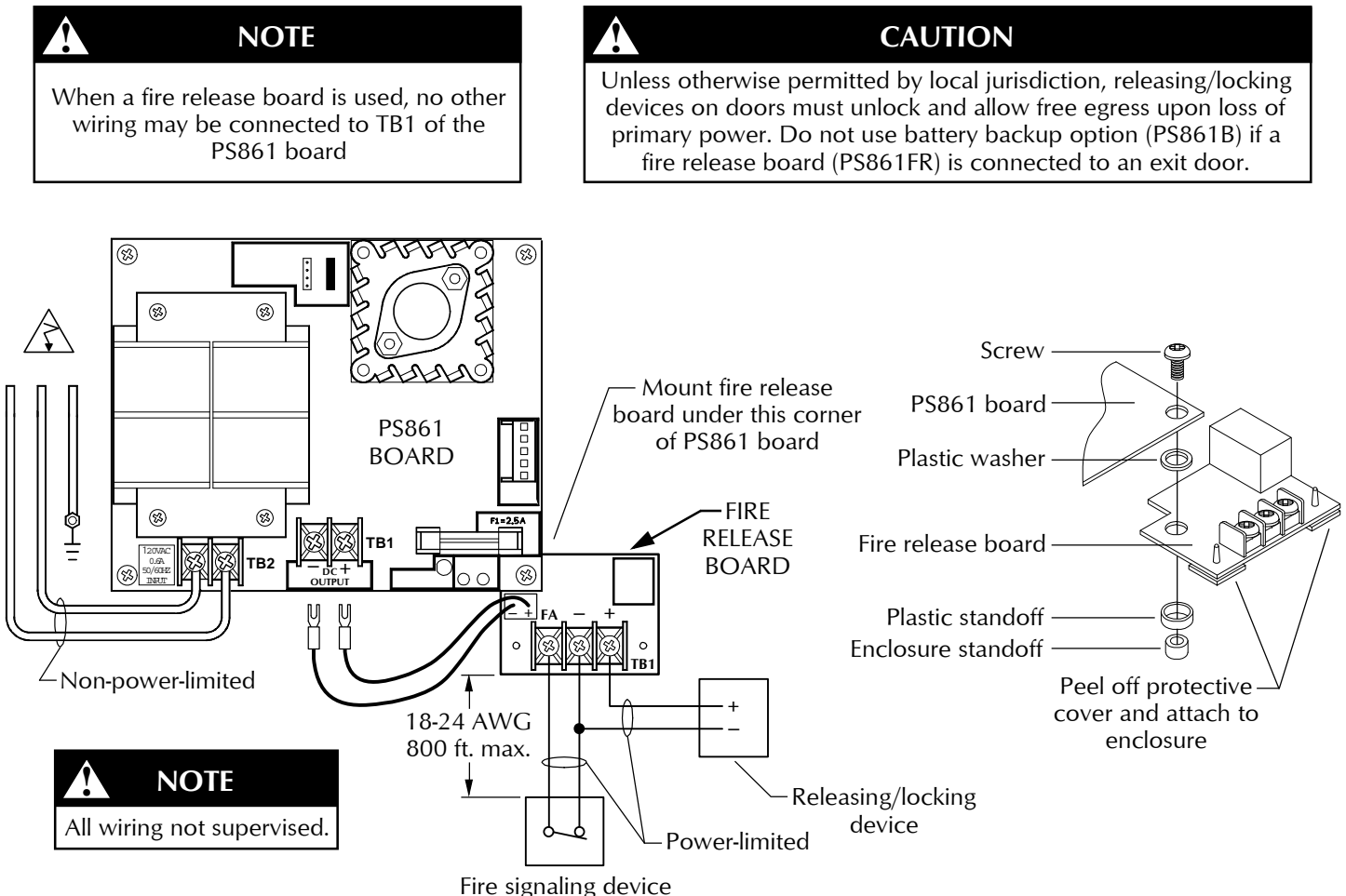


Figure 3. Installing and Wiring the Fire Release Board

# VON DUPRIN®

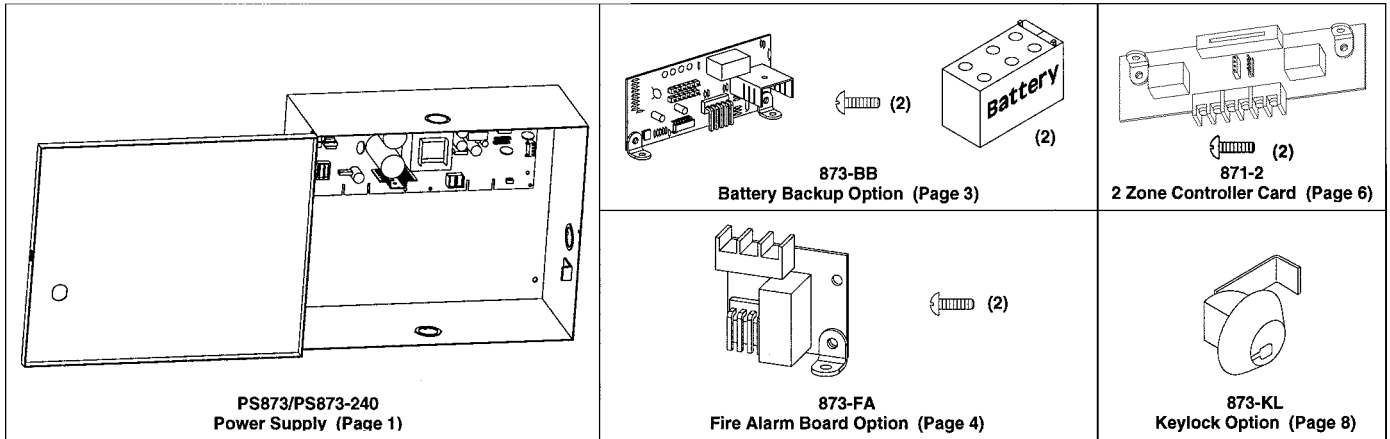
## Installation Instructions



941352-00

### PS873 Class 2 Power Supply & 873-FA, 873-BB, 873-KL Options

These instructions cover the following parts:



### PS873 Specifications:

**Input:** PS873: 120VAC, 1.0 Amperes, 50/60 Hz  
 PS873-240: 240VAC, 0.5 Amperes, 50/60 Hz

**Output:** 12VDC, 4 Amperes or 24VDC, 2 Amperes

Von Duprin EL compatible - 24VDC, 16 Amp-inrush (0.3 sec.).  
 When using EL device: 871 option board required - see page 6.  
 Output protected with 4 A slow blow, 250 V, 1/4" x 1-1/4" fuse (F2)

**CAUTION**

For continued protection against risk of fire, replace fuse F2 with same type and rating.

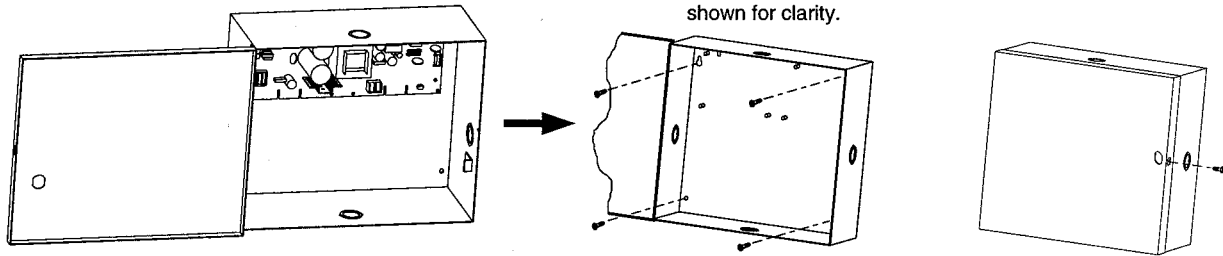
**NOTE:** During battery backup (873-BB required)  
 Output Rating: 10.5 - 12 VDC, 4A or 22-24 VDC, 2A

- Enclosure:** 10" H x 12.5" W x 5.0" D Hinged cover box  
 19 GA steel, Five 1/2" x 3/4" knockouts total
- Temperature:** 0-120 degrees F
- Installation Notes:**
1. If installing a PS873 with an EL Device, see P.8 of these instructions and exit device instructions under "optional equipment - EL".
  2. If installing PS873 with a Chexit device, see Chexit instructions.
  3. For Canadian applications, the device must be installed in accordance with Canadian Electrical Code.



# Step 1 Mount power supply.

PS873 or PS873-240

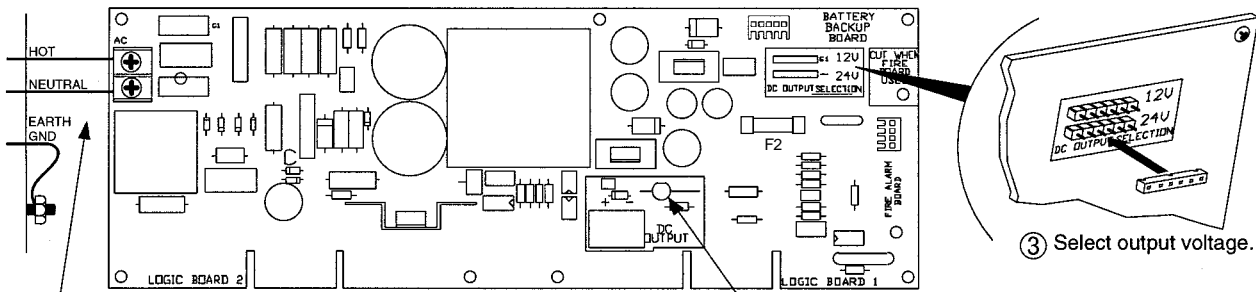


Note:  
Circuit Board not  
shown for clarity.

To secure door closed,  
install screw as shown.

# Step 2 AC Wiring.

- ① Ensure AC breaker is open.
- ② For supply connections, use wire suitable for at least 90°C temperature.

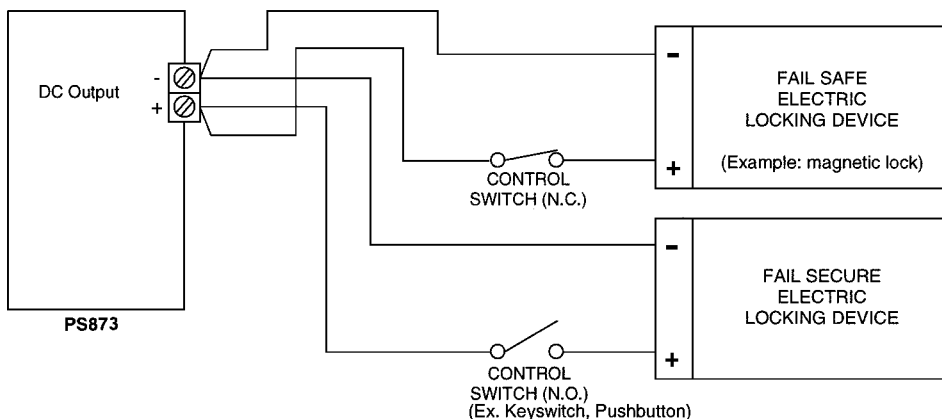


- ③ Select output voltage (12VDC or 24 VDC).
- ④ Connect AC voltage to two 6" black and white leads (hot and neutral) or remove the 6" leads and apply the AC voltage directly to terminal block.  
**NOTE: Maintain 1/4" spacing between AC input wiring and any other wiring (such as DC output wiring, switch contact wiring, etc.).**
- ⑤ Close breaker to turn on power supply. Verify green LED (DS1) is illuminated, indicating output voltage is present.

# Step 3 Device Wiring.

## PS873 WIRING

- ① Temporarily remove AC voltage from PS873 while connecting loads to output terminal block.
- ② Wire Devices



**Fail Safe:** Upon ultimate power loss, the locking device will unlock. Use of the PS873 controlled output is not intended to replace the function of Listed panic hardware for emergency exit.

**Fail Secure:** Upon ultimate power loss, the locking device will remain locked. Install after consulting with local authority having jurisdiction. Listed panic hardware may be required to allow emergency exit from the secured area. Use of the PS873 controlled output is not intended to replace the function of Listed panic hardware for emergency exit.

- ③ See TROUBLESHOOTING table at end of instructions if devices do not work properly.

# 873-BB BATTERY BACKUP

## SPECIFICATIONS:

**BATTERY BACKUP TIME:** 2 hours at 100% load  
4 hours at 50% load  
1000 EL Cycles (no other loads)

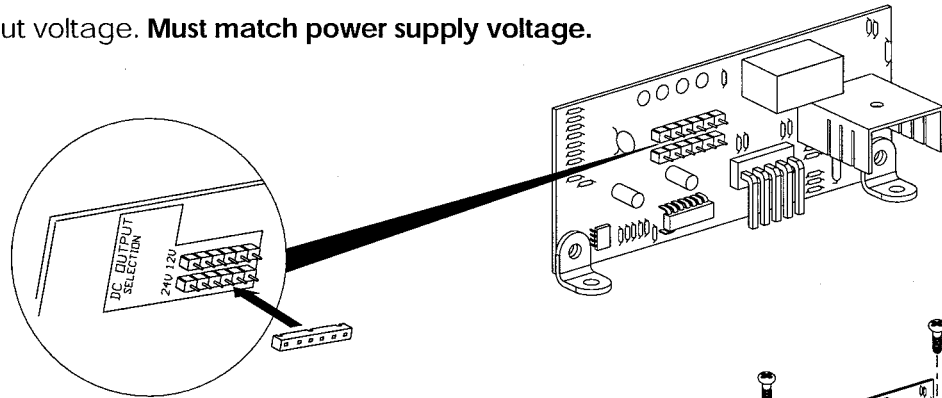
**BATTERIES:** (2) 12V, 7AH Lead Acid

**CAUTION:**  
Charge only Von Duprin part number 991280 lead acid batteries. Other types of batteries may burst causing personal injury and damage. Observe the proper polarity when connecting the batteries.

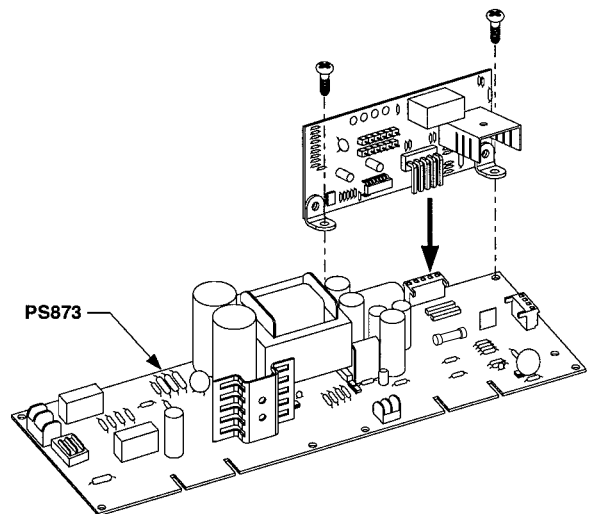
## INSTALLATION:

**Step 1** Ensure PS873 AC breaker is open.

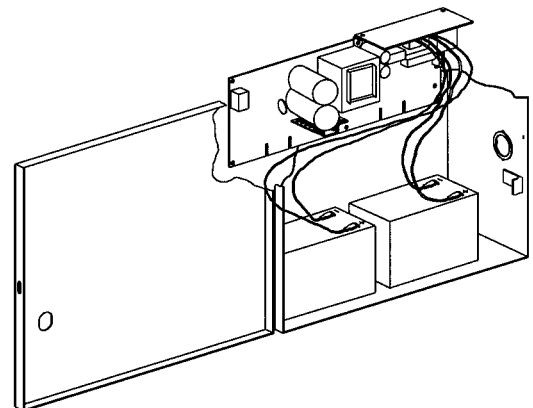
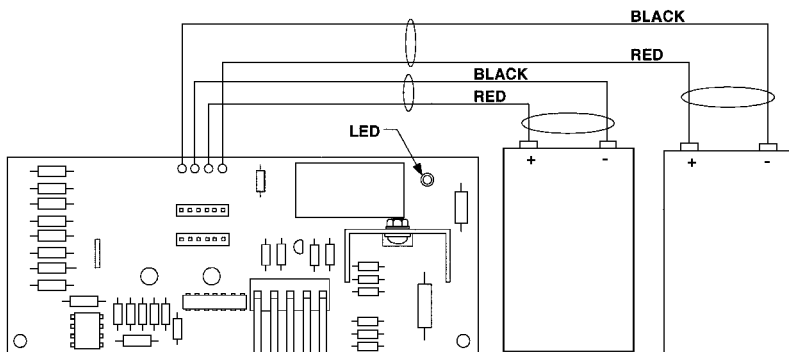
**Step 2** Select output voltage. **Must match power supply voltage.**



**Step 3** Install 873-BB onto PS873.



**Step 4** Connect 873-BB leads to batteries, being careful to connect RED to "+" and BLACK to "-". Place batteries in bottom of enclosure.



**Step 5** Close AC breaker. The yellow LED on the 873-BB will illuminate indicating the batteries are charging.

# 873-FA FIRE ALARM INPUT BOARD

The 873-FA option consists of one printed circuit board that plugs onto the PS873 power supply. In the event a fire alarm is active, this board will remove power from the PS873 output and any logic board\* output. The Fire Alarm Input board can be configured for Automatic or Manual reset.

## SPECIFICATIONS:

**Automatic Reset:** After a fire alarm condition is terminated, the 873-FA option will immediately restore power to all loads. The 873-FA is shipped in the Automatic configuration.

**Manual Reset:** After a fire alarm condition is cleared (or following a power outage), the 873-FA option will not restore power until a reset device has been toggled.

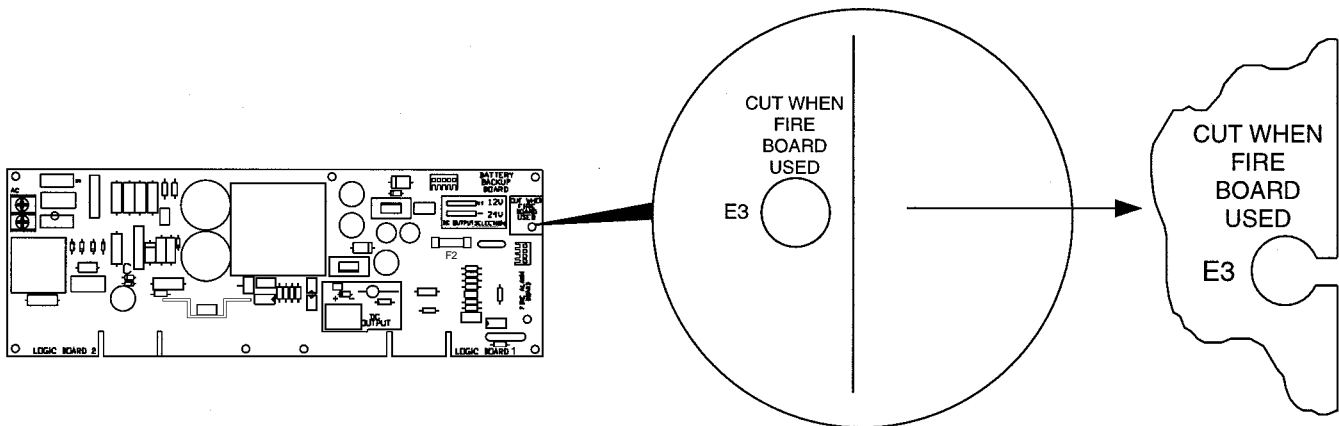
**Reset**

**Device Contacts:** 24 VDC, 0.1 ADC rating required.

## INSTALLATION:

**Step 1** Ensure PS873 AC breaker is open (Disconnect batteries if you have this option).

**Step 2** Locate hole labeled "E3 CUT WHEN FIRE BOARD USED" on the right side edge of the PS873 power supply board and cut.

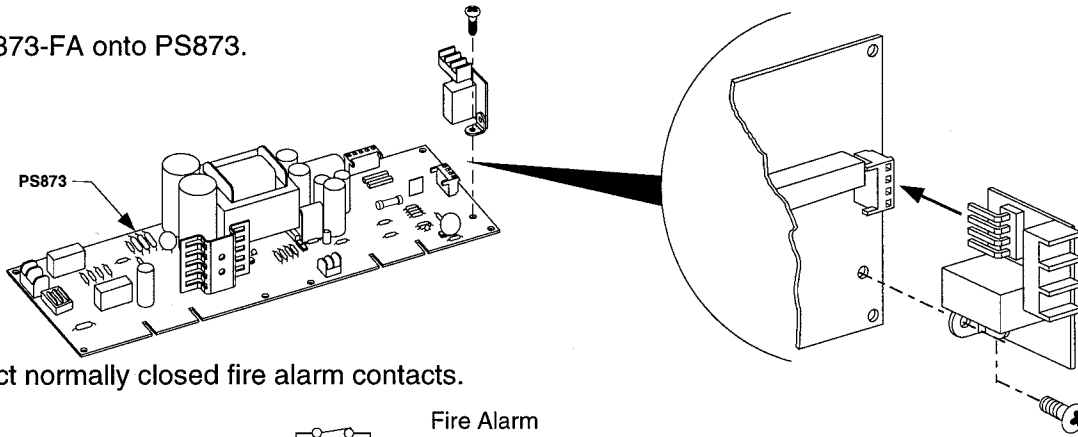


**Step 3** Configure 873-FA as Automatic or Manual reset as shown on following page.

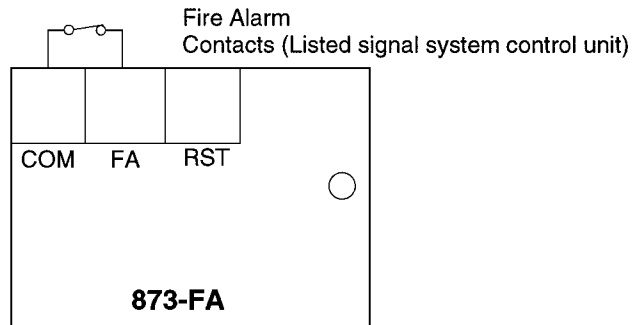
\*PS873 supports optional logic cards which perform door control and monitoring functions. Consult factory for more information.

## Automatic Reset

- ① Install 873-FA onto PS873.



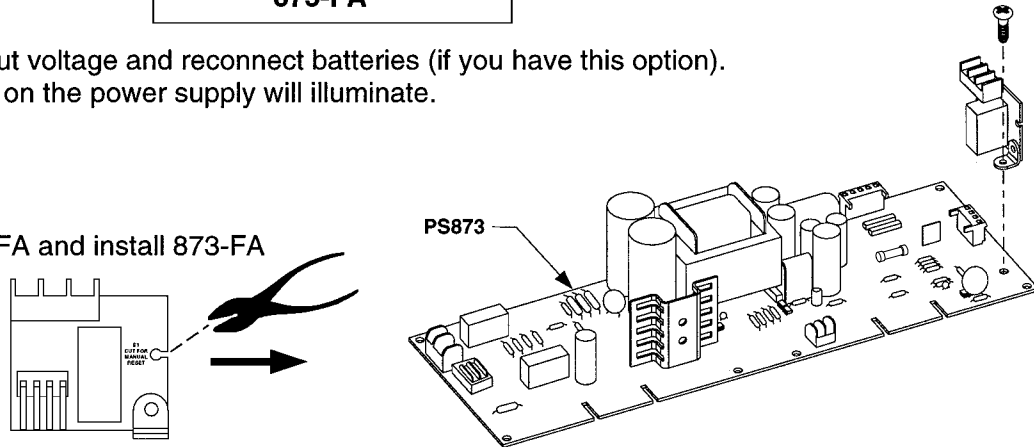
- ② Connect normally closed fire alarm contacts.



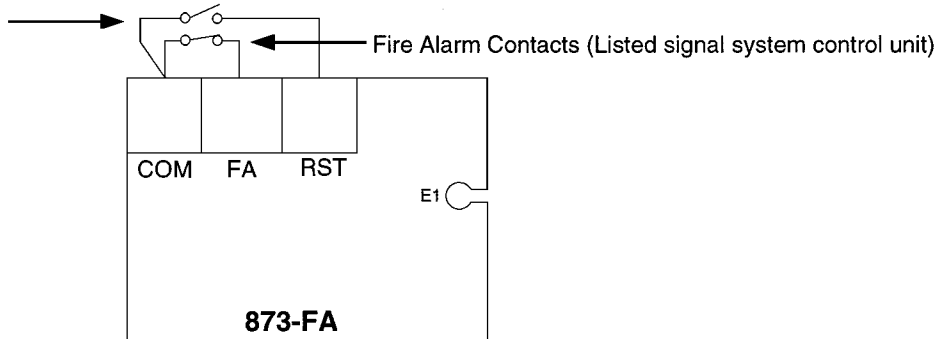
- ③ Restore AC input voltage and reconnect batteries (if you have this option). The green LED on the power supply will illuminate.

## Manual Reset

- ① Cut E1 on 873-FA and install 873-FA onto PS873.



- ② Connect normally closed fire alarm contacts and normally open reset contacts.



- ③ Restore AC input voltage and reconnect batteries (if you have this option).
- ④ Momentarily close the reset device contacts. The green LED on the power supply will illuminate.
- ⑤ **NOTE:** If the reset device contacts are left in the closed position, the 873-FA will not work properly.



# 871-2 INSTALLATION

**Note:** The 871-2 board is for standard EL exit devices only and cannot be used with QEL devices. For QEL devices, an 871-2Q board is required. For information on 871-2Q, see instructions 941016.

The 871-2 option provides control over two zones. One or two 871-2 boards can be installed on each PS873.

## INSTALLATION:

**Step 1** Ensure PS873 breaker is open. (Disconnect batteries if you have this option.)

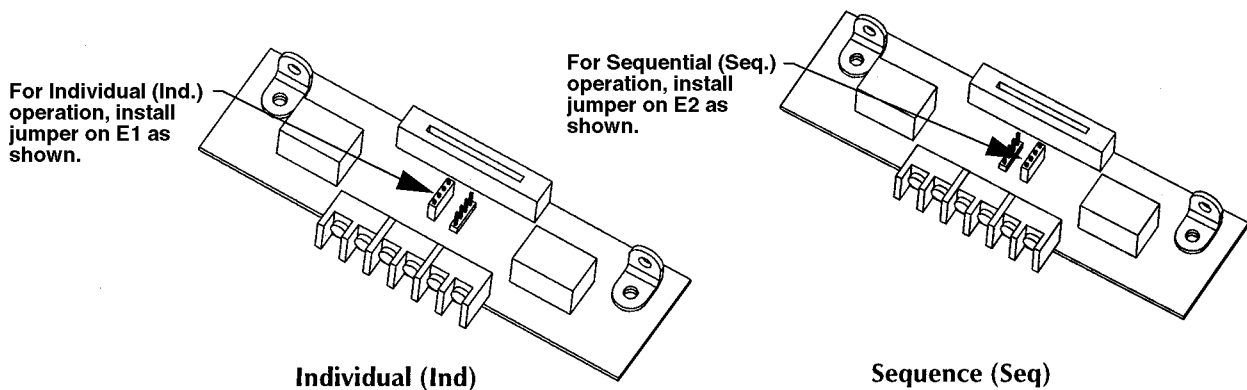
**Step 2** Select between individual or sequential outputs.

### Sequential outputs (factory shipped):

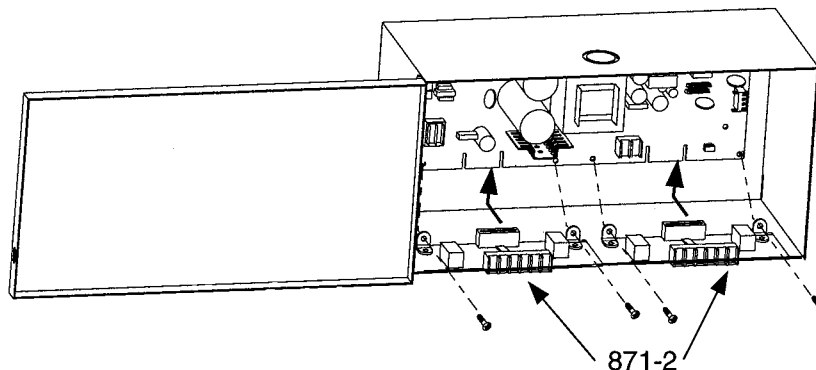
- Input 1 will sequence both outputs. (02 followed by 01)

### Individual outputs (must be field programmed):

- Input 1 will control output 1.
- Input 2 will control output 2.



**Step 3** Install 871-2 onto either PS873 receptacle as shown.

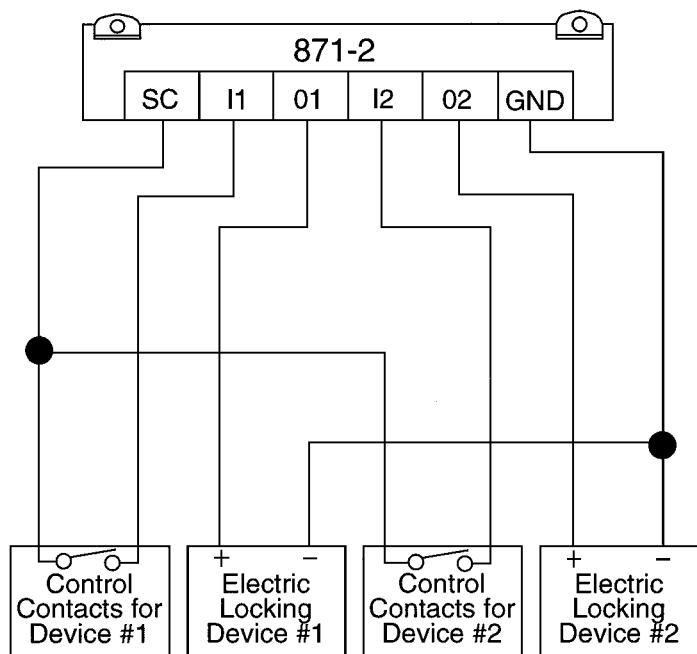


**Step 4** Connect inputs and outputs (wire as individual or sequential mode).

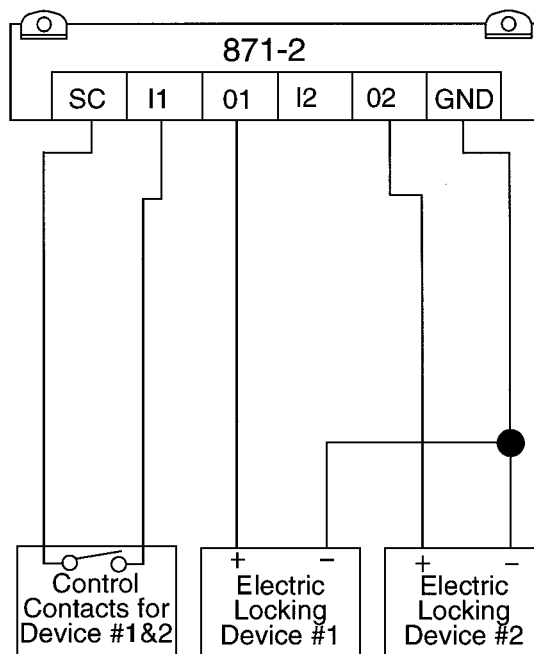
**NOTE:** When using an EL device such as EL33A, EL99, etc:  
Use 12 AWG stranded wire for outputs 01 and 02 between PS873 and EL device (200' run maximum).

Use 18 AWG stranded wire for control contact input I1 and I2 to actuator button, access control devices, etc.

**TYPICAL WIRING - INDIVIDUAL MODE**



**TYPICAL WIRING - SEQUENTIAL MODE**



**Step 5** Apply AC voltage to PS873 and test devices.

**Step 6** Operation Summary

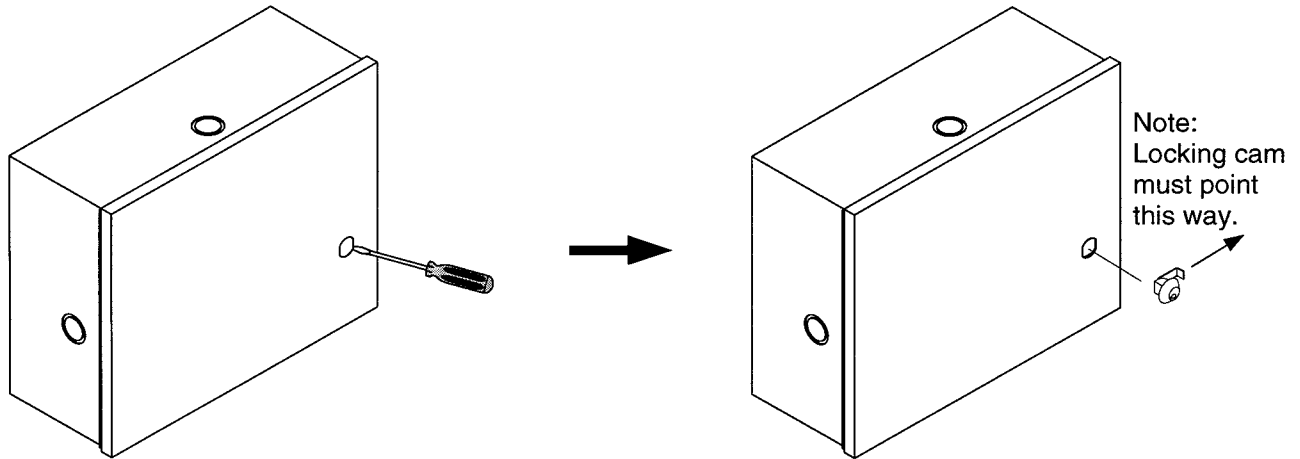
871-2 OPERATION SUMMARY		
871-2 MODE	IF	THEN
SEQUENTIAL	I1 = 0V I2 = 0V	01 = 0V AND 02 = 0V
	I1 = 24V	I2 = 24, 01 = 24V AND 02 = 24V
	I2 = 24V	I1 = 24, 01 = 24V AND 02 = 24V
INDIVIDUAL	I1 = 0V I2 = 0V	01 = 0V AND 02 = 0V
	I1 = 0V I2 = 24V	01 = 0V AND 02 = 24V
	I1 = 24V I2 = 0V	01 = 24V AND 02 = 0V
	I1 = 24V I2 = 24V	01 = 24V AND 02 = 24V

ALL DC VOLTAGES REFERENCED TO 871-2 GROUND TERMINAL.

# 873-KL KEYLOCK OPTION

The keylock consists of a one-piece lock with two keys.

- ① Remove knockout and install lock onto door.



## TROUBLE SHOOTING

SYMPTOM	CAUSE	SOLUTION
No PS873 output, green LED off	No AC input voltage	See PS873 Step ②
	Output current exceeds max rating ⚠ See "Caution" below	1. Reduce output current. 2. Replace fuse F2. Use 4 A slow blow, 250 V, 1/4" x 1 1/4". ⚠ See "Caution" below.
	873-FA not properly connected	See 873-FA (pp. 4-5)
12V on output instead of 24V or vice versa	Improper DC output selection	See PS873 Step ②
EL device tries, but fails, to pull latchbolt	Wire size too small from power supply to EL device, or wire run too long	See "871-2 Installation"
	Device adjusted improperly	Consult factory

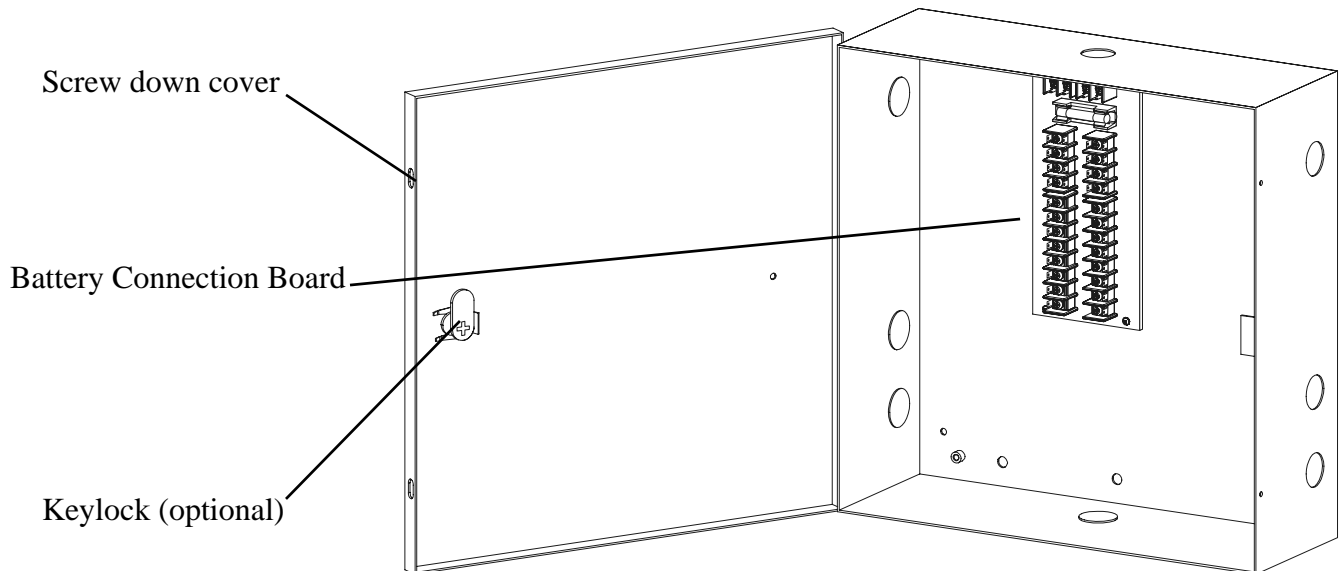


### CAUTION

For continued protection against risk of fire, replace fuse F2 with same type and rating.



## Standby Battery Enclosure (SBE)



- **Description:**

The SBE provides storage and simple installation of up to 8 batteries for either 12VDC or 24VDC systems. Standby Batteries (SBP Options) and Cable Kits (CAB Options) are ordered separately.

*NOTE: One CAB per 2 batteries.*

- **Installation:**

- 1) Determine voltage of system and connect batteries to proper terminal blocks as shown on page 2.
- 2) Check all battery connections for correct polarity. Output voltage may be measured at output terminals at the top of Battery Connection Board. Fully charged batteries will read 13.8VDC for 12VDC system or 27.6VDC for 24VDC system.
- 3) Run output wires from output terminals to power supply.

*IMPORTANT: Use Class 1 wiring between battery enclosure and power supply.*

- **Specifications (electrical):**

Fuse size: 12A, 3AG

- **Specifications (mechanical):**

- ◆ Input Terminals: Barrier strip w/Quick Disconnect Terminals
- ◆ Enclosure: 12" x 12" x 4" steel, NEMA Grade 1 w/conduit knockouts and hinge cover w/lock-down screws.
- ◆ Color/Finish: Gray, baked enamel.
- ◆ Weight: 7 pounds
- ◆ Output Terminals: Barrier strip w/4, #6 screw terminals

- **Optional:**

Key Lock Cover (KLC) w/2 keys

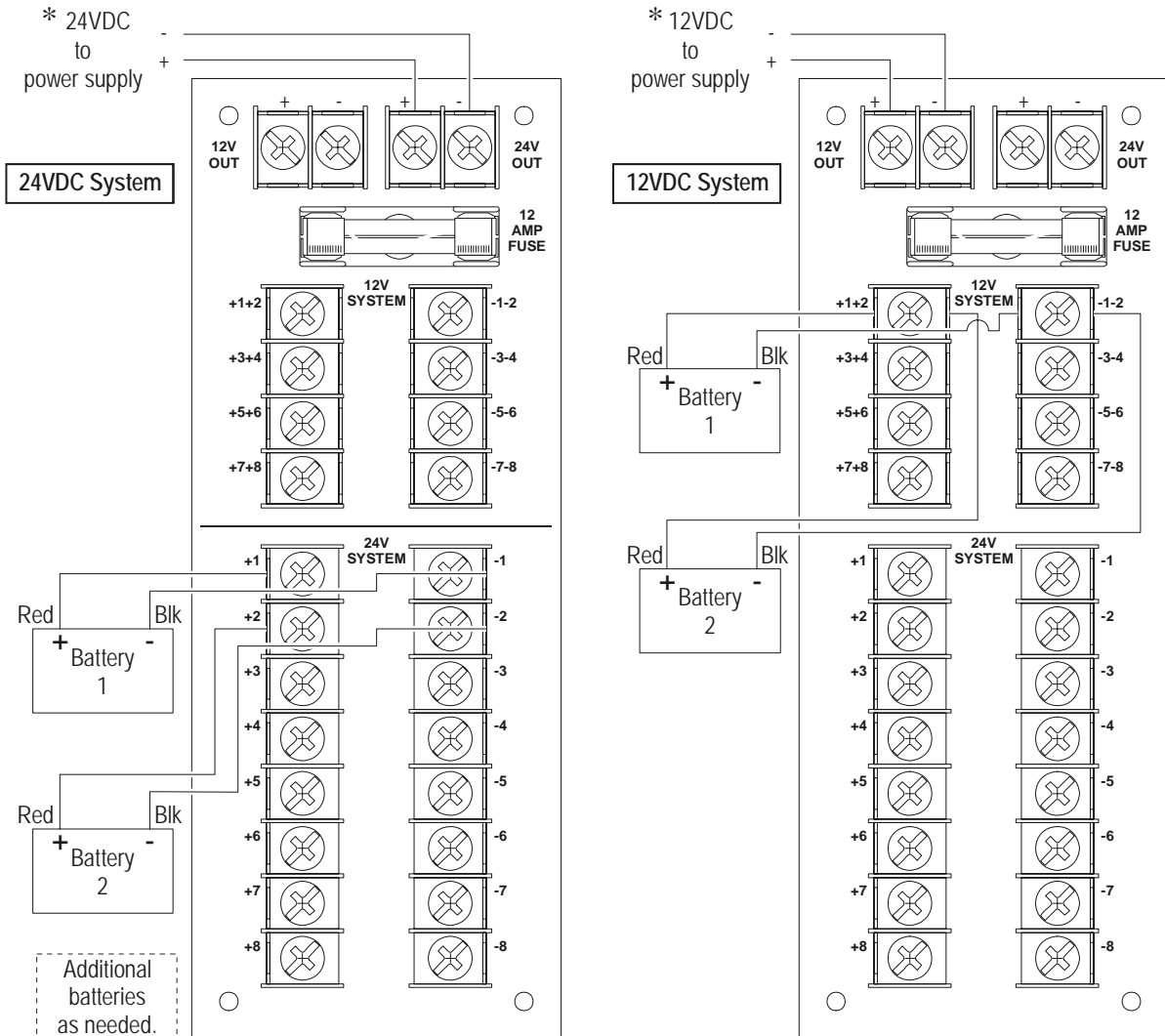


**Schlage Lock Company**

575 Birch Street  
Forrestville, CT 06010  
technical support: 866-322-1237  
email: SESsupport@irco.com  
web: www.irsupport.net

# Standby Battery Enclosure (SBE)

## Battery Connection Board



**WARNING: Battery output must match power supply output voltage.**

### Standby Time in Hours

Current Draw (Amps)	Hours (12VDC System)				Hours (24VDC System)			
3.00	2	4	6	8	-	-	-	-
2.00	3	6	9	12	1.5	3	4.5	6
1.00	6	12	18	24	3	6	9	12
0.50	12	24	36	48	6	12	18	24
0.33	24	48	72	96	12	24	36	48
0.22	36	72	108	144	18	36	54	72
0.16	48	96	144	192	24	48	72	96
<b>Number of batteries required &gt;</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>



931029-00

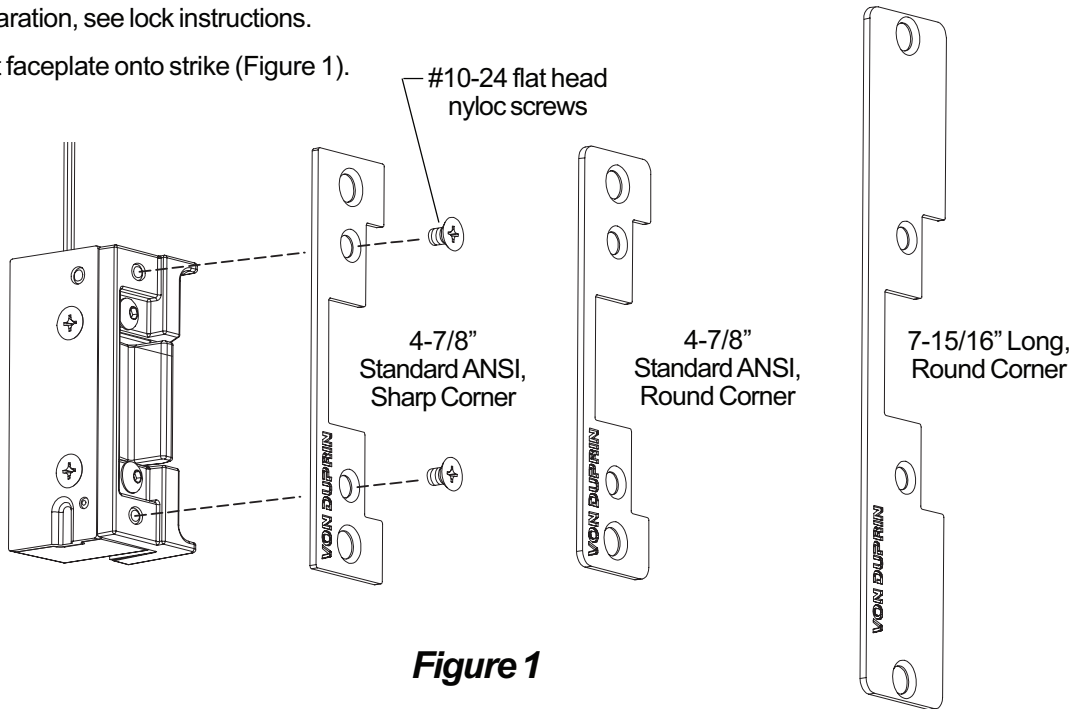
# 5100

# VON DUPRIN®

Electric Strike

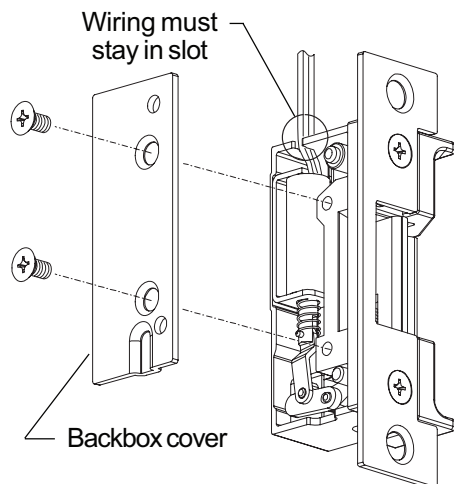
Installation Instructions

1. For lock preparation, see lock instructions.
2. Install correct faceplate onto strike (Figure 1).



**Figure 1**

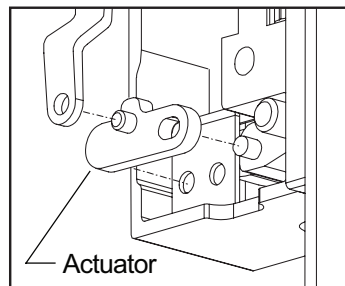
3. Prepare frame for strike (see page 4 for dimensions).  
Note: Prepare room for RCP rectifier if needed.
4. Make sure strike operates in correct mode. Lip of fail-safe (FS) strike can be moved when strike is not powered. Lip of fail-secure (FSE) strike cannot be moved when strike is not powered. If necessary, remove backbox cover (Figure 2) and change strike mode by repositioning actuator (Figure 3).



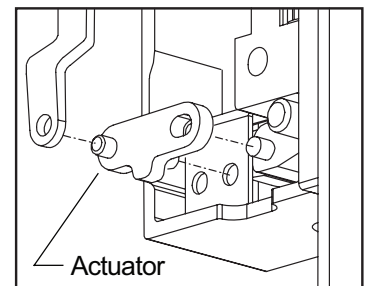
**Figure 2**

**NOTE**

When using the electric strike in fail-secure mode, the local authority having jurisdiction shall be consulted to assure compliance in allowing emergency exit from the secured area.



Fail-safe (FS) Mode



Fail-secure (FSE) Mode

**Figure 3**

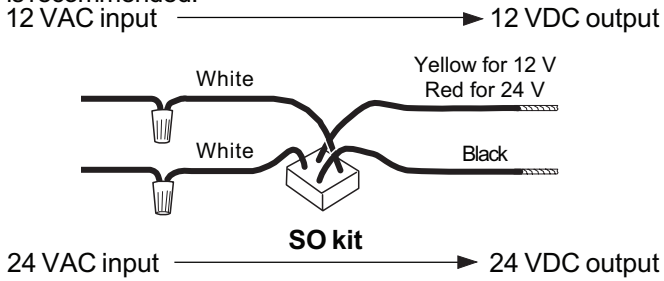
5. Check power source voltage (12 or 24 VAC or VDC).
6. When using 12 VAC or 24 VAC power, install SO kit to convert AC power to DC (Figure 4).
7. Wire strike solenoid for proper voltage (Figure 5). **Caution: Do not connect 24 VDC to 12 VDC configured strike.**

For DC operation, Von Duprin PS 861 and Locknetics 593 DC series power supplies are recommended.

For AC operation, Von Duprin SO-12 or 24 AC/DC convertor kit (shown below) is recommended.

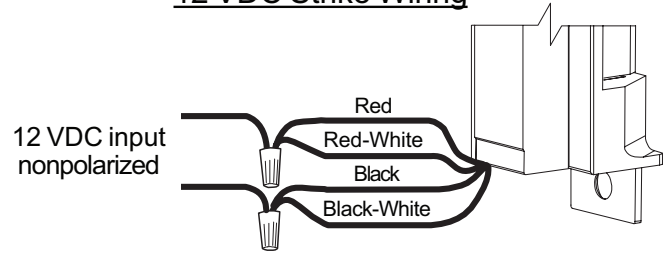
**SOLENOID POWER REQUIREMENTS**

12 VDC, 0.38 A  
24 VDC, 0.19 A

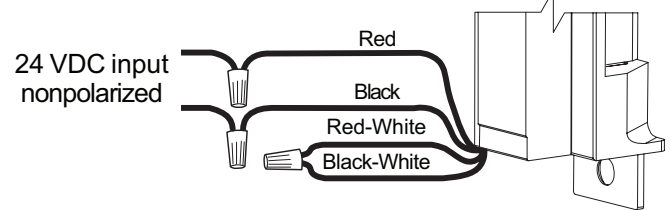


**Figure 4**

**12 VDC Strike Wiring**

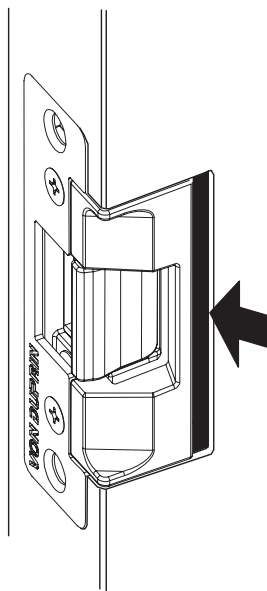


**24 VDC Strike Wiring**

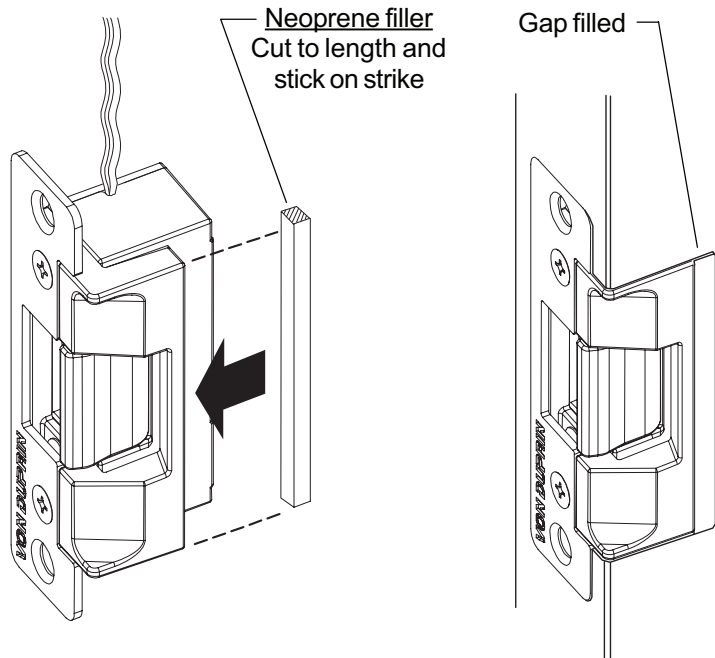


**Figure 5**

8. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks.
9. If cut-out for strike is too large along edge (Figure 6), cut neoprene filler and stick onto strike as shown (Figure 7). Note: This could occur in some retrofit applications.



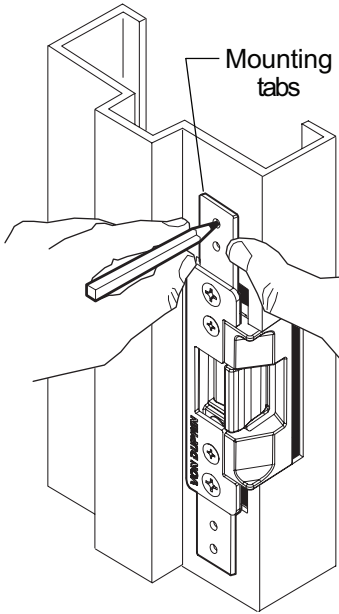
**Figure 6**



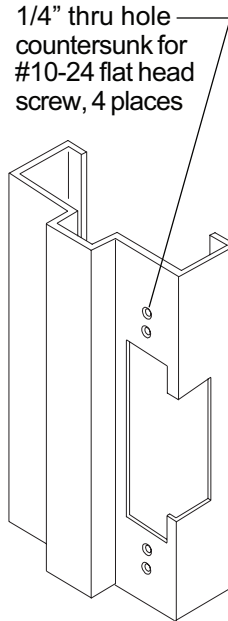
**Figure 7**

**10.** If frame does not have built in mounting tabs, install mounting tabs supplied with strike as shown below (Figure 8).

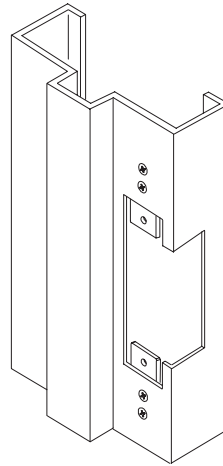
**A** Attach mounting tabs to strike with two #12-24 screws and mark 4 mounting tab holes on frame as shown below.



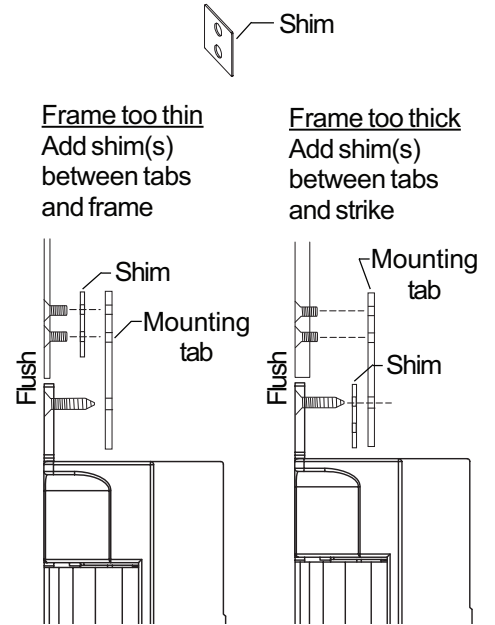
**B** Drill four mounting holes.



**C** Mount the two mounting tabs inside frame using #10-24 screws as shown below.

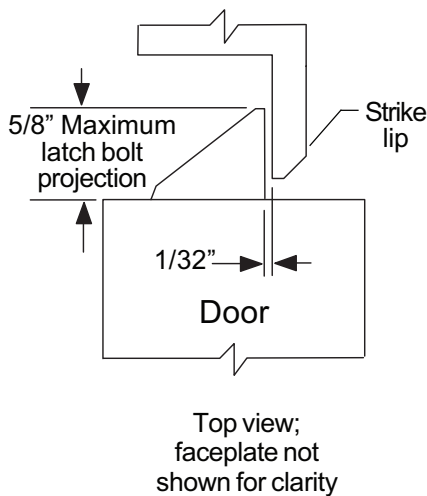


**D** Shim strike in or out as needed until faceplate is flush with frame.



**Figure 8**

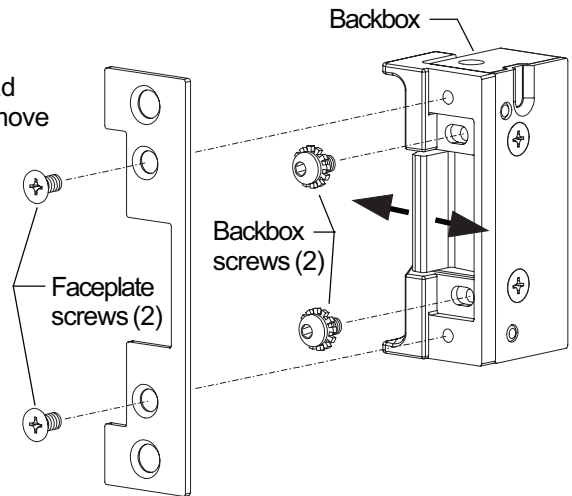
**11.** Install strike with two #12-24 mounting screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 9). If not, remove strike, adjust (Figure 10), and reinstall.



**Figure 9**

**Adjust Strike Lip**

- A** Remove two Phillips head faceplate screws and remove faceplate.
- B** Loosen two Hex head backbox screws and move backbox sideways as necessary, then secure screws.
- C** Replace faceplate and secure faceplate screws.

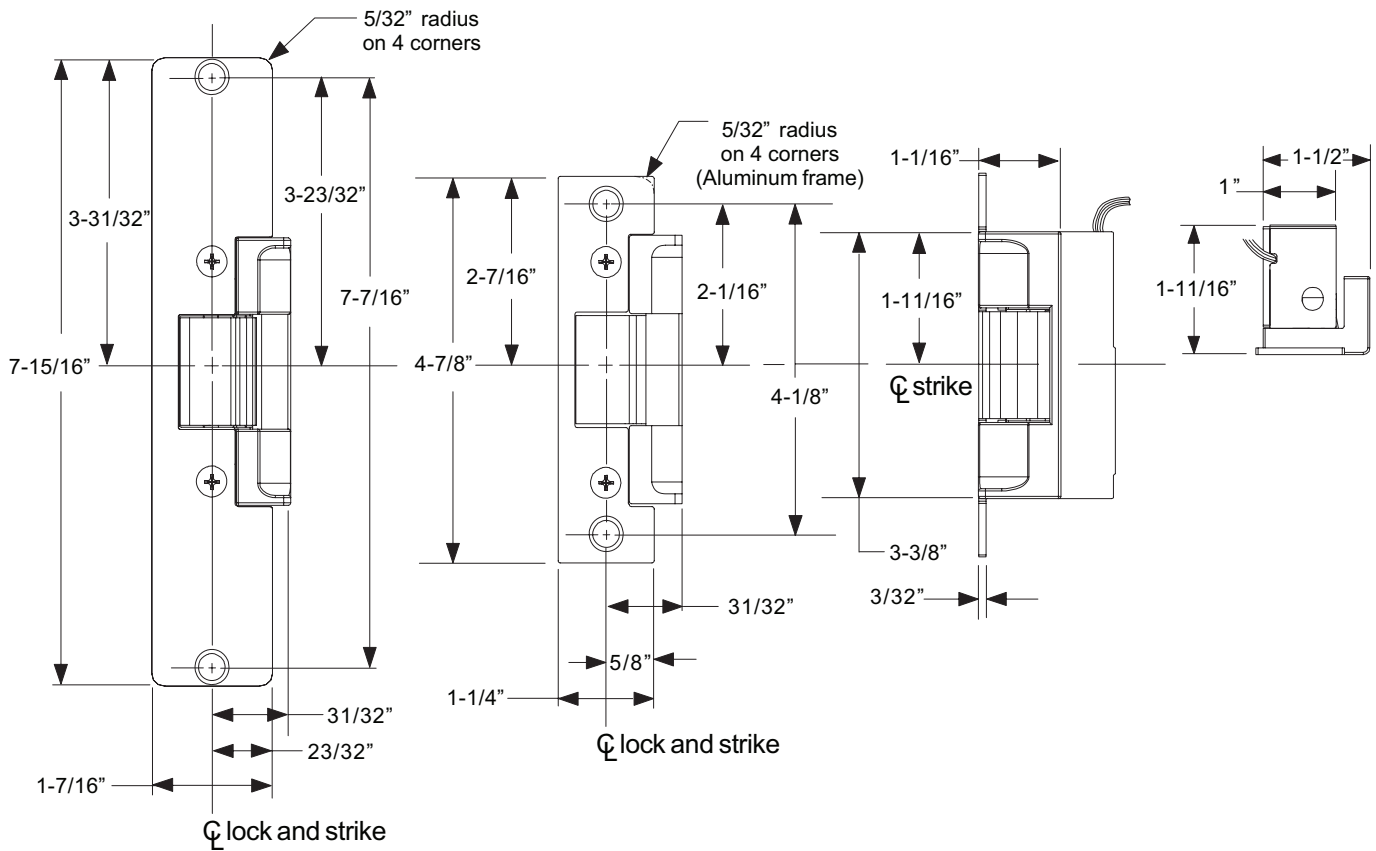


**Figure 10**

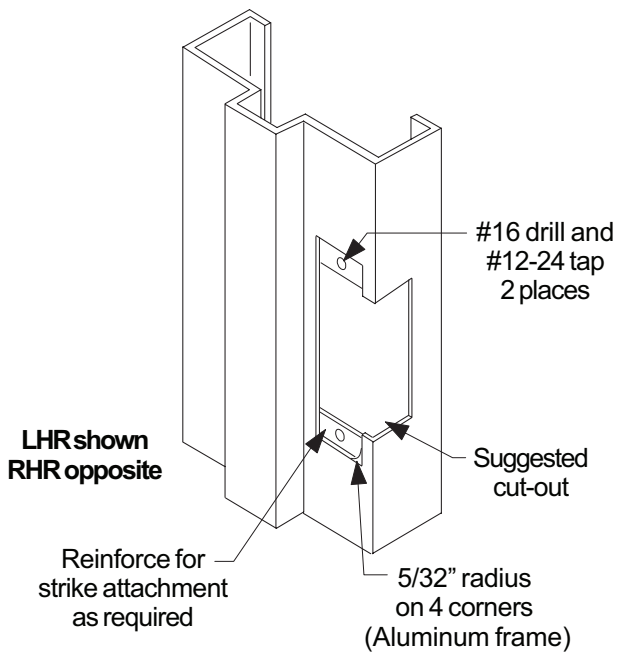
**12.** Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip and relatches.



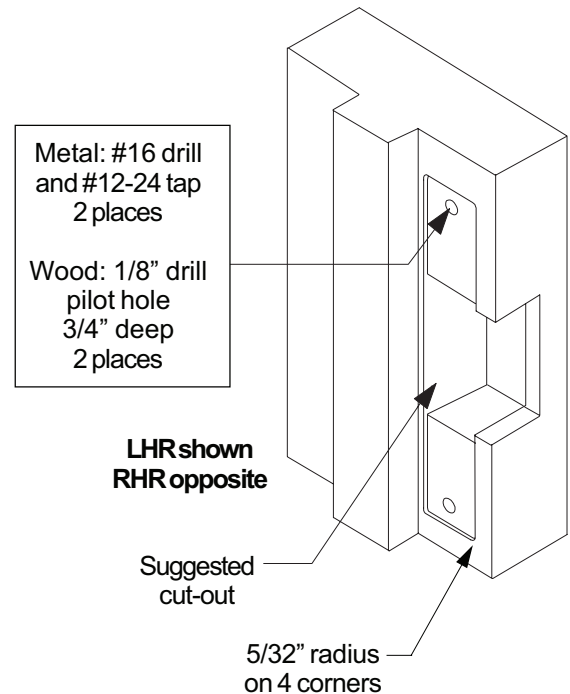
## Strike Dimensions



### Short Faceplate Suggested Cut-out



### Long Faceplate Suggested Cut-out



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911024-00

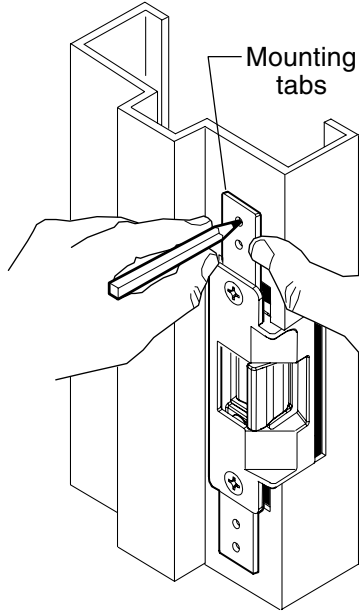
6000

VON DUPRIN®

Electric Strike Aluminum Frame Tabs

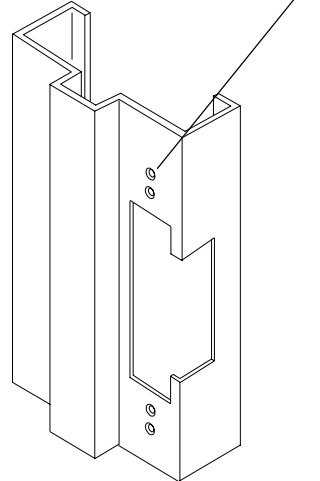
Installation Instructions

**1** Attach mounting tabs to strike with two #12-24 screws and mark 4 mounting tab holes on frame as shown below.

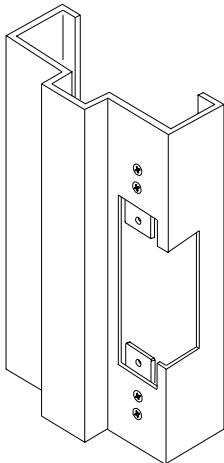


**2** Drill four mounting holes.

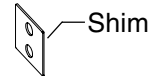
1/4" thru hole countersunk for #10-24 flat head screw, 4 places



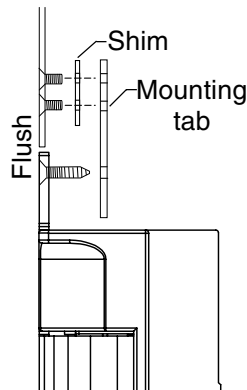
**3** Mount the two mounting tabs inside frame using #10-24 screws as shown below.



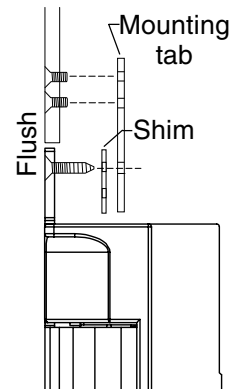
**4** Shim strike in or out as needed until faceplate is flush with frame.



Frame too thin  
Add shim(s) between tabs and frame



Frame too thick  
Add shim(s) between tabs and strike



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931229-00

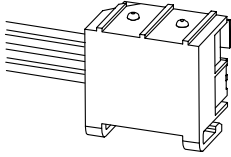
6000

VON DUPRIN®

Electric strike DS replacement kit

Installation instructions

## PARTS LIST



**Double Switch**  
Type A, Type A Gold  
Type B, or Type B Gold



**Strain relief**



**Button head screw**  
#6-32 X 1/4" (2)

## INSTALLATION



### NOTES

- Turn off power to strike before removal.

**1** Remove strike from door frame, unplug wiring plugs, and remove strike box from faceplate as shown (Figure 1).

**2** Remove box cover (5/64" Allen wrench) and remove old double switch (Figure 2).

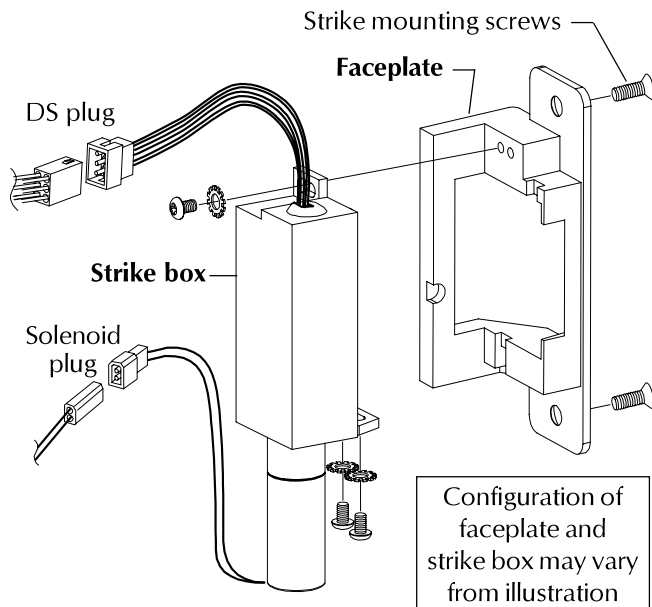


Figure 1

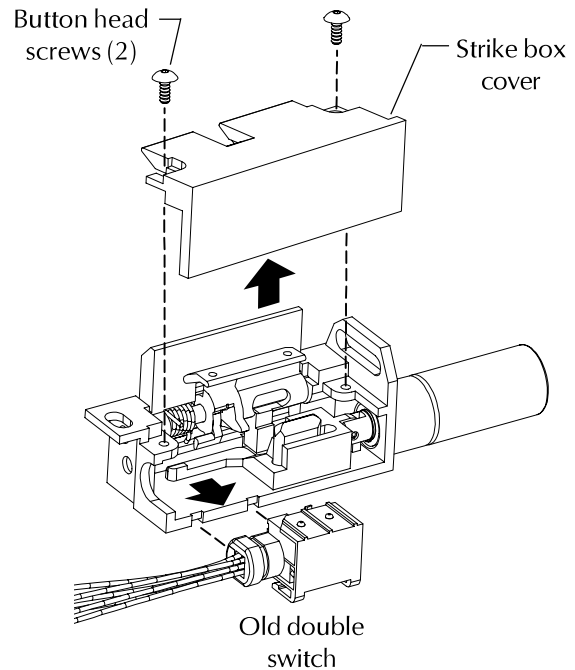


Figure 2



Customer Service

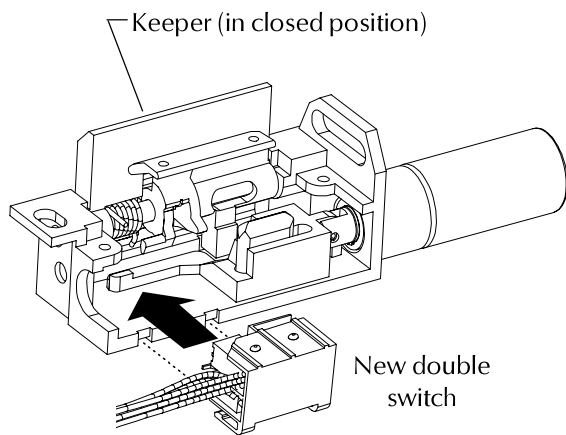
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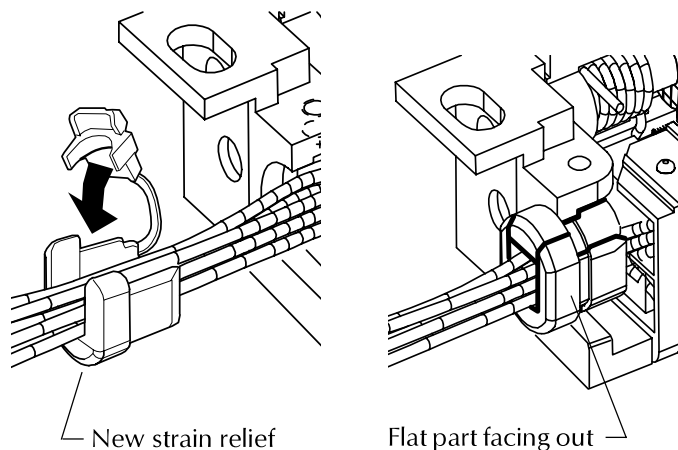
**3** With keeper in closed position, install new double switch (Figure 3).

Hold keeper in closed position while installing switch and after switch is installed or switch actuator can be damaged



**Figure 3**

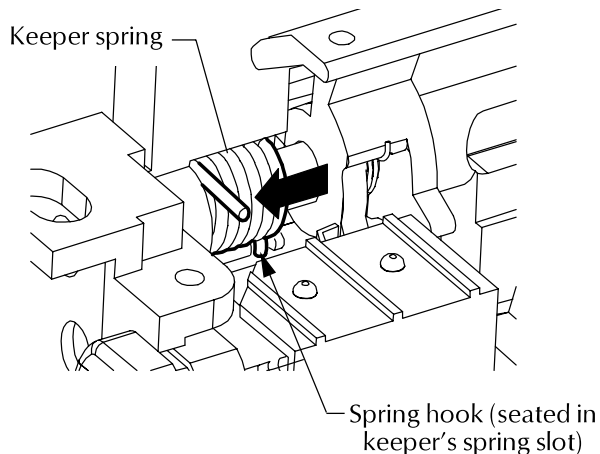
**4** Snap new strain relief around DS wires (Figure 4-1) and slide into box slot with flat part facing out as shown (Figure 4-2).



**Figure 4-1**

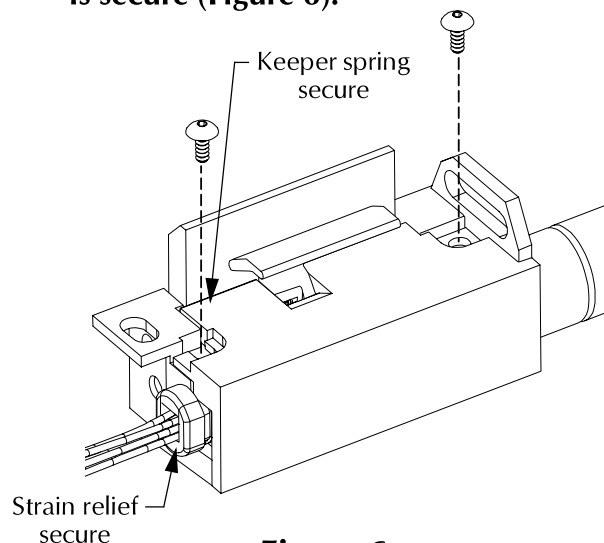
**Figure 4-2**

**5** Place keeper spring as far left as possible and verify that spring's hook is seated in keeper's spring slot (Figure 5).



**Figure 5**

**6** Secure box top on box and while ensuring that the keeper spring does not move out of position, and that the wire strain relief is secure (Figure 6).



**Figure 6**

**7** Reattach the box to the faceplate and reinstall strike. See Figure 1.

**NOTES:**

If the current being sent through the switch is less than 100mA a Gold contact switch (100mA) must be used.

If the current is greater than 100mA use the standard switch (standard switches are rated for a maximum of 2A).

Type B switches are required for 6211WF and 6212WF units.

A non DS unit can not be upgraded to a DS unit with this kit because the kit does not contain a tripper.



931229-00

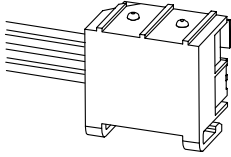
6000

VON DUPRIN®

Electric strike DS replacement kit

Installation instructions

## PARTS LIST



**Double Switch**  
Type A, Type A Gold  
Type B, or Type B Gold



**Strain relief**



**Button head screw**  
#6-32 X 1/4" (2)

## INSTALLATION



### NOTES

- Turn off power to strike before removal.

**1** Remove strike from door frame, unplug wiring plugs, and remove strike box from faceplate as shown (Figure 1).

**2** Remove box cover (5/64" Allen wrench) and remove old double switch (Figure 2).

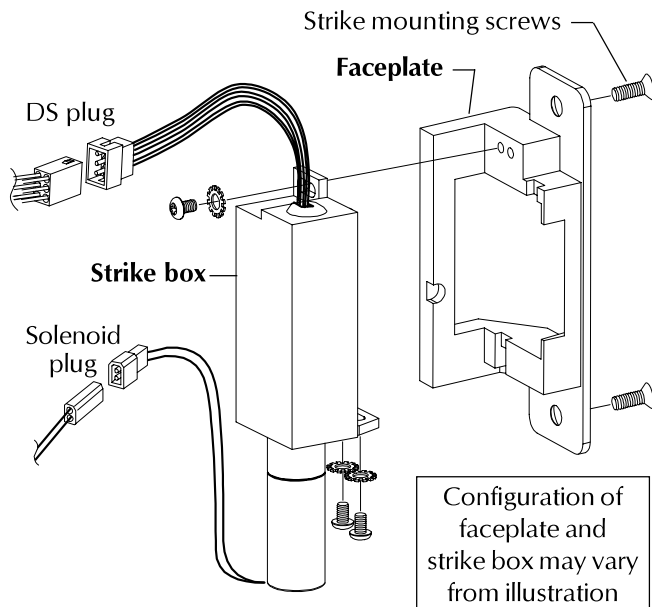


Figure 1

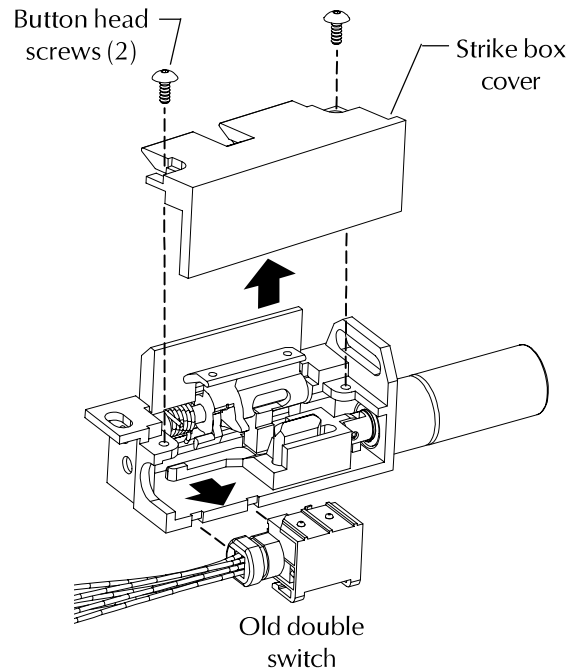


Figure 2



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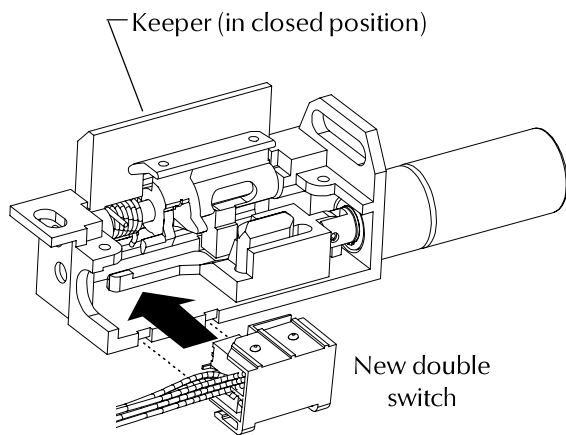
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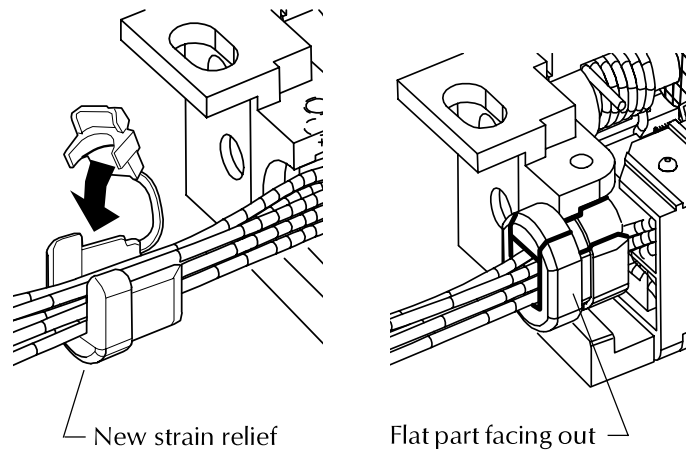
**3** With keeper in closed position, install new double switch (Figure 3).

Hold keeper in closed position while installing switch and after switch is installed or switch actuator can be damaged



**Figure 3**

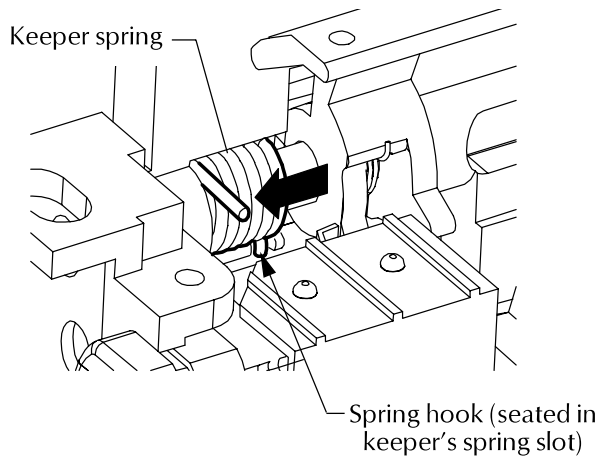
**4** Snap new strain relief around DS wires (Figure 4-1) and slide into box slot with flat part facing out as shown (Figure 4-2).



**Figure 4-1**

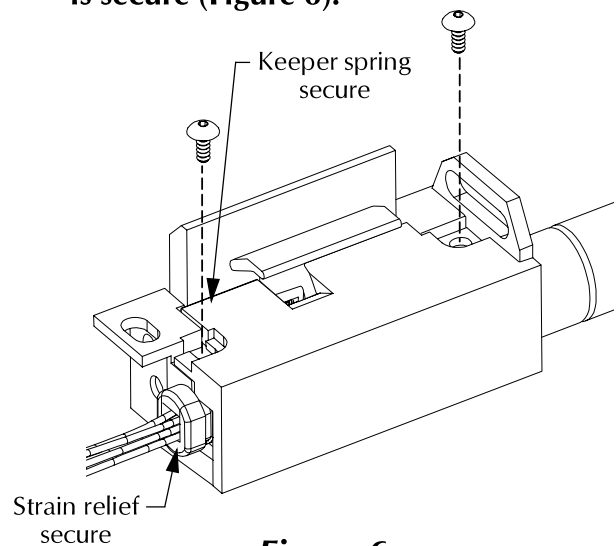
**Figure 4-2**

**5** Place keeper spring as far left as possible and verify that spring's hook is seated in keeper's spring slot (Figure 5).



**Figure 5**

**6** Secure box top on box and while ensuring that the keeper spring does not move out of position, and that the wire strain relief is secure (Figure 6).



**Figure 6**

**7** Reattach the box to the faceplate and reinstall strike. See Figure 1.

**NOTES:**

If the current being sent through the switch is less than 100mA a Gold contact switch (100mA) must be used.

If the current is greater than 100mA use the standard switch (standard switches are rated for a maximum of 2A).

Type B switches are required for 6211WF and 6212WF units.

A non DS unit can not be upgraded to a DS unit with this kit because the kit does not contain a tripper.



931219-00

# 6111/6111DS

# VON DUPRIN®

Electric Strike Single Door Rim Application

Installation Instructions

Note: Check with factory for retrofit applications.

- 1 For lock or device preparation, see their directions. Also see application schedule on other side.
- 2 Prepare frame for strike (see other side).
- 3 Wire strike (Figure 1). (Switches on 6111DS only.)
- 4 Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
- 5 Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2).
- 6 If latch bolt does not extend far enough to actuate tripper, install extension (Figure 3). (Tripper on 6111DS only.)
- 7 Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

### SOLENOID POWER REQUIREMENTS

Yellow solenoid wires = 12 VDC, 0.57 A  
 Black solenoid wires = 24 VDC, 0.29 A  
 (also shown on strike label)

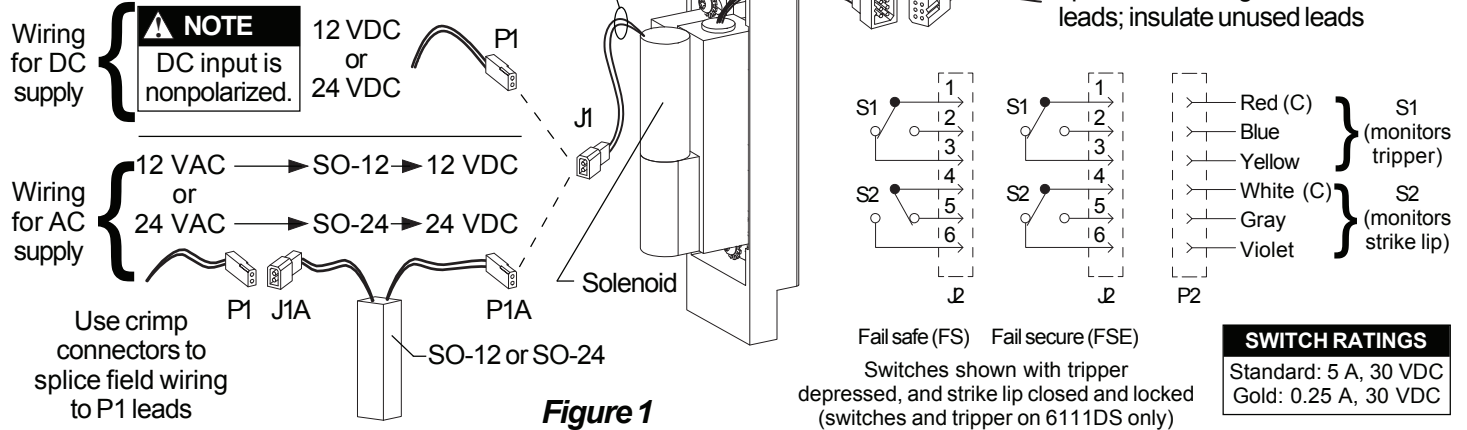


Figure 1

NOTE:  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000c.

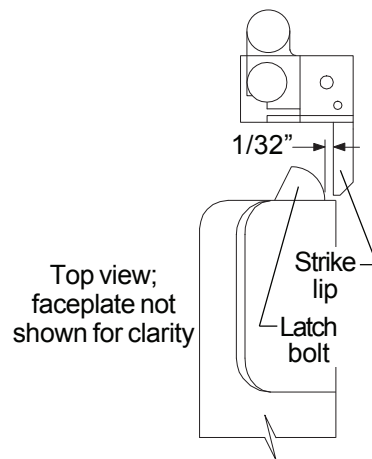


Figure 2

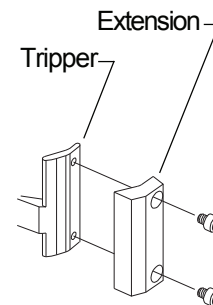
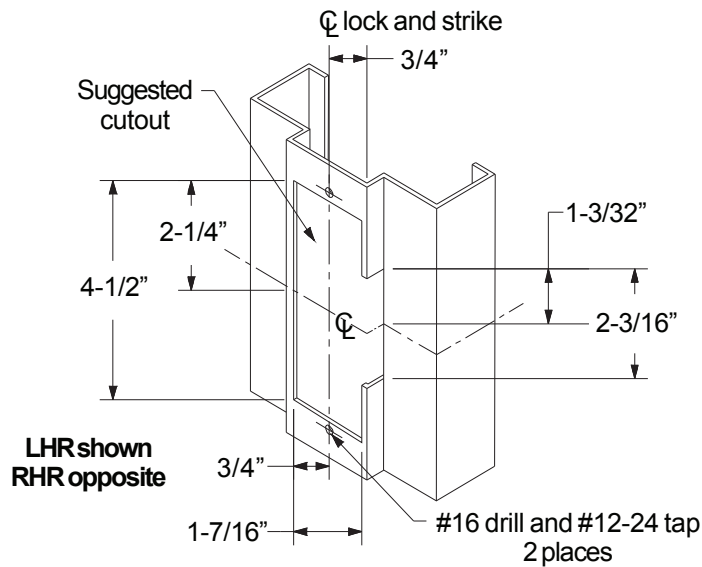
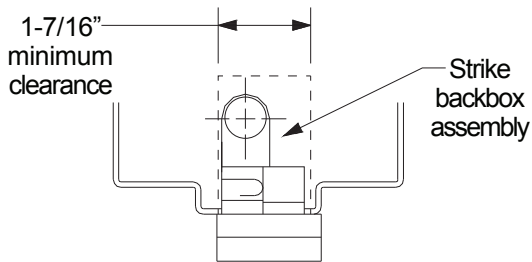
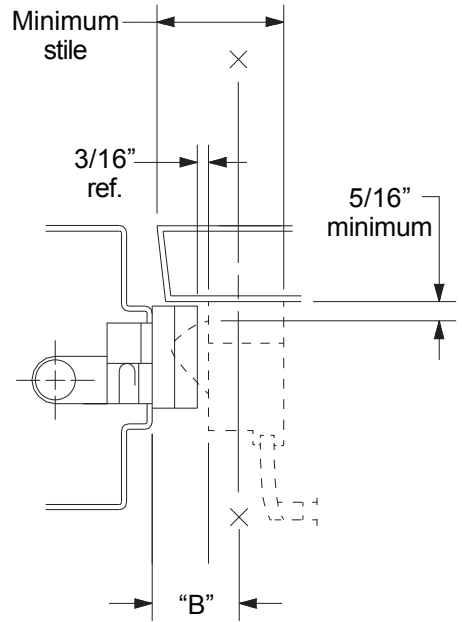


Figure 3

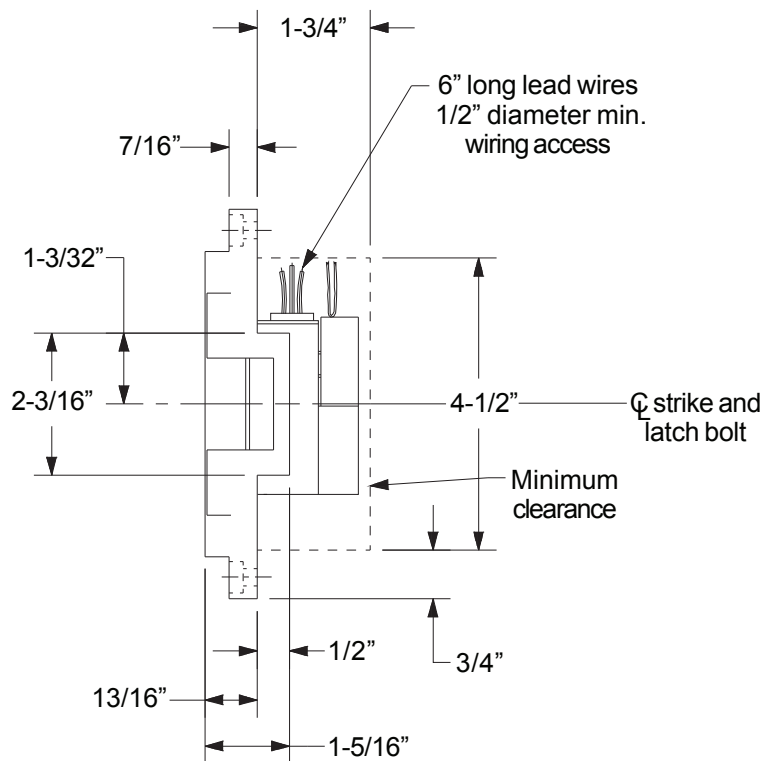
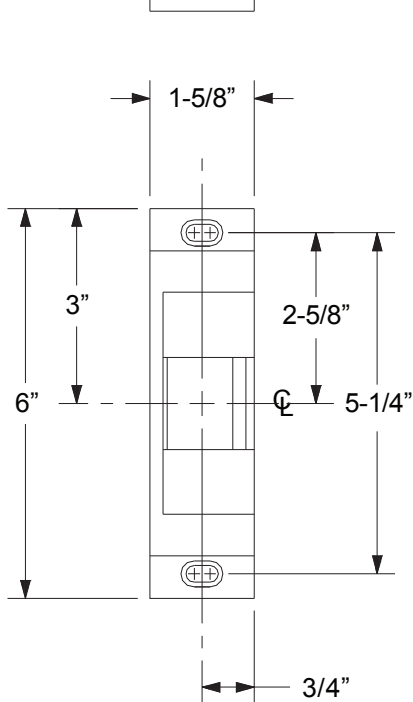


**Frame Preparation for Strike**



Von Duprin Device	"B"
22 Rim and 98/99 Rim	$2-7/16"$
33/35 Rim EO/DT/NL/TP	$1-13/32"$
33A/35A Series Rim	$1-15/32"$
44/88 Rim EO/DT/NL/TP	$2-1/2"$
44/88 Rim K	$2-3/8"$
<b>For other devices, consult factory.</b>	

**Application Schedule**



**Strike Dimensions and Required Clearances**

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931226-00

# 6111/6111DS

# VON DUPRIN

Electric Strike Double Door with Mullion Rim Application

Installation Instructions

Note: Check with factory for retrofit applications.

- 1 For lock or device preparation, see their directions. Also see application schedule on other side.
- 2 Prepare mullion for strike (see other side).
- 3 Wire strike (Figure 1). (Switches on 6111DS only.)
- 4 Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
- 5 Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2).
- 6 If latch bolt does not extend far enough to actuate tripper, install extension (Figure 3). (Tripper on 6111DS only.)
- 7 Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

### SOLENOID POWER REQUIREMENTS

Yellow solenoid wires = 12 VDC, 0.57 A  
 Black solenoid wires = 24 VDC, 0.29 A  
 (also shown on strike label)

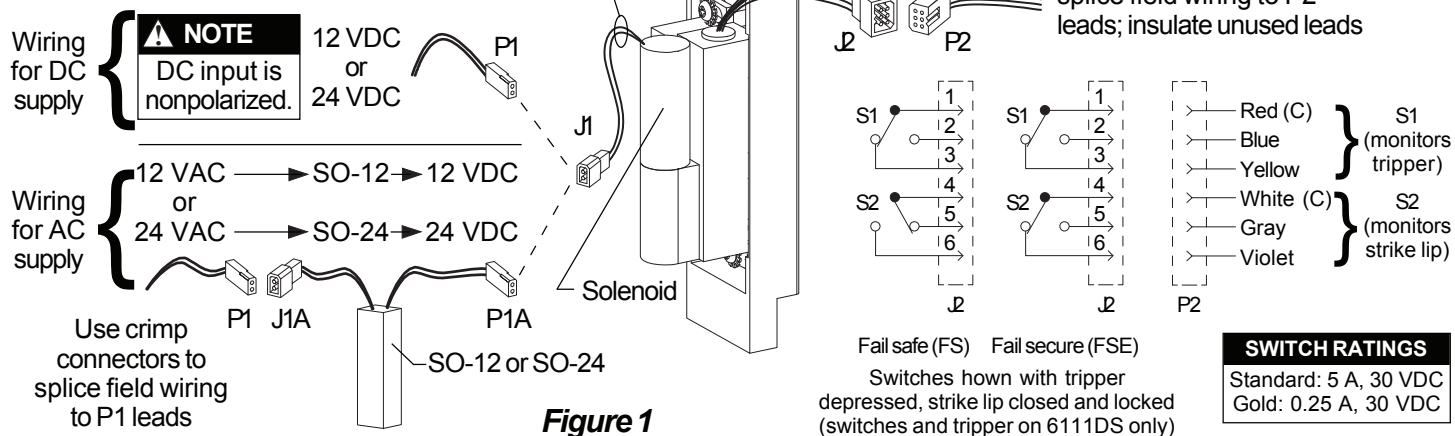


Figure 1

NOTE:  
 Static Strength Rating 1500 b.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000c.

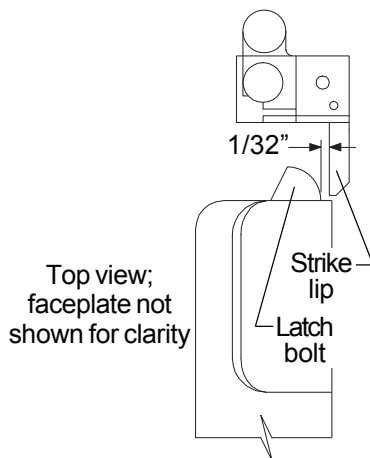


Figure 2

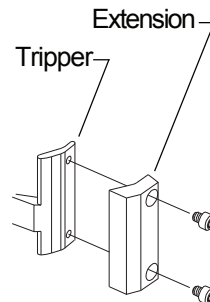
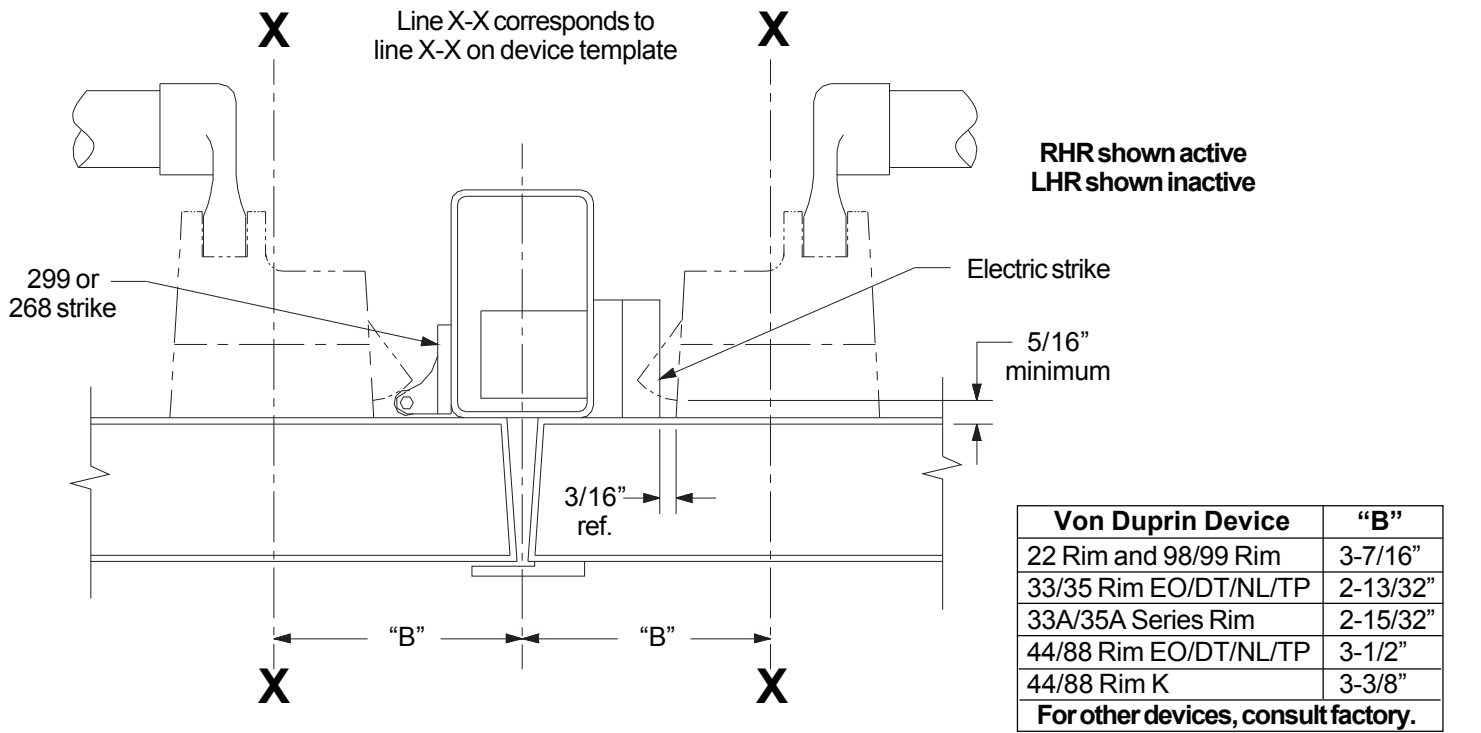


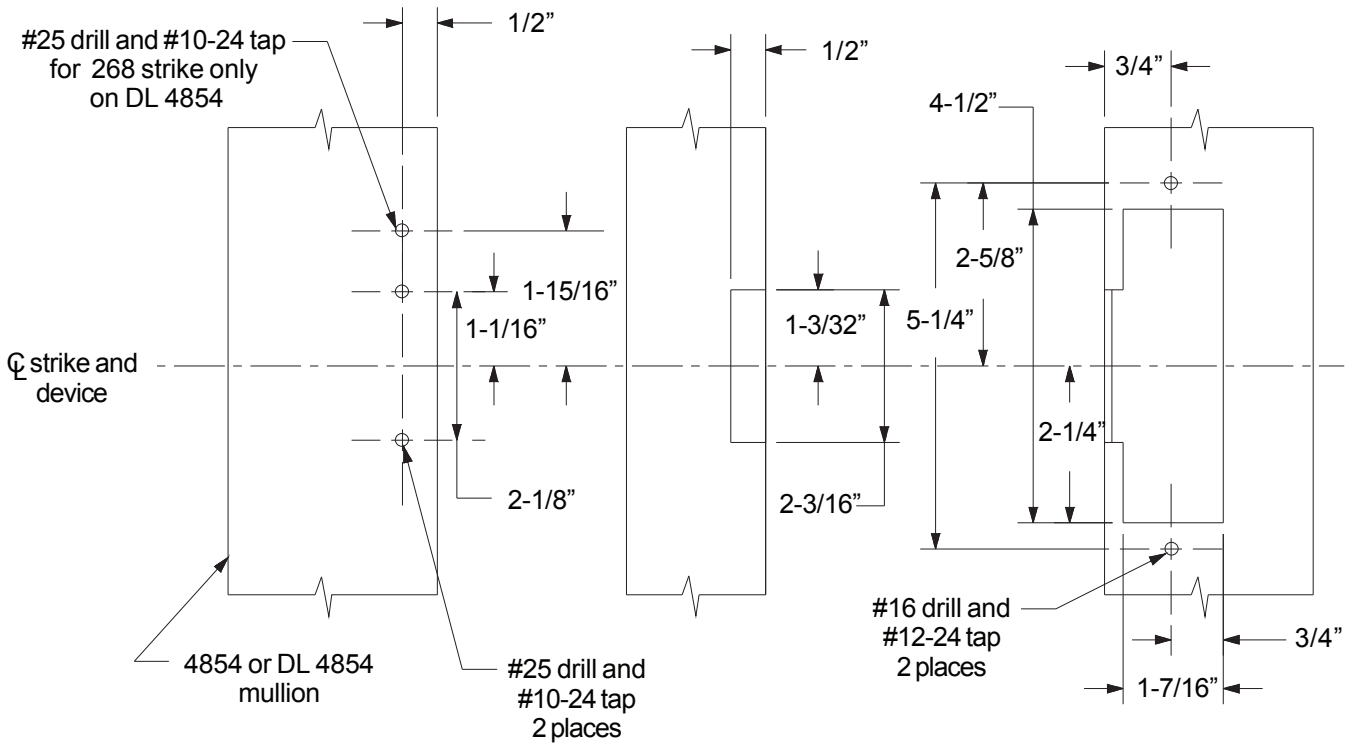
Figure 3



89/336/EEC



**Application Schedule**



**Mullion Preparation for Strike**



931232-00

# 6112/6112DS

# VON DUPRIN®

Electric Strike, Single Door Rim Application

Installation Instructions

**Note:** Check with factory for retrofit applications.

1. For lock or device preparation, see their directions. Also see application schedule on other side.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6112DS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2).
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 3). (Tripper on 6112DS only.)

7. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

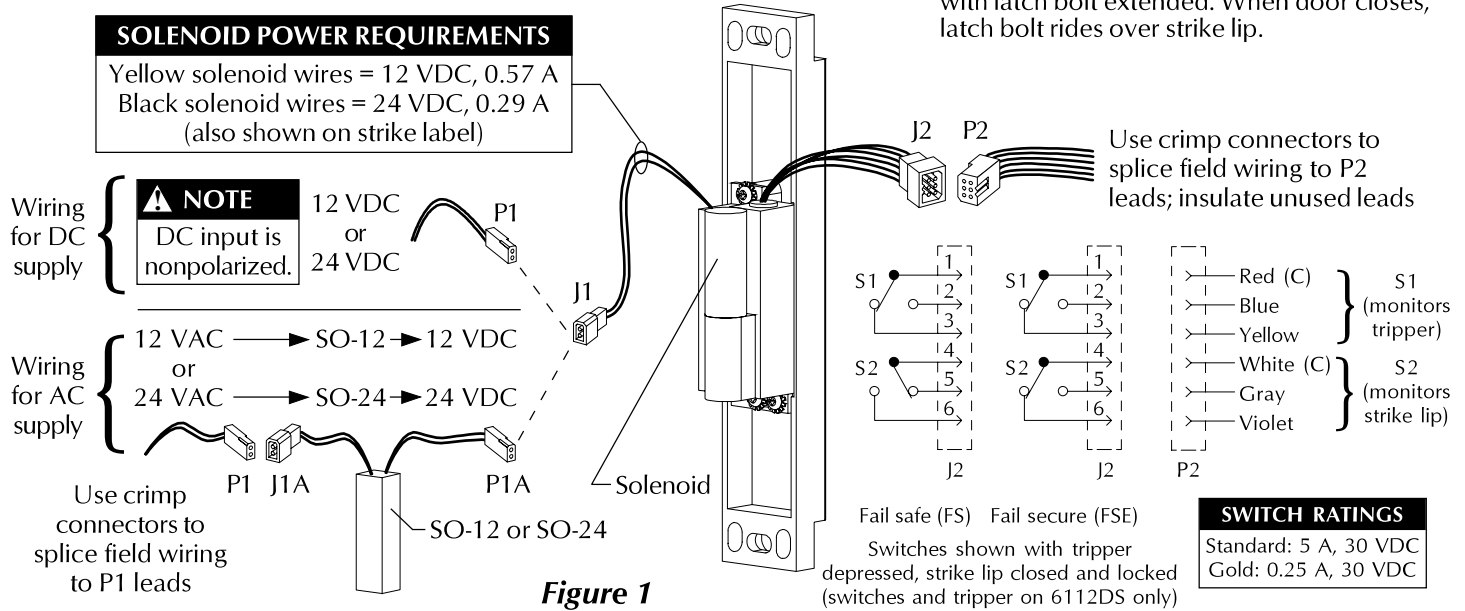


Figure 1

**NOTE:**  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

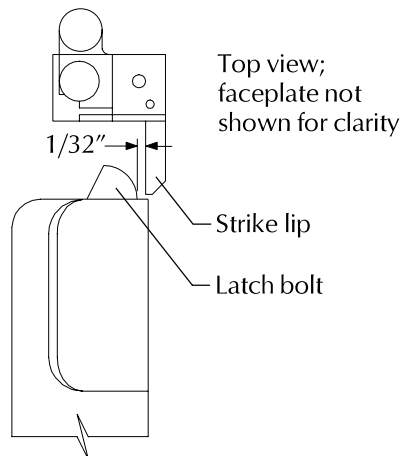


Figure 2

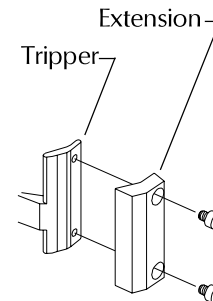
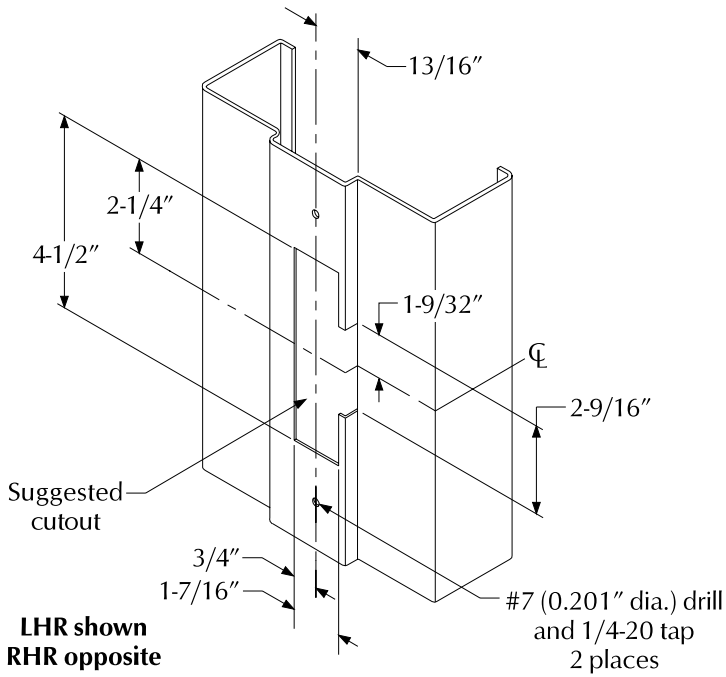


Figure 3

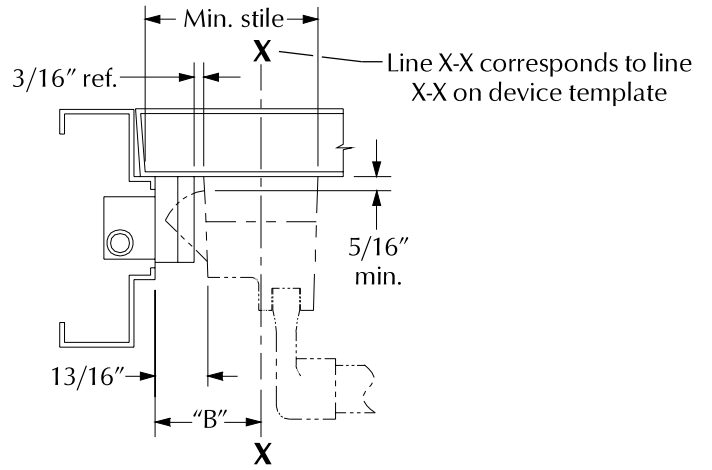


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 931232-00 Rev. 01/14-b

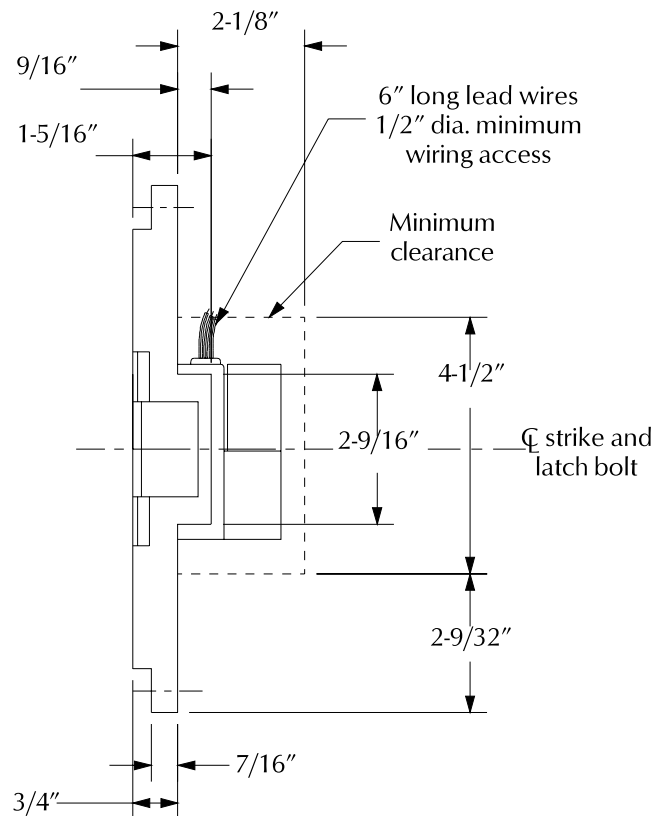
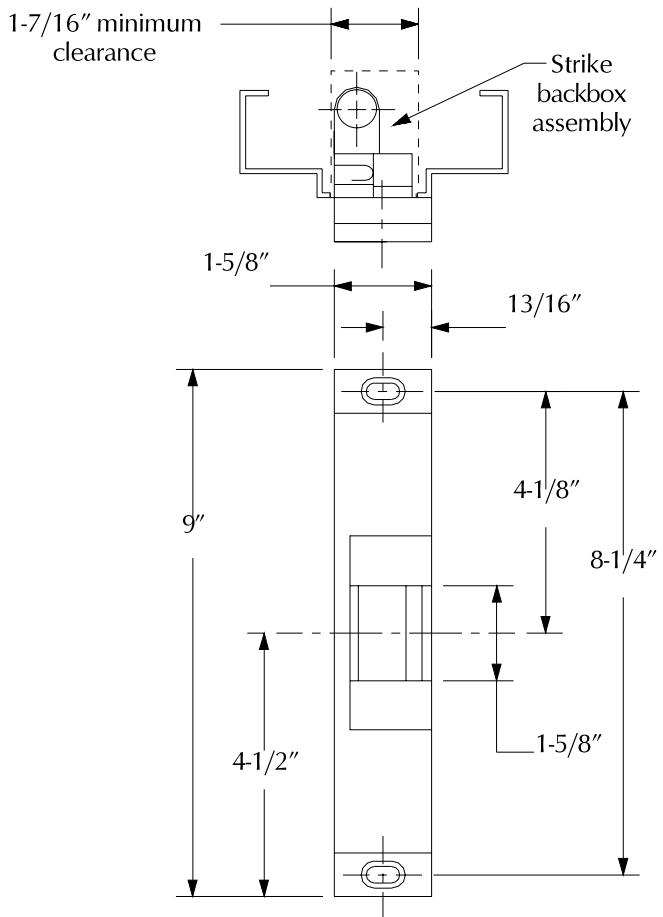


**Frame Preparation for Strike**



Device	"B"
22 Rim and 98/99 Rim	2-7/16"
33/35 Rim EO/DT/NL/TP	1-13/32"
33A/35A Series Rim	1-15/32"
88 Rim EO/DT/NL/TP	2-1/2"
88 Rim K	2-3/8"
<b>For other devices, consult factory.</b>	

**Application Schedule**



**Strike Dimensions and Required Clearances**



931220-00

# 6113/6113DS

# VON DUPRIN®

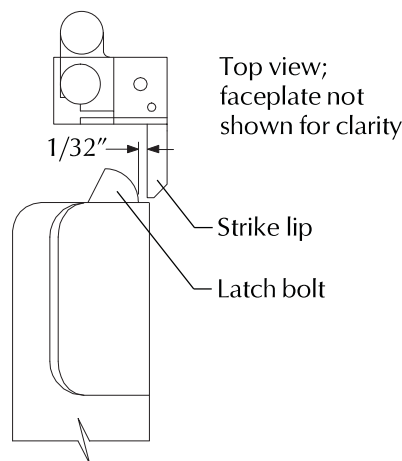
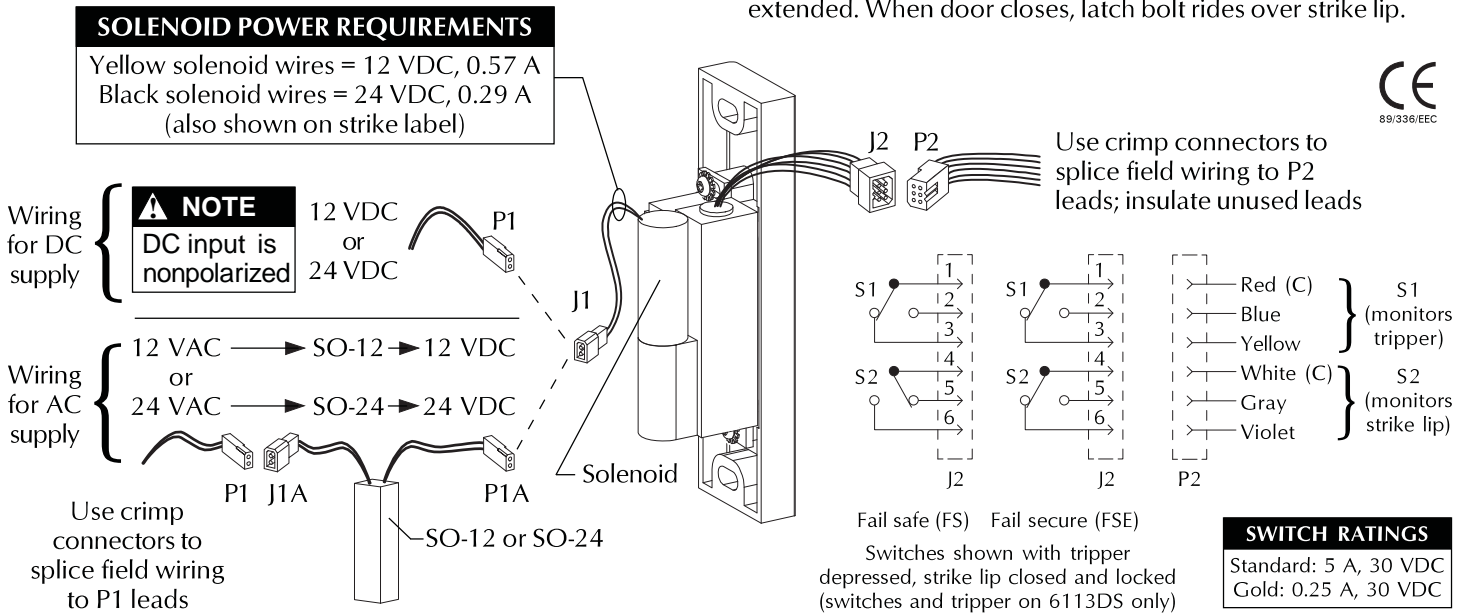
Electric Strike, Single Door Rim Application

Installation Instructions

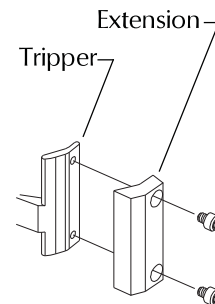
**Note:** Check with factory for retrofit applications.

1. For lock or device preparation, see their directions. Also see application schedule on other side.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6113DS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2).
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 3). (Tripper on 6113DS only.)
7. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.



**Figure 2**

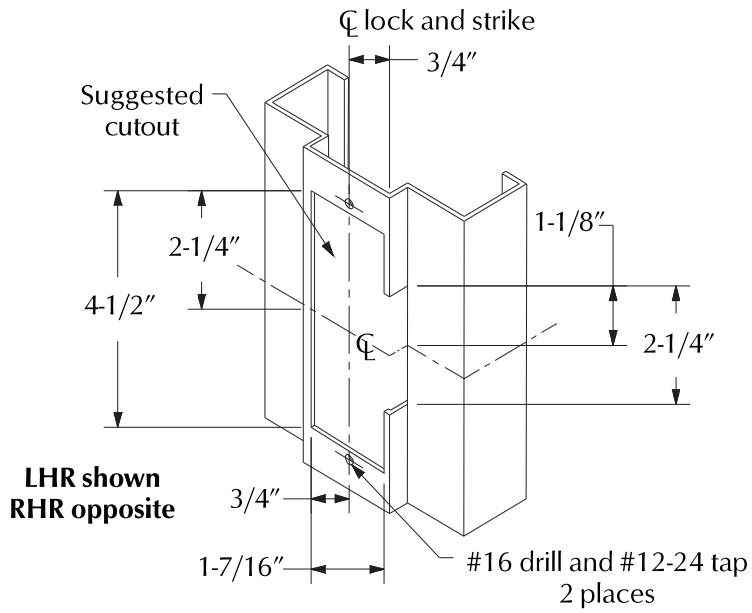


**Figure 3**

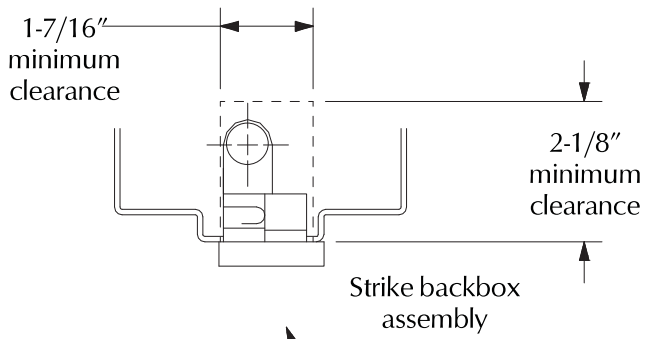
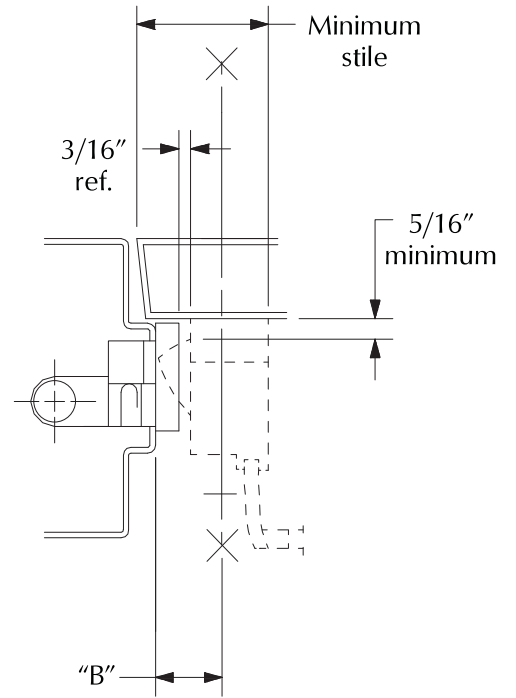


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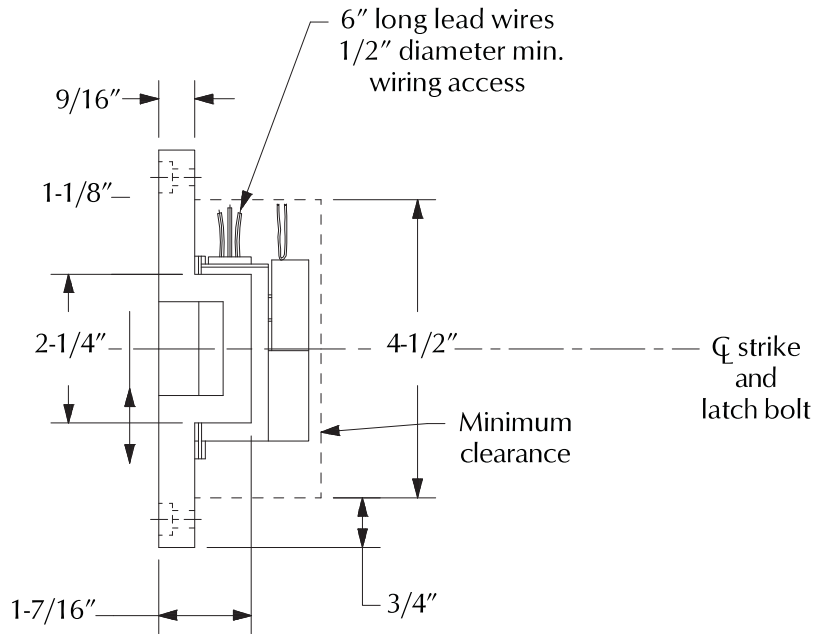
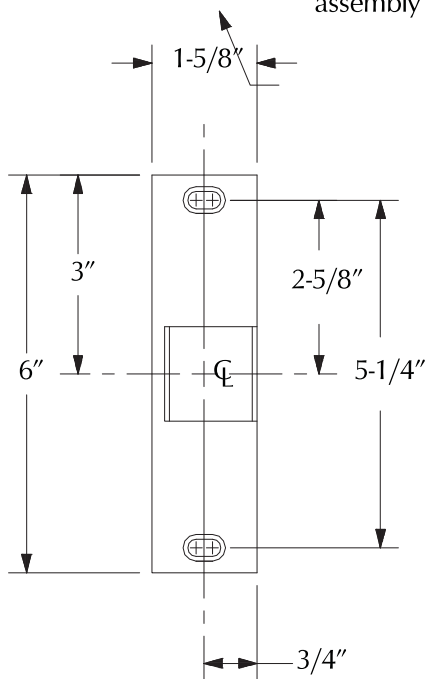


**Frame Preparation for Strike**



Von Duprin Device	"B"
22 Rim and 98/99 Rim	2-3/16"
33/35 Rim EO/DT/NL/TP	1-5/32"
33A/35A Series Rim	1-7/32"
44/88 Rim EO/DT/NL/TP	2-1/4"
44/88 Rim K	2-1/8"
<b>For other devices, consult factory.</b>	

**Application Schedule**



**Strike Dimensions and Required Clearances**



931243-00

# 6114/6114DS

# VON DUPRIN

Electric Strike, Single Door Rim Night Latch Application

Installation Instructions

Note: Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6114DS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with four #10-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 3). If not, shim night latch as necessary.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6114DS only.)
7. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

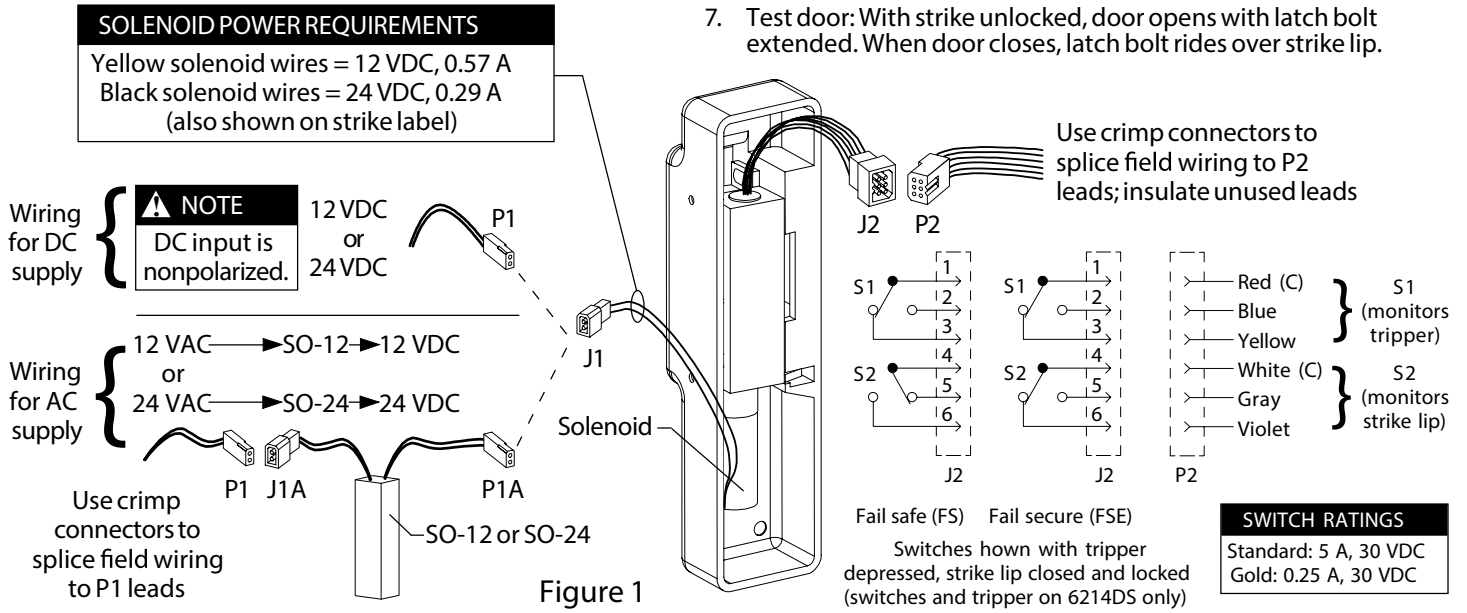


Figure 1

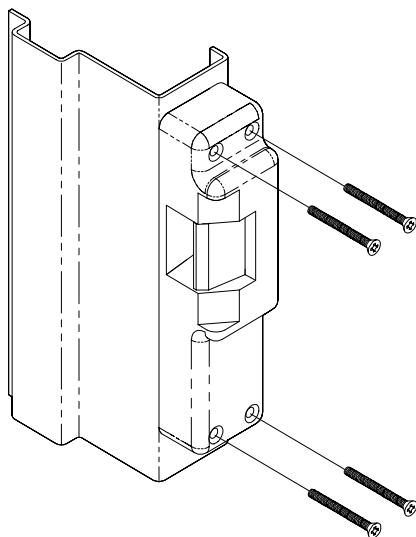


Figure 2

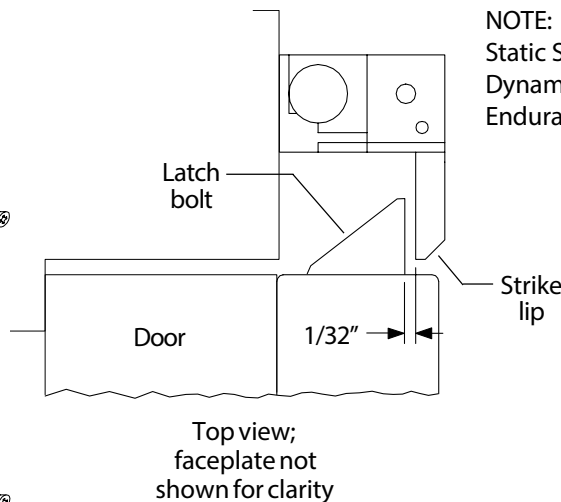


Figure 3

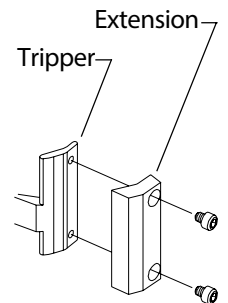
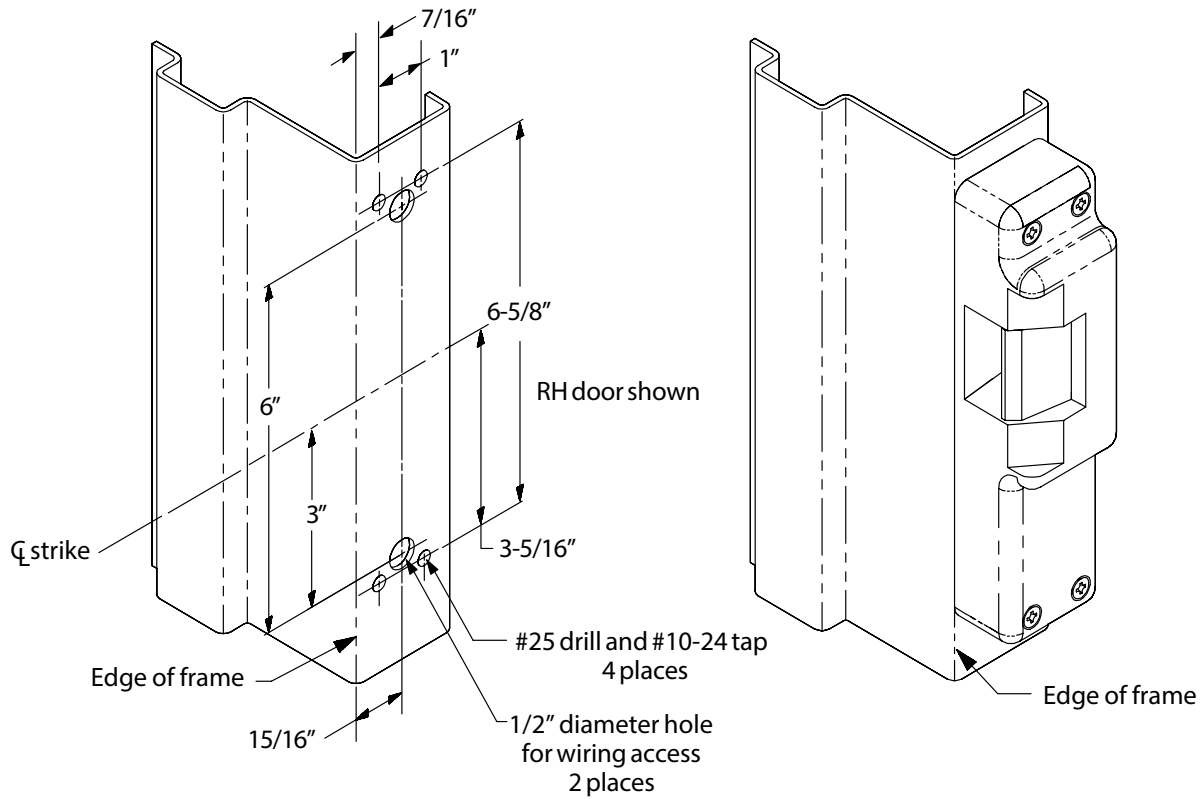


Figure 4

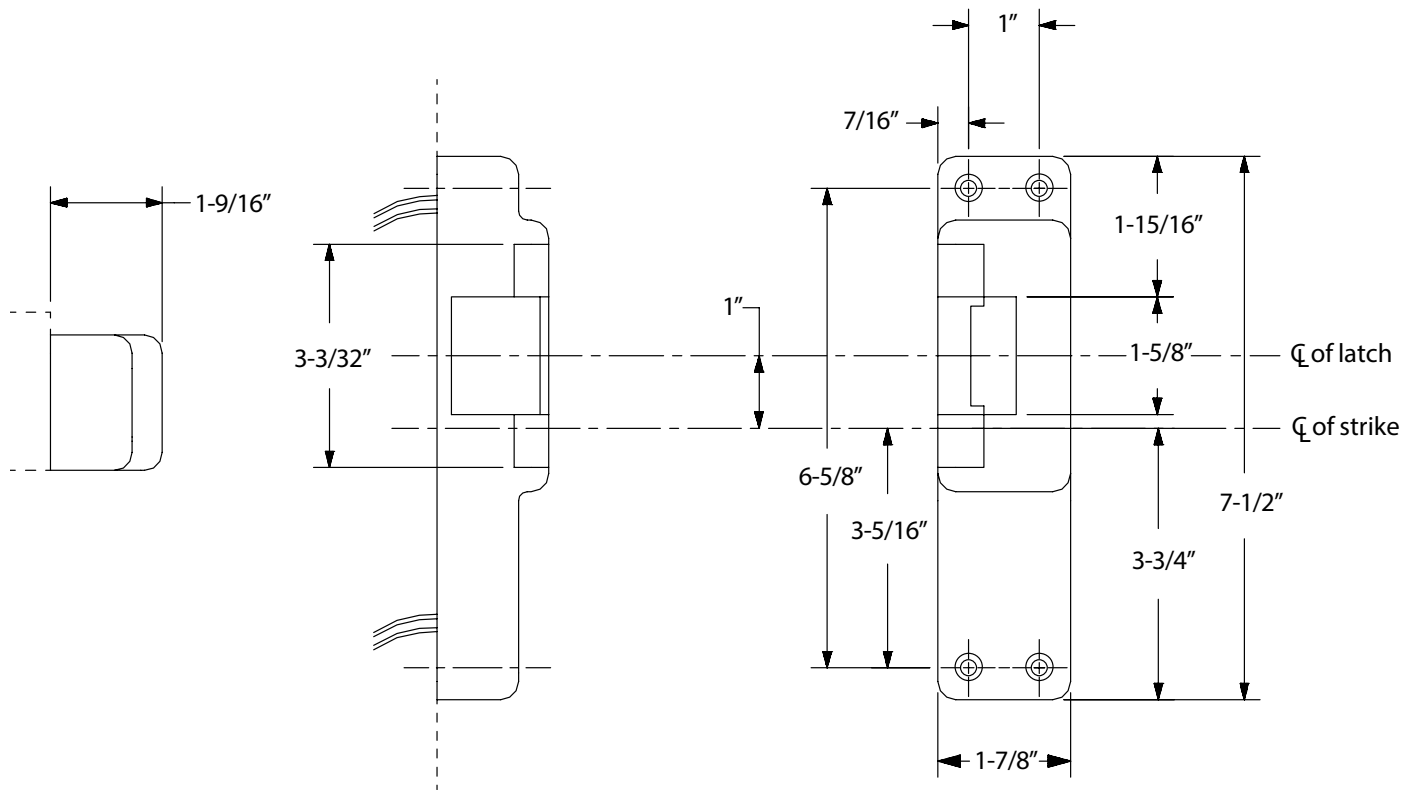


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Frame Preparation for Strike



Strike Dimensions





931239-00

# 6121/6121DS

# VON DUPRIN

Electric Strike, Double Door Closed Back Rim Application

Installation Instructions

Note: Check with factory for retrofit applications.

1. For lock or device preparation, see their directions. Also see application schedule below.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6121DS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6121DS only.)

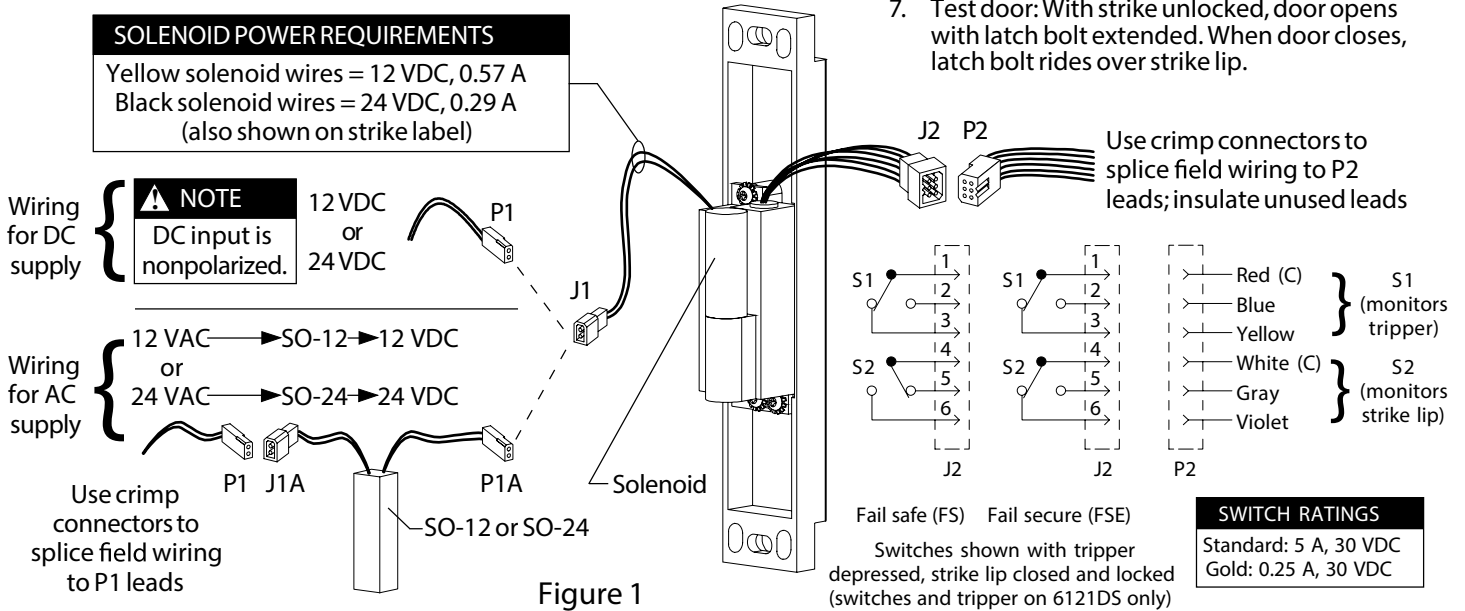
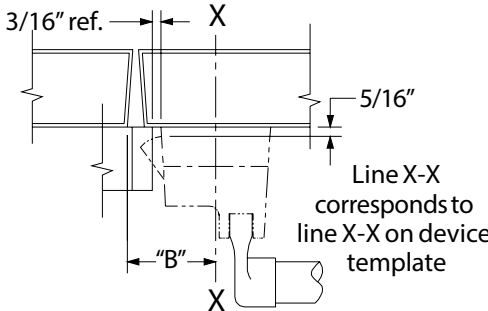


Figure 1

Von Duprin Device	"B"
22 Rim and 98/99 Rim	2-7/16"
33/35 Rim EO/DT/NL/TP	1-13/16"
33A/35A Series Rim	1-15/32"
88 Rim EO/DT/NL/TP	2-1/2"
88 Rim K	2-3/8"
For other devices, consult factory.	



Application Schedule

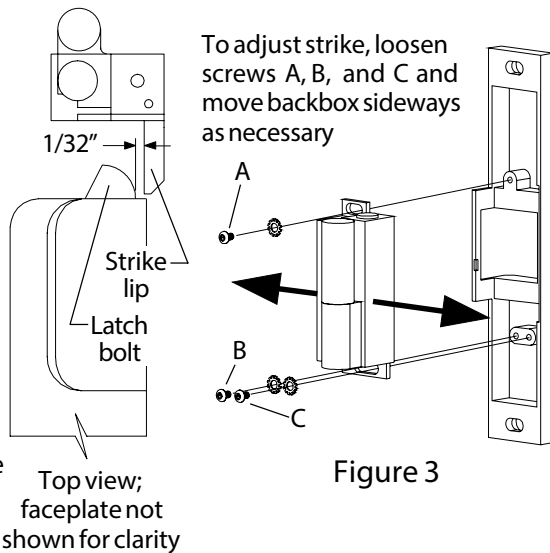


Figure 2

To adjust strike, loosen screws A, B, and C and move backbox sideways as necessary

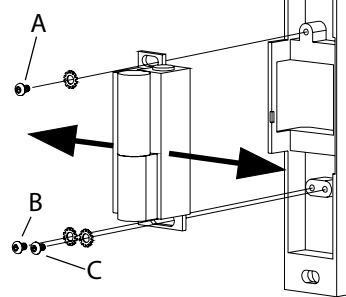


Figure 3

NOTE:  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

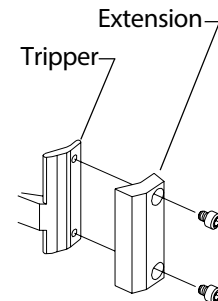
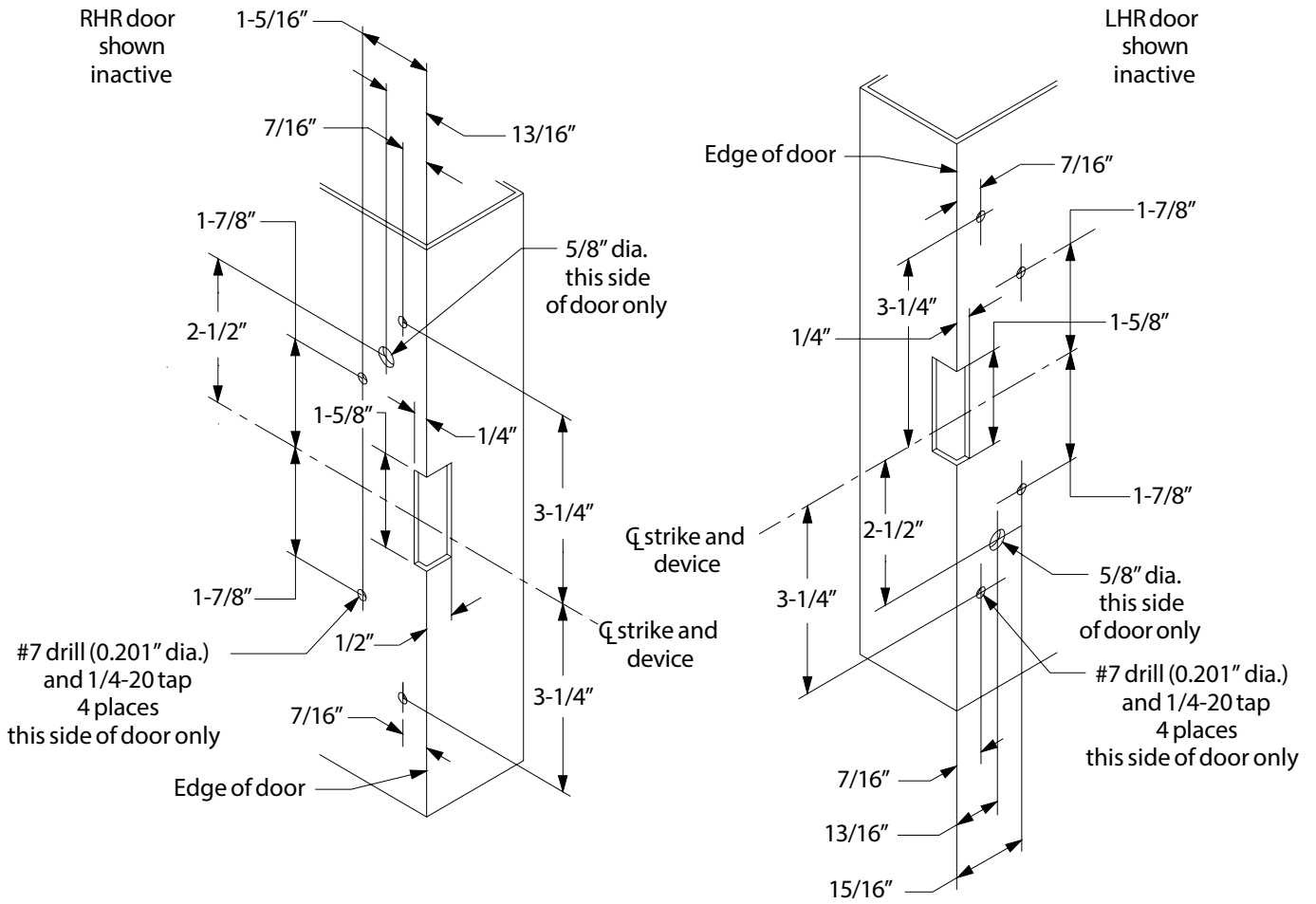


Figure 4

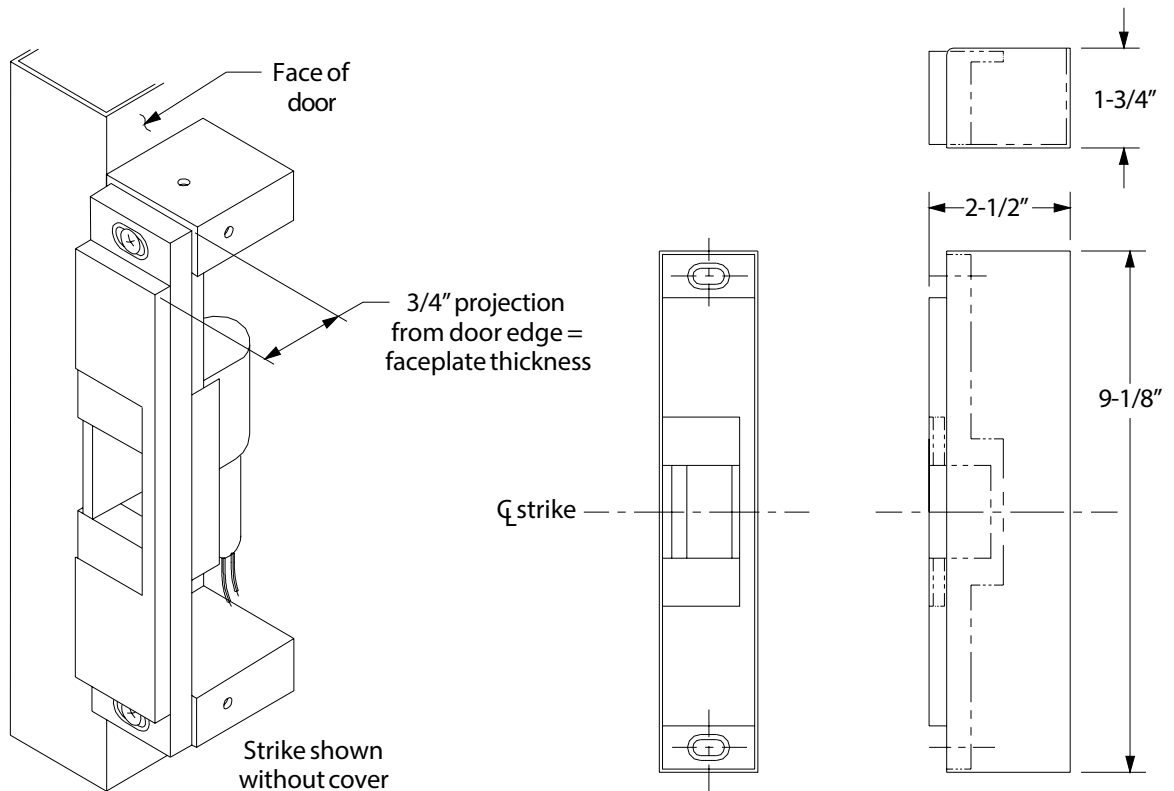


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**Door Preparation for Strike**



**Strike Dimensions and Required Clearances**



931001-00

Electric Strike Single Door Mortise Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

- 1 For lock or device preparation, see their directions.
- 2 Prepare frame for strike (see other side).
- 3 Wire strike (Figure 1). (Switches on 6210DS only.)
- 4 Install insert for auxiliary bolt operation (Figure 2).
- 5 Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
- 6 Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 3). If not, uninstall strike, adjust (Figure 4), and reinstall.
- 7 Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

### SOLENOID POWER REQUIREMENTS

Yellow solenoid wires: 12 VDC, 0.57 A  
 Black solenoid wires: 24 VDC, 0.29 A  
 (also shown on strike label)

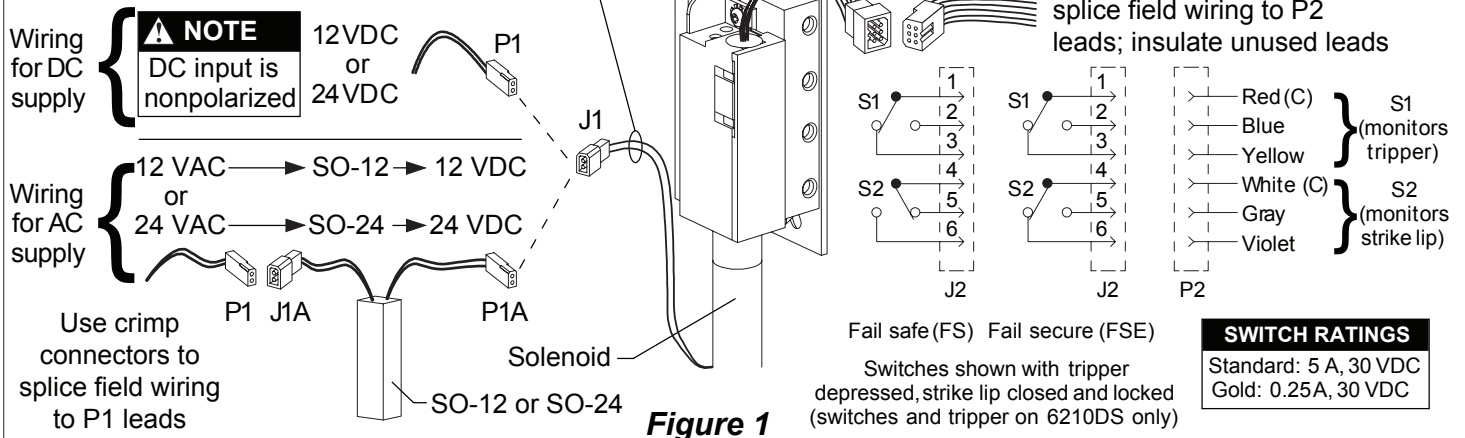


Figure 1

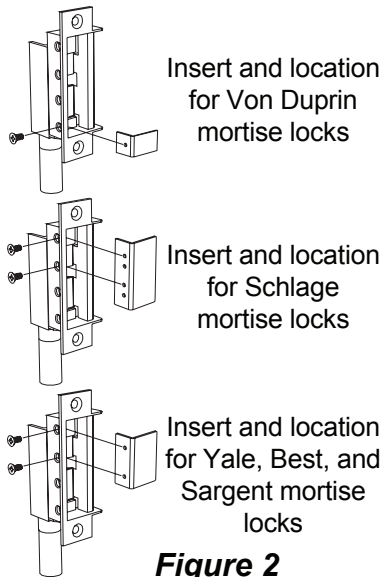


Figure 2

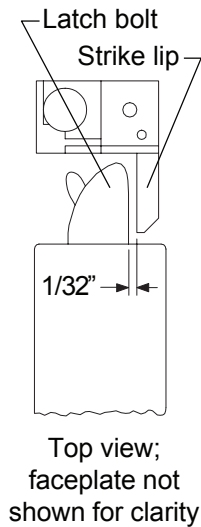


Figure 3

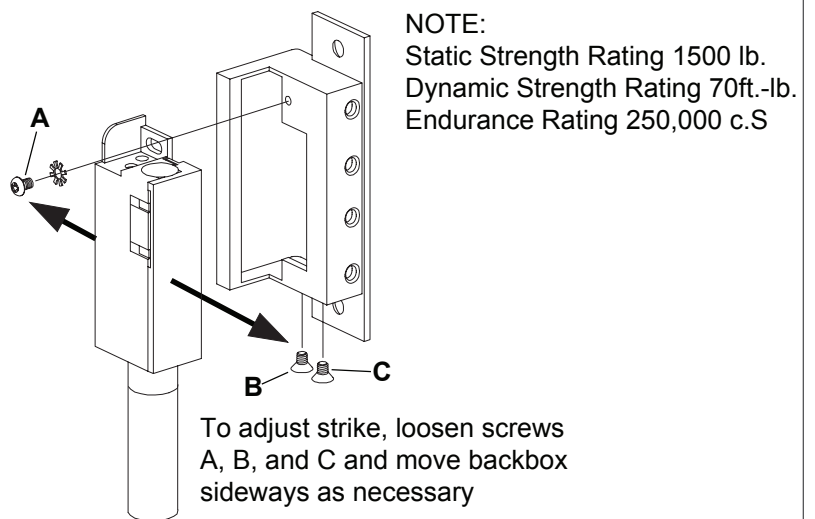
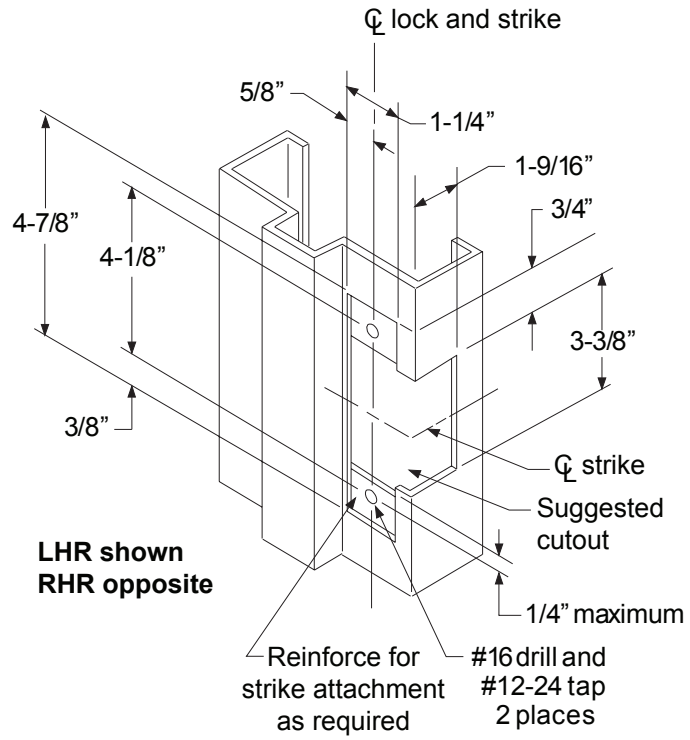
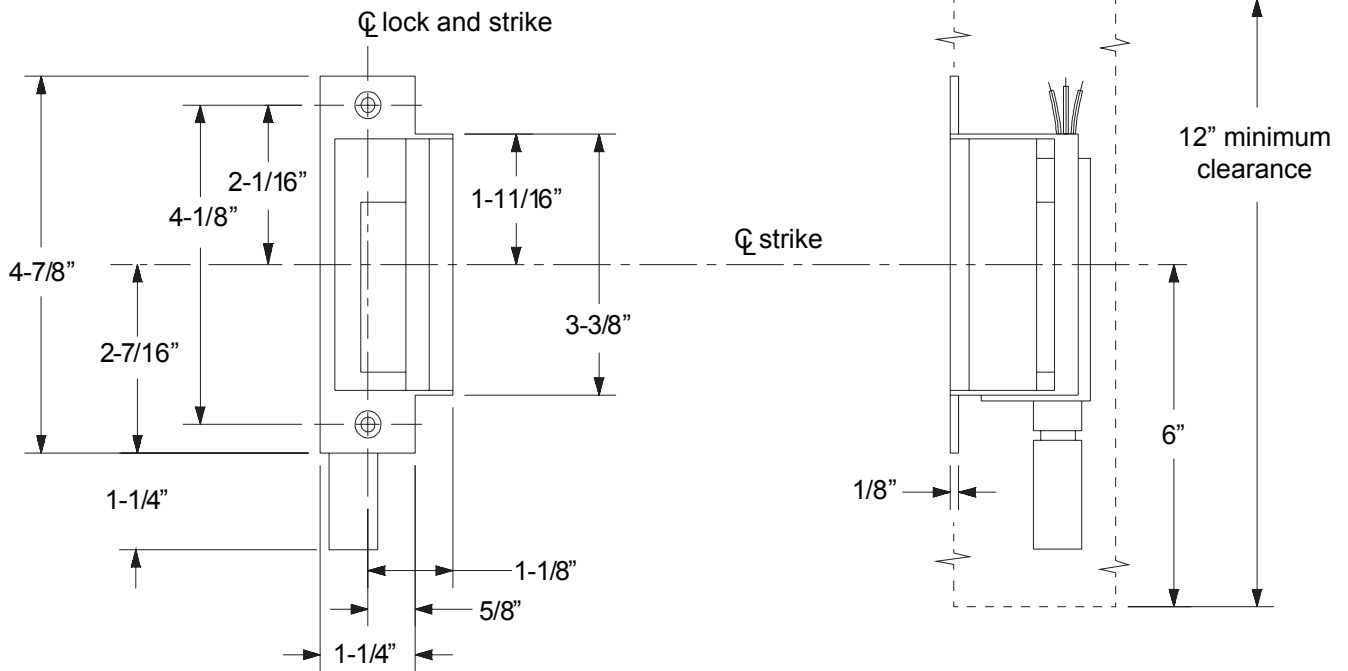
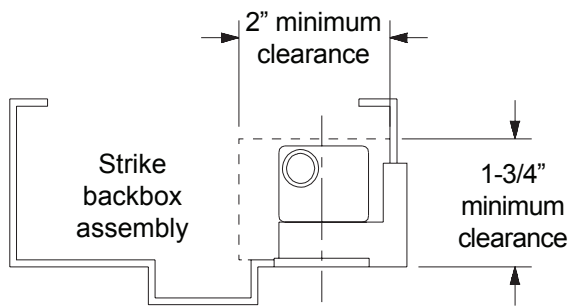


Figure 4



LHR shown  
RHR opposite

### Frame Preparation for Strike



### Strike Dimensions and Required Clearances

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931227-00

Electric Strike for Single Door Mortise or Cylindrical Application

Installation Instructions

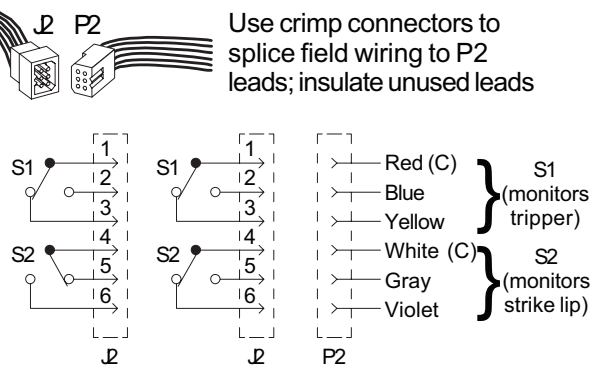
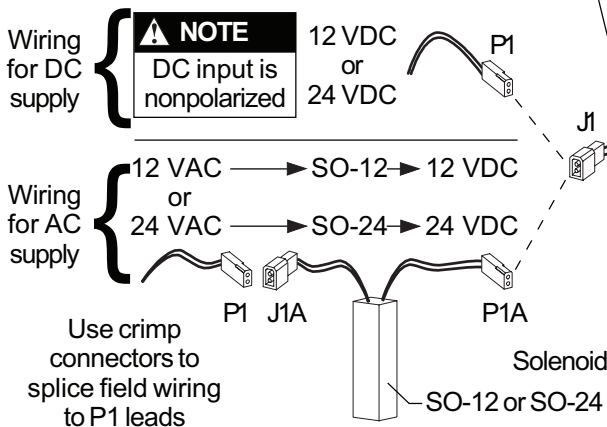
**Notes:** Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6211DS only.)

4. Install insert for auxiliary bolt operation (Figure 2).
5. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
6. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 3). If not, uninstall strike, adjust (Figure 4), and reinstall.
7. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 5). (Tripper on 6211DS only.)
8. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

### SOLENOID POWER REQUIREMENTS

Yellow solenoid wires: 12 VDC, 0.57 A  
 Black solenoid wires: 24 VDC, 0.29 A  
 (also shown on strike label)



SWITCH RATINGS	
Standard:	5 A, 30 VDC
Gold:	0.25 A, 30 VDC

Figure 1

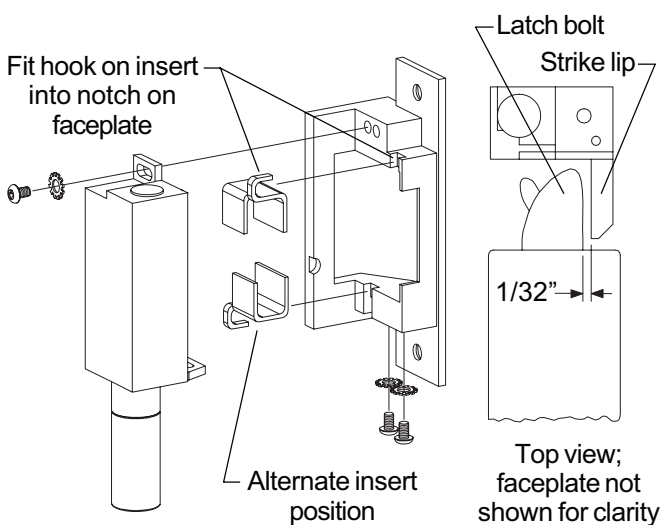


Figure 2

Figure 3

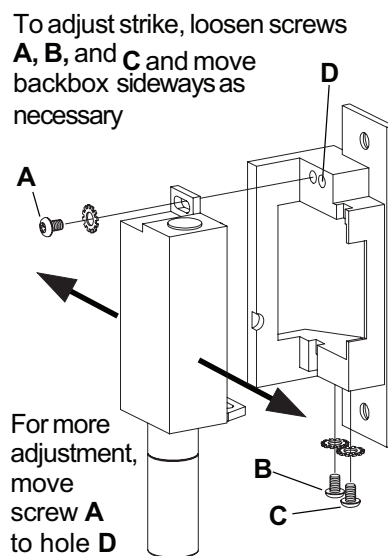


Figure 4

**NOTE:**  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

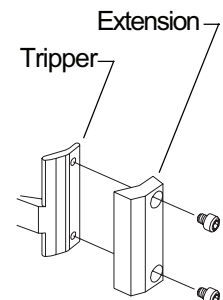
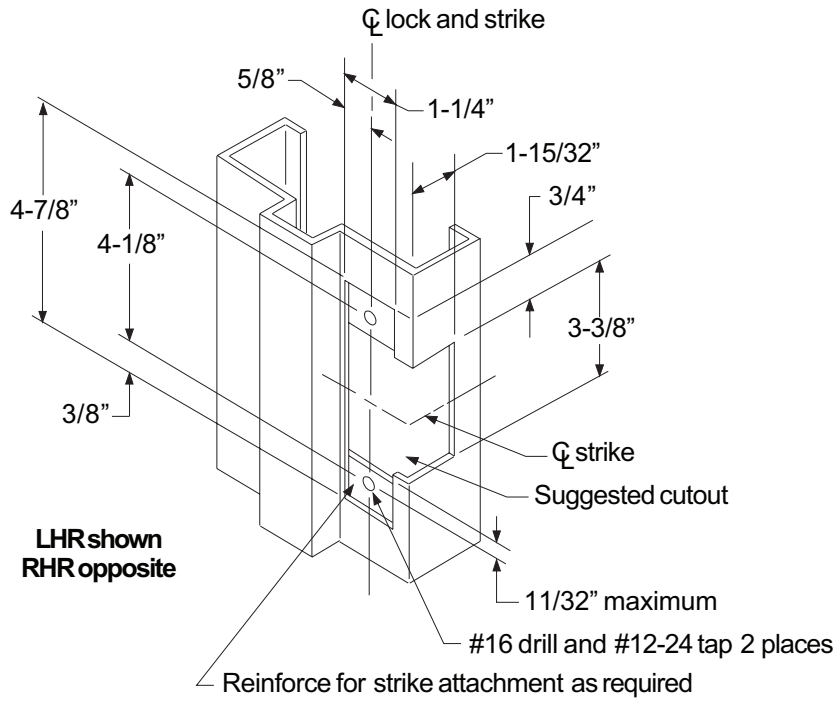


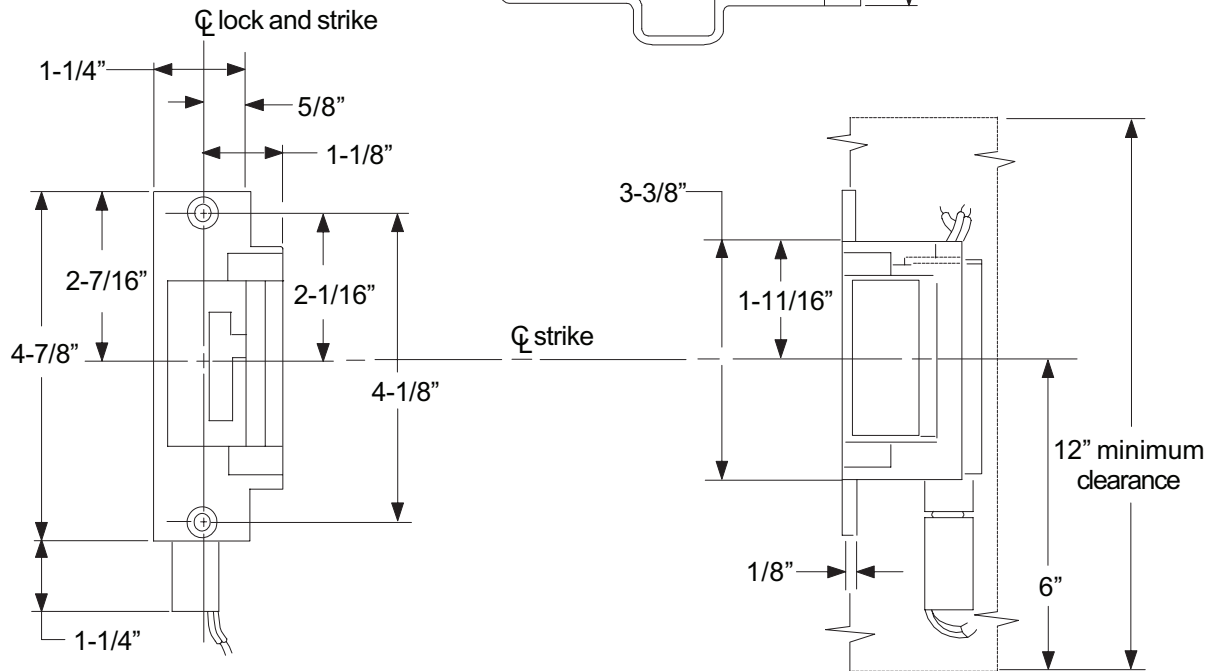
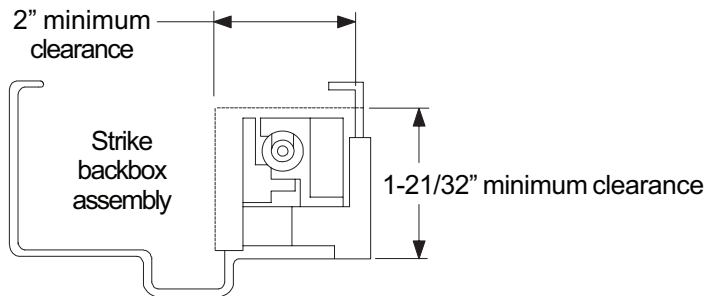
Figure 5



89/336/EEC



**Frame Preparation for Strike**



**Strike Dimensions and Required Clearances**



# 6211AL/6211ALDS

# VON DUPRIN

931221-00

Electric Strike, Single Door Aluminum Frame Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6211ALDS only.)
4. Install insert for auxiliary bolt operation (Figure 2).

5. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
6. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 3). If not, uninstall strike, adjust (Figure 4), and reinstall.
7. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 5). (Tripper on 6211ALDS only.)
8. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.



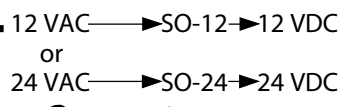
**SOLENOID POWER REQUIREMENTS**  
 Yellow solenoid wires: 12 VDC, 0.57 A  
 Black solenoid wires: 24 VDC, 0.29 A  
 (also shown on strike label)

Wiring for DC supply

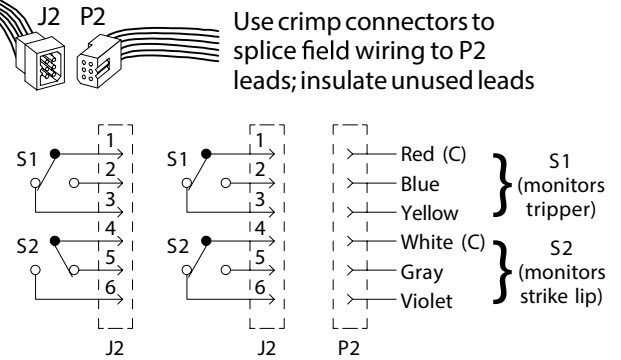
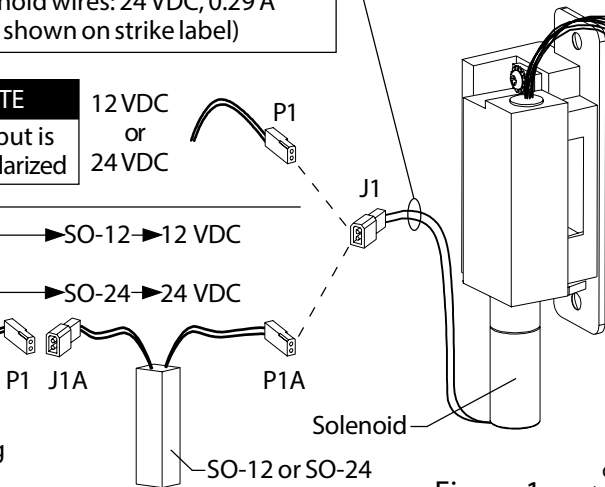
**NOTE**  
 DC input is nonpolarized



Wiring for AC supply



Use crimp connectors to splice field wiring to P1 leads



Fail safe (FS)    Fail secure (FSE)  
 Switches shown with tripper depressed, strike lip closed and locked (switches and tripper on 6211ALDS only)

**SWITCH RATINGS**  
 Standard: 5 A, 30 VDC  
 Gold: 0.25 A, 30 VDC

Figure 1

NOTE:  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

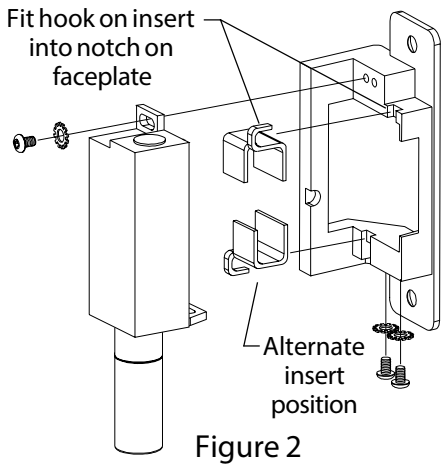


Figure 2

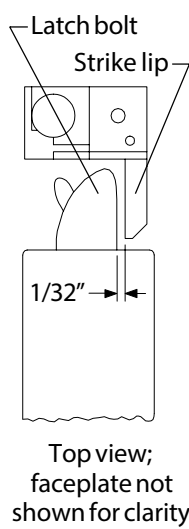


Figure 3

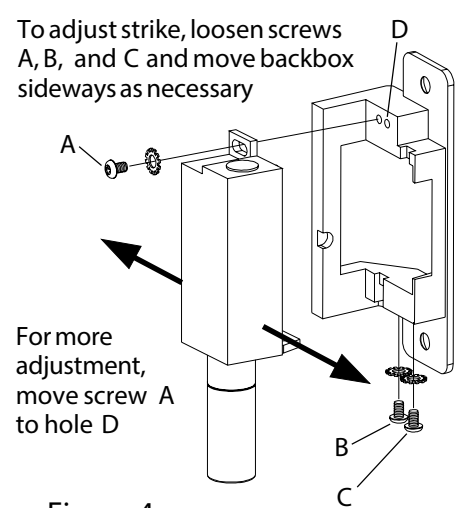


Figure 4

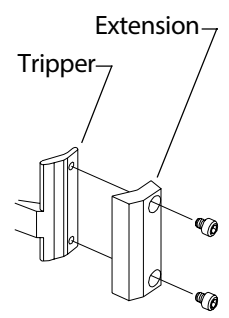
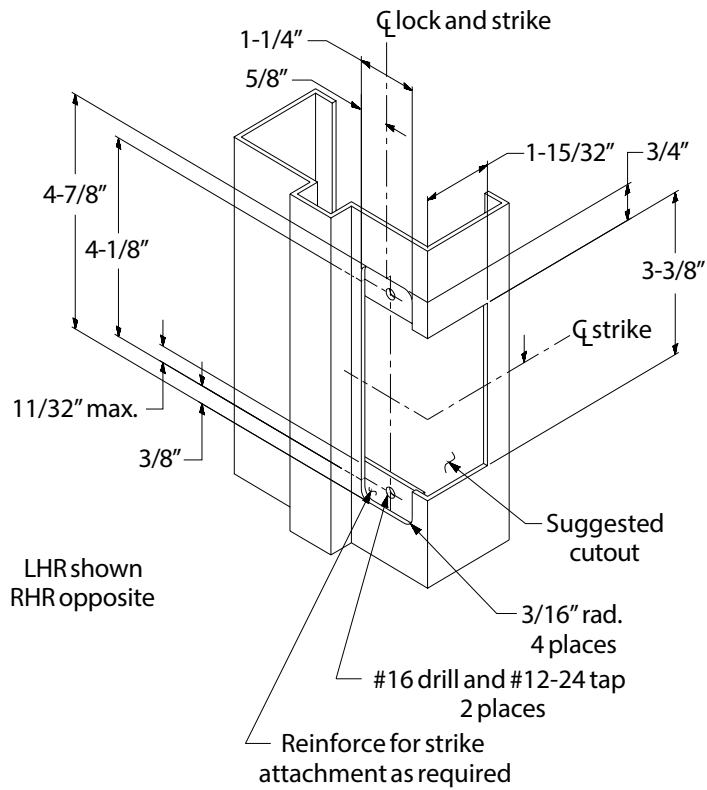


Figure 5

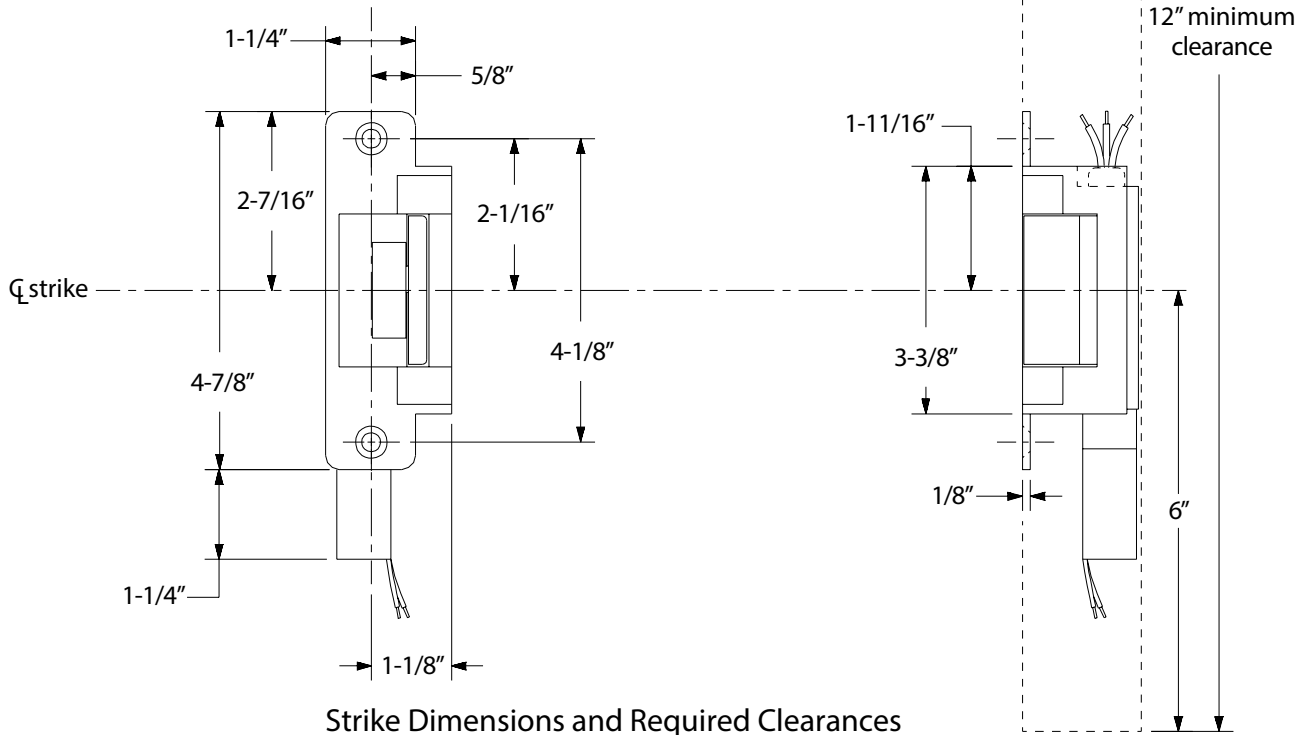
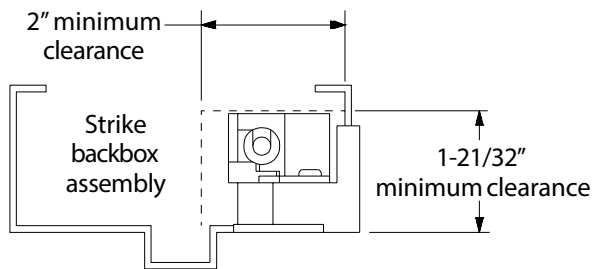


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**Frame Preparation for Strike**



**Strike Dimensions and Required Clearances**





# 6211WF/6211WFDS

# VON DUPRIN

931218-00

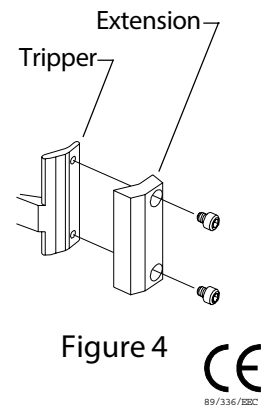
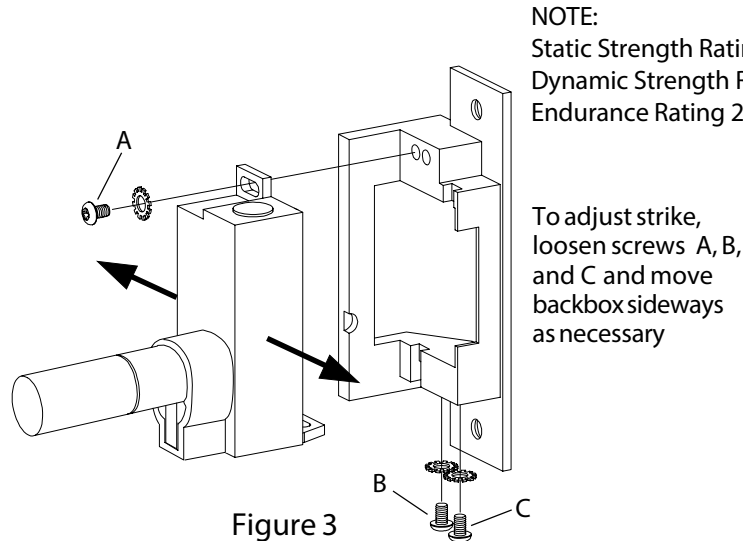
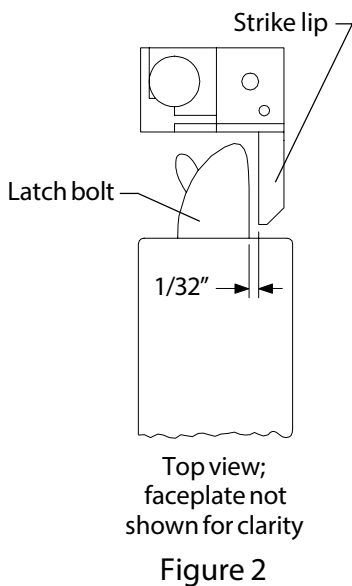
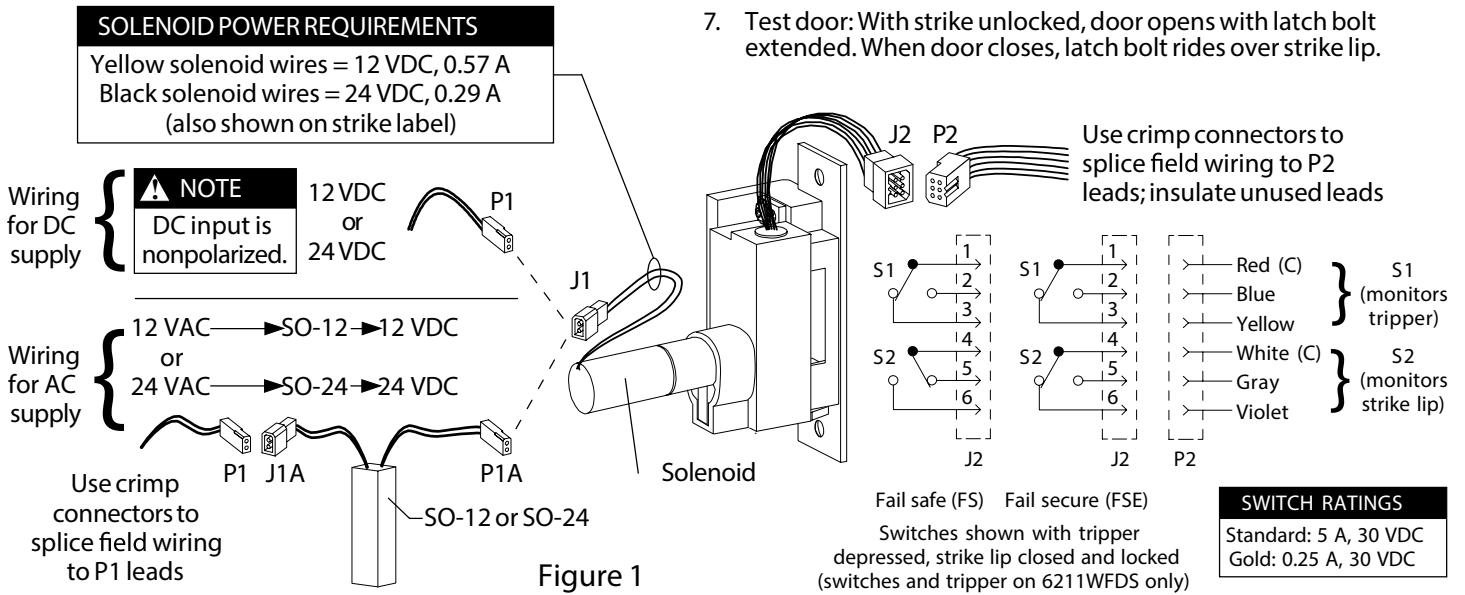
Electric Strike, Single Door Wood Frame Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

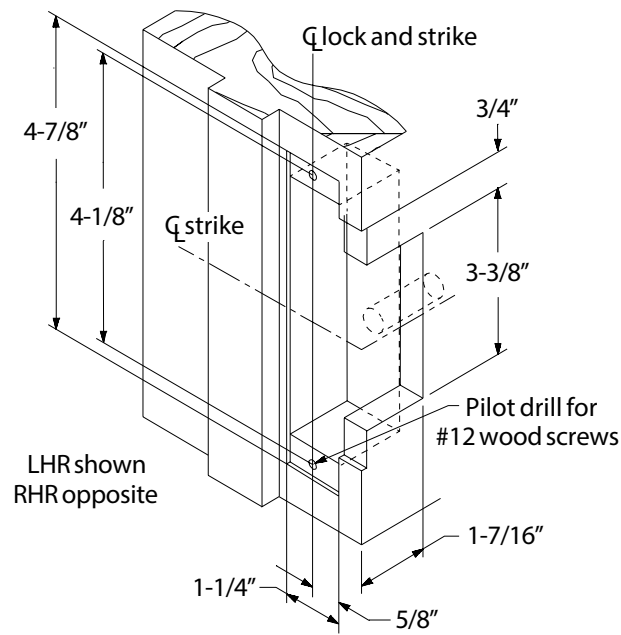
1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6211WFDS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6211WFDS only.)
7. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

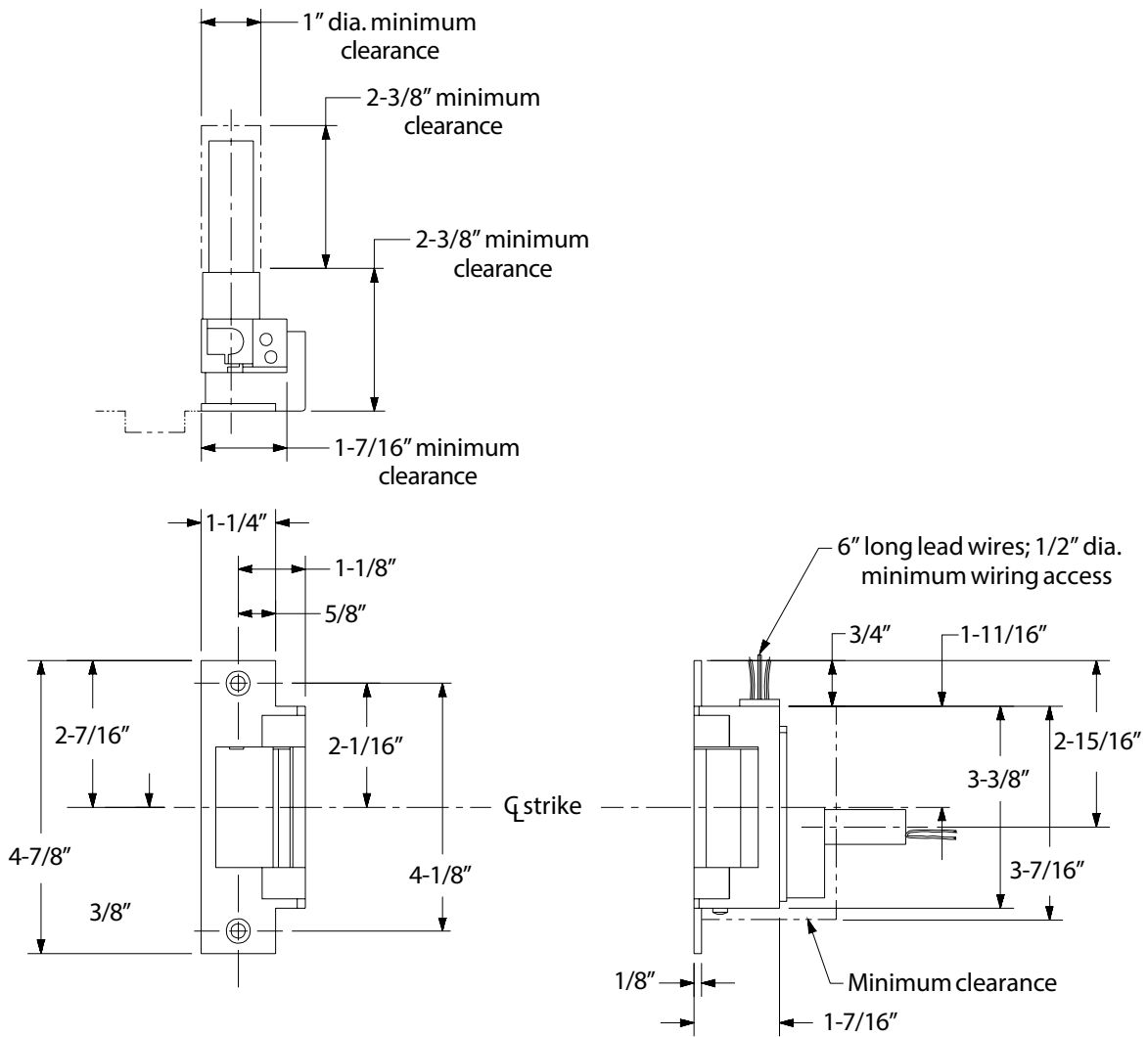


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Door Preparation for Strike



Strike Dimensions and Required Clearances



931228-00

# 6212/6212DS

# VON DUPRIN

Electric Strike, Single Door Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6212DS only.)
4. Install insert for auxiliary bolt operation (Figure 2).

5. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
6. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 3). If not, uninstall strike, adjust (Figure 4), and reinstall.
7. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 5). (Tripper on 6212DS only.)
8. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

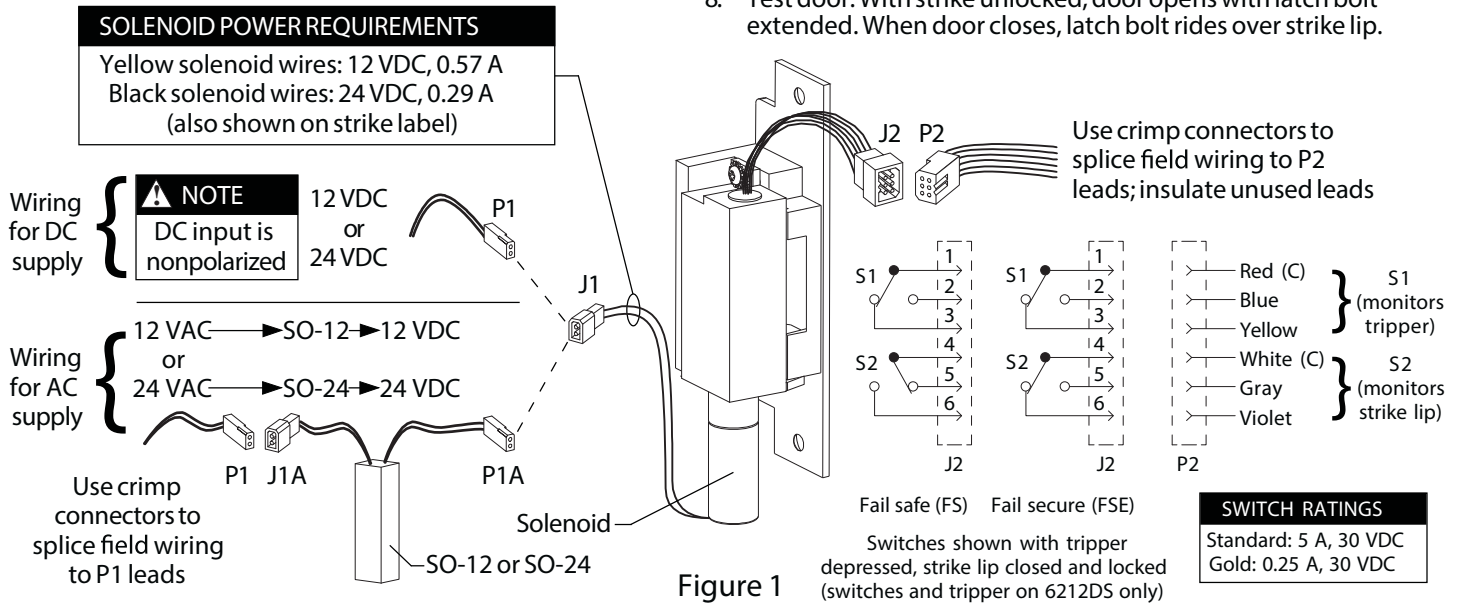
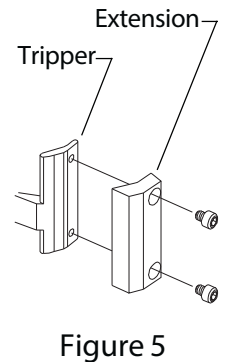
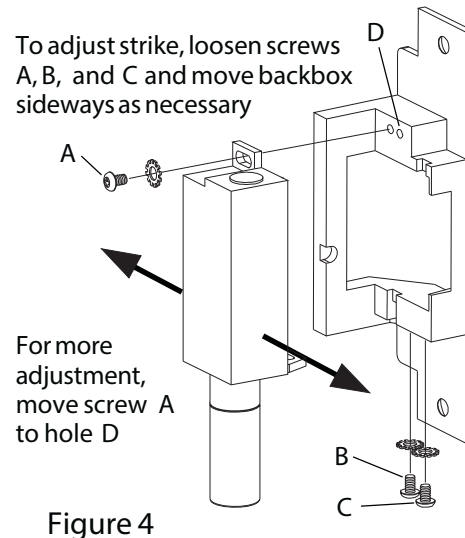
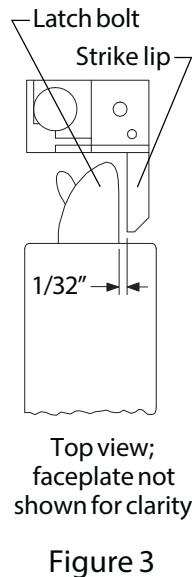
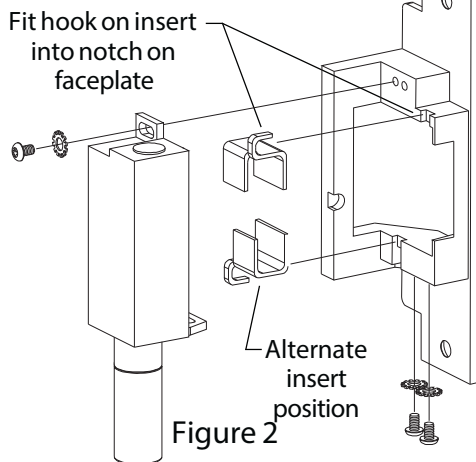


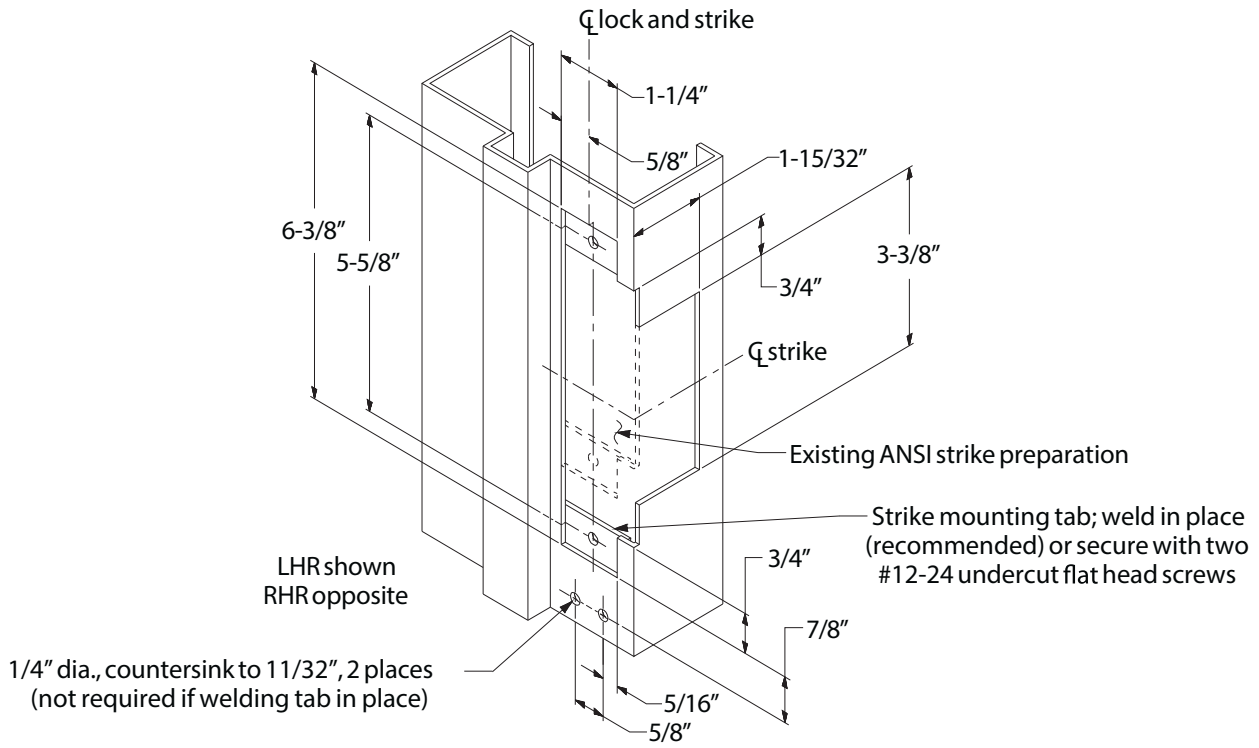
Figure 1

NOTE:  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

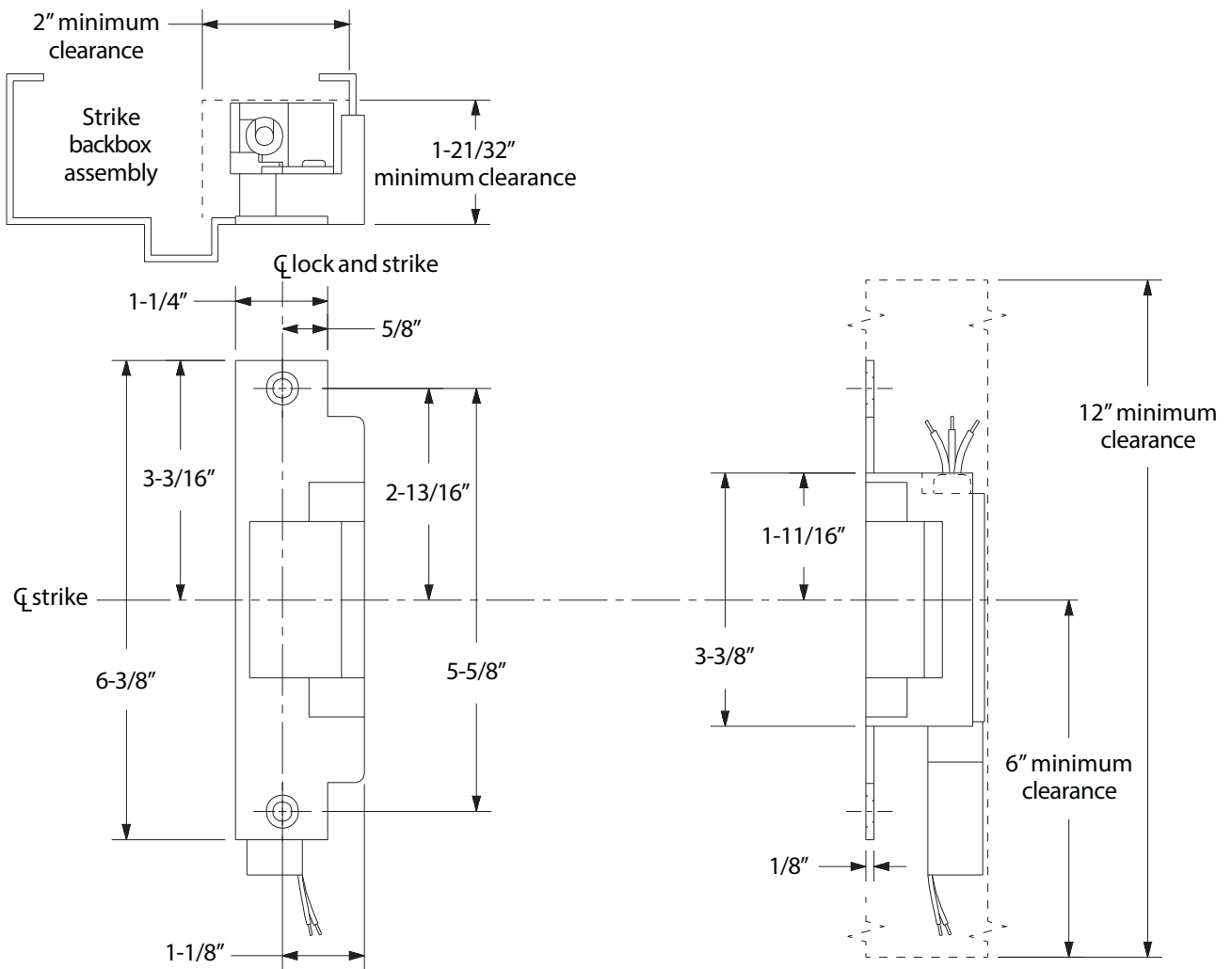


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Frame Preparation for Strike



Strike Dimensions and Required Clearances



# 6212WF/6212WFDS

# VON DUPRIN

931222-00

Electric Strike, Single Door Wood Frame Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6212WFDS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.

5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.



6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6212WFDS only.)

7. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

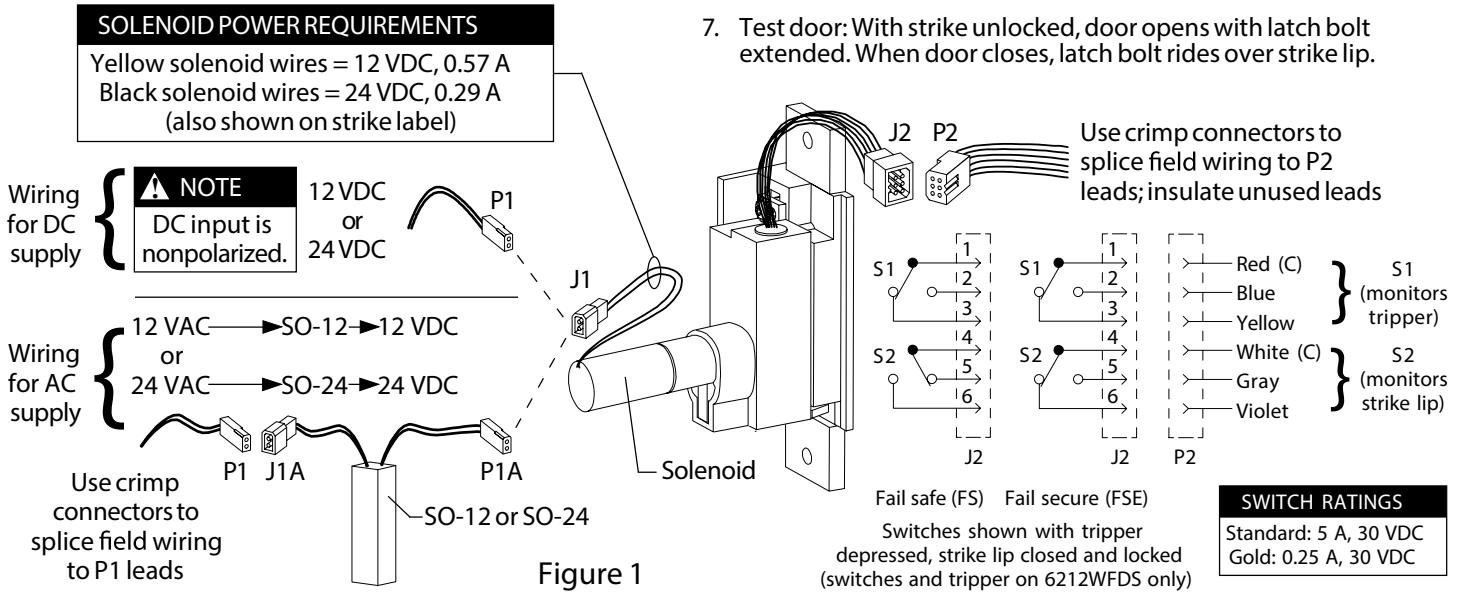


Figure 1

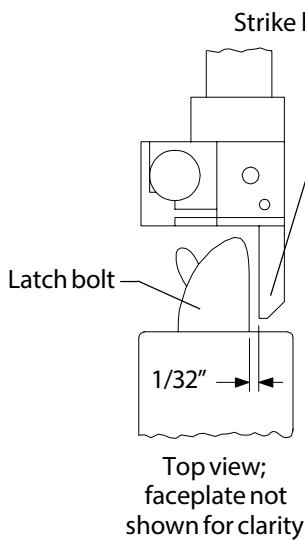


Figure 2

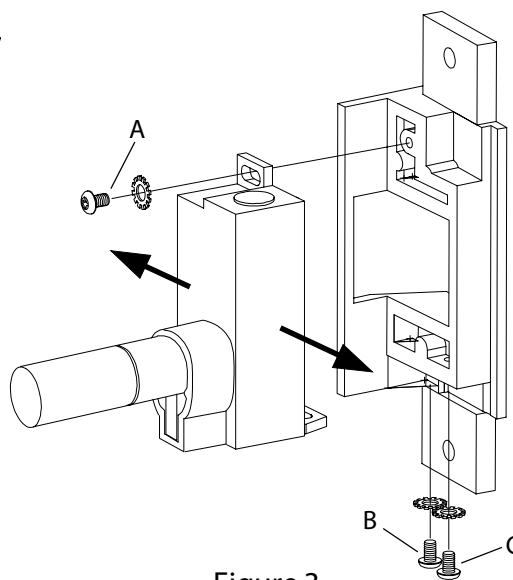


Figure 3

NOTE:  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

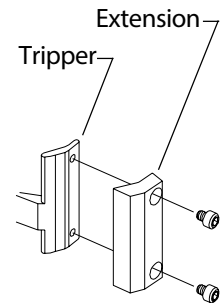
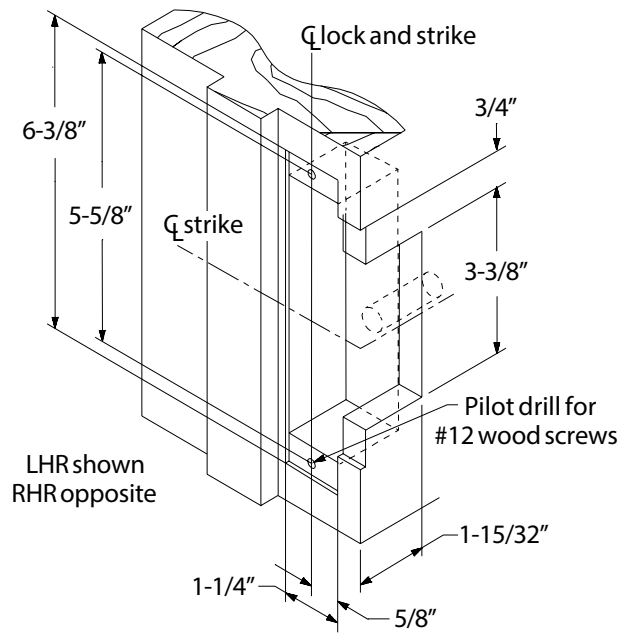


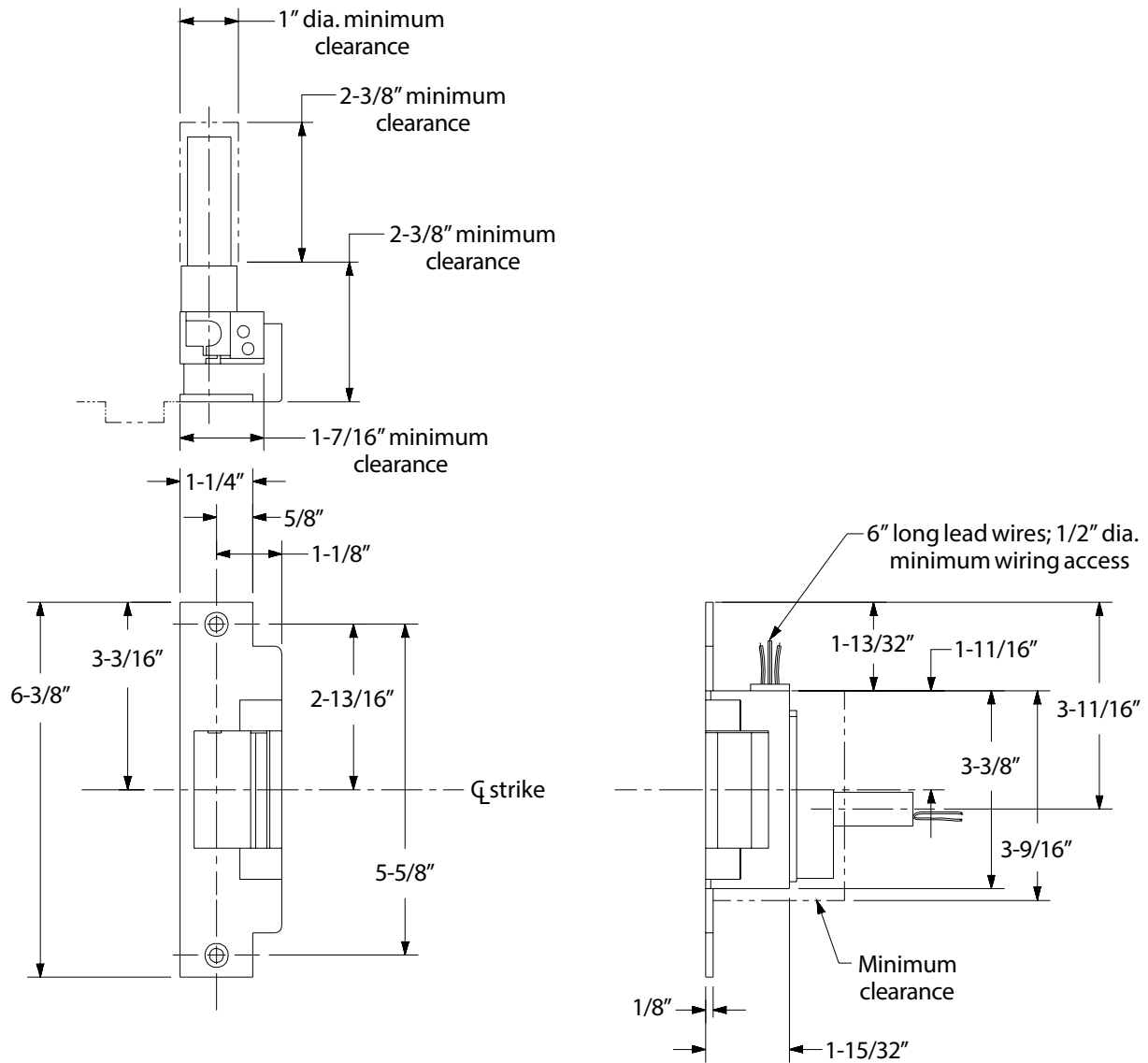
Figure 4



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Door Preparation for Strike



Strike Dimensions and Required Clearances



931223-00

# 6213/6213DS

# VON DUPRIN®

Electric Strike, Single Door Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike.  
Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6213DS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6213DS only.)
7. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

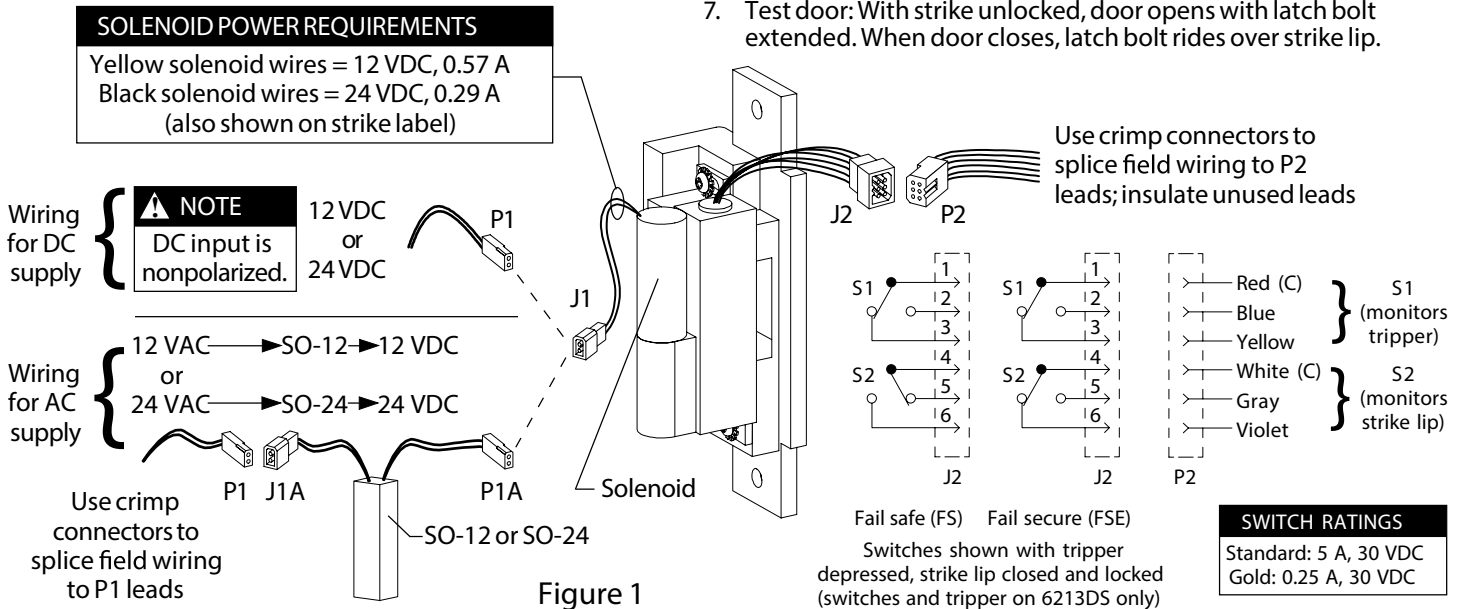


Figure 1

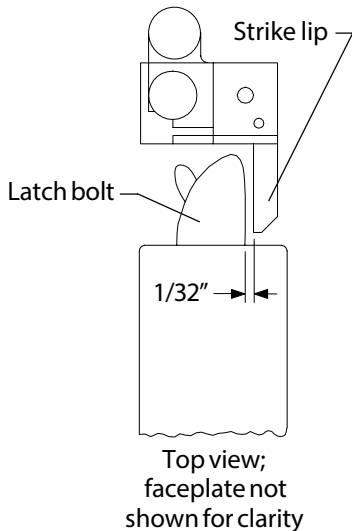


Figure 2

To adjust strike, loosen screws A, B, and C and move backbox sideways as necessary

For more adjustment, move screw A to hole D

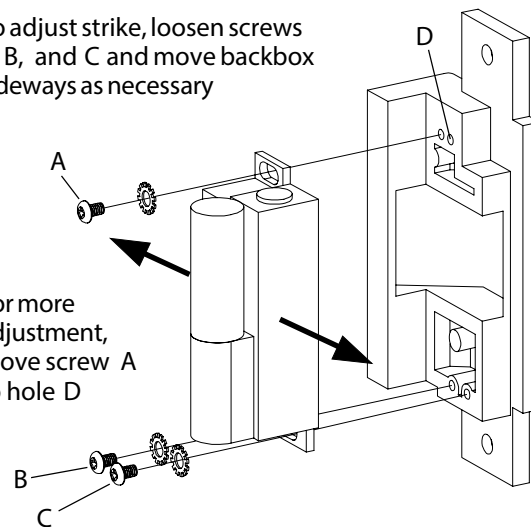


Figure 3

NOTE:  
Static Strength Rating 1500 lb.  
Dynamic Strength Rating 70ft.-lb.  
Endurance Rating 250,000 c.

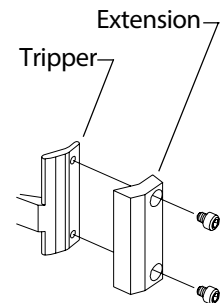


Figure 4

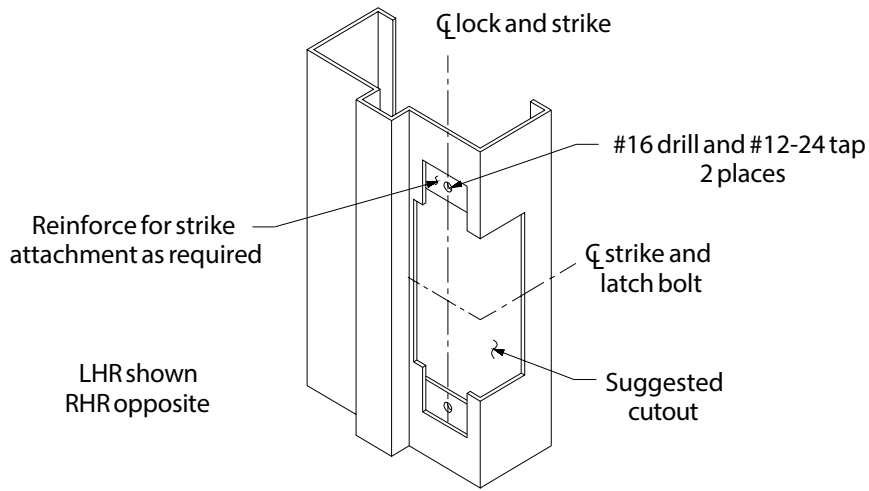


89/336/BBC

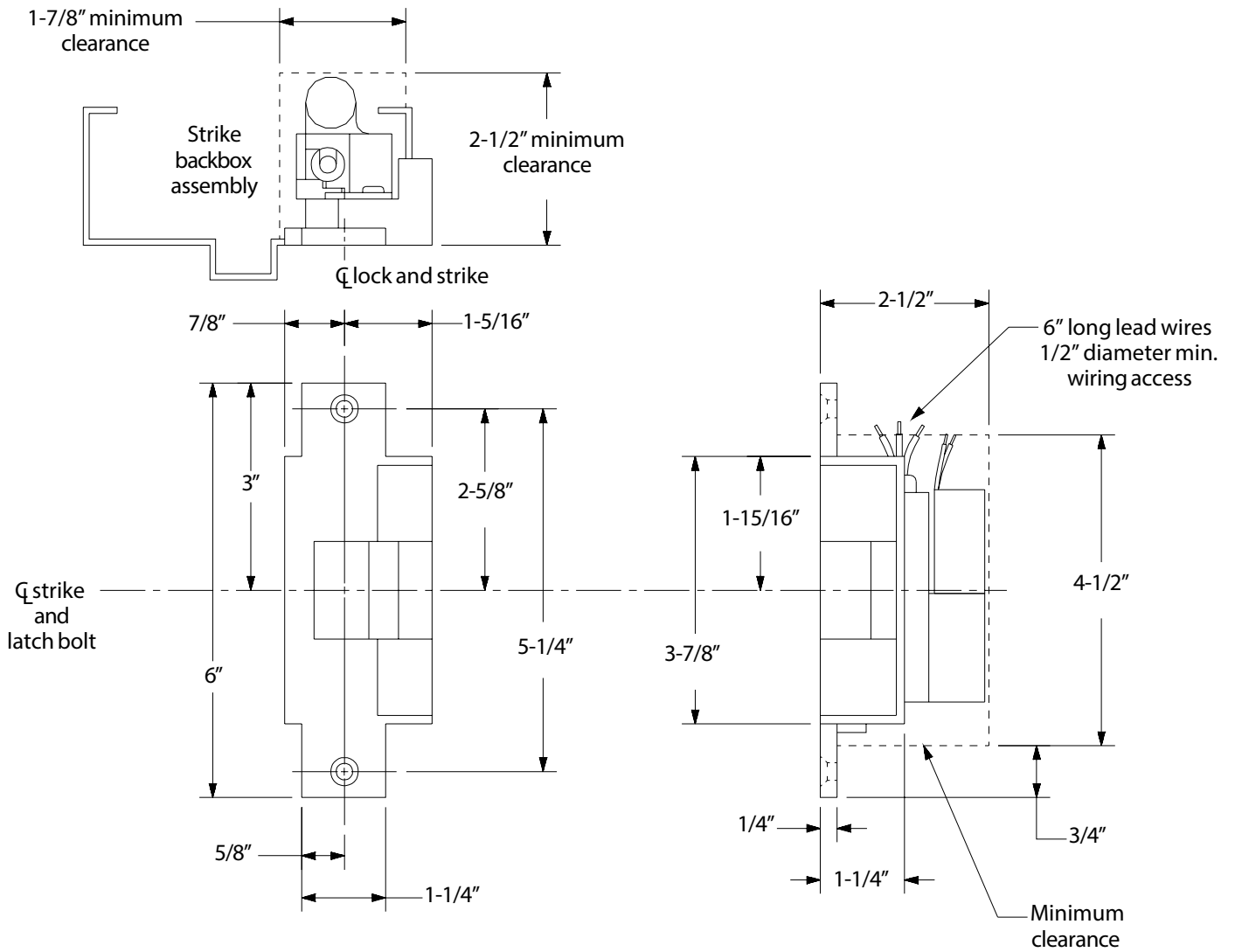


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### Frame Preparation for Strike



### Strike Dimensions and Required Clearances





931233-00

# 6214/6214DS

# VON DUPRIN®

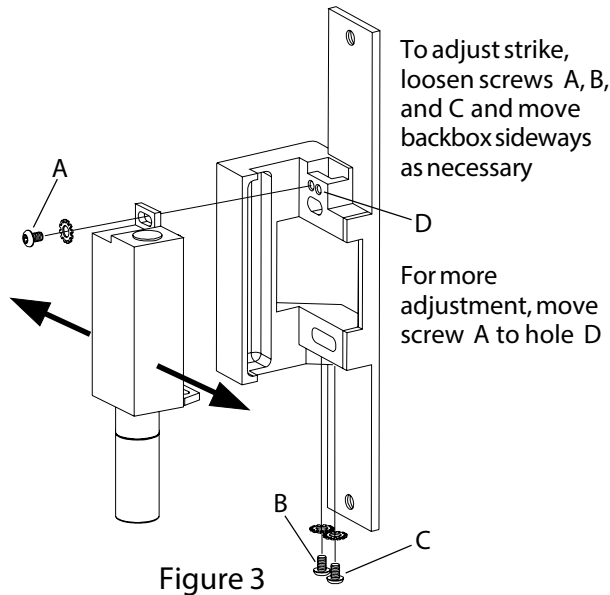
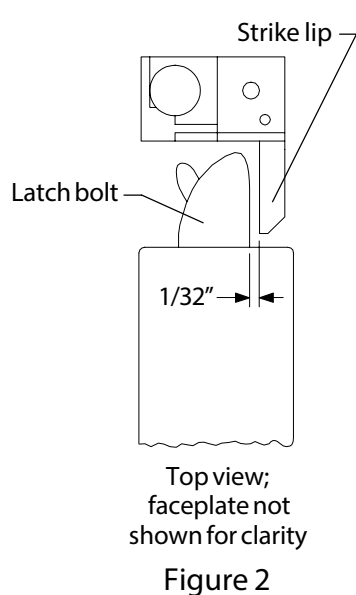
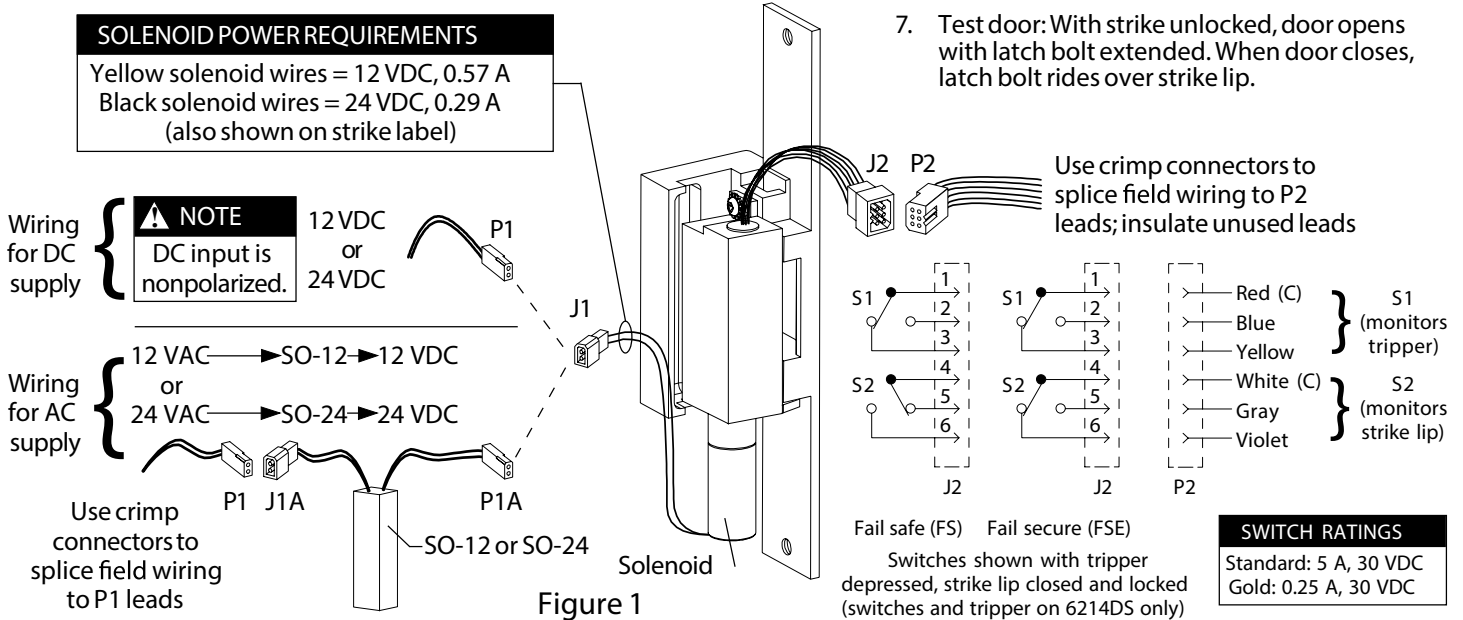
Electric Strike, Single Door Mortise or Cylindrical Application

Installation Instructions

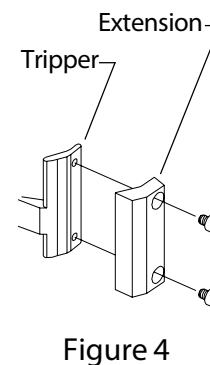
Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6214DS only.)

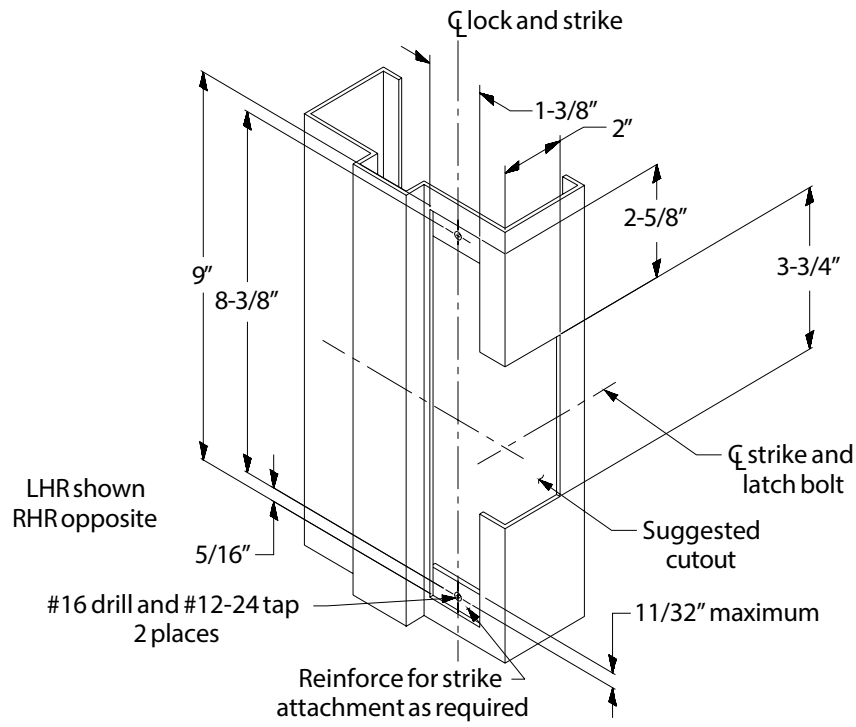
4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6214DS only.)



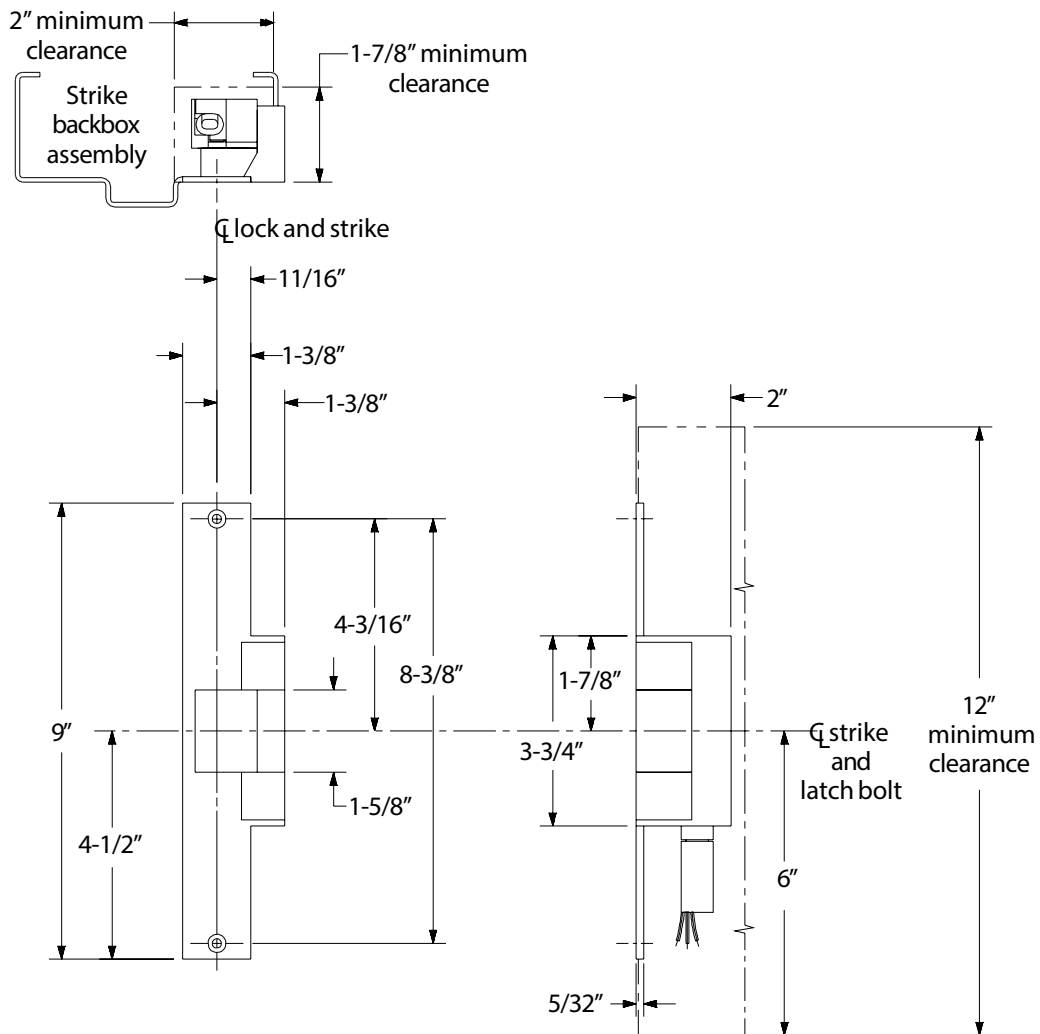
NOTE:  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.



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Frame Preparation for Strike



Strike Dimensions and Required Clearances



931234-00

# 6215/6215DS

# VON DUPRIN®

Electric Strike, Single Door Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6215DS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6215DS only.)

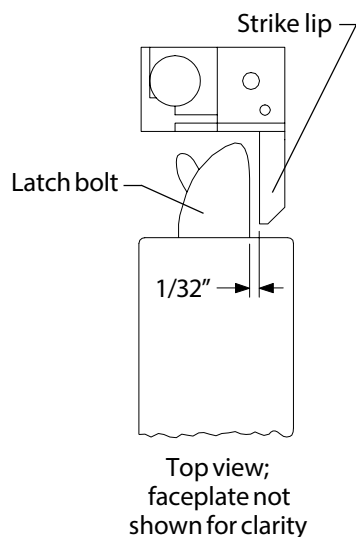
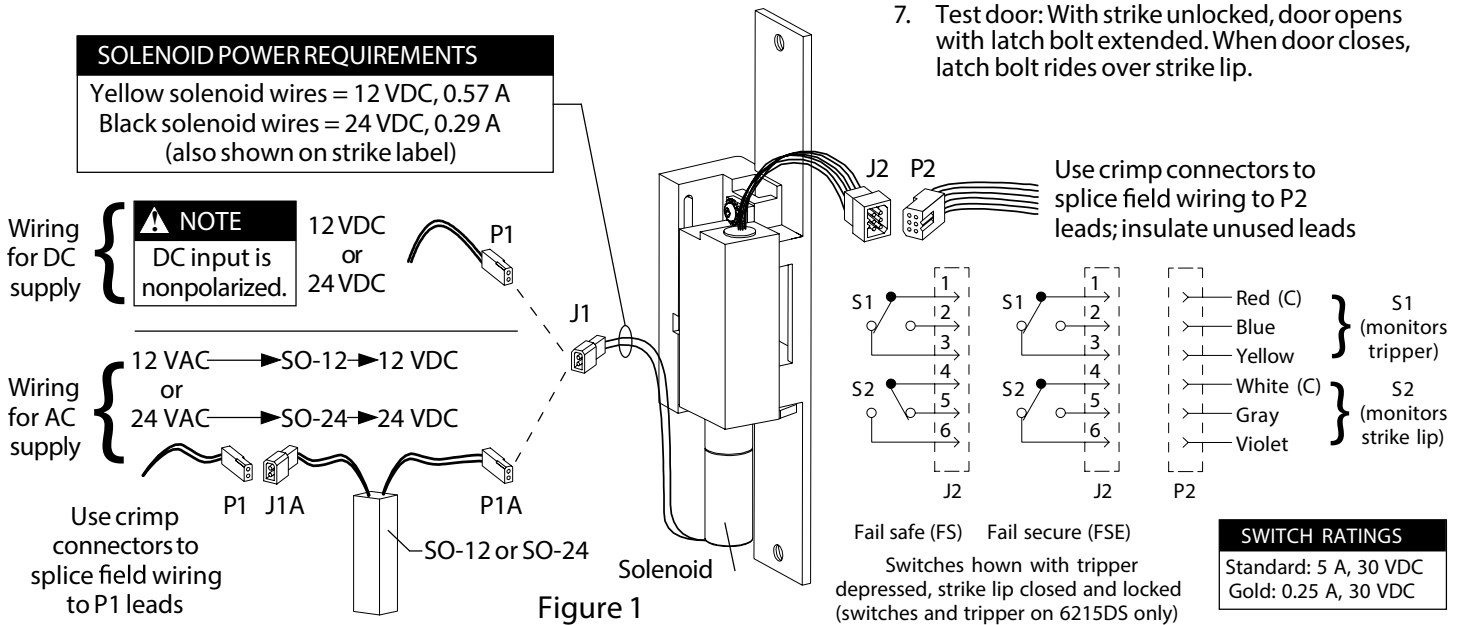


Figure 2

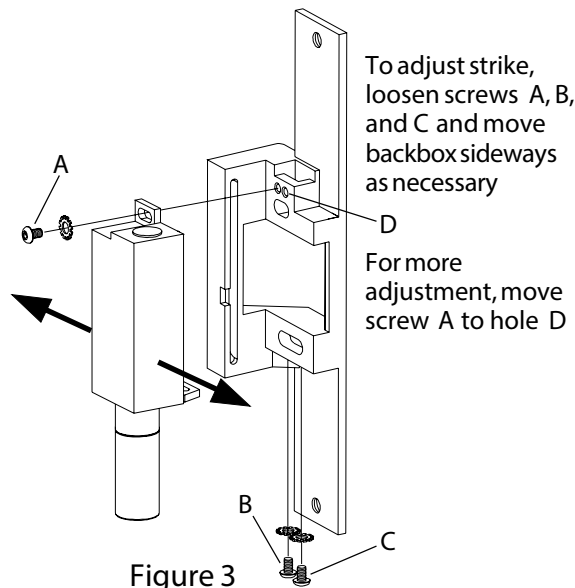


Figure 3

**NOTE:**  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

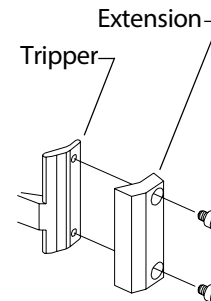
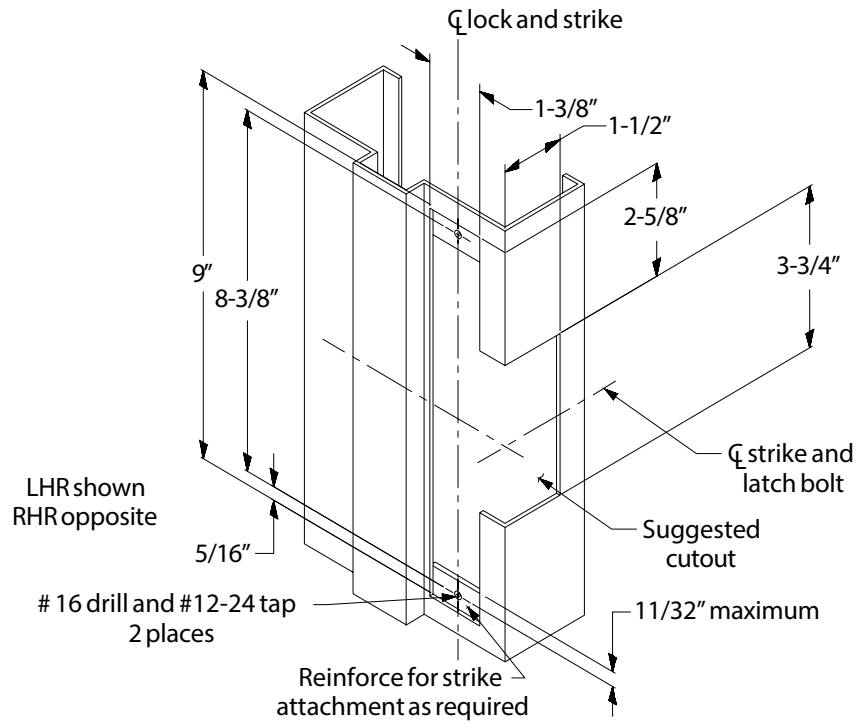


Figure 4

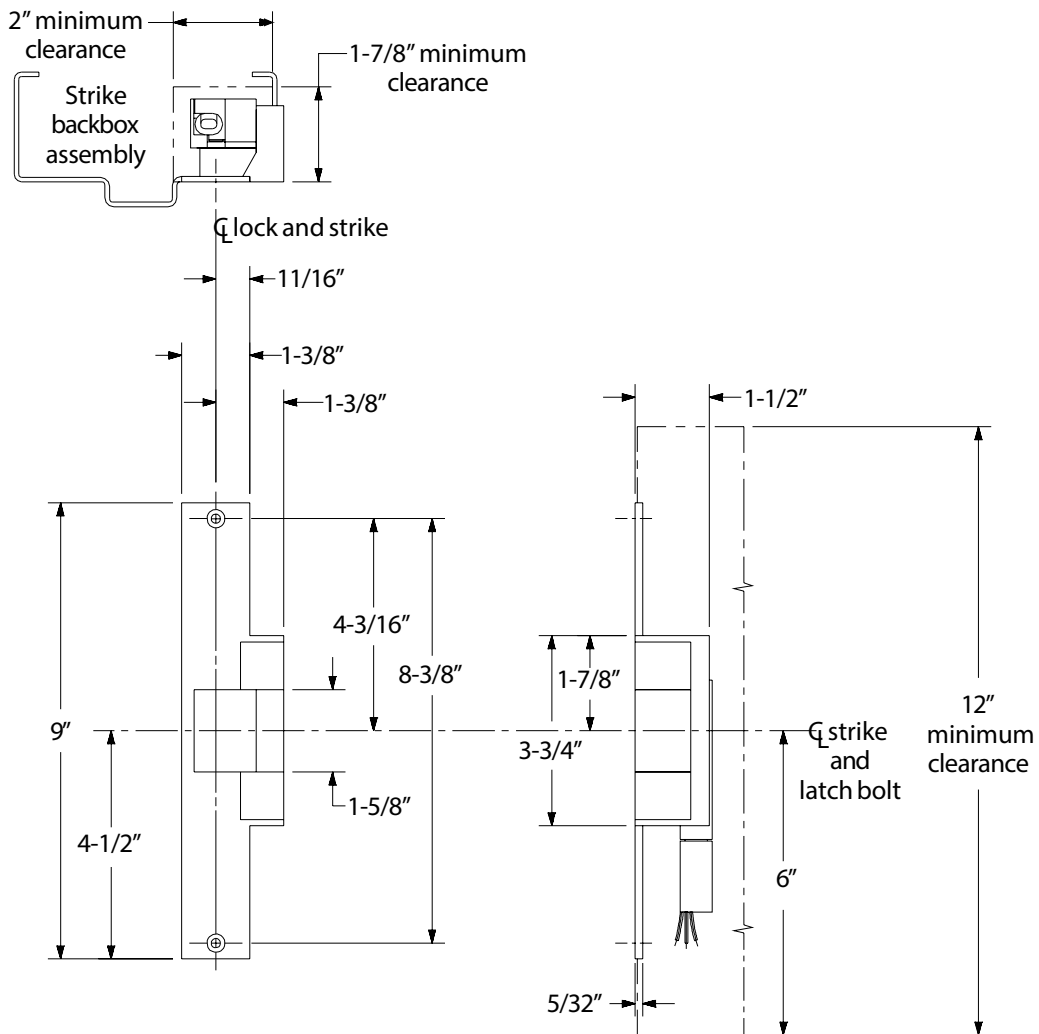


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Frame Preparation for Strike



Strike Dimensions and Required Clearances



931235-00

# 6216/6216DS

# VON DUPRIN®

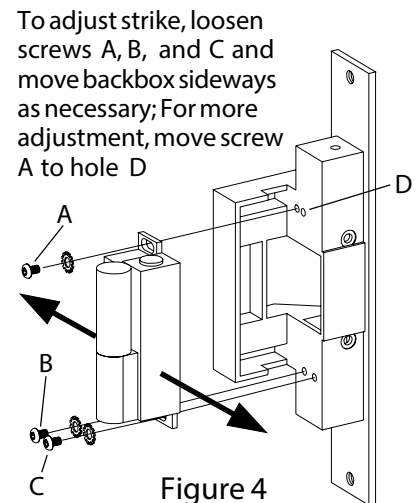
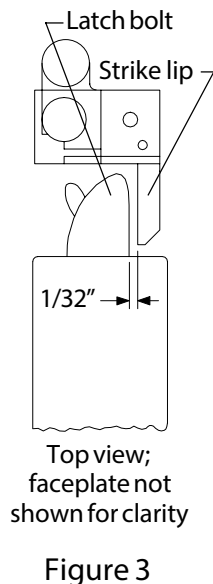
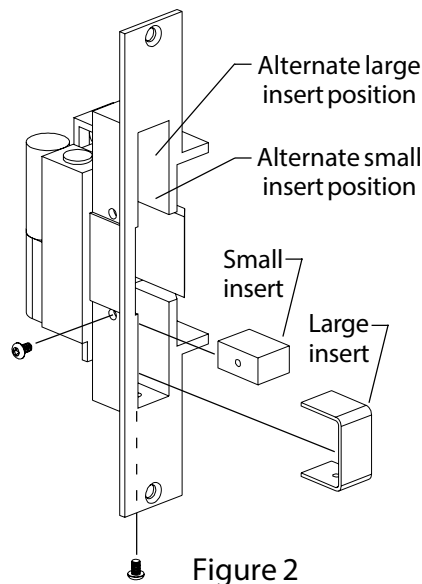
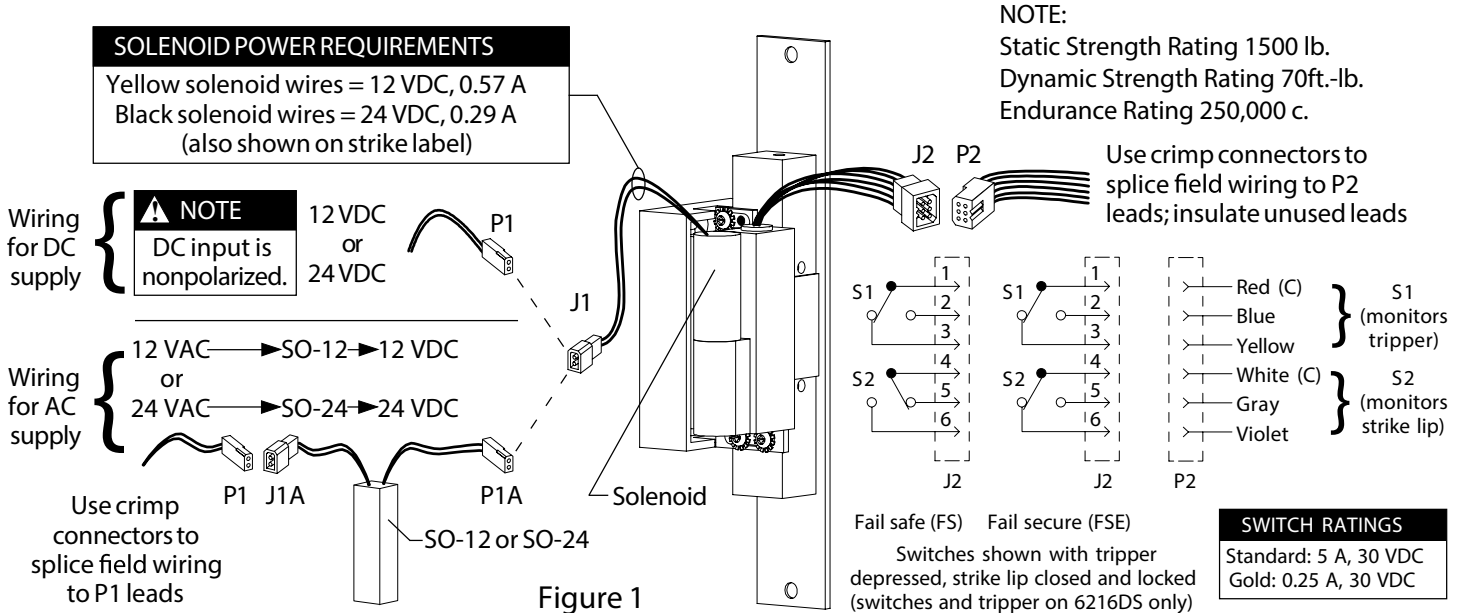
Electric Strike, Single Door Mortise with Deadbolt Application

Installation Instructions

Note: Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare frame for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6216DS only.)
4. Install small insert for auxiliary bolt operation and large insert in unused dead bolt pocket (Figure 2).

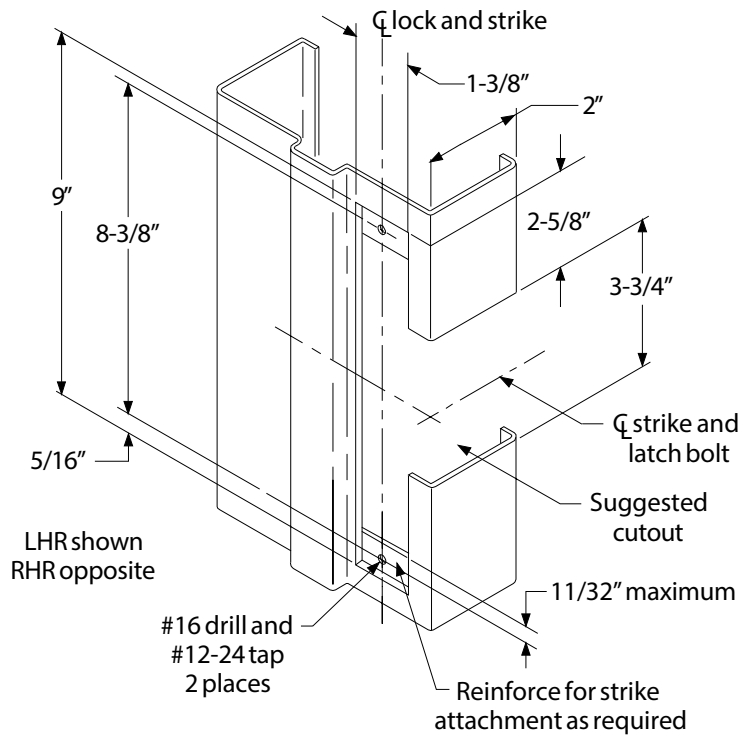
5. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
6. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 3). If not, uninstall strike, adjust (Figure 4), and reinstall.
7. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.



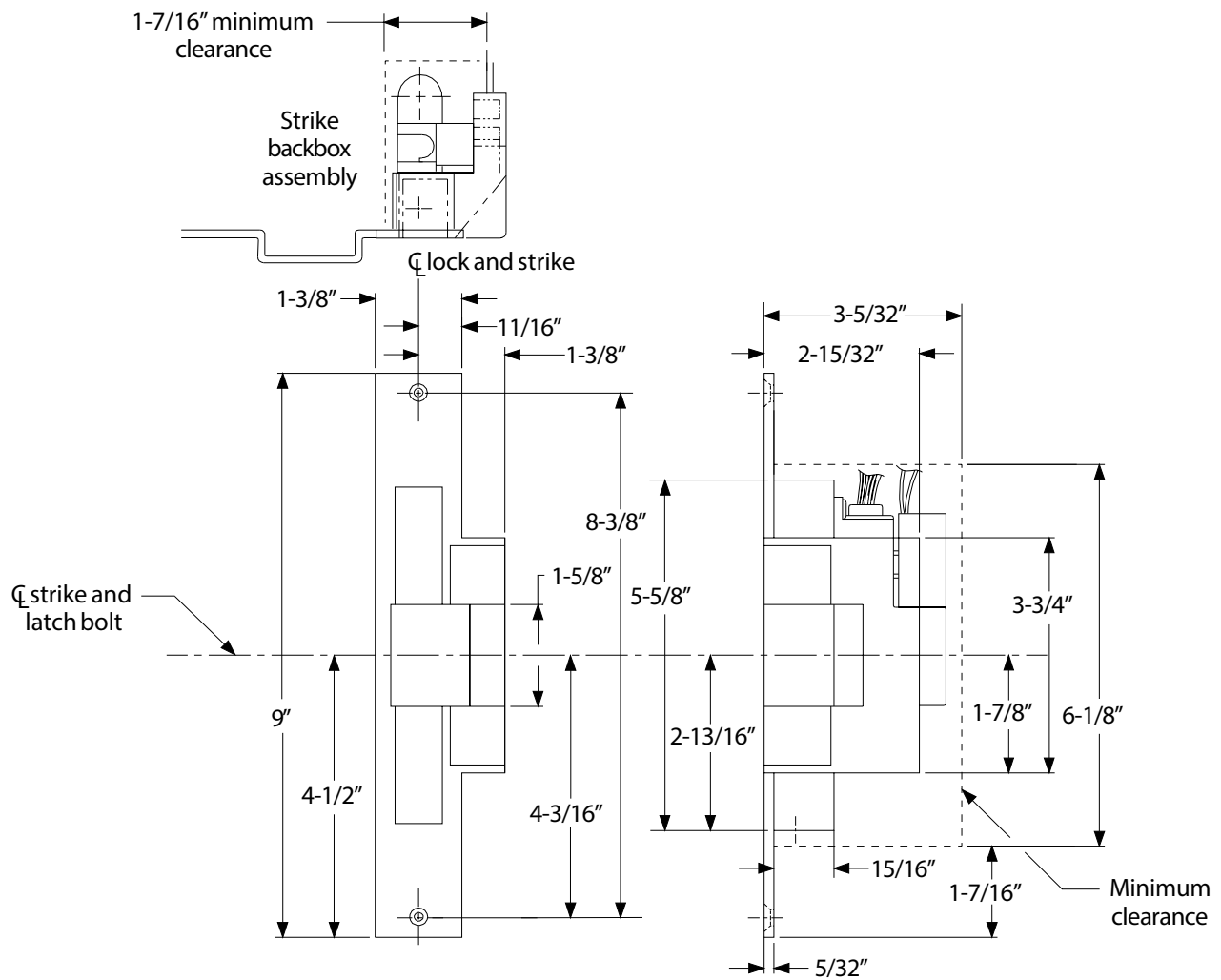
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Frame Preparation for Strike



Strike Dimensions and Required Clearances



**931224-00**

Electric Strike, Double Door Open Back Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike.  
Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1).

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

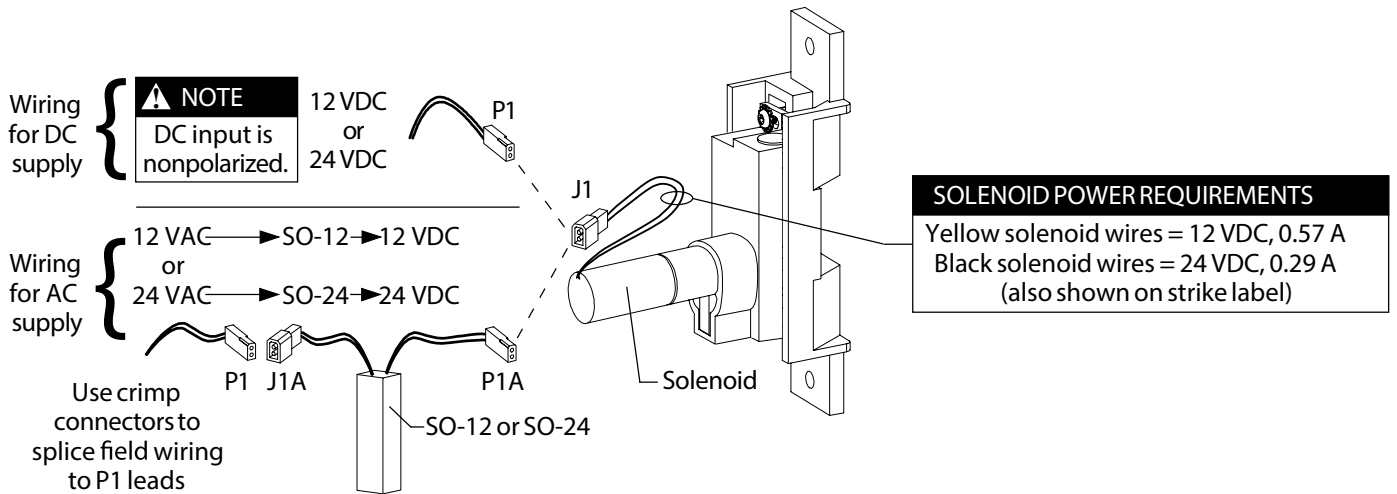


Figure 1

NOTE:  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

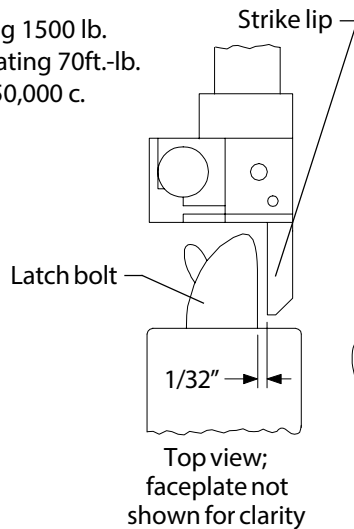


Figure 2

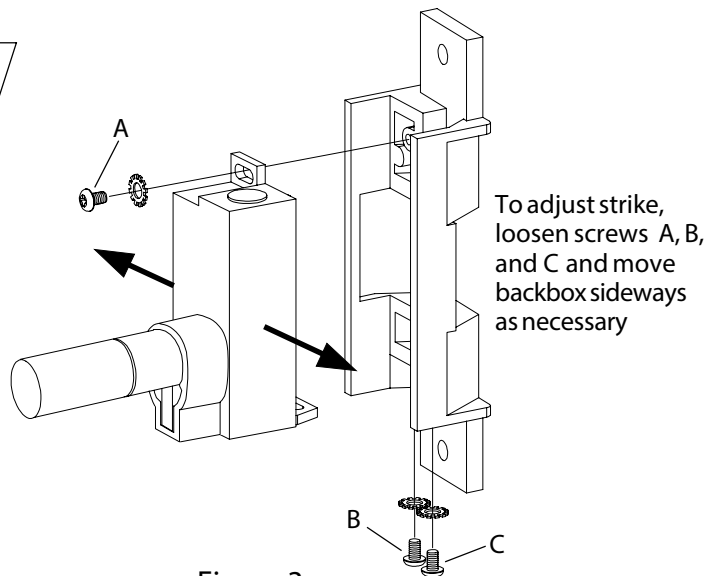
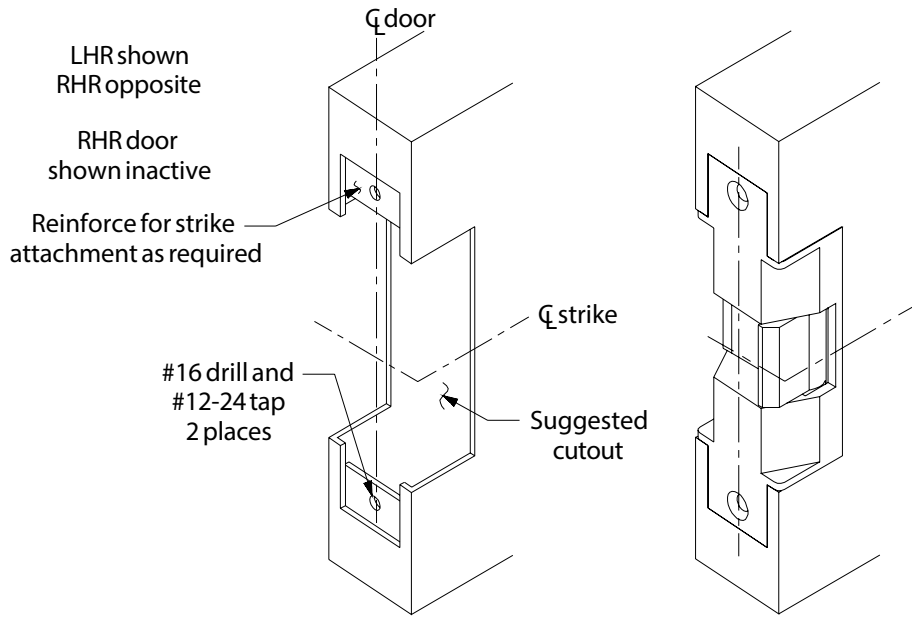
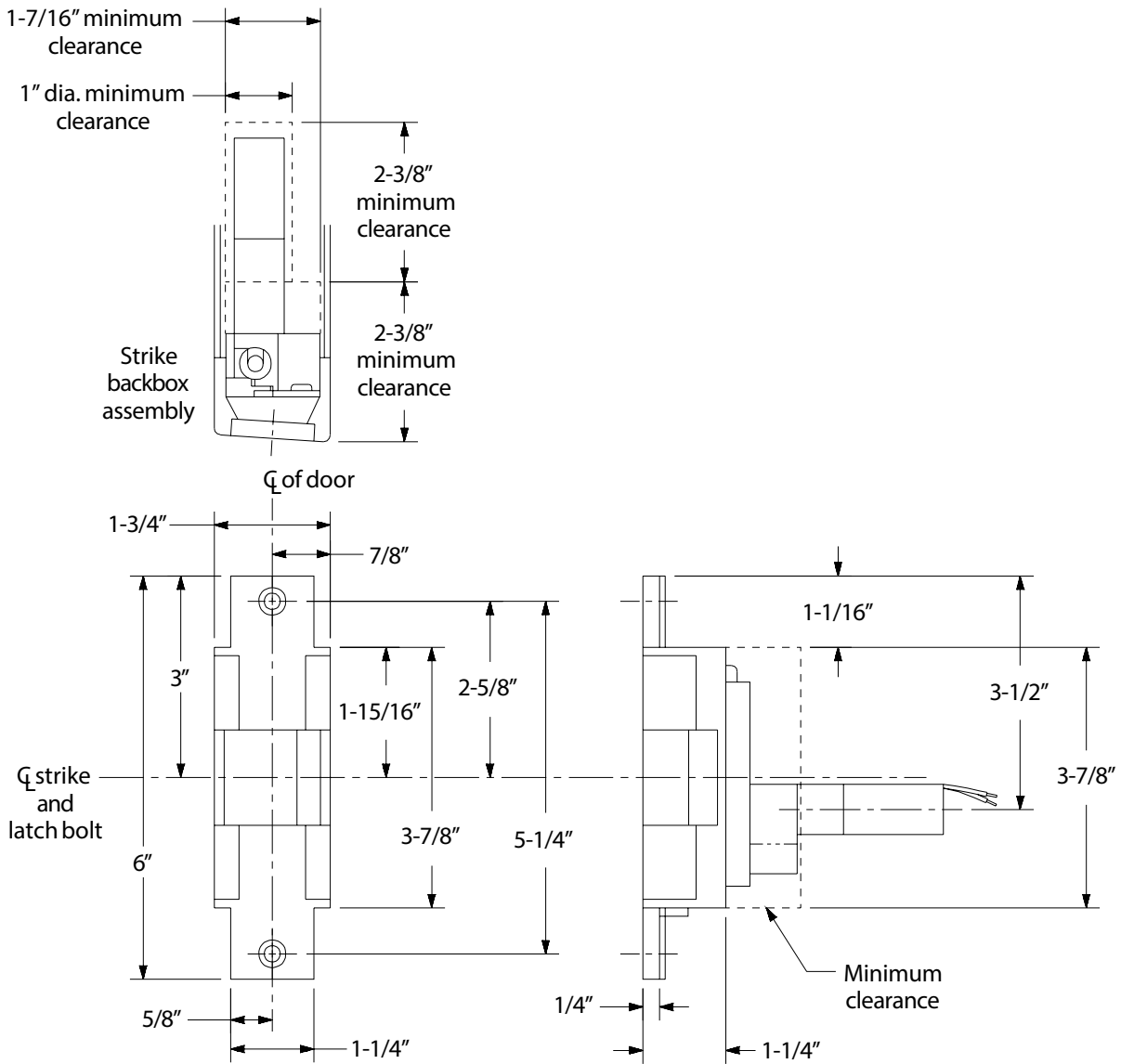


Figure 3





Door Preparation for Strike



Strike Dimensions and Required Clearances





931237-00

6222

VON DUPRIN®

Electric Strike, Double Door Open Back Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1).
4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks.

5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

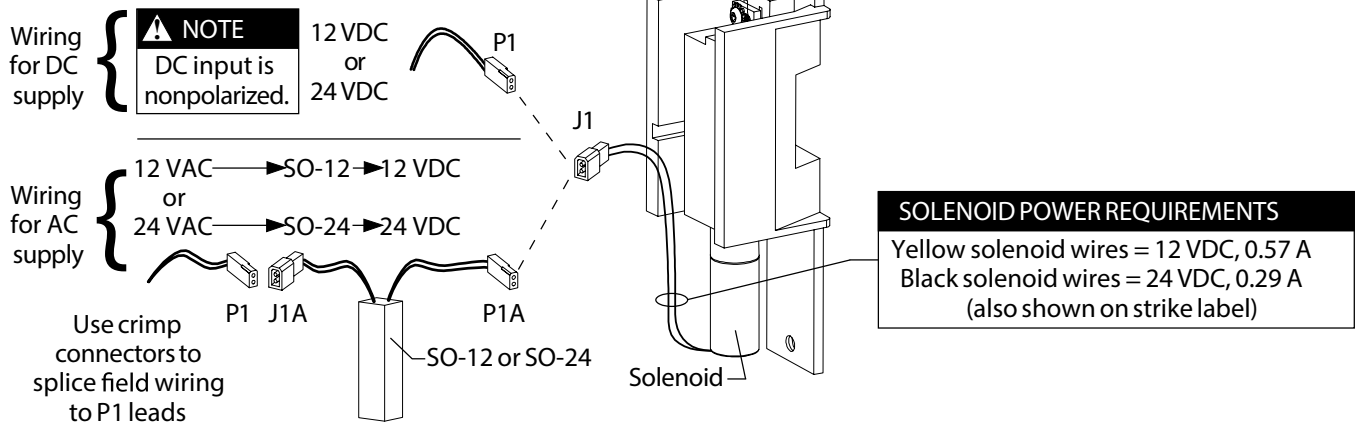


Figure 1

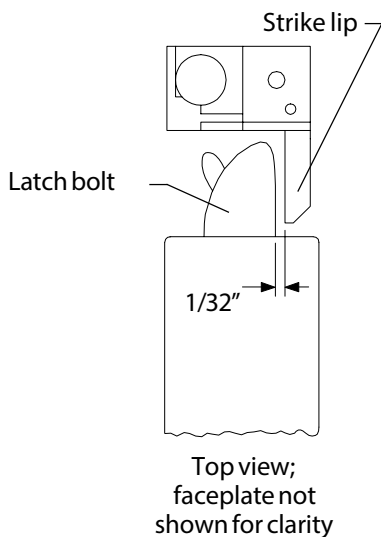


Figure 2

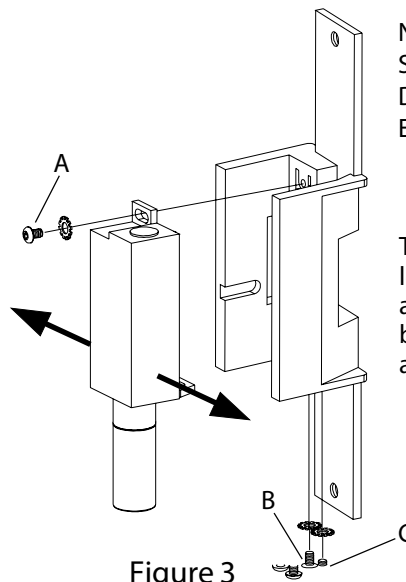
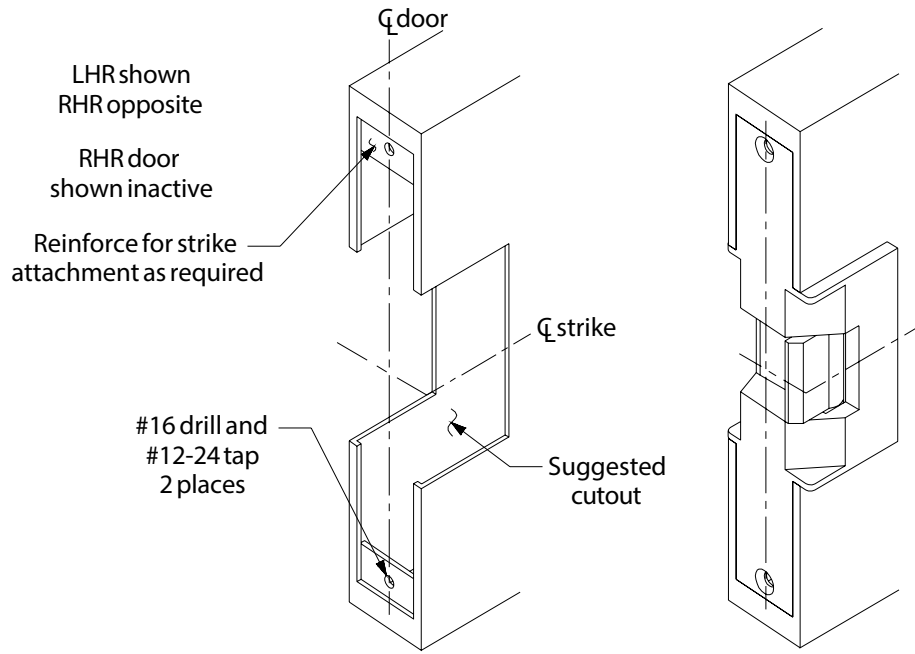


Figure 3

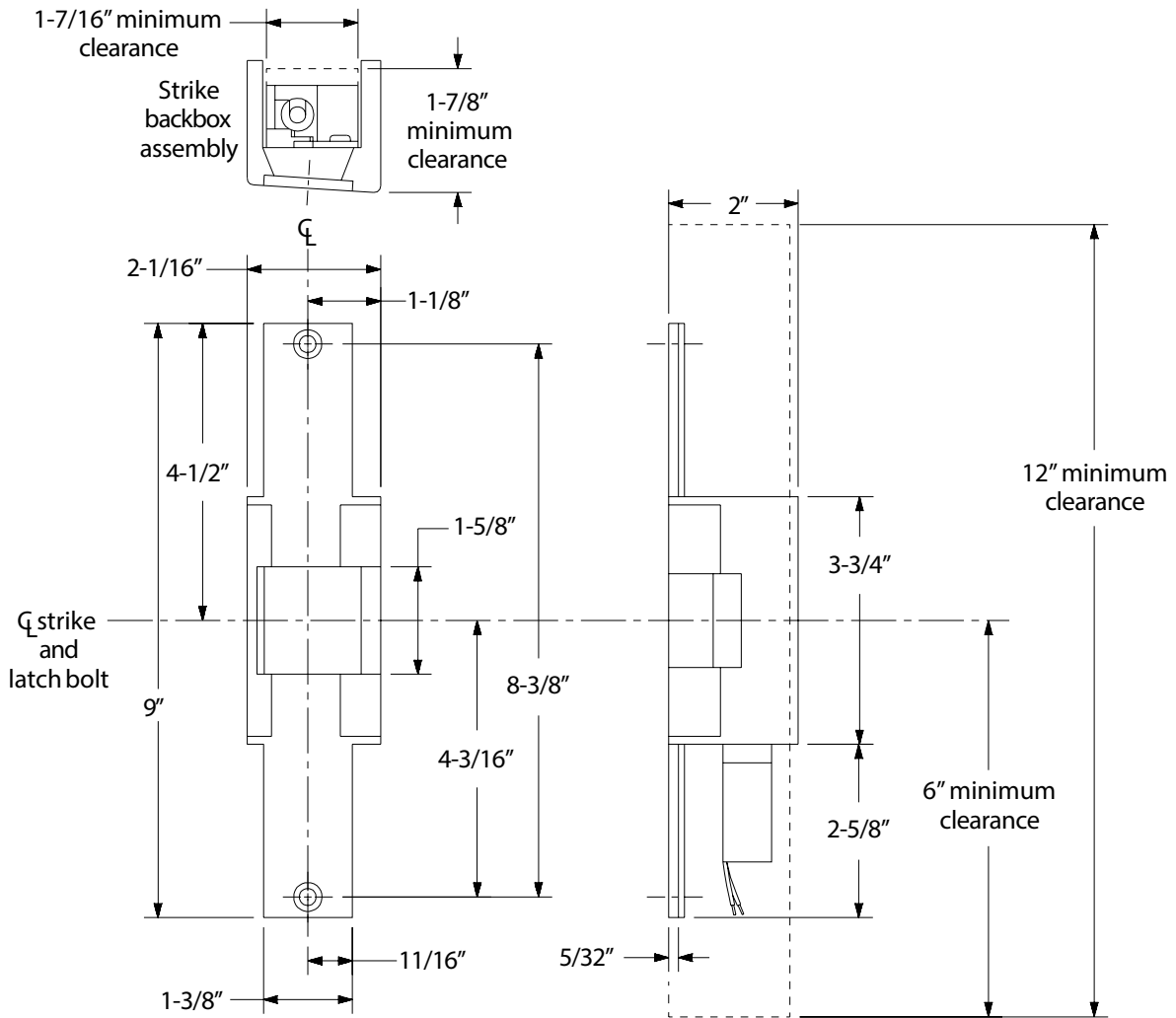


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Door Preparation for Strike



Strike Dimensions and Required Clearances



931225-00

# 6223/6223DS

# VON DUPRIN®

Electric Strike

Installation Instructions

## Double Door Closed Back Mortise or Cylindrical Application

**Notes** Deadbolt will not function with this strike.  
Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6223DS only.)

4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Failsafe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strikelip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6223DS only.)
7. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strikelip.

### SOLENOID POWER REQUIREMENTS

Yellow solenoid wires = 12VDC, 0.57A  
 Black solenoid wires = 24VDC, 0.29A  
 (also shown on strike label)

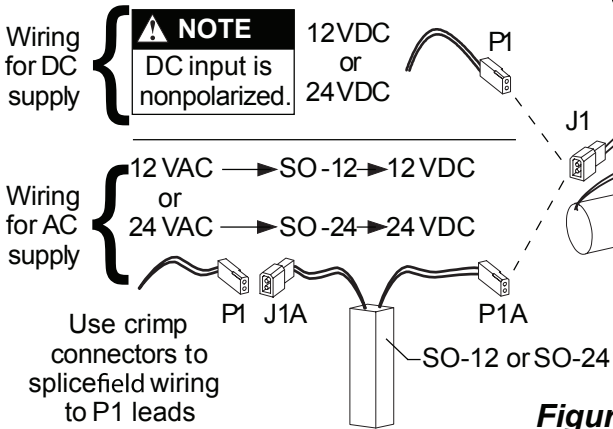
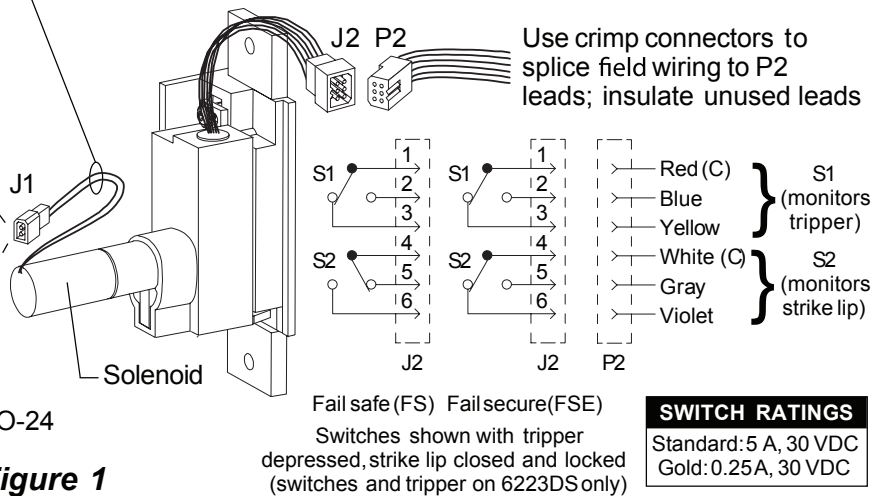


Figure 1



**SWITCH RATINGS**  
 Standard: 5 A, 30 VDC  
 Gold: 0.25A, 30 VDC

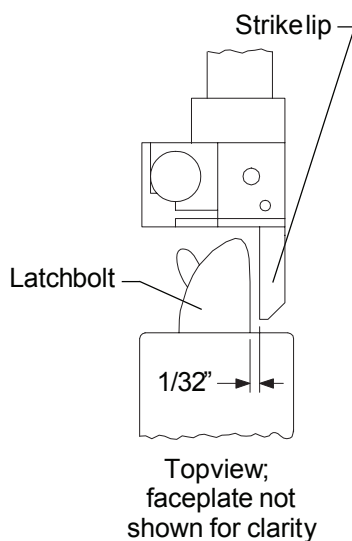


Figure 2

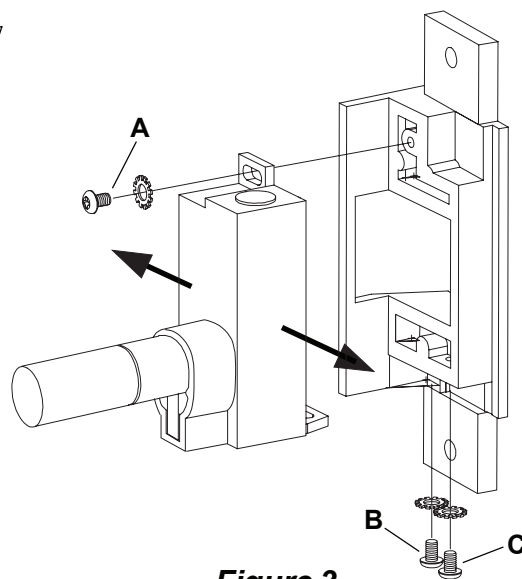


Figure 3

**NOTE:**  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

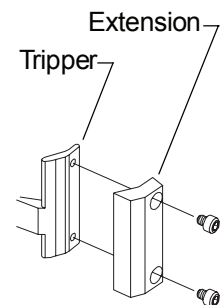
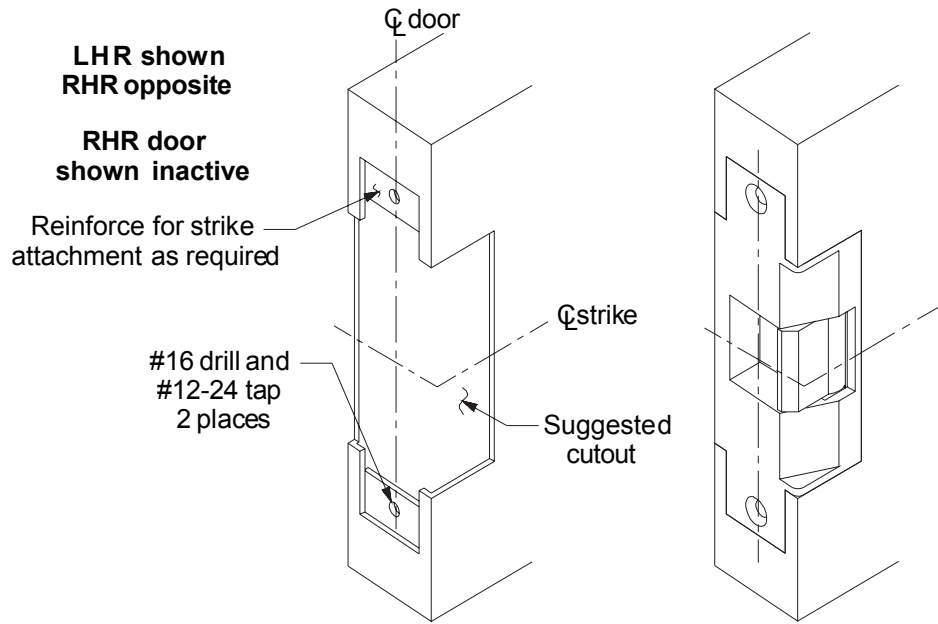


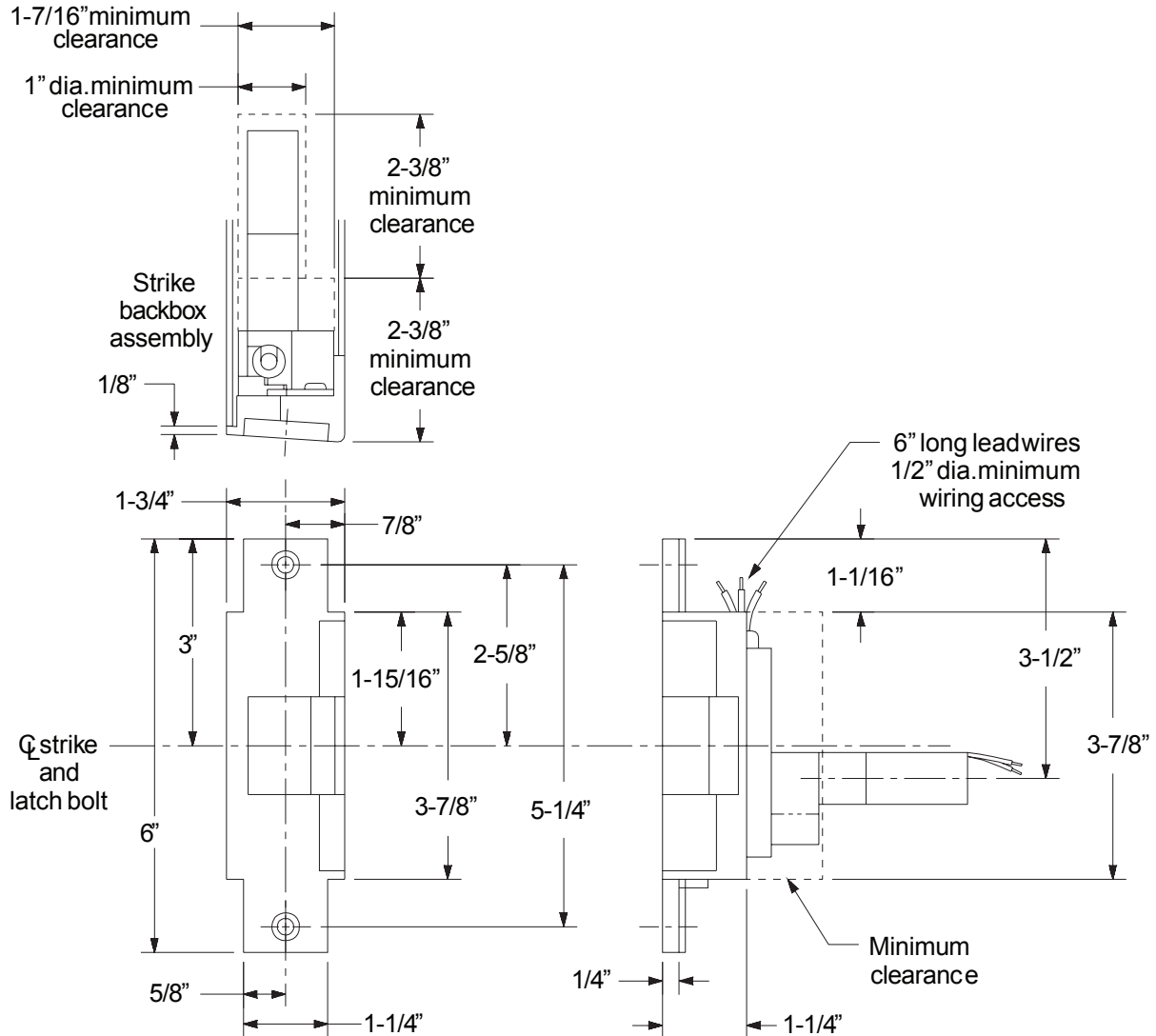
Figure 4



89/336/EEC



**Door Preparation for Strike**



**Strike Dimensions and Required Clearances**

**Customer Service**

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931240-00

# 6224/6224DS

# VON DUPRIN®

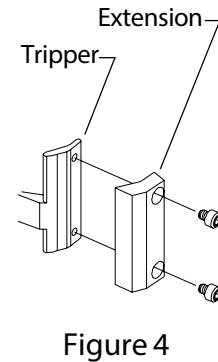
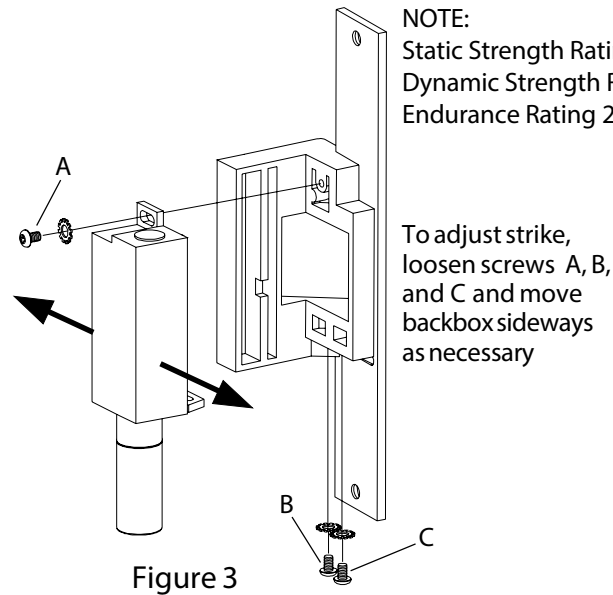
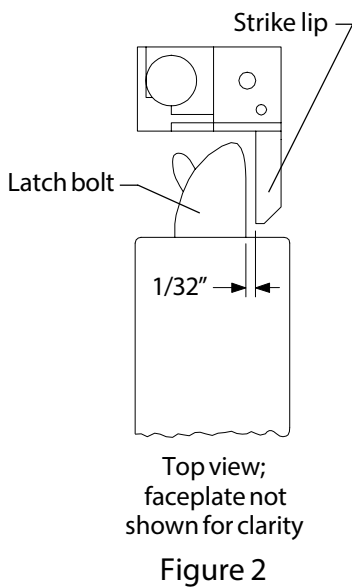
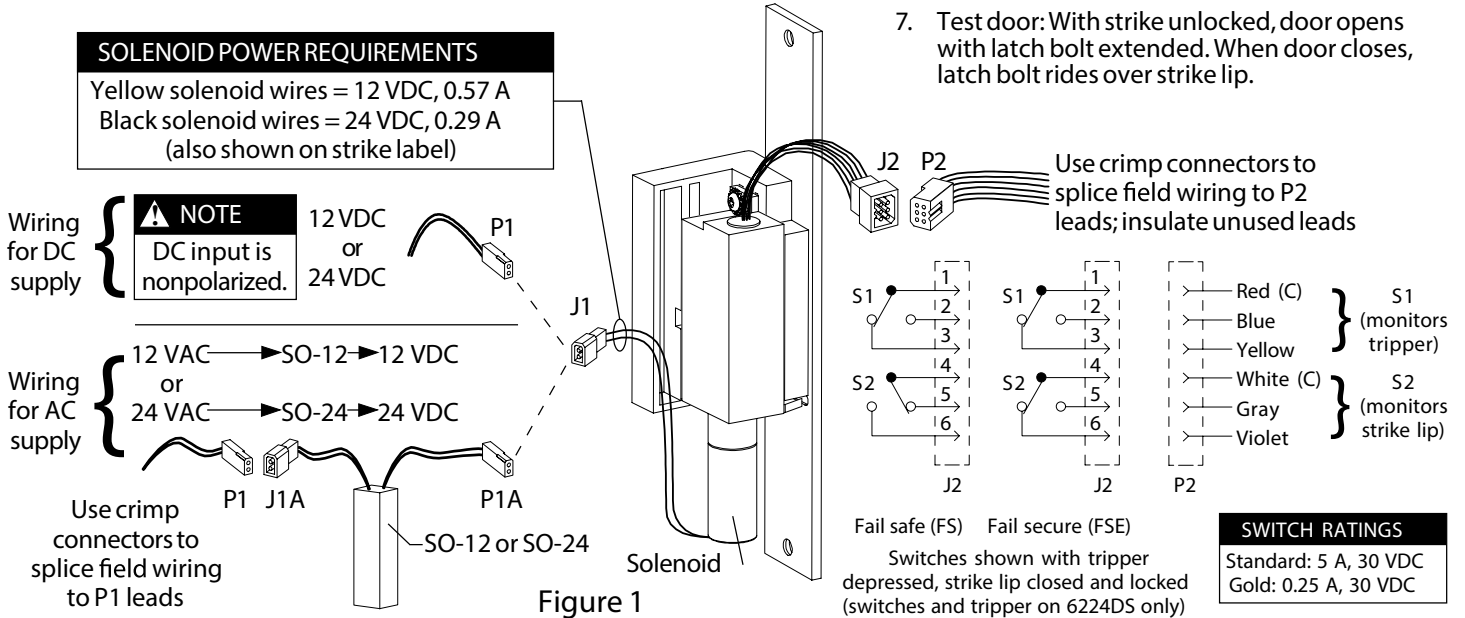
Electric Strike, Double Door Closed Back Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6224DS only.)

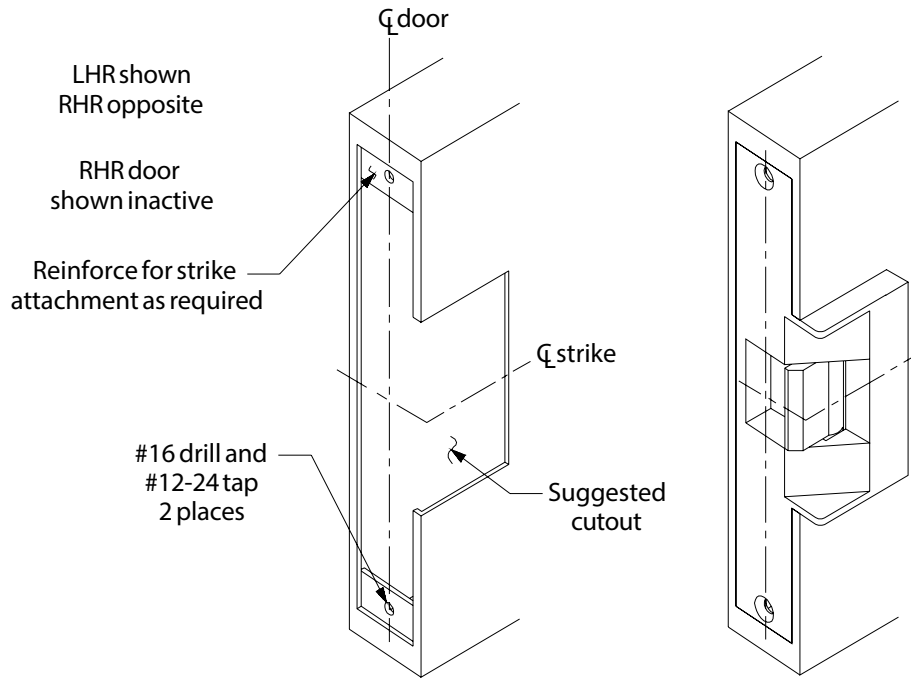
4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6224DS only.)



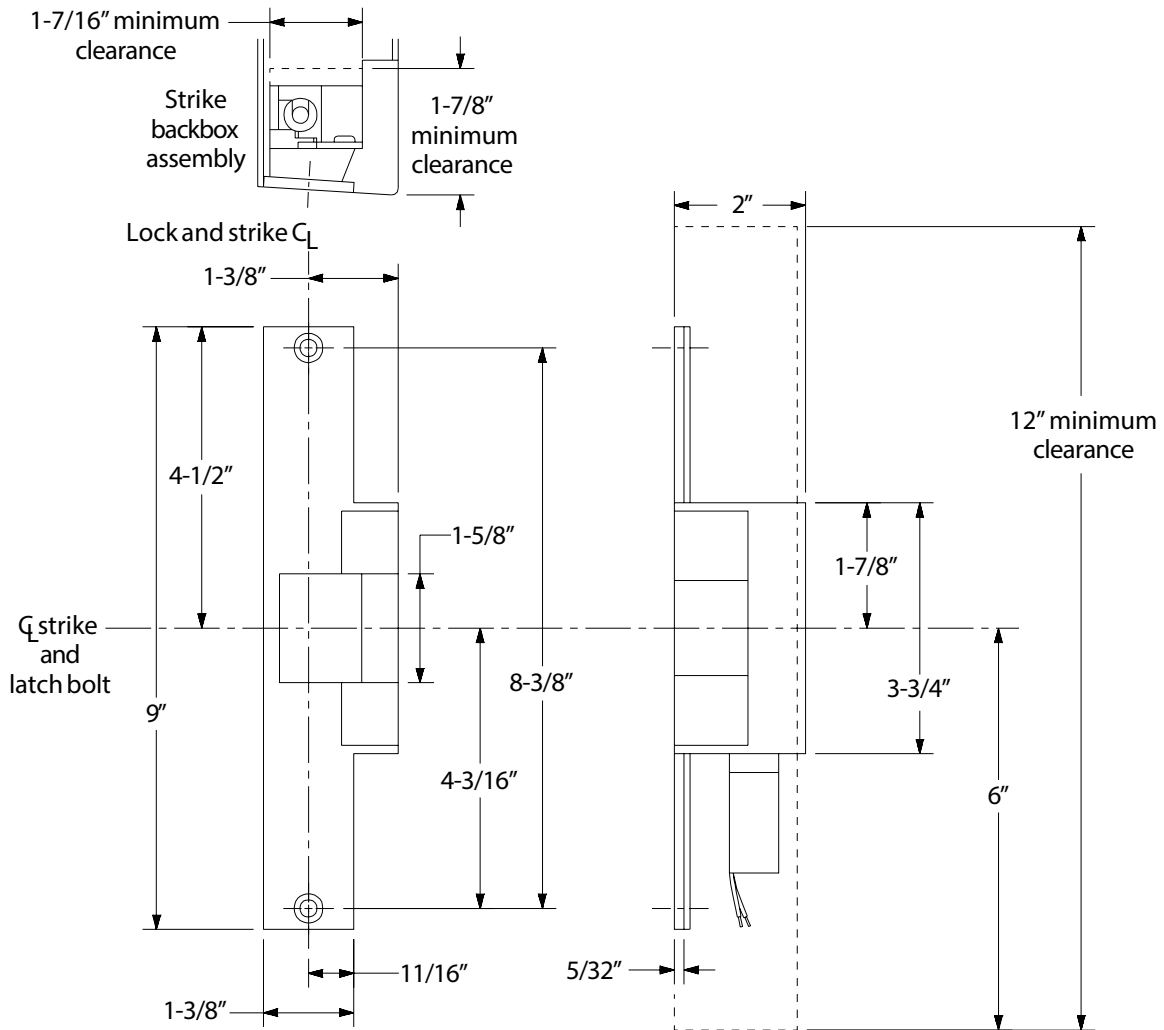
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Door Preparation for Strike



Strike Dimensions and Required Clearances



931242-00

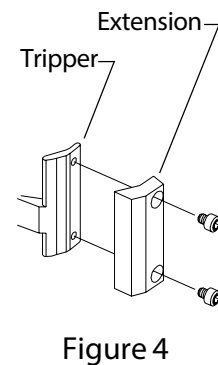
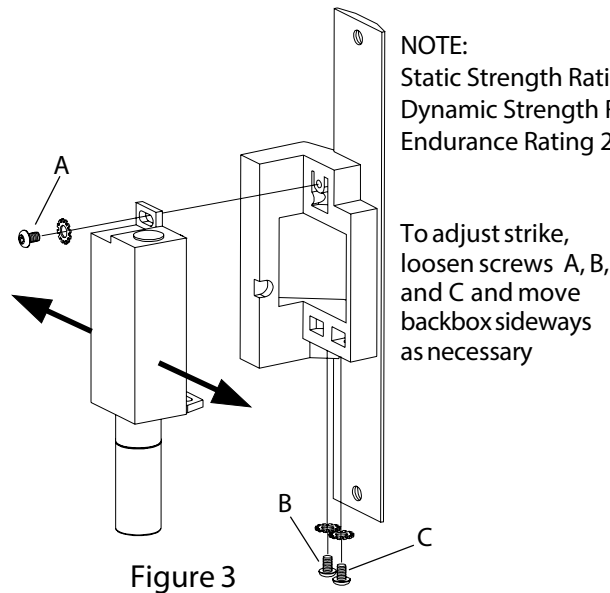
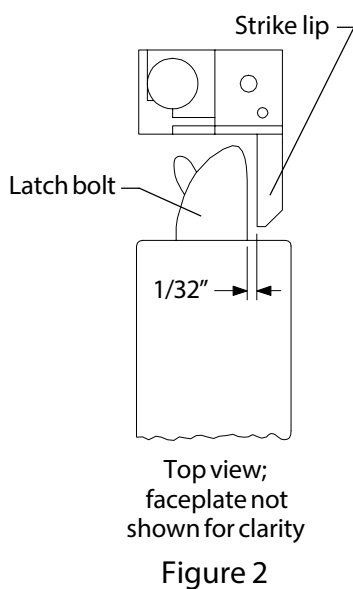
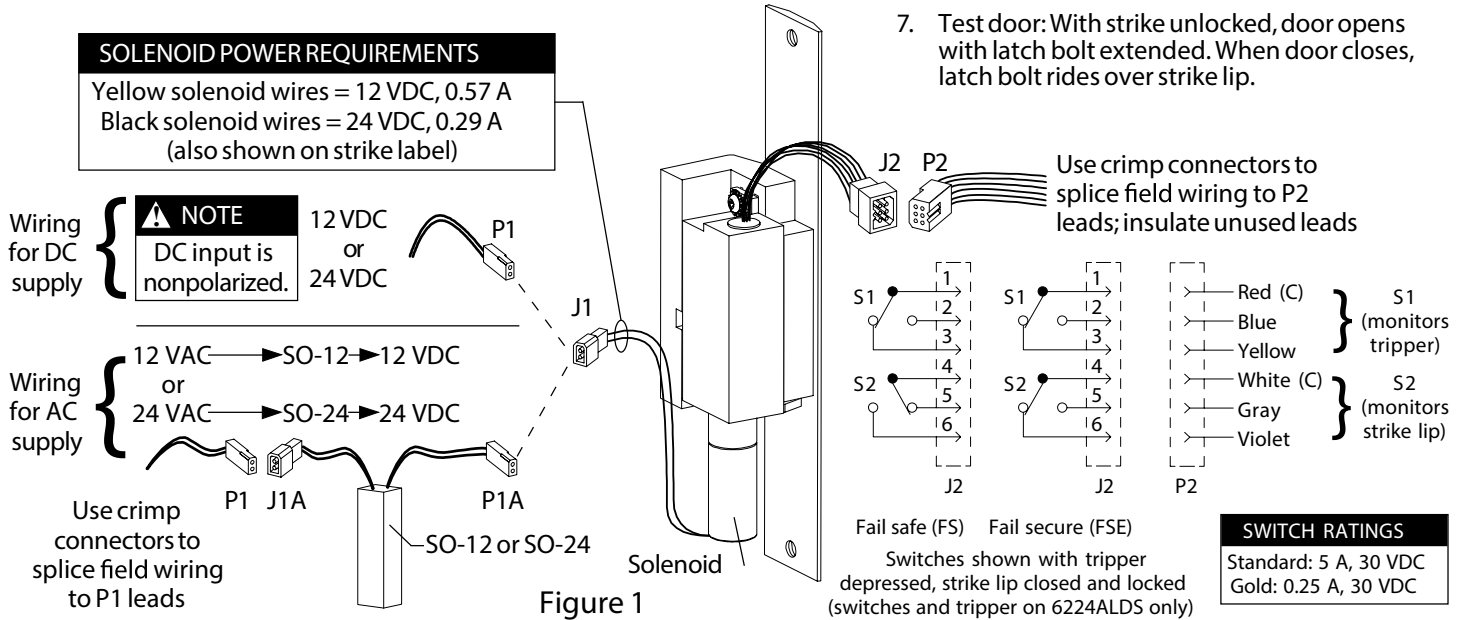
Electric strike, double aluminum door closed back mortise or cylindrical application

Installation Instructions

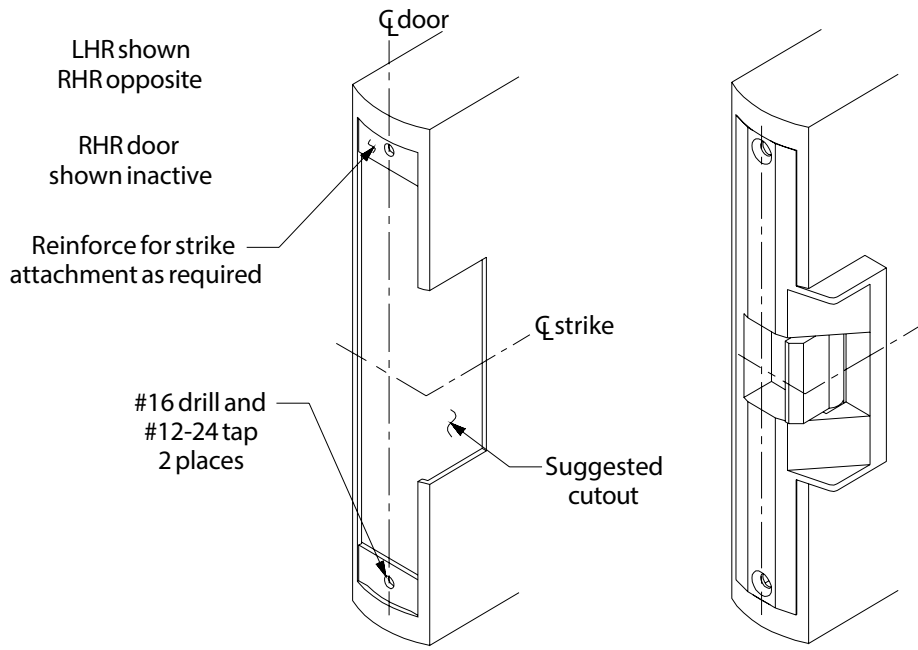
Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6224ALDS only.)

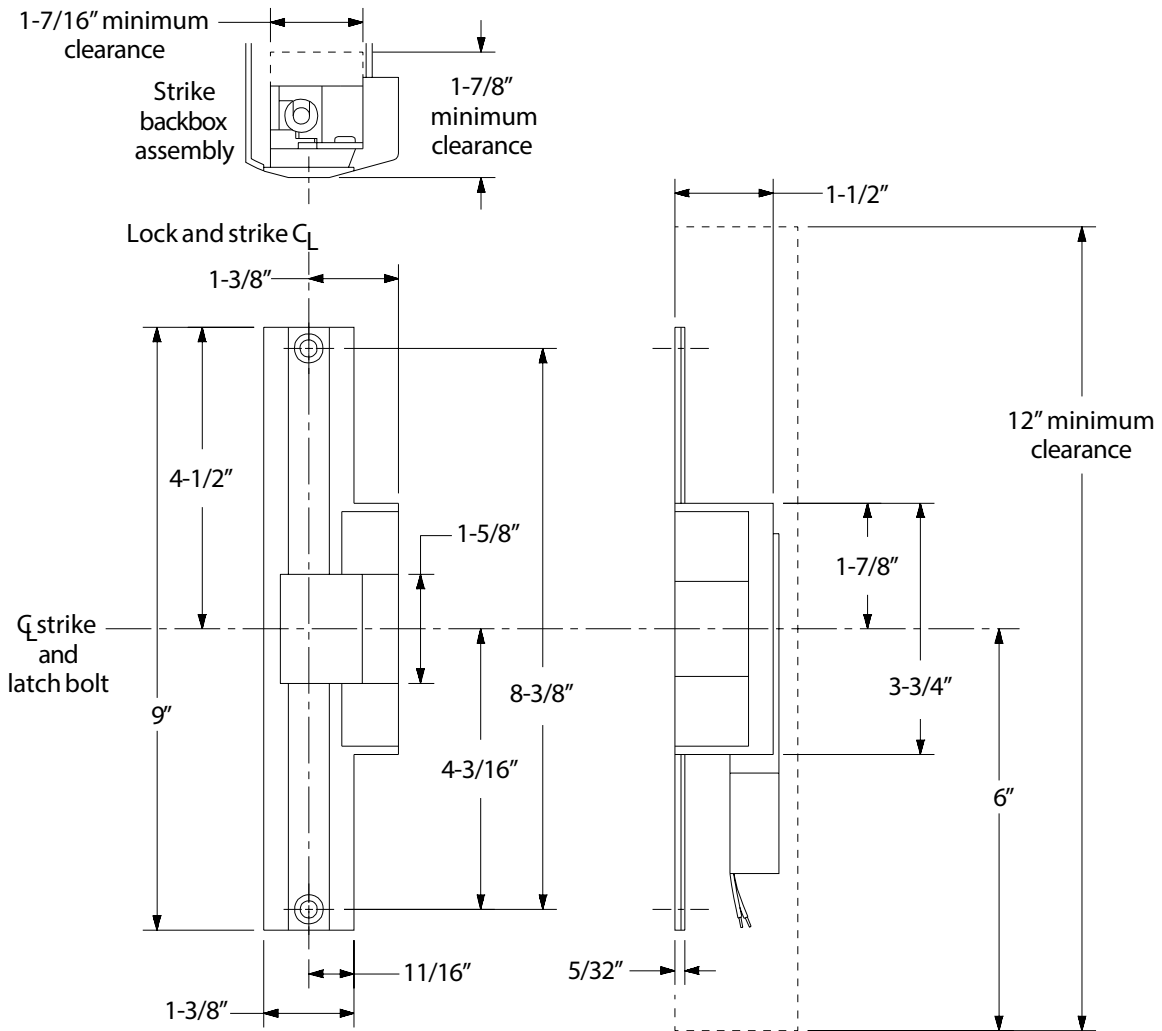
4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6224ALDS only.)



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### Door Preparation for Strike



### Strike Dimensions and Required Clearances





931238-00

6225

VON DUPRIN®

Electric Strike, Double Door Open Back Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1).
4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks.

5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. Test door: With strike unlocked, door opens with latch bolt extended. When door closes, latch bolt rides over strike lip.

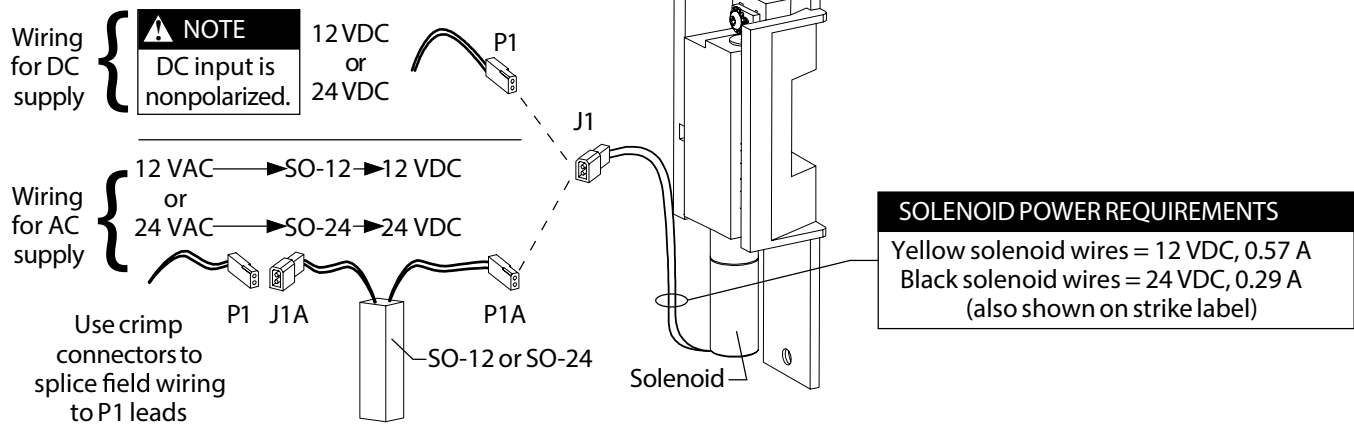


Figure 1

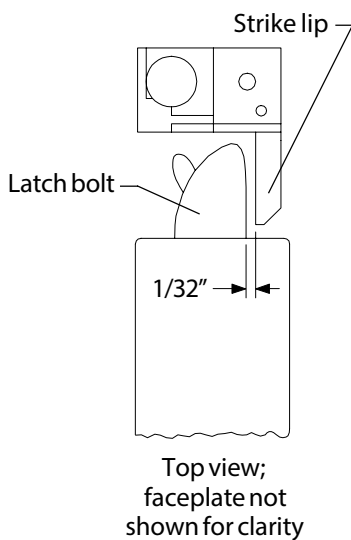


Figure 2

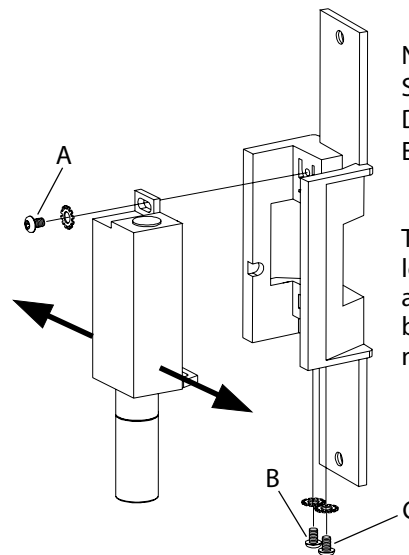


Figure 3

NOTE:  
 Static Strength Rating 1500 lb.  
 Dynamic Strength Rating 70ft.-lb.  
 Endurance Rating 250,000 c.

To adjust strike,  
 loosen screws A, B,  
 and C and move  
 backbox sideways as  
 necessary



89/336/2002

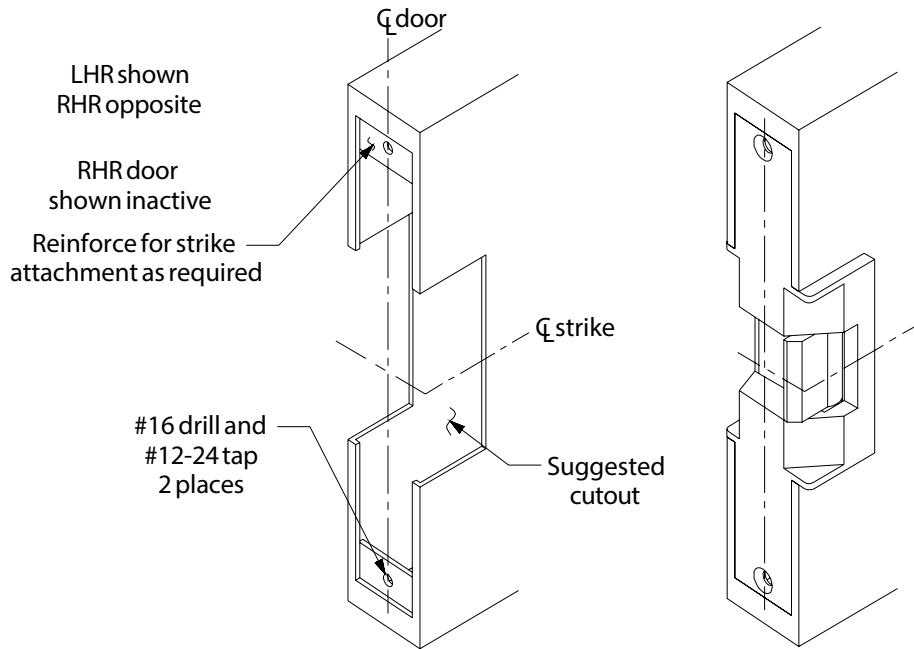


Customer Service

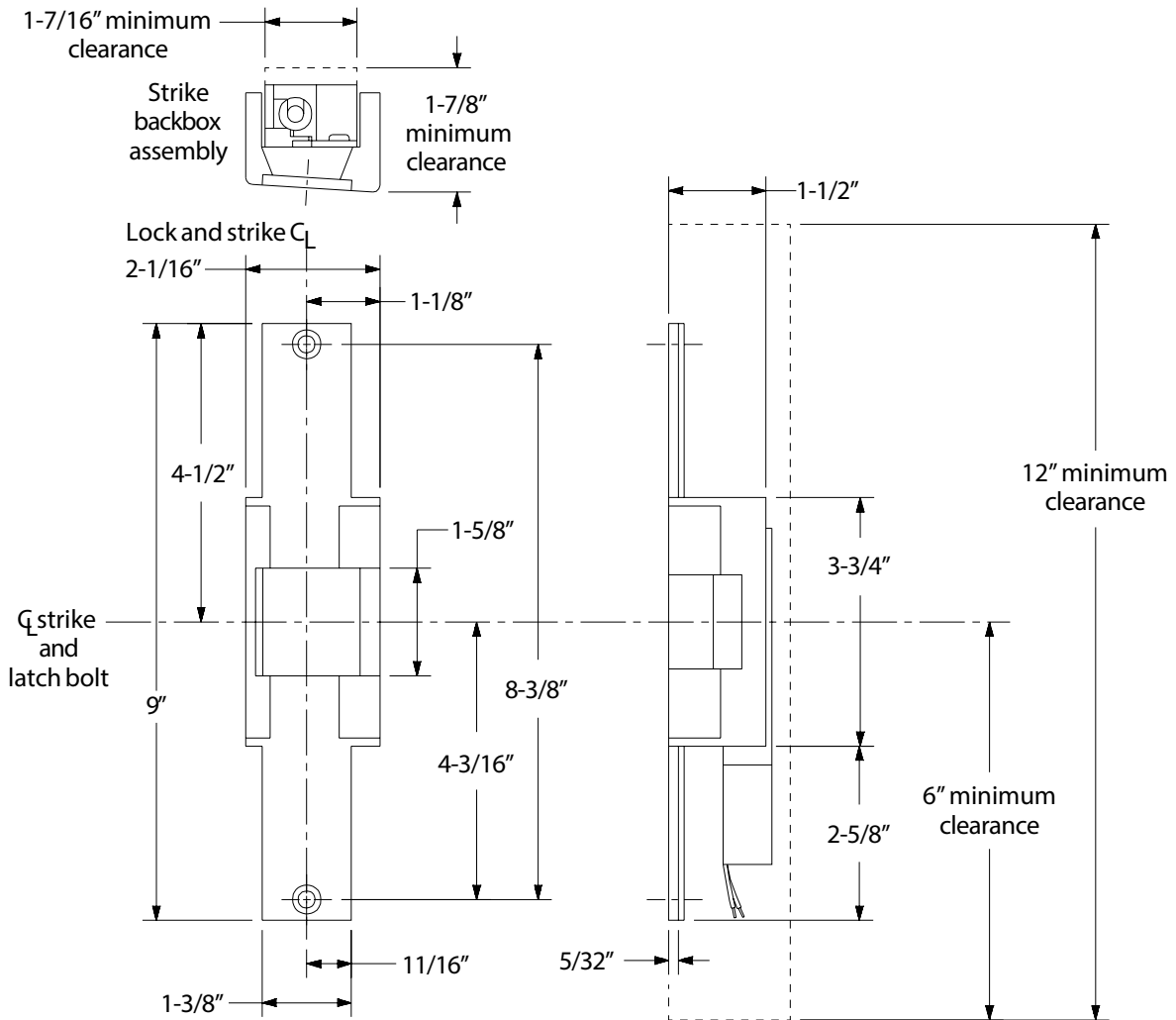
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### Door Preparation for Strike



### Strike Dimensions and Required Clearances



# 6226/6226DS

# VON DUPRIN®

931241-00

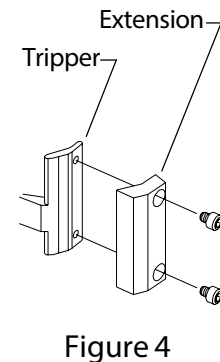
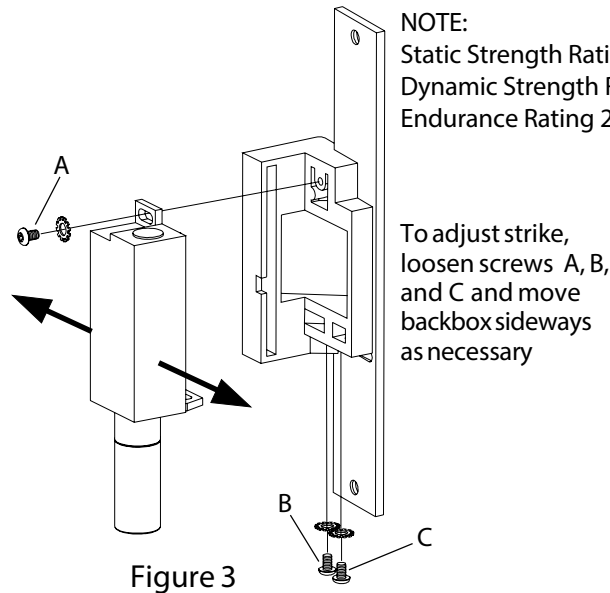
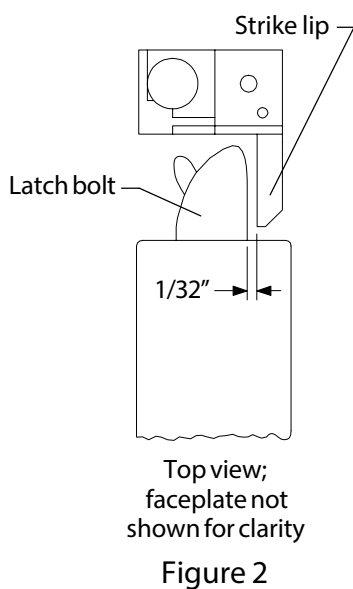
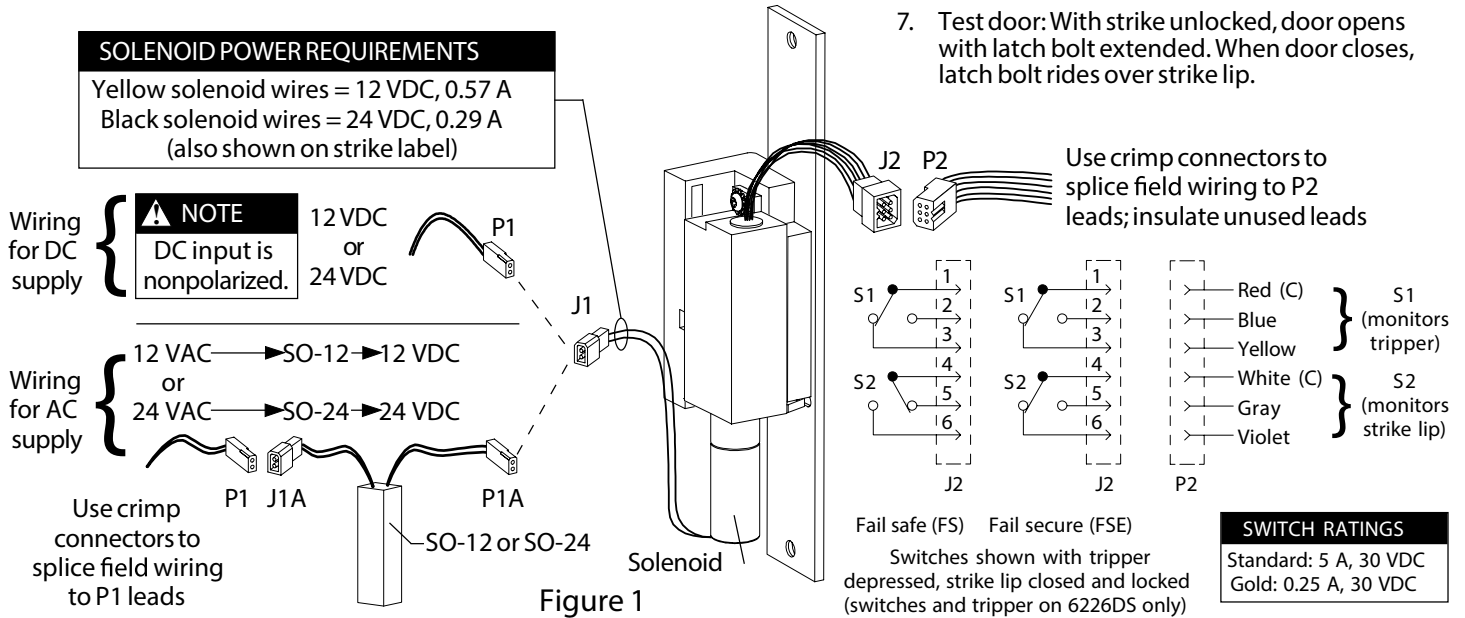
Electric Strike, Double Door Closed Back Mortise or Cylindrical Application

Installation Instructions

Notes: Deadbolt will not function with this strike. Check with factory for retrofit applications.

1. For lock or device preparation, see their directions.
2. Prepare door for strike (see other side).
3. Wire strike (Figure 1). (Switches on 6226DS only.)

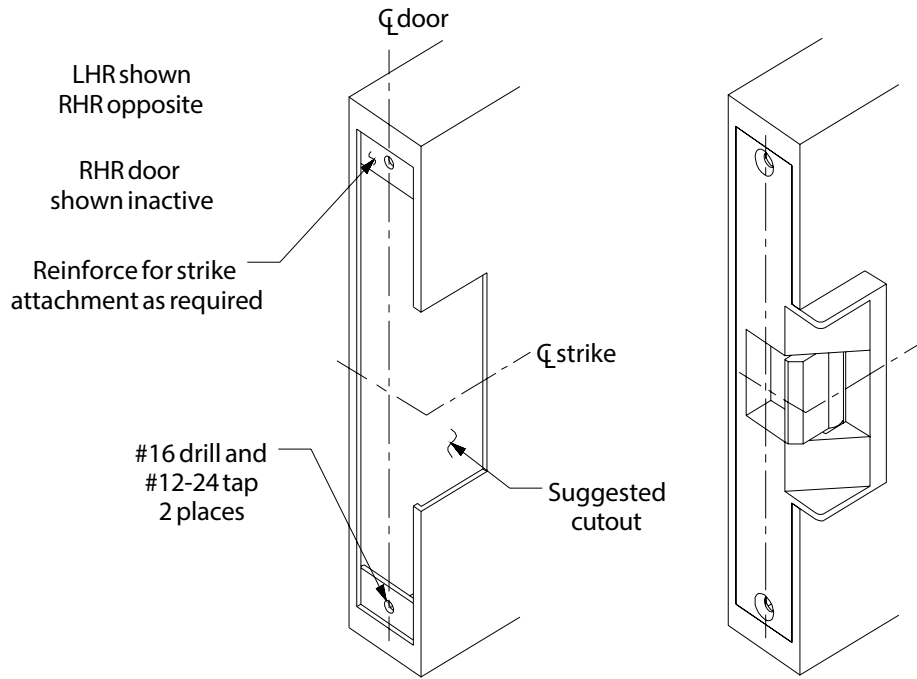
4. Test strike: Apply solenoid power. Fail secure (FSE) lip unlocks. Fail safe (FS) lip locks. Figure 1 shows status of switches.
5. Install strike with two #12-24 screws. Make sure clearance between latch bolt and strike lip is 1/32" (Figure 2). If not, uninstall strike, adjust (Figure 3), and reinstall.
6. If latch bolt does not extend far enough to actuate tripper, install extension (Figure 4). (Tripper on 6226DS only.)



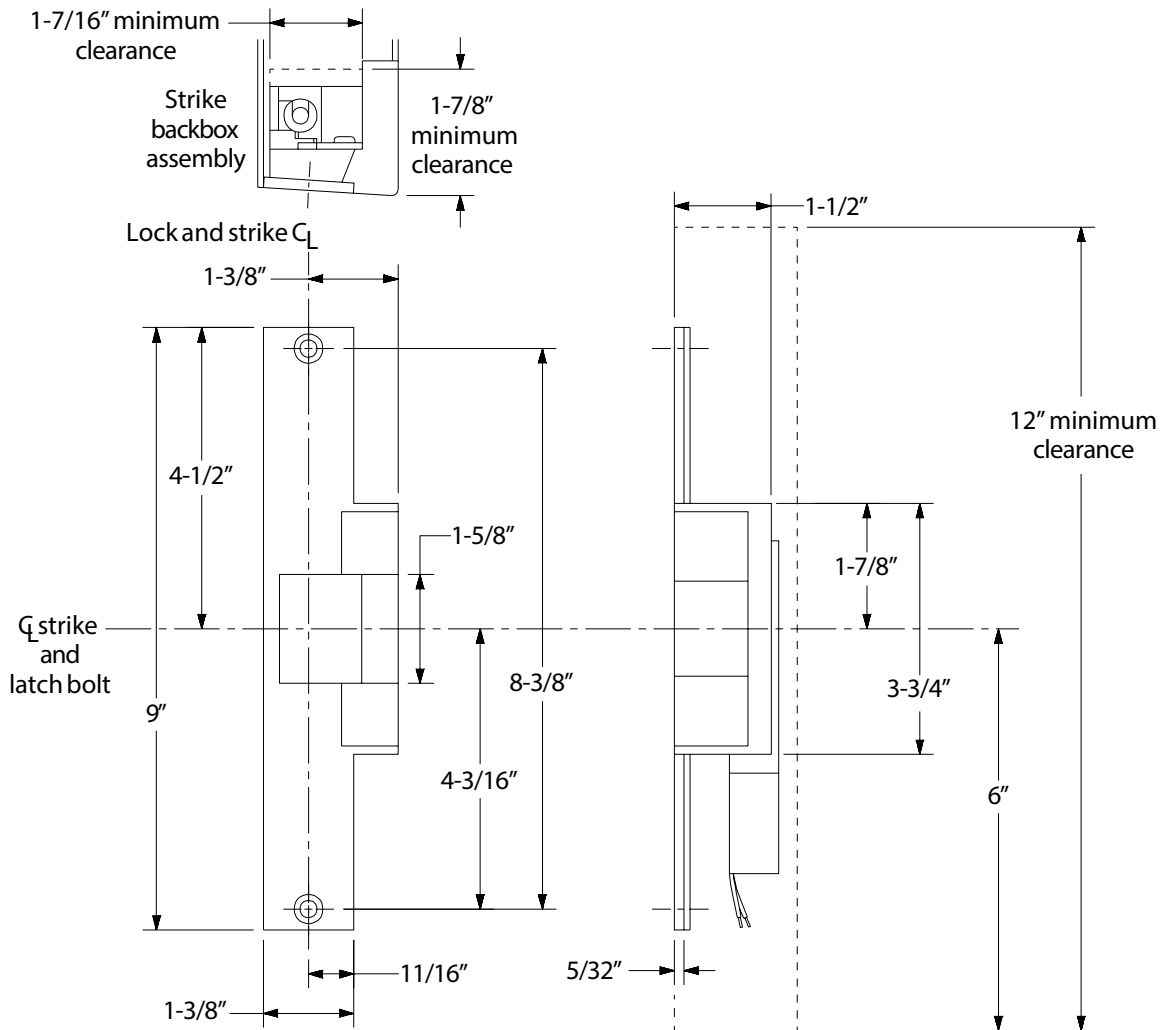
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Door Preparation for Strike



Strike Dimensions and Required Clearances



## P516-961

### Surface Mounted Rim Strike

### Installation Instructions

#### Important:

Installations of the RIM strike qualify as "Indoor Use Only" when not continuously exposed to an outdoor environment. Ensure the exit device functions as intended for life safety concerns by verifying electric strike and exit device compatibility. Maximum latch projection is essential to obtaining full holding force.

When installed in a fail secure manner, the local authority having jurisdiction shall be consulted with regard to the use of selected panic hardware to ensure emergency exit from the secured area.

#### Catalog specifications

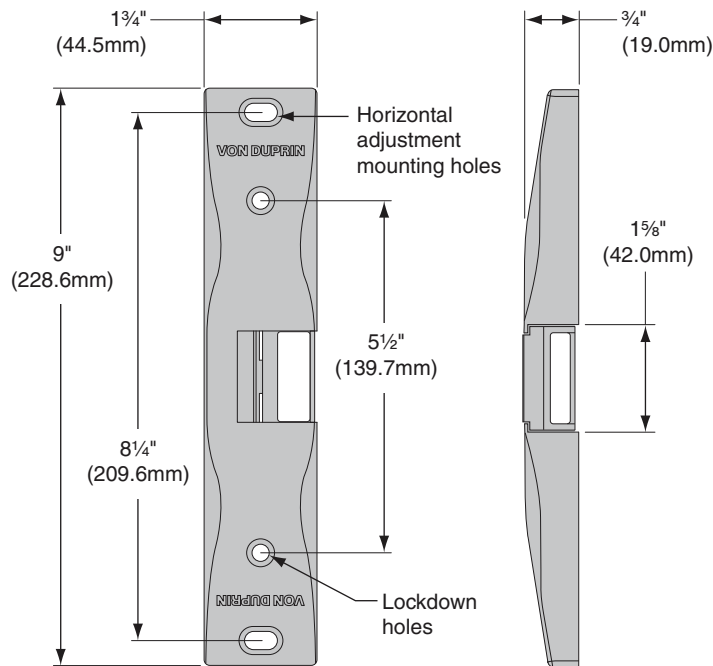
Model	Mode	Voltage	Current	Duty	Amps	Ohms
6300	Fail Secure	12V	DC	Continuous	0.50	22
6300	Fail Secure	24V	DC	Continuous	0.24	89

FSE = Fail Locked / Fail Secure

DC = Direct Current

Continuous Duty = Energized 1 minute or more

#### Dimensional Details



### 1 Find center line

Determine the horizontal center line of the exit device latch and transfer center line to the frame stop

### 2 Center-punch mounting holes

Position the paper template onto the frame aligning with center line and against the closed door. Center-punch the two mounting holes and the wire access hole as shown

### 3 Drill and tap

Drill and tap the two mounting holes and drill the wire access hole

### 4 Test fit

Test fit electric strike to ensure full latch engagement. Add provided spacer if required

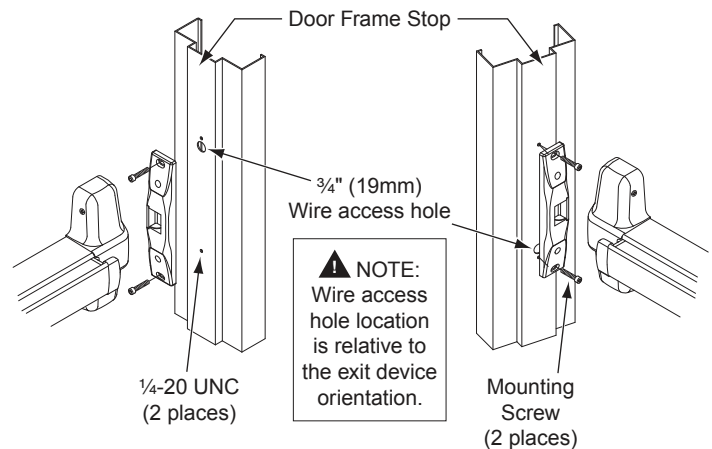
### 5 Wire connections

Make wire connections from the power source to the appropriate wire harness supplied. Use the 12V harness for 12VDC. Use the 24V harness only for 24VDC

**Note: Overheated or burnt coils caused by incorrect voltage/wire harness combinations will not be covered under warranty**

### 6 Mount electric strike

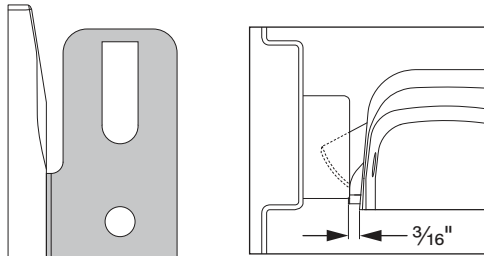
Using the 1/4-20 UNC screws provided, loosely mount the electric strike using the horizontal mounting holes (outer slots)



**NOTE:**  
Wire access hole location is relative to the exit device orientation.

## 7 Install Exit Device

Install exit device per manufacturer instructions and align plastic template as shown



**⚠ WARNING: For proper operation, a  $\frac{3}{16}$ " gap (minimum) is required.**

99 Rim  
template shown

## 8 Adjust strike

Adjust the electric strike horizontally until exit device latch fully engages with the door closed

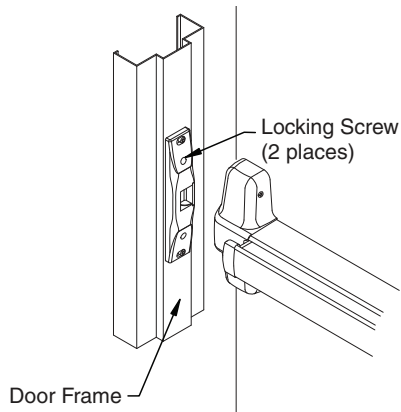
- ① **Note: Ensure a  $\frac{1}{16}$ " (1.5mm) clearance between exit device latch and electric strike is maintained. Latchbolt should not touch the keeper**

## 9 Check screws and operation

Tighten the two mounting screws and check operation. Adjust the horizontal position of the electric strike as required

## 10 Prepare holes

Using the electric strike as a template, prepare the two locking holes by drilling and tapping for  $\frac{1}{4}$ -20 UNC screws. Using the  $\frac{1}{4}$ -20 UNC screws provided, secure the electric strike through the locking holes



## 11 Check Proper Electrical and Mechanical Function

### Customer Service

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24201428

# 6400

# VON DUPRIN®

Electric Strike

Installation Instructions

Standard Parts:	Accessories*:
Insert	Latch Monitor Switch - LM6400
Deadbolt Keeper	
Deadbolt Plug	
Deadlatch Ramp (Auxiliary Bolt Bracket)	
Keeper Sliding Shims: 1/16" (1.5mm) & 1/8" (3.0mm)	
A Center-lined latch faceplate and an Offset latch faceplate are provided. Both are: 4-7/8" x 1-1/4" (123.8mm x 31.8mm)	
Trim Plate	
12VDC or 12 to 24VAC Cable Connector	
24VDC Cable Connector	
Anti-Tamper Security Screws (2x12-24)	
Mounting Tab Kit (2x Tabs, 4x Shims, & 5x12-24 Screws)	

The fail secure locking mechanism shall only be installed where allowed by the local authority having jurisdiction and shall not impair the operation of the panic hardware or intended operation of the emergency exit.

### Wiring Instructions

Use the appropriate wire harness supplied.

12V for 12VDC & 12-24VAC

24V for 24VDC only

Connect the red wire through the Access Control Contacts to the (+) of the power supply.

Attach the black wire to the (-) negative of the power supply.

If using AC power, polarity is not observed.

NOTE: If a suppression diode is required for access control, observe proper polarity (Suppression Diode NOT supplied).

### Latch Monitor Wires

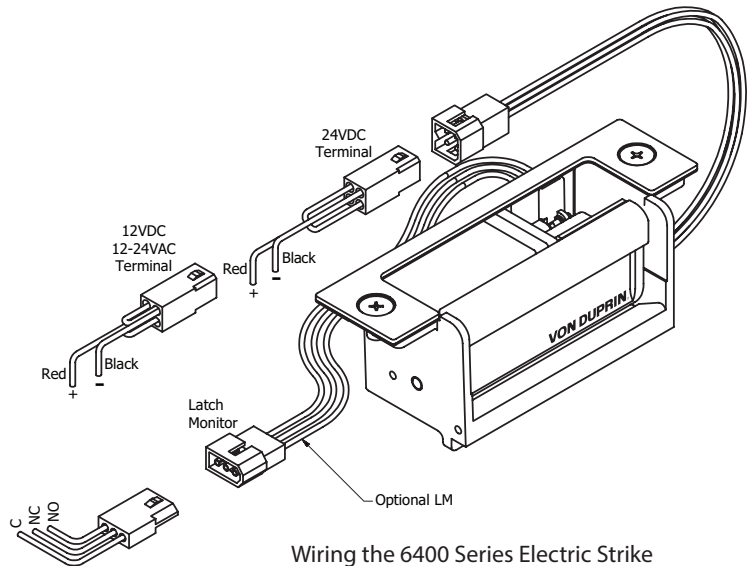
Black = Common (C)

Blue = Normally Closed (NC)

Orange = Normally Open (NO)

Switch Rating: 2 Amp @ 24VDC

Switch Type: SPDT



Wiring the 6400 Series Electric Strike

Voltage	Duty	Amps*	Ohms†
12 VDC	Continuous	.375	37
24 VDC	Continuous	.190	148
12-24 VAC	Intermittent	.280 - .565	37

Intermittent Duty = Energized less than 1 min.  
with Duty Ratio 1:5

Continuous Duty = Energized 1 min. or more

\* Ratings are based on maximum current draw at +50°F (+10°C) and include initial power-up current draw.

† Nominal resistance at +77°F (+25°C) ± 7% tolerance

Model 6400 must be connected to a compatible UL Listed Burglary or Access Control Power Supply.

## 1 Mounting the Strike

- 1a Mount the strike onto the frame without the faceplate. Tighten the mounting screws just enough to hold the strike in place; you may need to slide it up or down for adjustment



- 1b Adjust the deadbolt keeper:

Extend the deadbolt and move the door so that the deadbolt touches the keeper

Mark deadbolt lines on the strike keeper

Open the door and retract the deadbolt

Adjust the deadbolt keeper position so that it aligns with the deadbolt limit lines marked on the keeper

If needed, move the strike up or down for alignment

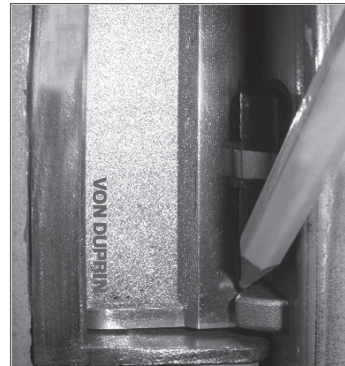


- 1c Adjust the deadlatch ramp:

Move the door towards the strike so the deadbolt touches the keeper

Mark deadlatch limit lines on the keeper

After opening the door, adjust the deadlatch ramp so that it aligns with the deadlatch limit lines marked on the keeper



- 1d Adjust plug-in latch monitor (accessory):

Move the door towards the strike so that the latch touches the keeper

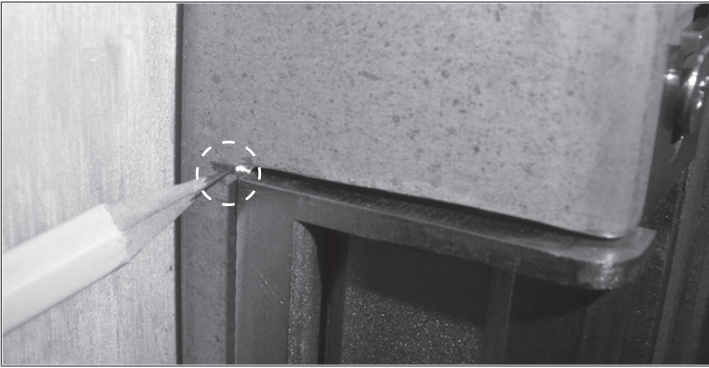
Mark the latch limit lines on the keeper

After opening the door, mount the latch monitor on the strike housing so that it is between the latch limit lines marked on the keeper



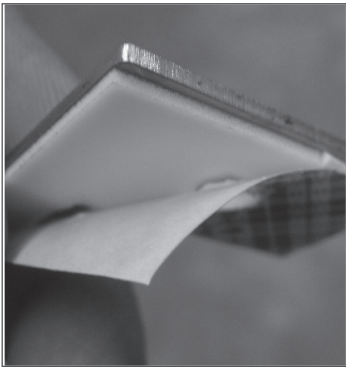


## 2 Mark the strike position on the door frame



## 3 Install the strike on the door frame

- 3a Remove the adhesive backing from the tape on the back side of the appropriate faceplate.



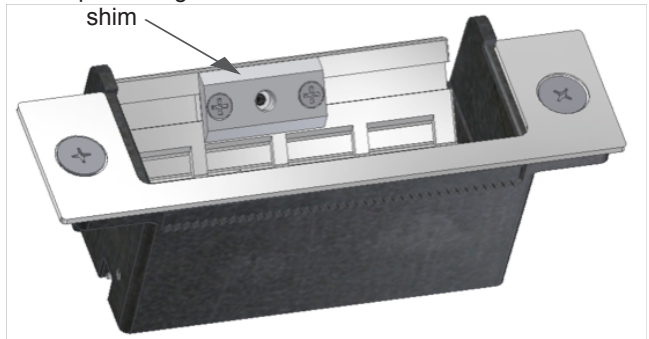
- 3b Remove the strike mounting screws from the faceplate. While holding the strike in the position marked on the frame, position the faceplate on the strike and secure to the frame



## 4 Make adjustments as needed

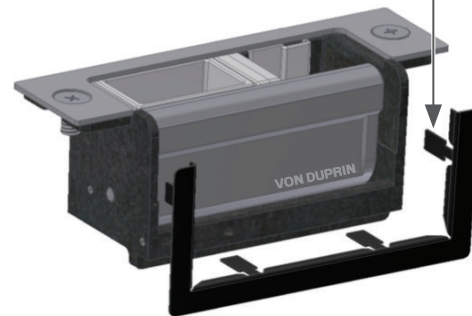
- 4a Horizontal adjustment:  
If there is play in the door when closed, the keeper shims may be used to minimize play

Keeper sliding shim



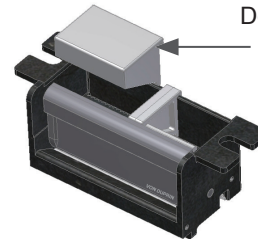
- 4b The trim plate can be used if the frame cutout is larger than required

Bend tabs to grip frame

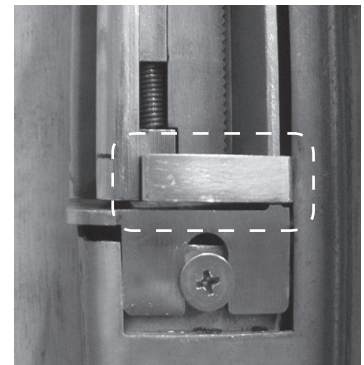
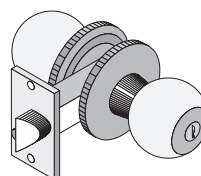


- 4c If the lock set doesn't have a deadbolt, the deadbolt keeper can be replaced with the deadbolt plug

Deadbolt plug



- 4d Note: The deadlatch ramp also acts as a keeper stop, so ensure it is inserted for centerline cylindrical lock applications



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24201428 Rev. 07/14-b



24236283

# 6400

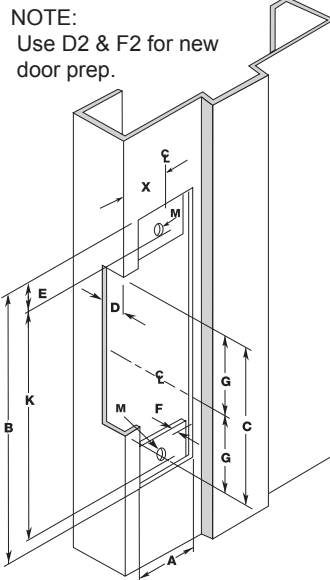
# VON DUPRIN®

Frame Preparation

Installation Instructions

## 1 Frame Prep Dimensions

MEASUREMENT	FRACTIONAL INCHES	DECIMAL INCHES	METRIC mm
A	1-1/4"	1.250	31.75
B	4-7/8"	4.875	123.83
C	3-3/8"	3.375	85.73
D	1-19/32"	1.590	40.40
D2	1-21/32"	1.650	42.00
E	3/8"	0.375	9.53
F	1/8"*	0.125*	3.18*
F2	3/16"*	0.188*	4.78*
G	1-11/16"	1.688	42.86
X	Vertical Centre Line of Door Lock and Mounting Face Plate**		
K	4-1/8"	4.125	104.78
M	12-24	N/A	N/A



Note: Specifications subject to change without notice.

\* Dimension F is measured from face of mounting tab to face of frame

\*\* Dimension X on the drawing is determined by the vertical centerline of the door. If the latch incorporates a deadlocking pin, additional steps will be necessary to ensure proper operation of the deadlocking pin. Measure the thickness of the deadlocking pin and add this thickness to dimension X to relocate the vertical centerline an appropriate distance on the frame.

## 2 Cutting ANSI Prep Frames

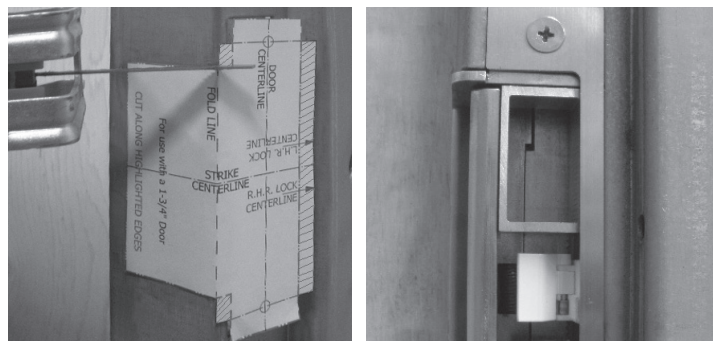
2a Place the folded template square on the frame. Align horizontal holes marked on the template with the mounting holes in the frame



2b Peel adhesive backing and paste the folded template square to the frame



2c Cut the frame inside the unshaded area marked on the template. Install strike per installation instructions 24201428

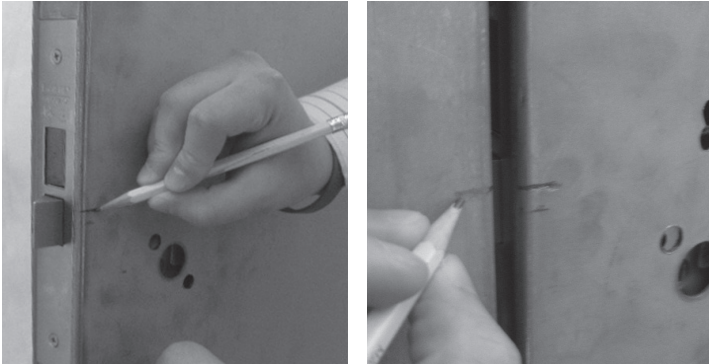


### 3 Cutting frames WITHOUT ANSI Prep

3a Mark the horizontal lock body centerline on the door.

Close the door and transfer the lock body centerline to the frame

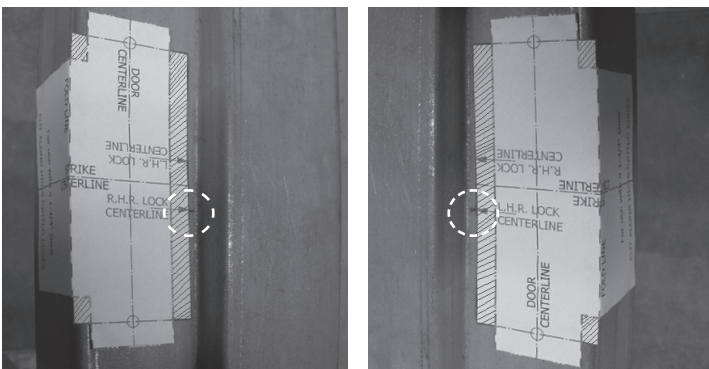
If the door isn't flush to the frame in the closed position, mark the depth of the closed door on the frame. Measure half of the door thickness back toward the door stop and mark the vertical door centerline on the frame.



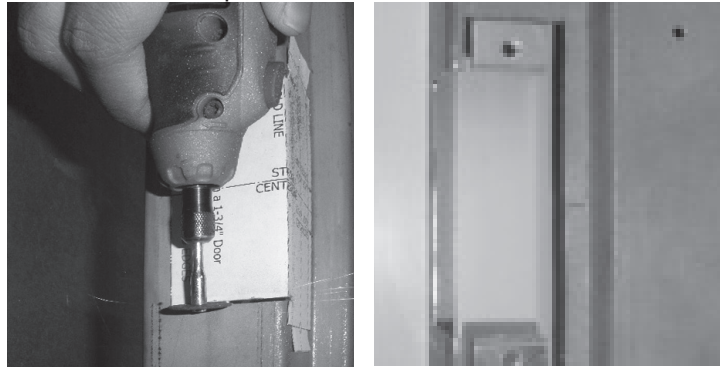
3b Align the proper template lock centerline horizontally with the lock body centerline marked on the frame. Peel the adhesive backing and paste the folded template square to the frame.

If the door isn't flush to the frame when closed, tear the template at the fold line. Align the faceplate portion vertically with the door centerline and match the template lock centerline with the lock body centerline marked on the frame.

Paste the front portion of the template on the face of the frame to align with the faceplate portion.



3c Cut the frame inside the unshaded area marked on the template. Follow mounting tab installation instructions. Install strike per installation instructions 24201428



### 4 If mounting tabs are required

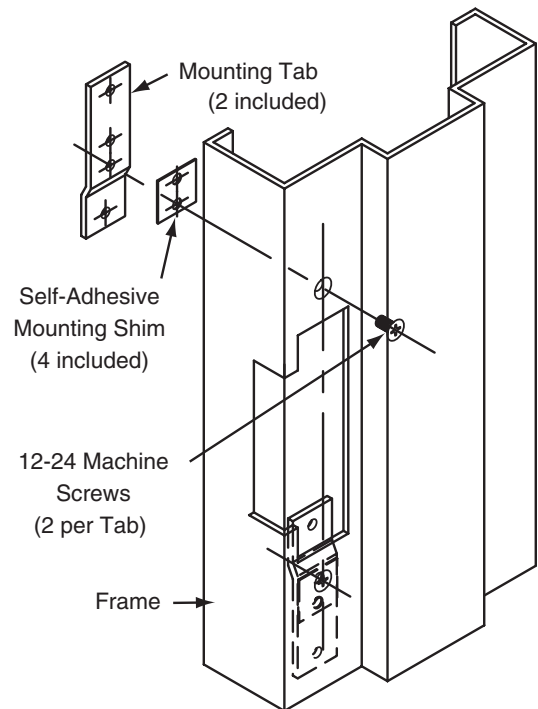
4a Fasten the mounting tab to the faceplate of the strike and select the appropriate shims for the installation

4b Using the assembled strike and tabs as a template, place against the frame and mark the mounting hole locations

Remove and drill a  $\frac{3}{16}$ " hole in the frame for each mounting tab and countersink the frame

4c Remove the tabs from the faceplate and install in the frame using the 12-24 x  $\frac{3}{8}$ " machine screws supplied

Tabs are pre-drilled and tapped for this purpose



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24236291

## LM6400 Latch Monitor Installation Instructions

Patent  
Pending

Improved design to accommodate  
1/2" - 3/4" latch throw.

### Latch Monitor Wires

(door open no latch)

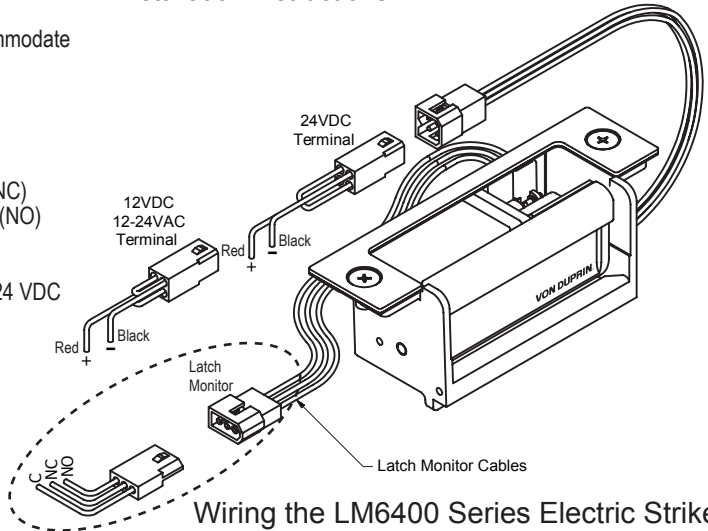
Black = Common (C)

Blue = Normally Closed (NC)

Orange = Normally Open (NO)

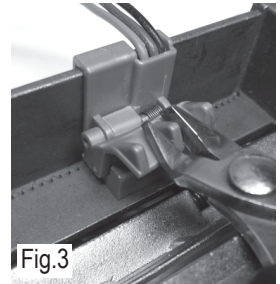
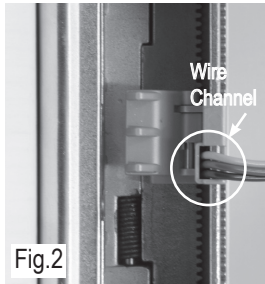
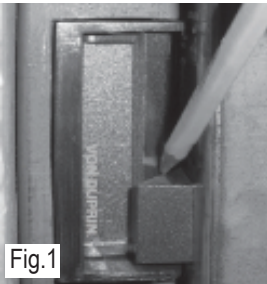
Switch Type: SPDT

Switch Rating: 2 Amp @ 24 VDC



Adjust Latch Monitor Module:

- Step 1: Carefully remove faceplate from strike insert. Make sure the deadbolt and deadlatch alignments don't change.
- Step 2: Move the door towards the strike so that the latch touches the keeper.
- Step 3: Mark latch limit lines on keeper (Fig. 1).
- Step 4: Open the door. Mount the Latch Monitor Module on the strike housing so that it is between the latch limit lines marked on keeper.
- Step 5: Make electrical connection, position the faceplate onto the strike and secure to the frame.  
**NOTE:** To avoid pinching wires, ensure wires run through wiring channel before inserting strike into frame (see Fig. 2).
- Step 6: Test the door to ensure that the latch depresses the LM lever. If the latch doesn't depress the LM lever, the ribs must be trimmed with side cutters (Fig. 3).







653071

# 650 Series Keyswitches



Installation Instructions and Template

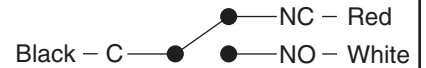
- ① 653 Models mount in a standard single-gang box as shown below. Template may be cut out or follow dimensions for prep of mounting area. See other side for special application notes.

## Template



**DO NOT PHOTOCOPY THIS DOCUMENT!  
TEMPLATE MUST BE TO SCALE.**

Standard Keyswitch  
5A @ 30VAC/VDC



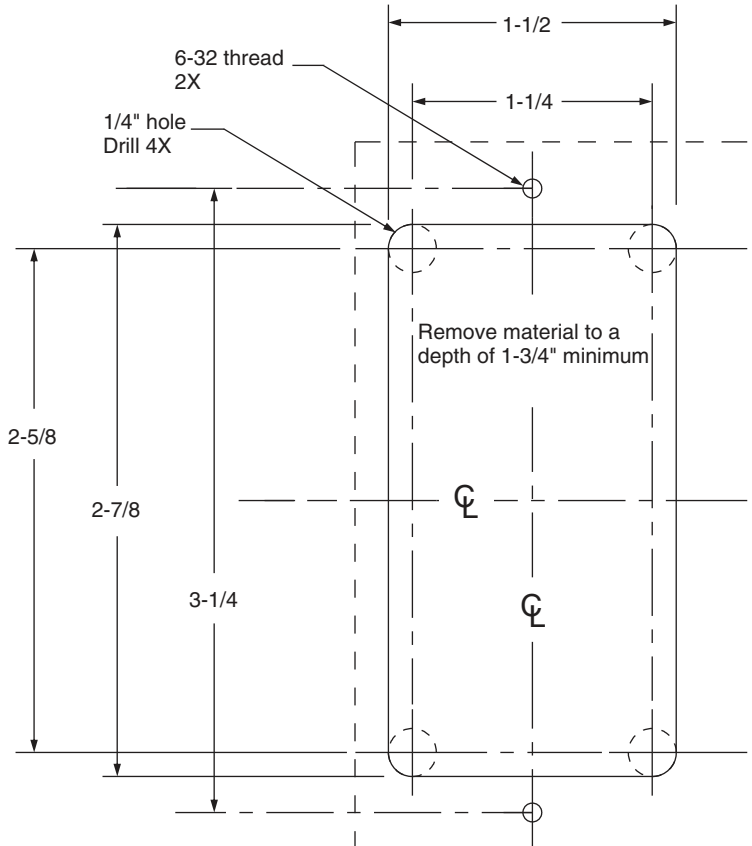
ATS switch closes  
when cover is on.  
0.025A @ 28VDC



LED indicator lights  
operate @ 12-24VDC  
0.025A @ 28VDC

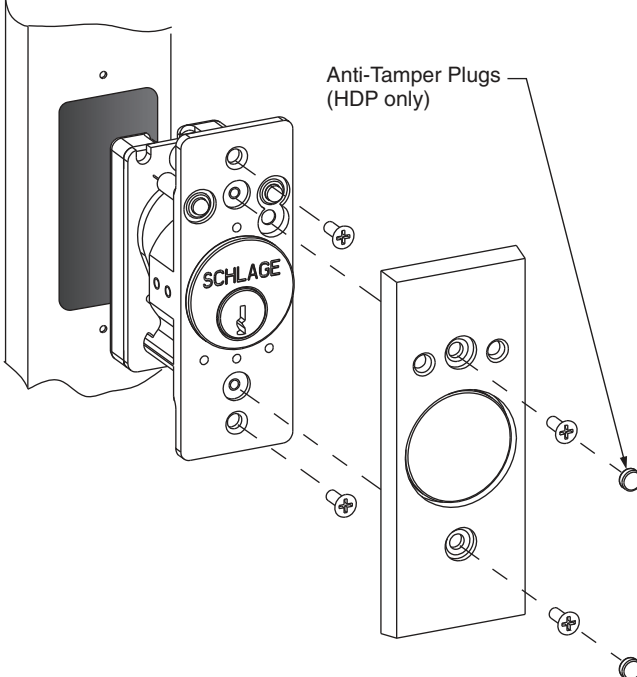
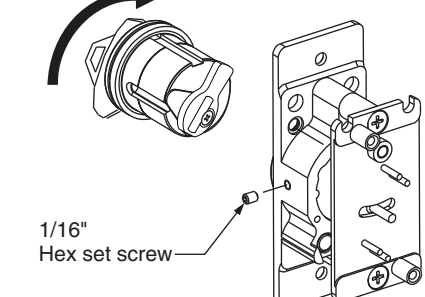
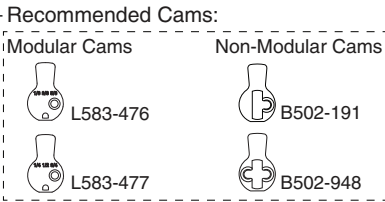
Red (+)  
Black (-)

Recommended cutout for 653 Keyswitches.



Blocking Ring required for cylinders over 1-1/8"  
Thickness = cylinder length - 1-1/8"

Anti-Pullout Tab (optional)



## Functions

The 653 Keyswitch comes with all parts (except switch assemblies) to make any function shown below. If switch assemblies are needed, order P/N P653059.

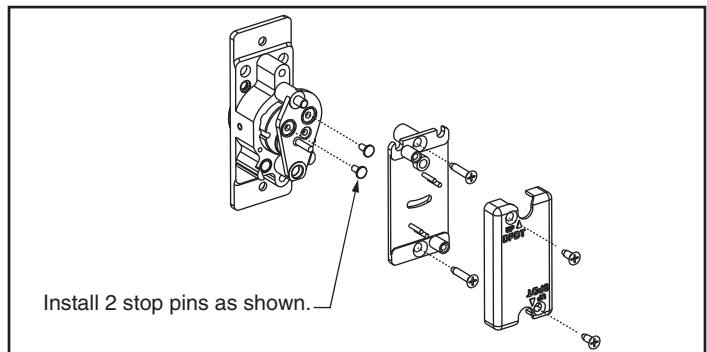
**NOTE:** The Keyswitch uses magnetic springs to activate. Dot facing up on Spring Magnet configures momentary action; dot down configures maintained action. For maintained key, remove one position (041 and 141 functions). Stop pins will be needed.



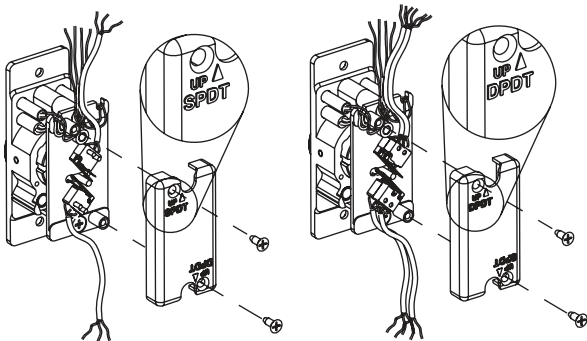
*(Magnets can be removed, flipped and reinstalled using a steel tool as shown.)*

Function	Switch Configuration	Magnet Configuration
 653-0404 CCW-SPDT-CW Maintained Maintained		
 653-1414 CCW-DPDT-CW Maintained Maintained		
 653-0505 CCW-SPDT-CW Momentary Momentary		
 653-1515 CCW-DPDT-CW Momentary Momentary		
 653-0405 CCW-SPDT-CW Momentary Momentary		
 653-1415 CCW-DPDT-CW Momentary Momentary		

Function	Switch Configuration	Magnet Configuration
 653-04 SPDT-CW Maintained		
 653-05 SPDT-CW Momentary		
 653-14 DPDT-CW Maintained		
 653-15 DPDT-CW Momentary		



Verify switch cover is oriented correctly for switch configuration. Note that only one, two or four switches can be installed. Three is not recommended.



 653-041 CCW-SPDT Maintained Key can not be removed when switch is activated.		
 653-141 CCW-DPDT Maintained Key can not be removed when switch is activated.		

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620142

# 620 and 631 Series Pushbuttons

## Installation Instructions and Template



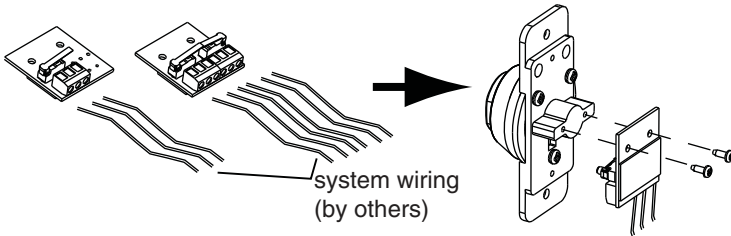
**! DO NOT PHOTOCOPY THIS DOCUMENT!  
TEMPLATE MUST BE TO SCALE.**

### Information

The 620 and 631 Series Pushbuttons mount in a standard single-gang box. 620-NS & 631-NS pushbuttons mount with prep shown below. Cut out template or follow mounting prep dimensions.

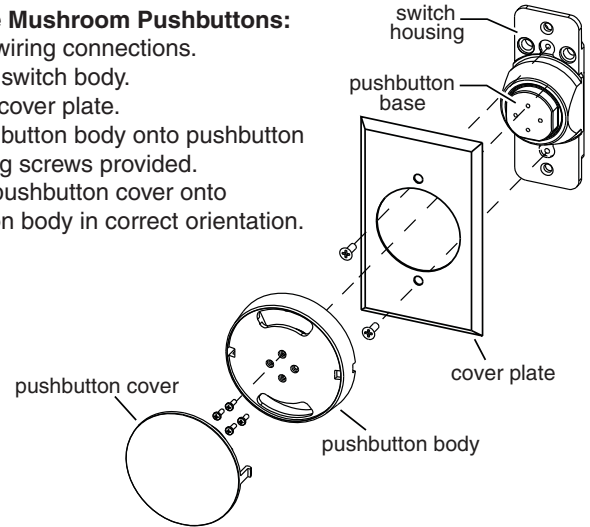
### Instructions

**1 Install system wiring (see PCB for contact positions). Screw PCB assembly onto switch housing using screws provided.**



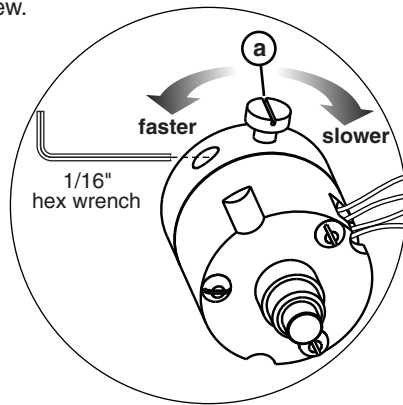
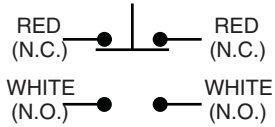
**2 On Large Mushroom Pushbuttons:**

1. Make wiring connections.
2. Mount switch body.
3. Install cover plate.
4. Screw button body onto pushbutton base using screws provided.
5. Snap pushbutton cover onto pushbutton body in correct orientation.



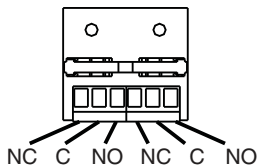
**3 All DA Pushbuttons 5A @ 30VDC**

After adjusting delay with screw (a), use the provided 1/16" hex wrench to tighten set screw.

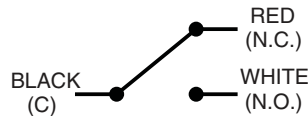


### Additional Info

**MOMENTARY (STANDARD)**  
STANDARD: 3A@30VDC

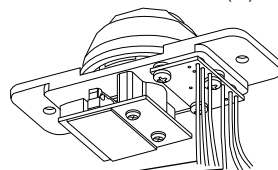
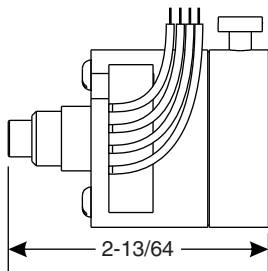


**AA PUSHBUTTONS**  
3A @ 30VDC



**LEDS OPERATE AT:**

12-24 VDC  
0.025A@28VDC  
RED, GREEN, YELLOW (+)  
BLACK (-)

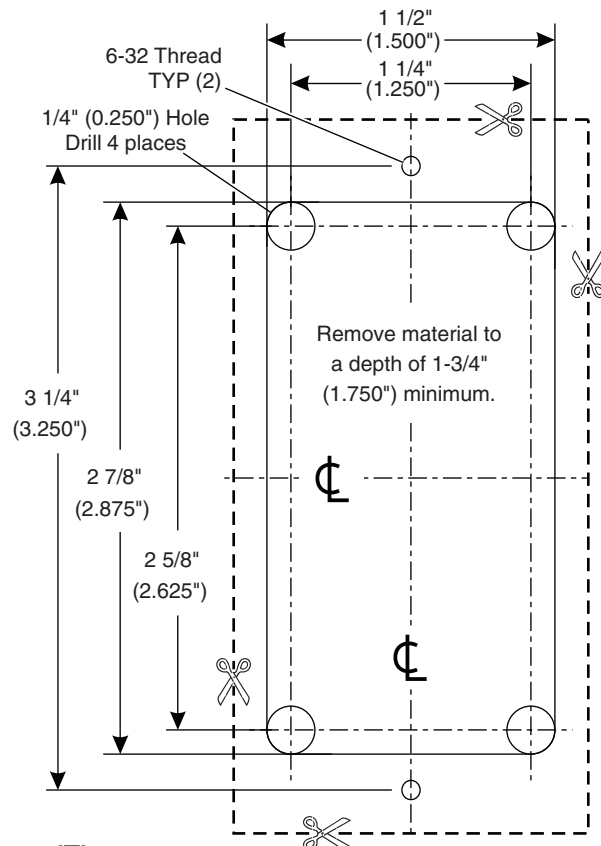


**NOTE: BLACK WIRE NEXT TO COLORED WIRE IS THE COLORED WIRE'S GND.**

### Template

Recommended cutout for 620-NS and 631-NS narrow pushbuttons.

**NOTE: Standard pushbuttons can be mounted using same cutout.**



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620142

# 620 and 631 Series Pushbuttons

## Installation Instructions and Template



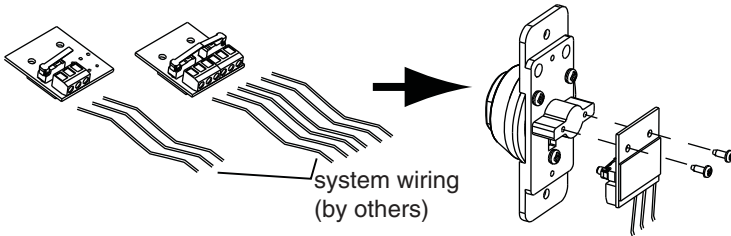
**DO NOT PHOTOCOPY THIS DOCUMENT!**  
**TEMPLATE MUST BE TO SCALE.**

### Information

The 620 and 631 Series Pushbuttons mount in a standard single-gang box. 620-NS & 631-NS pushbuttons mount with prep shown below. Cut out template or follow mounting prep dimensions.

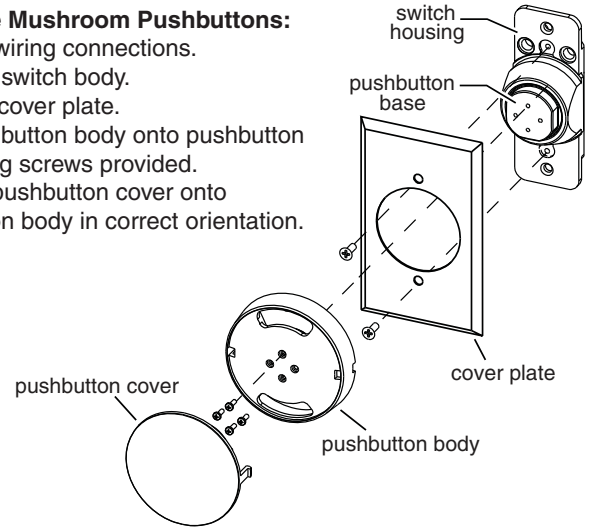
### Instructions

**1 Install system wiring (see PCB for contact positions). Screw PCB assembly onto switch housing using screws provided.**



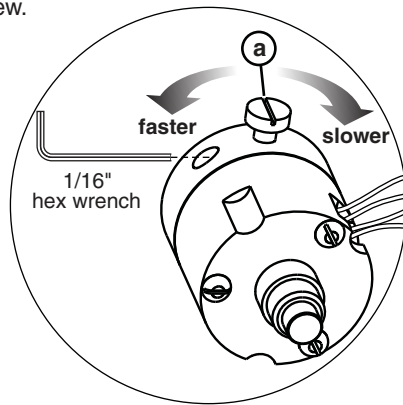
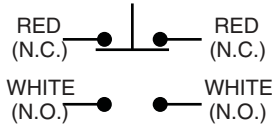
**2 On Large Mushroom Pushbuttons:**

1. Make wiring connections.
2. Mount switch body.
3. Install cover plate.
4. Screw button body onto pushbutton base using screws provided.
5. Snap pushbutton cover onto pushbutton body in correct orientation.



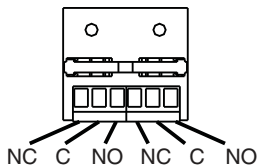
**3 All DA Pushbuttons 5A @ 30VDC**

After adjusting delay with screw (a), use the provided 1/16" hex wrench to tighten set screw.

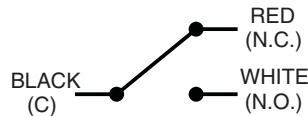


### Additional Info

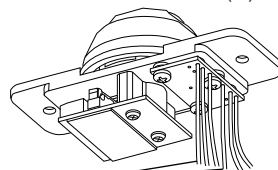
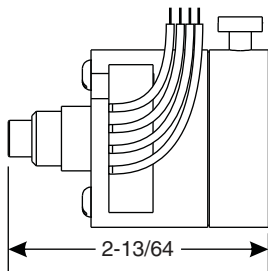
**MOMENTARY (STANDARD)**  
STANDARD: 3A@30VDC



**AA PUSHBUTTONS**  
3A @ 30VDC



**LEDS OPERATE AT:**  
12-24 VDC  
0.025A@28VDC  
RED, GREEN, YELLOW (+)  
BLACK (-)

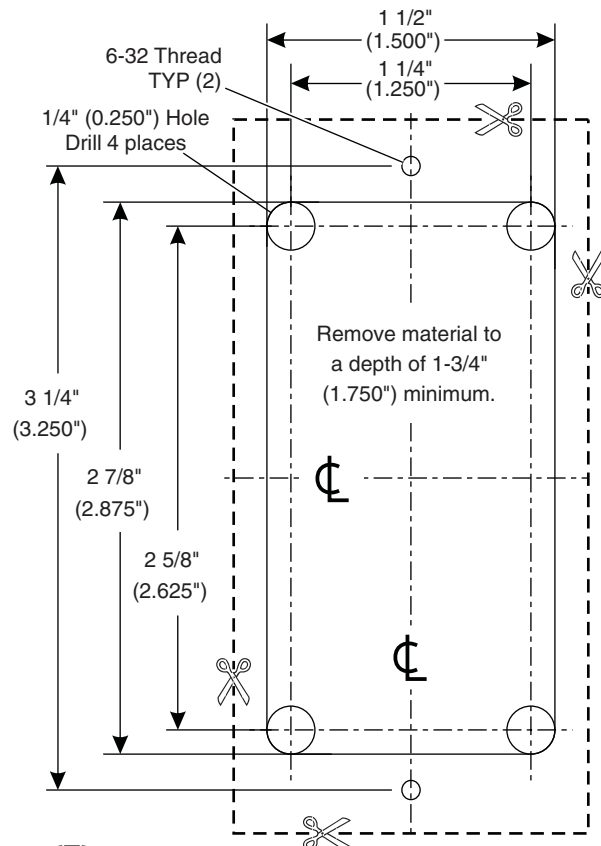


**LED WIRES**  
**NOTE:** BLACK WIRE NEXT TO COLORED WIRE IS THE COLORED WIRE'S GND.

### Template

Recommended cutout for 620-NS and 631-NS narrow pushbuttons.

**NOTE:** Standard pushbuttons can be mounted using same cutout.



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66000

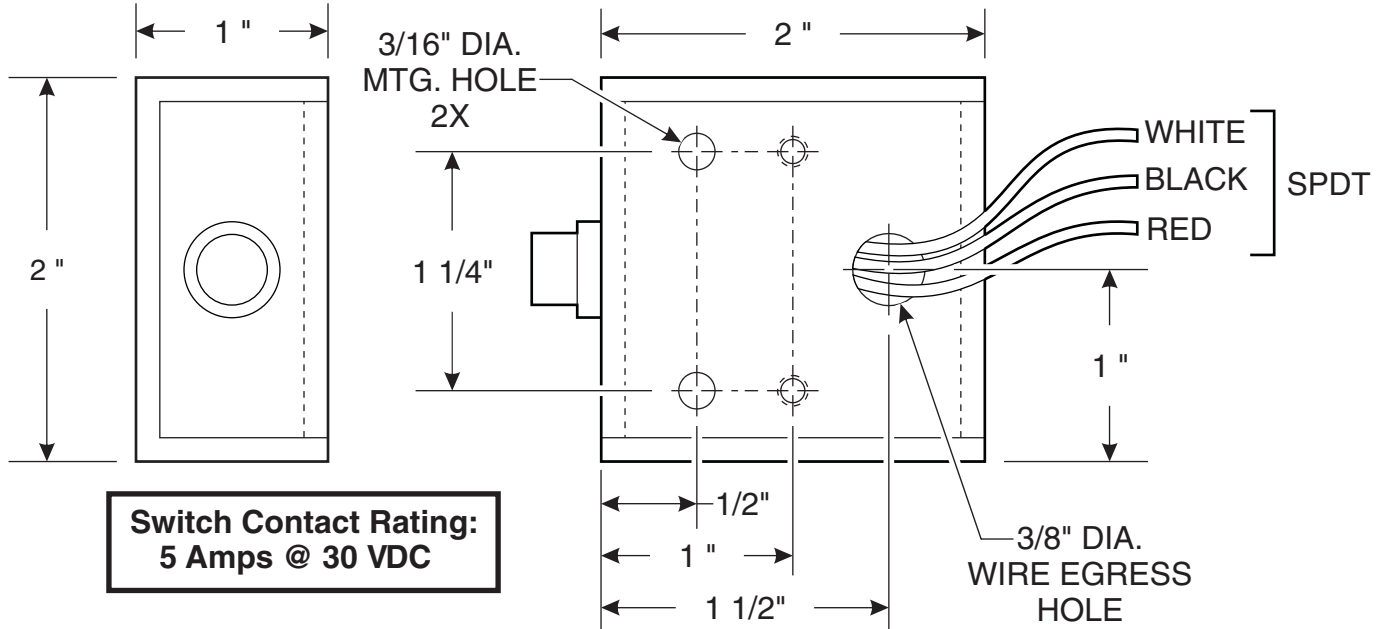
# 660PB/660PB-DP

Installation Instructions



## Surface Box

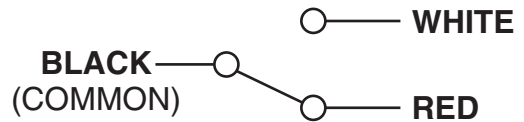
The 660PB is a SPDT momentary pushbutton switch that can be surface mounted. A typical application is an under-desk release of entrance doors.



## Shipped Items

- 8-32 x 3/8" Lg Pan HD Screw (2x)
- #8 x 3/4 Lg Pan HD Sheet Metal Screw (2x)
- #8 External Tooth Lockwasher (2x)

## Pushbutton Switch



Shown in OFF position.

## Mounting Instructions

1. Remove screws which secure housing cover to switch housing.
2. Place switch housing in desired position and mark mounting hole locations.
3. Pre-drill for either 8-32 x 3/8" pan head screws or #8 sheet metal screws.
4. Mount switch housing using two screws and two lock washers.
5. Make wiring connections (see above diagram).
6. Install housing cover.

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64000

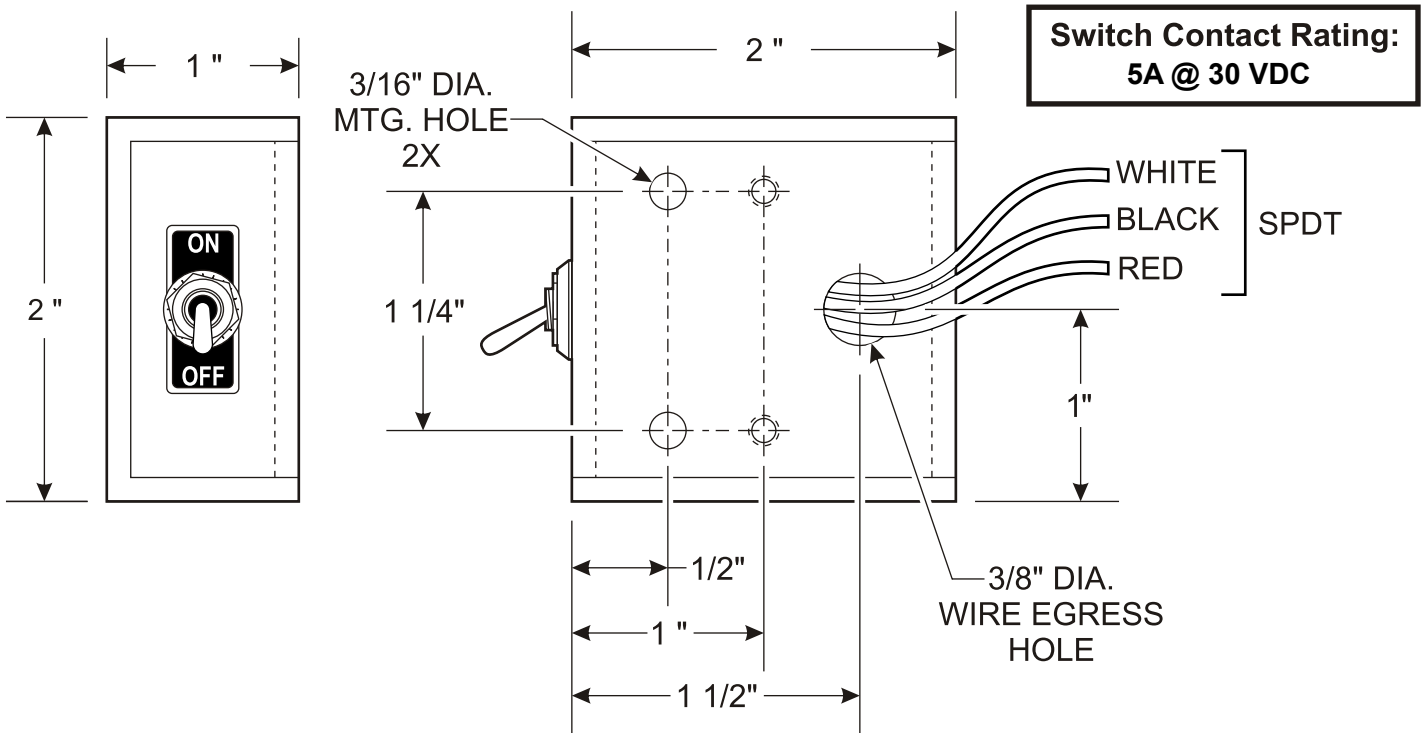
# 660T4

## Installation Instructions



### Surface Box

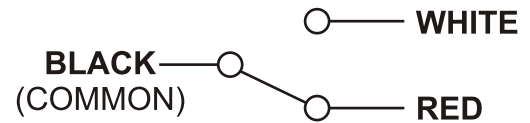
The 660T4 is a SPDT maintained toggle switch that can be surface mounted. A typical application is an under-desk release of entrance doors.



### Shipped Items

- 8-32 x 3/8" Lg Pan HD Screw (2x)
- #8 x 3/4 Lg Pan HD Sheet Metal Screw (2x)
- #8 External Tooth Lockwasher (2x)

### Toggle Switch - T4



Shown in OFF position.

### Mounting Instructions

1. Remove screws which secure housing cover to switch housing.
2. Place switch housing in desired position and mark mounting hole locations.
3. Pre-drill for either 8-32 x 3/8" pan head screws or #8 sheet metal screws.
4. Mount switch housing using two screws and two lock washers.
5. Make wiring connections (see above diagram).
6. Install housing cover.

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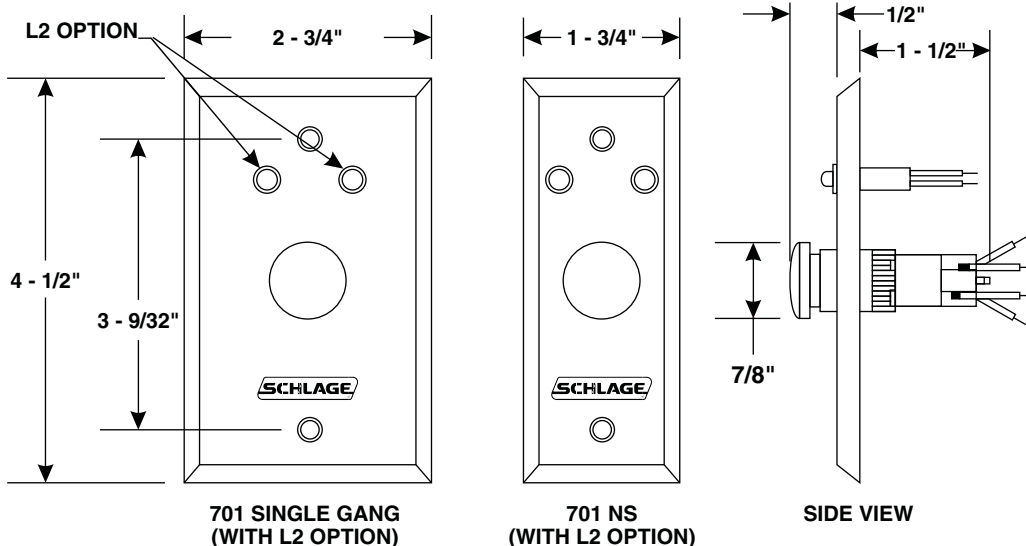


70101\_FST

# 701 Series Pushbutton Switch Mushroom Cap



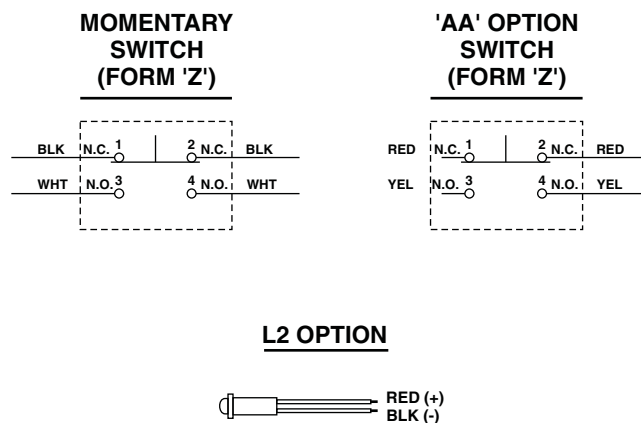
## Installation Instructions



### Specifications

<b>Switches:</b>	<b>L2 Options:</b>
<b>Contact Ratings:</b> 5 Amps @ 30 VDC	<b>Input Requirements:</b> Voltage: 12 - 24 VAC/VDC Current: 30 mA Max each
<b>Wire Leads:</b> 20 AWG - 6" Long	<b>Wire Leads:</b> 24 AWG - 6" Long

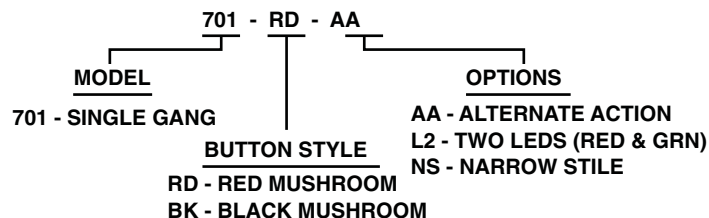
### Wire Colors

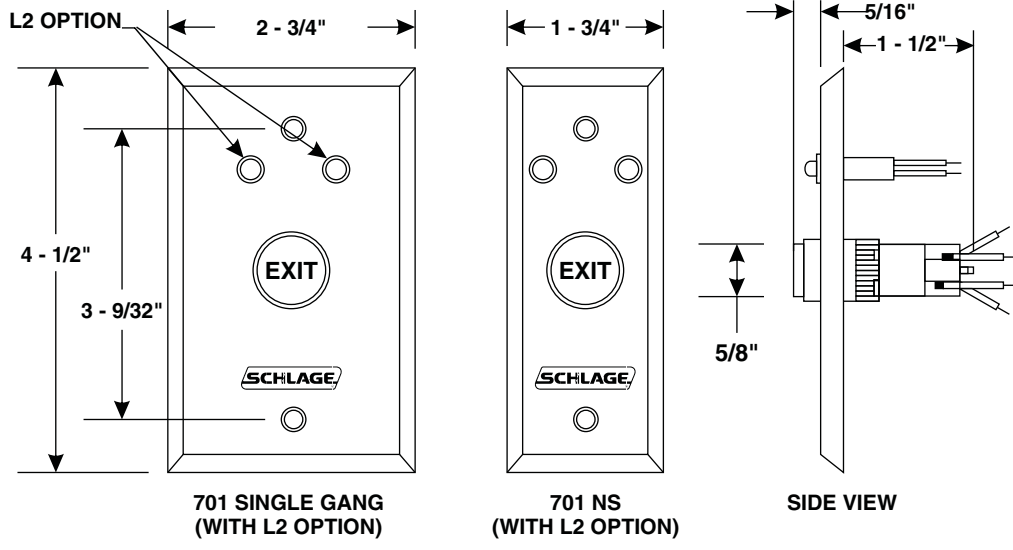


### Recommended Electrical Mounting Box

<b>Style:</b>	<b>Part Number:</b>
Mortise Mount	724-40
Surface Mount	744-1

### Model Numbering

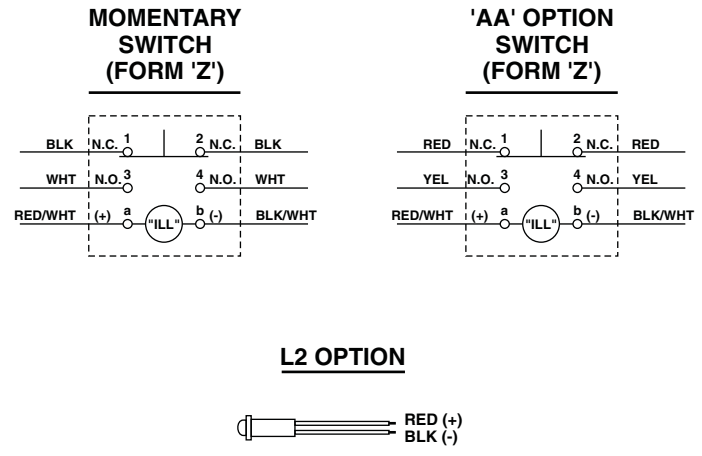




**Specifications**

<b>Switches:</b>	<b>L2 Options:</b>
<b>Contact Ratings:</b> 5 Amps @ 30 VDC	<b>Input Requirements:</b> Voltage: 12 - 24 VAC/VDC Current: 30 mA Max each
<b>“III” Option:</b> 24 VDC LED	<b>Wire Leads:</b> 24 AWG - 6” Long
<b>Wire Leads:</b> 20 AWG - 6” Long	

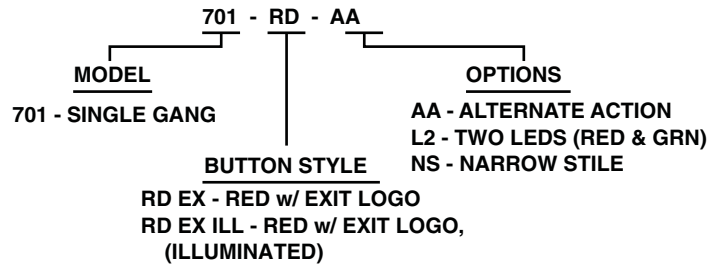
**Wire Colors**



**Recommended Electrical Mounting Box**

<b>Style:</b>	<b>Part Number:</b>
Mortise Mount	724-40
Surface Mount	744-1

**Model Numbering**



**Customer Service**

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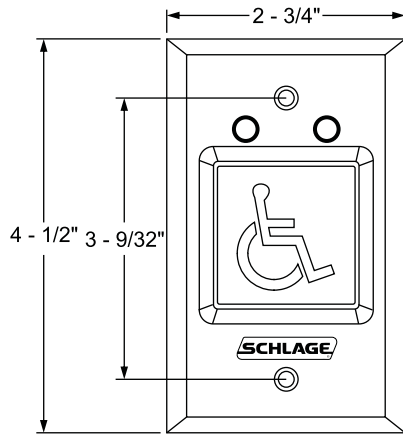




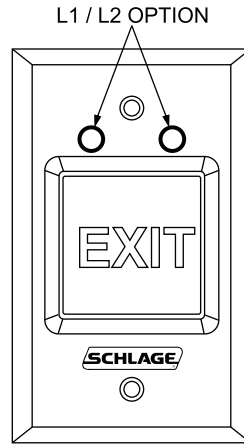
70901\_FST

# 709 Series Illuminated Pushbutton Switch

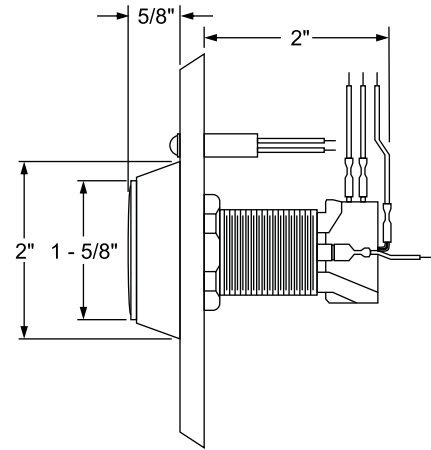
## Installation Instructions



709 SINGLE GANG  
(‘BLH’ STYLE SHOWN w/‘L2’ OPTION)



709 SINGLE GANG  
(‘RD EX’ STYLE SHOWN w/‘L2’ OPTION)



SIDE VIEW

### Specifications

**Switches:**

**Contact Ratings:**

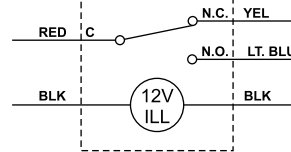
5 Amps @ 30 VDC

**Wire Leads:**

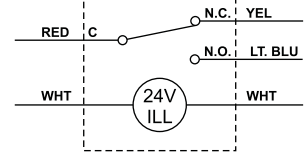
20 AWG - 8” Long

### Wire Colors

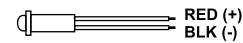
**12 VOLT SPDT SWITCH CONTACTS**



**24 VOLT SPDT SWITCH CONTACTS**



**L1 / L2 OPTION**



### Recommended Electrical Mounting Box

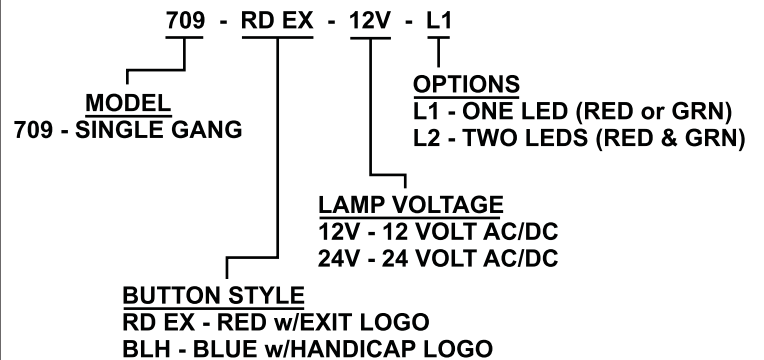
**Style:**

Surface Mount

**Part Number:**

744-1

### Model Numbering



### Customer Service

1-877-671-7011

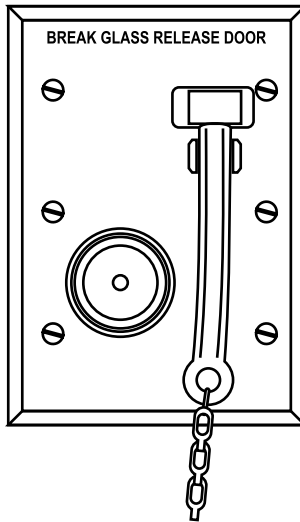
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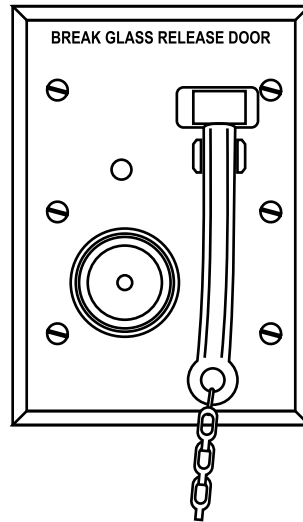
# 740 Series Break Glass Release and Indicator Assembly



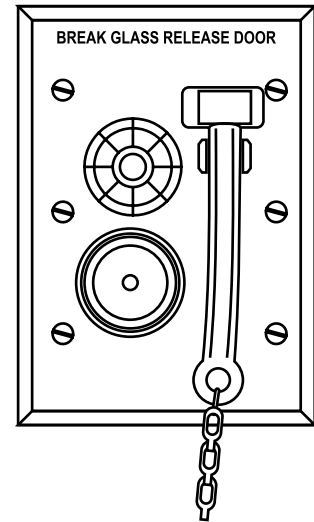
## Installation Instructions



**#740 Standard Break Glass Assembly**



**#741 Similar to #740 with additional LED Luminous Indicator to signal usage.**



**#742 Similar to #740 with the addition of an audio to signal usage.**

### Operations

#740 Series Break Assemblies are a preferred method of releasing non-designed egress doors.

The unit consists of a replaceable Break Glass cartridge that normally holds a plunger activated switch that is depressed until the cartridge lens is broken.

When the lens is broken, the plunger jumps forward and alters the switch contact position. Four replacement lens disks are provided with each assembly.

A small hammer is attached to the Break Glass Assembly via a mounting clip along with 12" of chain to insure it will not stray from the assembly.

On the top edge of the assembly is a red sign clearly indicating the purpose of the release.

### Why Used

The Break Glass Assembly is a preferred alternate to the conventional pull box installation, as accidental activation is all but eliminated as far as false alarms are concerned. Breaking the lens requires more of a commitment on the user's part than merely pulling the handle and leaving the scene.

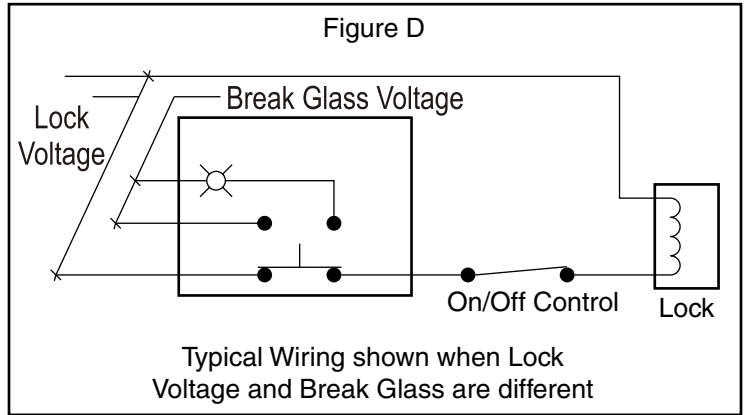
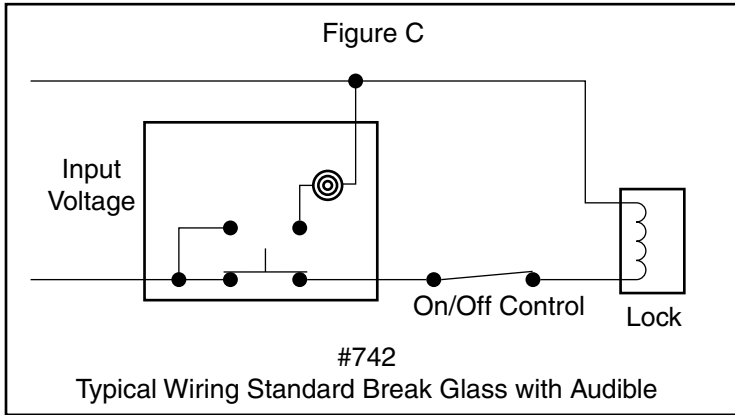
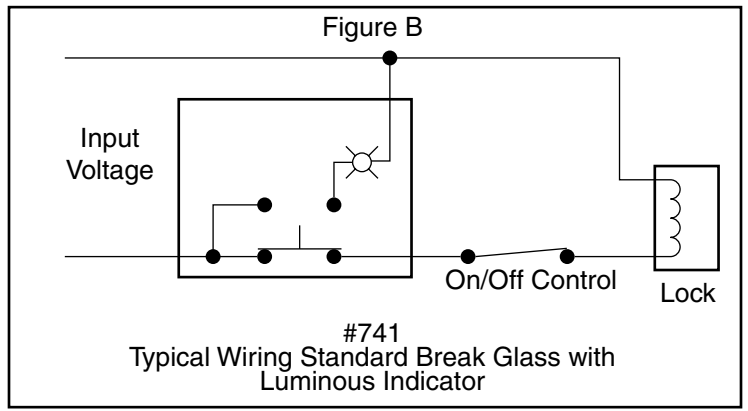
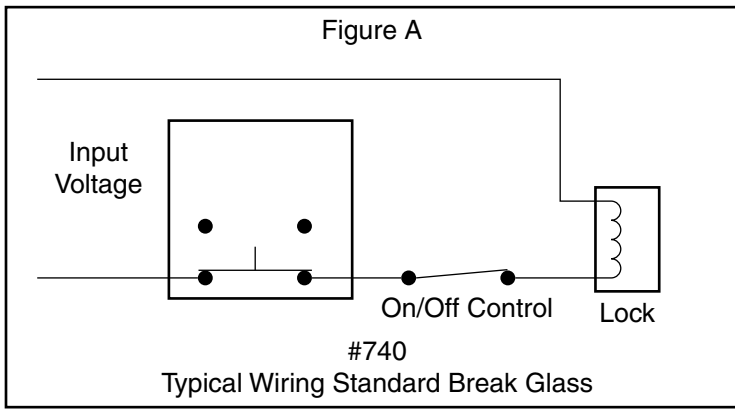
### Where Used

Laboratories, testing areas, and other similar rooms provided with exit doors.

Fail Safe multiple door interlocks, where in the event of equipment malfunction, incorrect usage or wiring, someone may be trapped between doors.

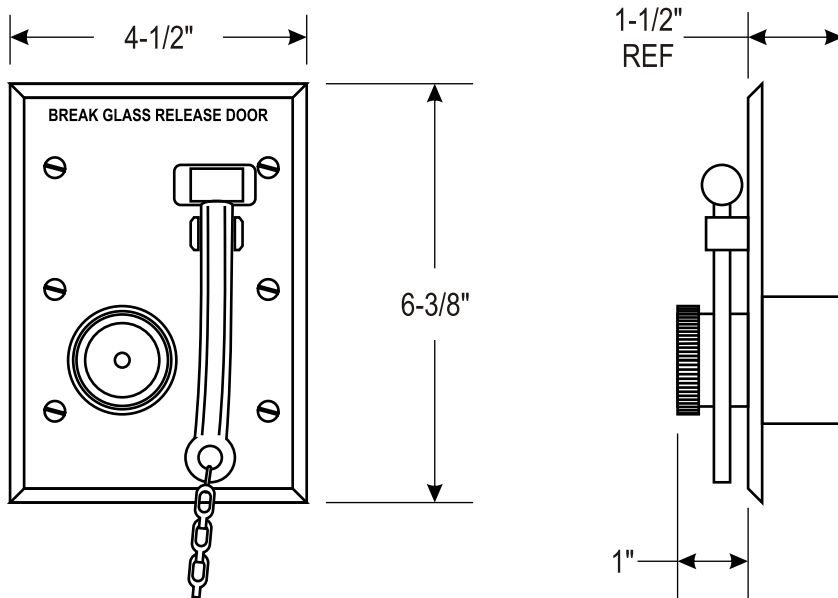
### Features

- Surface or mortise mounts, in a standard 3 gang enclosure.
- Compatible with all Fail Safe type Electric Locking Systems.
- An effective alternate to the standard pull box type.
- Standard finish US26, special finishes available, consult factory for price and delivery.



Note: Figures B and C are shown with Break Glass being operated with voltage the same as the lock. For installations utilizing different operating voltages, see Figure D.

## Specifications



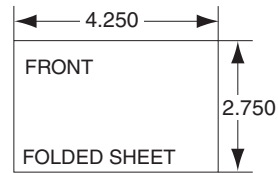
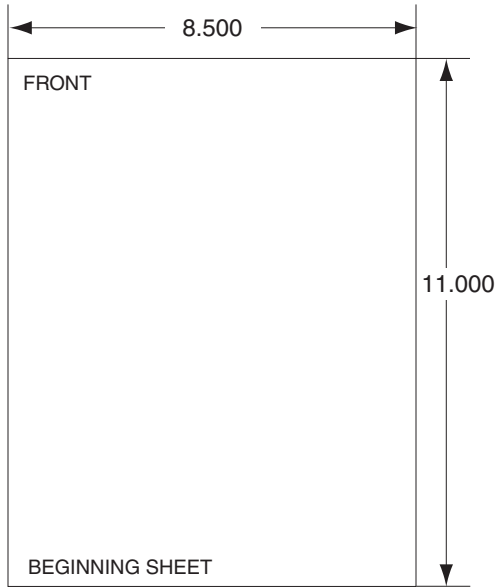
Switch contacts rated 6 amps @ 120 VAC  
Screw type wiring connections

### Customer Service

1-877-671-7011

www.allegion.com/us





**DRAWING:** In this area, draw the following:

beginning sheet, to scale

folded sheet, to scale

Enter the dimensions of the sheet with three decimal places.

Be sure to include FRONT labels, which indicate that the bar code must remain visible when the final fold is completed.

Additional Notes:
None

Revision History						Revision Description:					
A	B	C	D	E	F	C > Allegion Rebranding					
N/A	33550	060572									
Material						Edited By		Approved By		EC Number	Release Date
White Paper						R. Byun		P. Bockelman		060572	12/05/2014
Notes						Title					
<ol style="list-style-type: none"> <li>printed two sides</li> <li>printed black</li> <li>tolerance: ± .13</li> <li>see sheet 2 for artwork</li> <li>printed in country may vary</li> <li>drawings above not to scale</li> </ol>						Installation Instruction, 740 Series Break Glass Release					
Creation Date			Number			Revision					
02/12/2013			24481707			C					
Created By				Activity							
D. Myers				3899 Hancock Expwy							
Software: Illustrator CS6				Security, CO 80911				Allegion Copyright © 2014			

**Notes:** Enter any notes here. These notes must include:

how many sides of the paper are printed

ink color (usually black, may also be one or two specific colors, such as a Pantone value, or





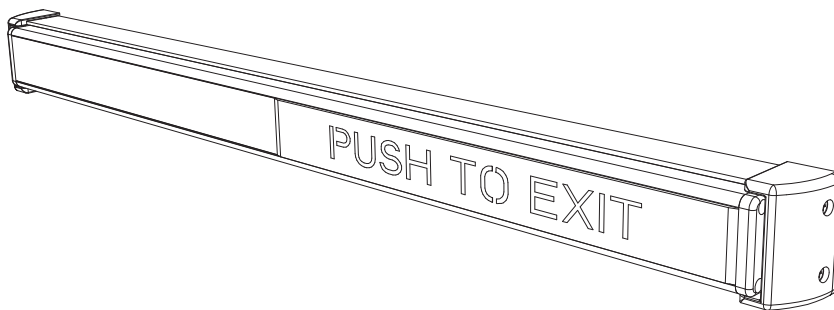
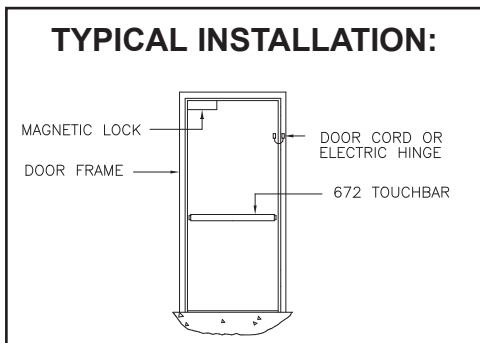
941128-00

# 672 Series



RX TouchBar Exit Device

Installation Instructions



**GENERAL DESCRIPTION:** The 672 Series Request to Exit TouchBar is a non-latching releasing device. It is most often used as a switch to release a magnetic lock. A double pole output is standard, and allows for use when integrating with a monitoring system which requires a signal for legal egress. The device can be ordered to fit 3 standard door openings or can be cut to size in the field. A 24-inch (minimum) pre-connected cable comes standard to make installation easier.

These devices are to be installed in accordance with the applicable codes and the local authorities having jurisdiction. It is up to local authority having jurisdiction whether this is to be installed in lieu of panic hardware.

## WHAT MODEL DO YOU HAVE?

**EXAMPLE: 672-36-628-RD-RHR-WD**

**HANDING:**  
RHR or LHR (Shown above) to change hand (if required) see page 2.

**DOOR WIDTH:**  
36"  
42"  
48"

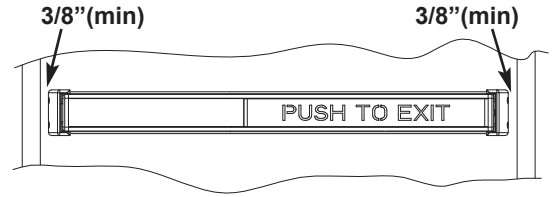
**OPTIONS:**  
AR 18" armored door cord (no wire)  
WD Sex nuts/screws for wood or hollow metal door applications  
SHK Aluminum door mounting shim kit (screws included)

**PUSHPAD:**  
RD Black Pushpad w/ RED letters  
GID Glow-in-dark

**BAR FINISHES:**  
628 Satin aluminum  
313 Dark Satin Bronze

**STEP 1**

Place the TouchBar on the door and measure the distance between each end and the stop (or frame on a blade stop door). It should be at least 3/8" of an inch. If so, proceed to step 2. If not, the TouchBar will need to be cut to size.



**CUTTING TOUCHBAR TO SIZE:**

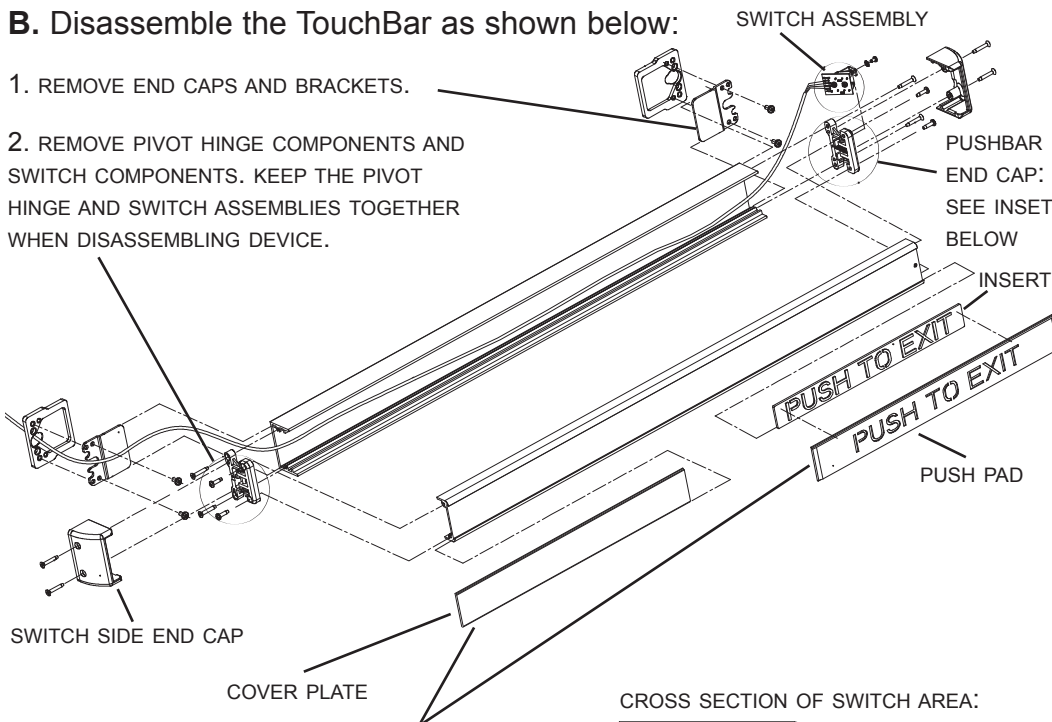
**A.** Measure the DOOR WIDTH, hereafter referred to as dimension "X"

**HOLLOW METAL OR WOOD DOOR:**



**B.** Disassemble the TouchBar as shown below:

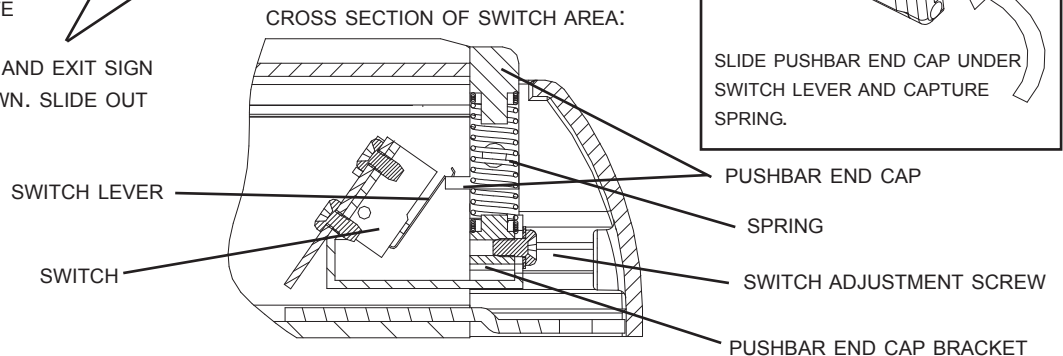
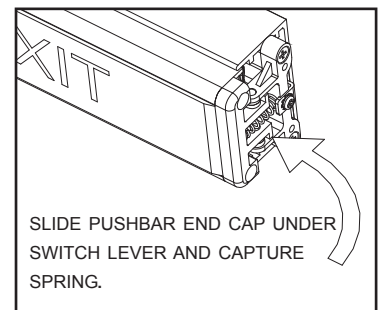
1. REMOVE END CAPS AND BRACKETS.
2. REMOVE PIVOT HINGE COMPONENTS AND SWITCH COMPONENTS. KEEP THE PIVOT HINGE AND SWITCH ASSEMBLIES TOGETHER WHEN DISASSEMBLING DEVICE.



**CHANGING HAND:**

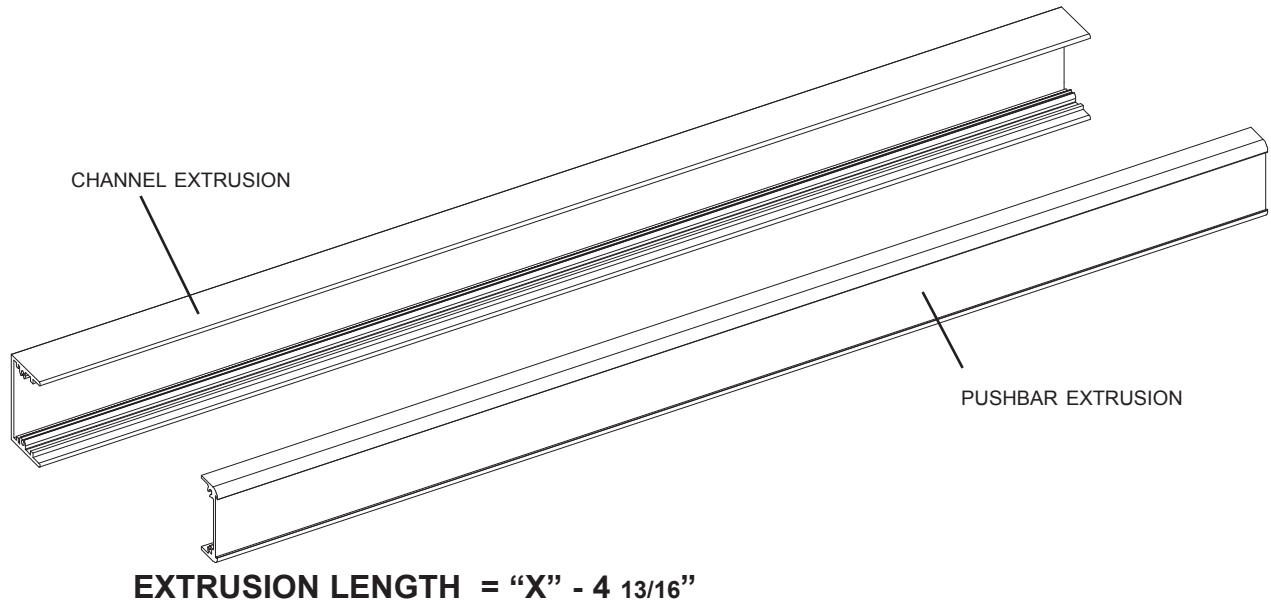
1. REMOVE SWITCH SIDE END CAP AND PUSHBAR END CAP.
2. REMOVE "PUSH TO EXIT" SIGN AND INSERT AND REVERSE LETTER DIRECTION.
3. REFER TO THIS PAGE TO RE-INSTALL END CAPS.

3. SLIDE OUT PUSH PAD AND EXIT SIGN (IF FURNISHED) AS SHOWN. SLIDE OUT COVER PLATE.

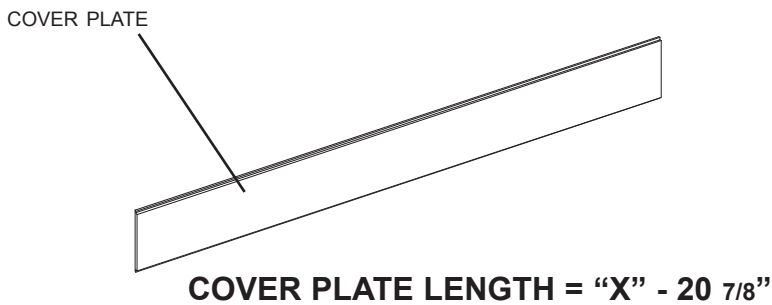


**SEE BACK COVER FOR COMPLETE EXPLODED VIEW.**

**C.** Calculate the correct length to cut the housing extrusion and pushbar extrusion using the door width as determined in step 1 (dimension “X”).



**D.** Calculate the correct length to cut the cover plate extrusion using the door width determined in step 1.



**E.** Cut metal parts to length determined above (using a metal miter saw is recommended to ensure a good clean cut and a right angle). Do not cut the plastic push pad.

**F.** Reassemble the TouchBar (without installing the end caps). Note that the screws which connect parts to the aluminum extrusions are self tapping (thread forming) screws. It is recommended that a power tool be used to drive them in. This will make assembly easier.

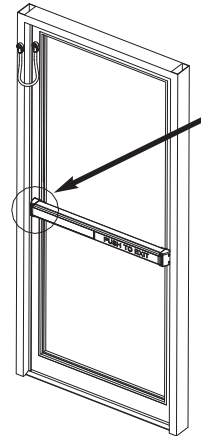
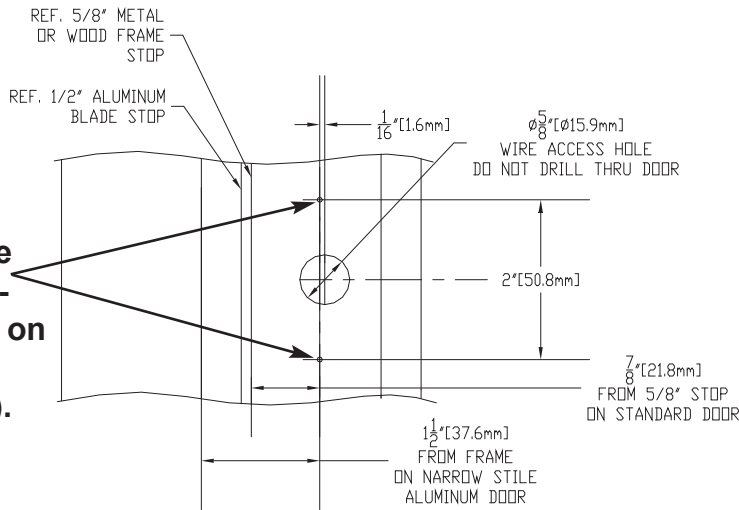
**NOTE: AT THIS TIME THE TOUCHBAR CAN BE HANDED BY ASSEMBLING THE "PUSH TO EXIT" SIGN (IF FURNISHED) IN THE CORRECT ORIENTATION.**

**STEP 2 LOCATING AND DRILLING THE WIRE HOLE**

- a. On the **hinge-side** of door, mark a horizontal centerline at the desired height for the TouchBar.
- b. Place a channel end cap bracket over the centerline.
- c. Center wire hole in the adapter plate with the centerline that was marked on door. (See below)
- d. Mark center of wire hole and center of one mounting hole.
- d. Drill a 5/8" wire access hole at wire hole mark. **DO NOT DRILL WIRE HOLE THRU DOOR.**

**WIRE HOLE LOCATION:**

Note that hole size and location depends on fastener type (SEE STEP 3).

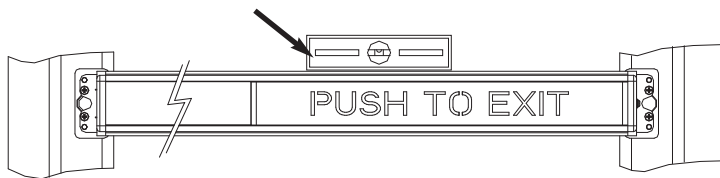


**WIRE HOLE IS ALWAYS ON HINGE SIDE OF FRAME**

**STEP 3 MARK AND DRILL MOUNTING HOLES**

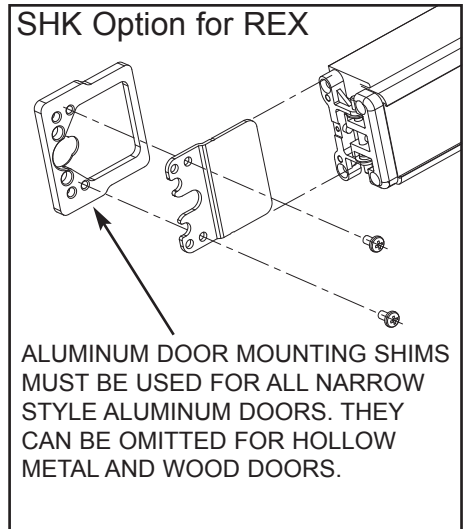
Fasten TouchBar to door. There are three methods of fastening the device to the door:

USE A LEVEL WHEN MARKING HOLES



**SELF DRILLING SELF TAPPING SCREWS:**

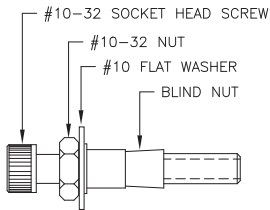
- a. Hold device in position determined in step 2.
- b. Using a powered screw driver, screw in one screw on one side.
- c. Level the device. Secure other side with self drilling screw.
- d. Install remaining two screws.



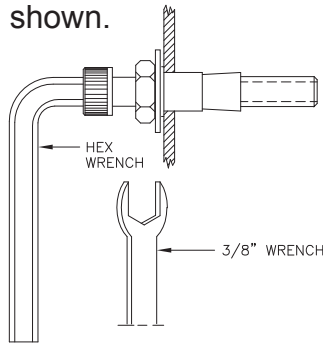
**BLIND NUT INSTALLATION:**

- a. Drill four 9/32” holes *on device side only* of door in positions marked in step 3.
- b. Install blind nuts as shown to right.
- c. Secure device using # socket cap screws.

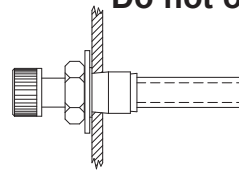
I. Assemble tool to install blind nut as shown using the parts supplied.



II. Install blind nut assembly into pre-drilled 9/32” hole in door. Hold the socket head screw firmly with the hex wrench to prevent rotations as shown.



III. Using a 3/8” wrench, rotate the nut clockwise until the nut collapses against the inside of the door skin. Some resistance will be felt. **Carefully tighten until nut is secure. Do not overtighten.**

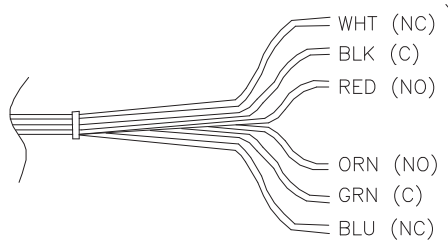


**WD OPTION - SEX NUTS FOR WOOD DOORS:**

- a. Drill four 13/32” holes thru door in positions marked in step 3.
- b. Using a rubber mallet, hammer in sex nuts from opposite side of door.
- c. Secure device using #10-24 pan head screws.

**STEP 3: WIRING**

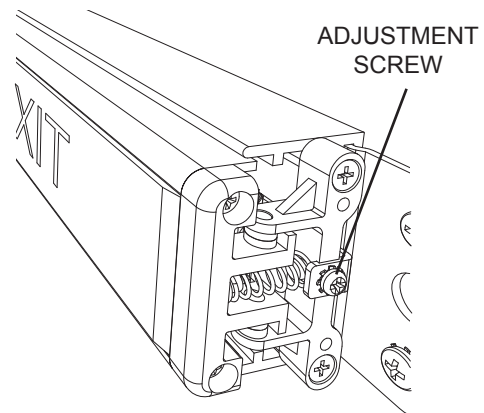
Provision must be made for conductors to get to the device on the door. Common methods are an electric hinge, door cord, or power transfer device. Purchase with AR option to receive a model 798-18 armored door cord to facilitate power transfer. Make wiring connections as required by the system wiring diagram. Contact colors are shown below:



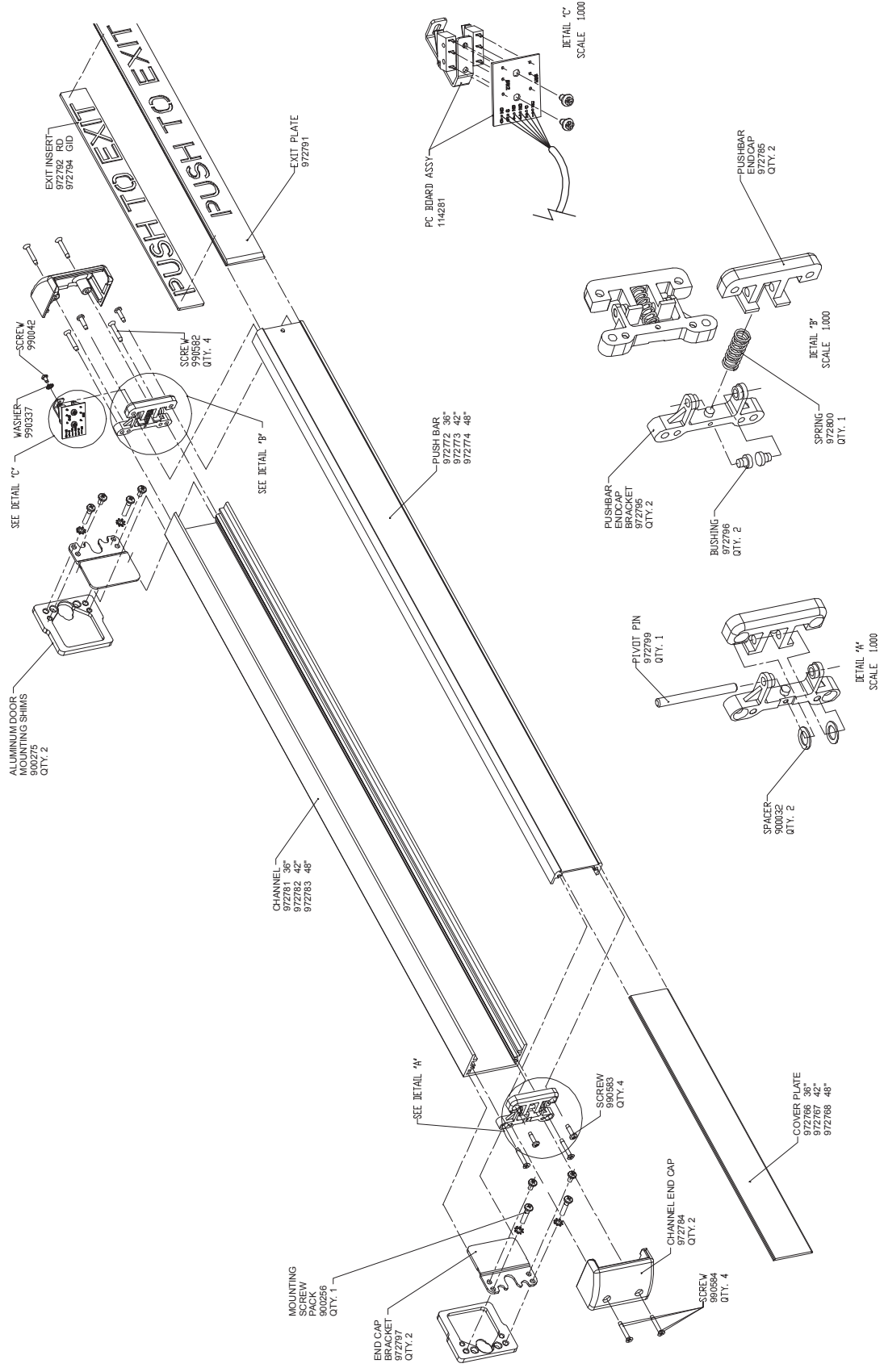
**DPDT(STANDARD)  
4 AMPS @30VDC**

**SWITCH ADJUSTMENT:**

The switch sensitivity is set at the factory. If the switch is determined to be too sensitive or not sensitive enough it can be adjusted by loosening the screw which secures the switch assembly and sliding the switch to the left or right. **BE SURE TO TIGHTEN THE SCREW AFTER ADJUSTMENT.**



# PARTS BREAKDOWN





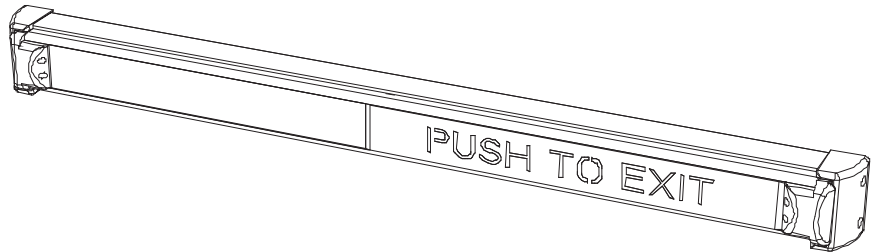
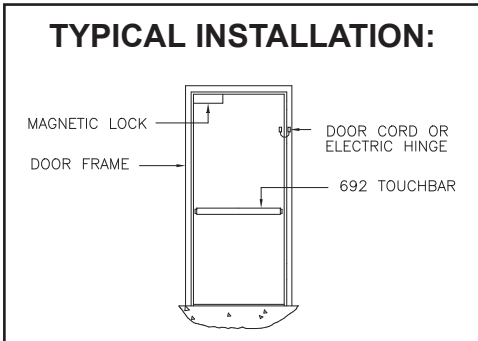
941139-00

692



TouchBar

Installation and Wiring Instructions



**GENERAL DESCRIPTION:** The 692 Series TouchBar is a non-latching releasing device which uses two photo beams to detect intention to exit. Breaking either or both beams will deactivate the relay. Loss of power to the device will also deactivate the relay. It is most often used as a switch to release a magnetic lock. A double pole output is standard. The device can be ordered to fit 3 standard door openings. A 24-inch (minimum) pre-connected cable comes standard to make installation easier. These devices are to be installed in accordance with the applicable codes and the local authorities having jurisdiction. It is up to local authority having jurisdiction whether this can be installed in lieu of panic hardware.

<b>ELECTRICAL SPECIFICATIONS:</b>	<b>INPUT RATING:</b>	<b>12/24 VOLTS DC @500mA MAX.</b>
	<b>CONTACT RATING:</b>	<b>4 AMPS @ 30 VDC</b>

**WHAT MODEL DO YOU HAVE?**

**EXAMPLE: 692-36-628-RD-RHR-WD**

**HANDING:**  
RHR or LHR (Shown above)  
To change hand (if required) see page 2.

**DOOR WIDTH:**  
36"  
42"  
48"

**OPTIONS:**  
WD Sex nuts/screws for wood or hollow metal door applications  
SHK Aluminum door mounting shim kit (screws included)

**PUSHPAD:**  
RD RED EXIT  
GID GLOW IN DARK EXIT

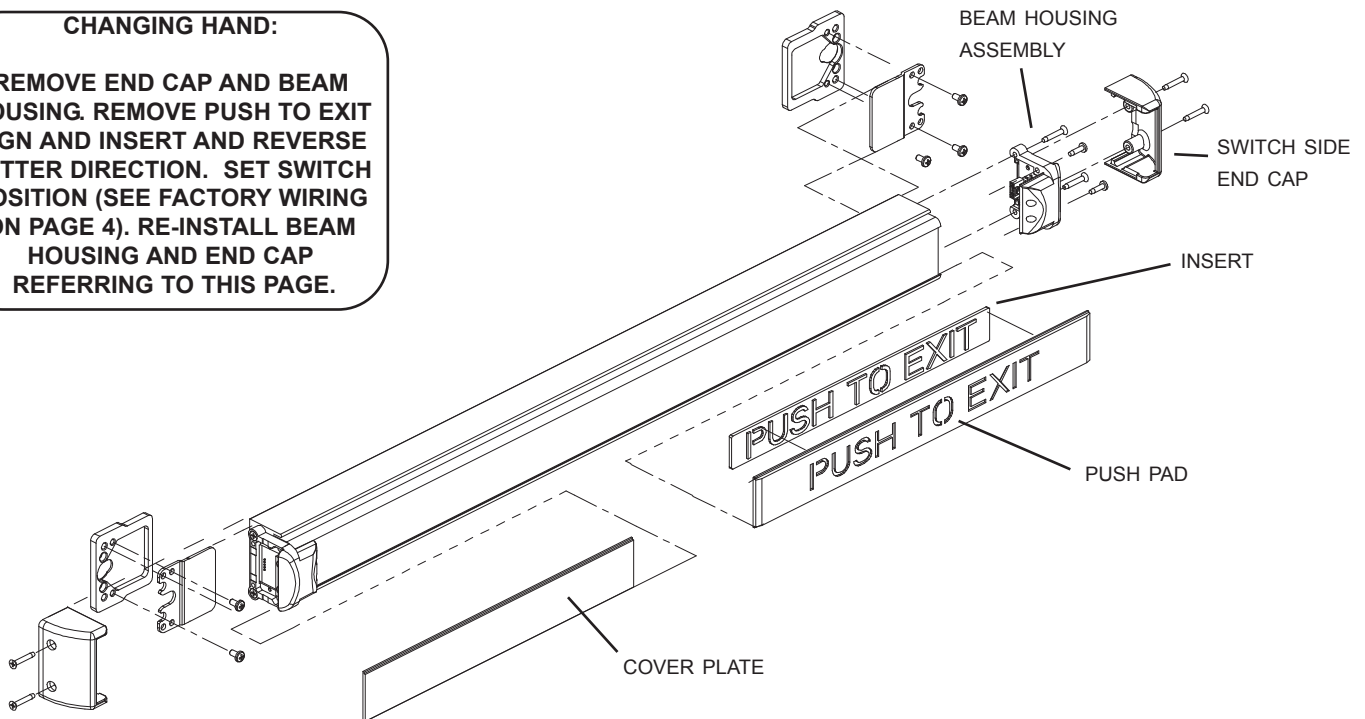
**BAR FINISHES:**  
628 Satin aluminum  
313 Dark Satin Bronze

## STEP 1 VERIFY CORRECT HAND.

*Note: devices ordered specifically for the job should not need to be handed.*

### CHANGING HAND:

REMOVE END CAP AND BEAM HOUSING. REMOVE PUSH TO EXIT SIGN AND INSERT AND REVERSE LETTER DIRECTION. SET SWITCH POSITION (SEE FACTORY WIRING ON PAGE 4). RE-INSTALL BEAM HOUSING AND END CAP REFERRING TO THIS PAGE.

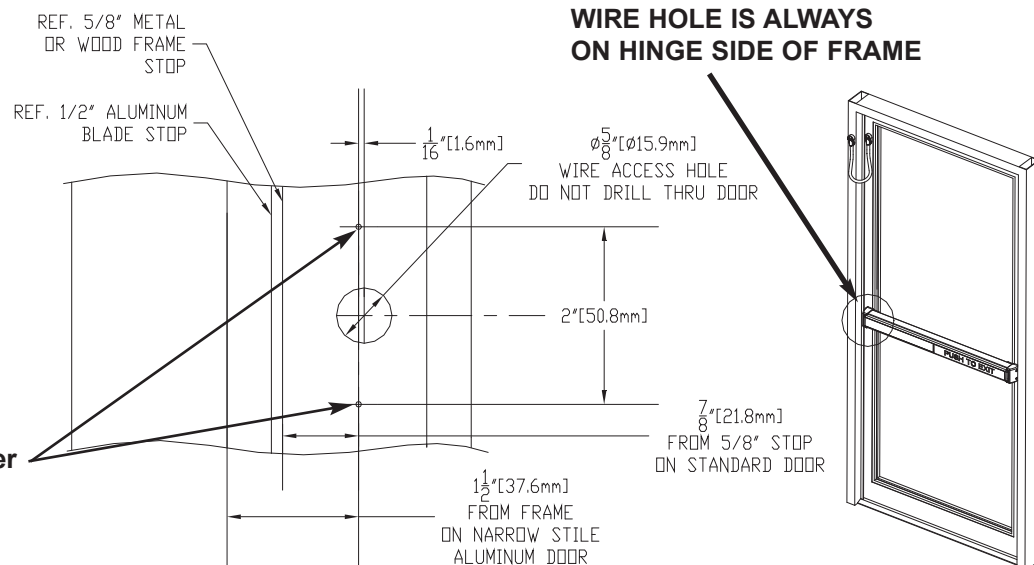


SEE BACK COVER FOR COMPLETE EXPLODED VIEW.

## STEP 2 LOCATING AND DRILLING THE WIRE HOLE

- On the **hinge-side** of door, mark a horizontal centerline at the desired height for the TouchBar.
- Place a channel end cap bracket over the centerline.
- Center wire hole in the adapter plate with the centerline that was marked on door. (See below)
- Mark center of wire hole and center of one mounting hole.
- Drill a 5/8" wire access hole at wire hole mark. **DO NOT DRILL WIRE HOLE THRU DOOR.**

### WIRE HOLE LOCATION:

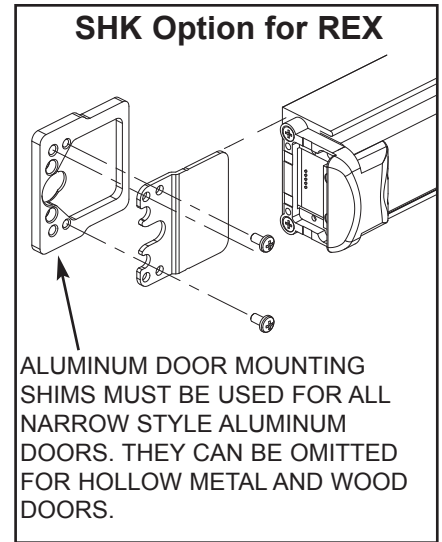
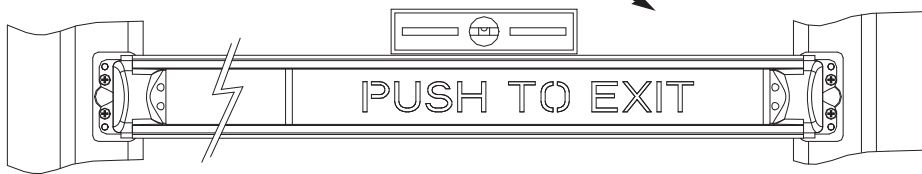




### STEP 3 MARK AND DRILL MOUNTING HOLES

Fasten TouchBar to door. There are three methods of fastening the device to the door:

USE A LEVEL WHEN MARKING HOLES



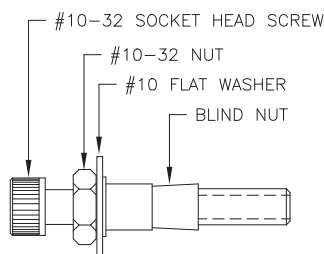
#### SELF DRILLING SELF TAPPING SCREWS:

- Hold device in position determined in step 3.
- Using a powered screw driver, screw in one screw on one side.
- Level the device. Secure other side with self drilling screw.
- Install remaining two screws.

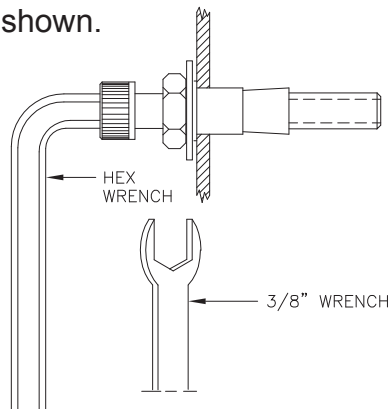
#### BLIND NUT INSTALLATION:

- Drill four 9/32" holes *on device side only* of door in positions marked in step 3.
- Install blind nuts as shown to right.
- Secure device using #10-32 socket cap screws.

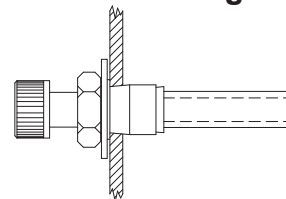
I. Assemble tool to install blind nut as shown using the parts supplied.



II. Install blind nut assembly into pre-drilled 9/32" hole in door. Hold the socket head screw firmly with the hex wrench to prevent rotations as shown.



III. Using a 3/8" wrench, rotate the nut clockwise until the nut collapses against the inside of the door skin. Some resistance will be felt. **Carefully tighten until nut is secure. Do not overtighten.**



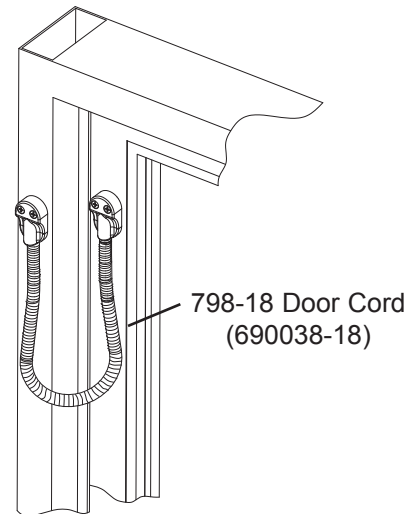
#### WD OPTION - SEX NUTS FOR WOOD DOORS:

- Drill four 13/32" holes thru door in positions marked in step 3.
- Using a rubber mallet, hammer in sex nuts from opposite side of door.
- Secure device using #10-24 pan head screws.

#### STEP 4: WIRING

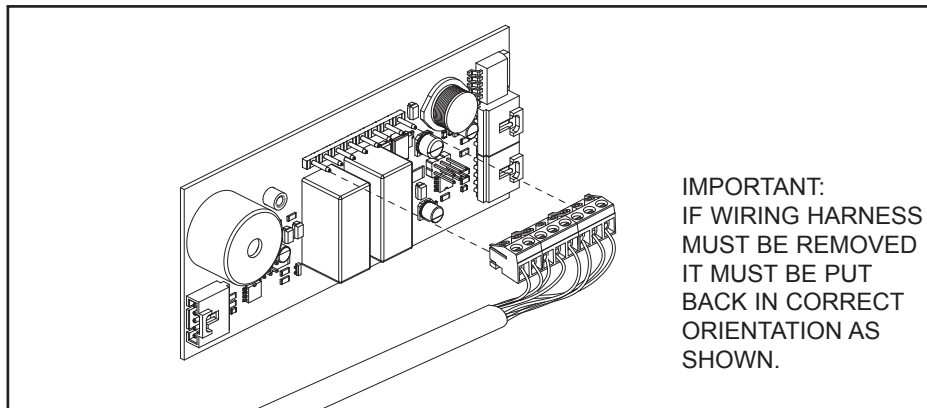
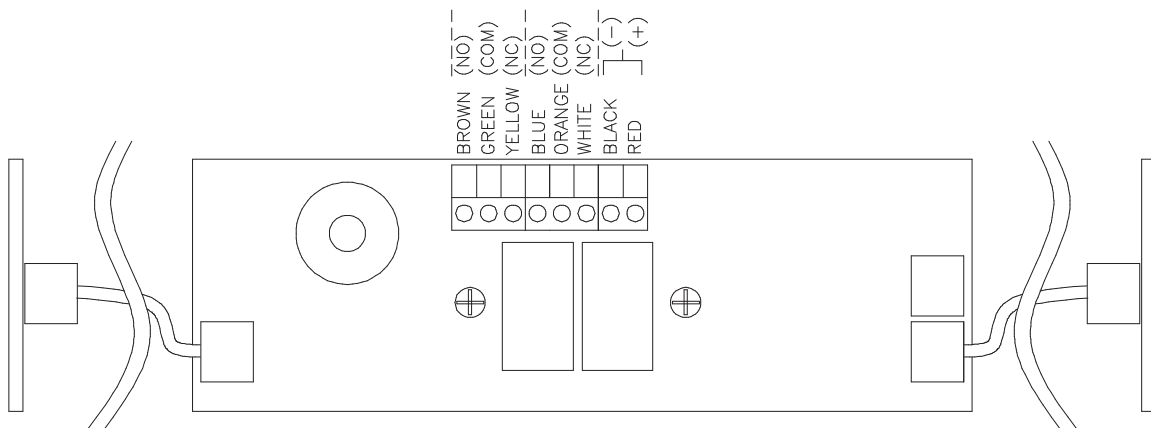
Provision must be made to get wiring to the device on the door. Common methods are an electric hinge, door cord, or power transfer device. A model 798-18 Armored Door Cord Kit is included as standard equipment with each 692 TouchBar to facilitate power transfer. Make wiring connections as required by the system wiring diagram.

See next page for typical wiring methods.

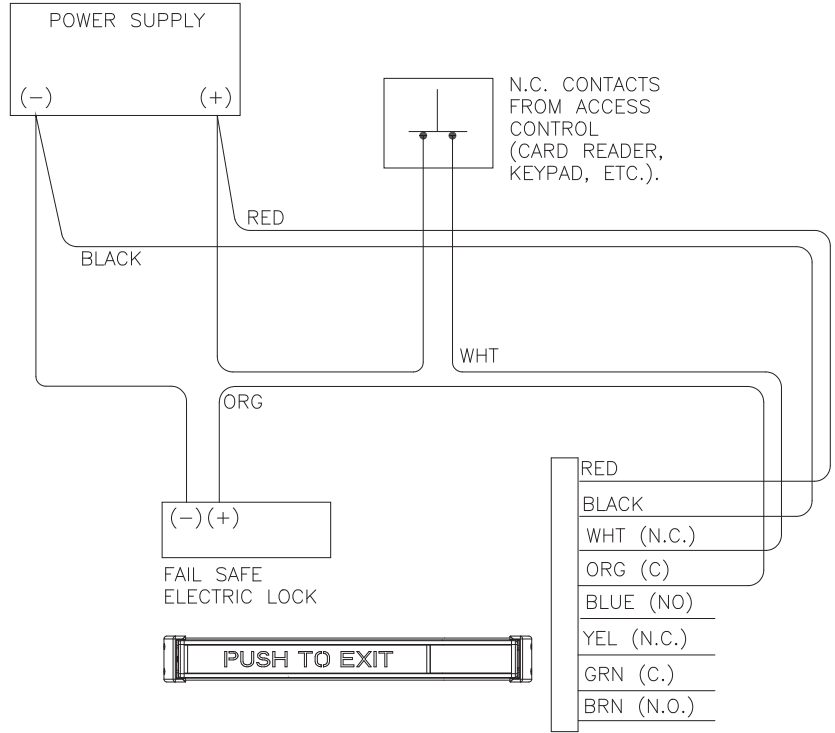


#### FACTORY WIRING:

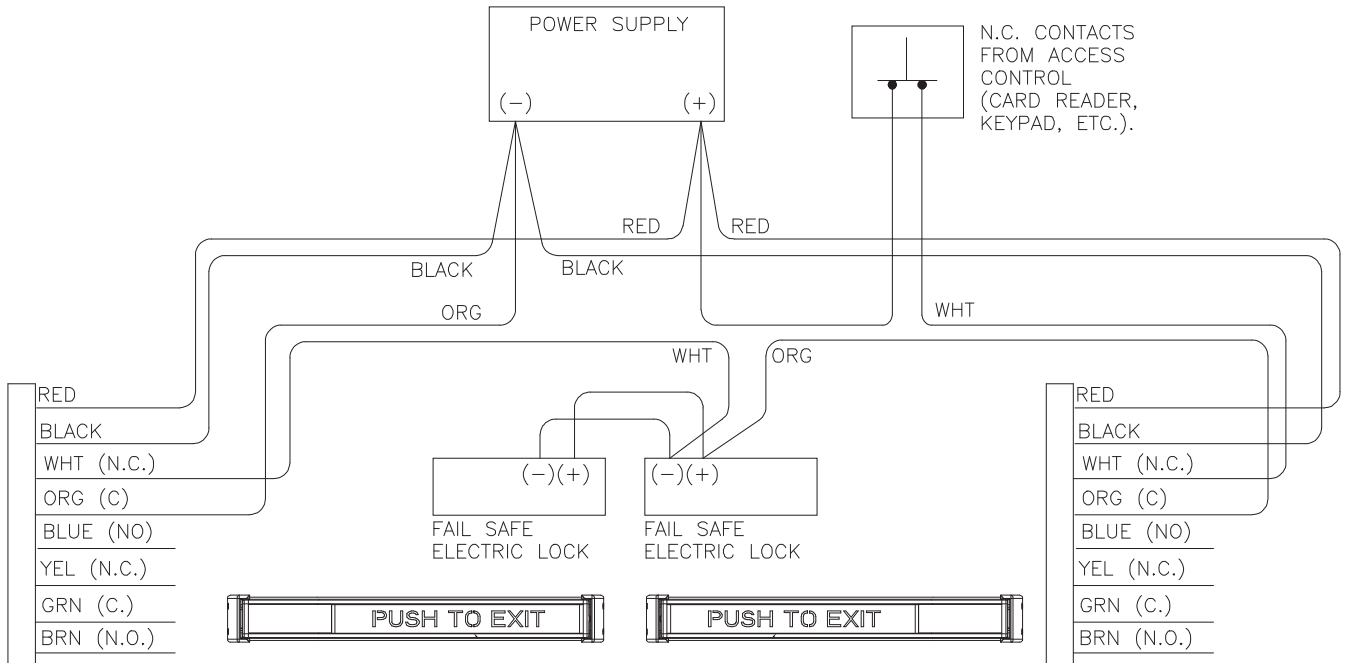
THIS INFORMATION IS SHOWN FOR TROUBLE-SHOOTING PURPOSES. DO NOT MODIFY FACTORY WIRING.



# SINGLE DOOR - TYPICAL



# DOUBLE DOOR - TYPICAL



## TROUBLE-SHOOTING TIPS:

### PROBLEM:

CONTINUOUS BEEPING

BEEPS TWICE INTERMITTENTLY

BEEPS AND CLICKS ON POWERUP

DOES NOT WORK W/ POWER APPLIED

### CHECK:

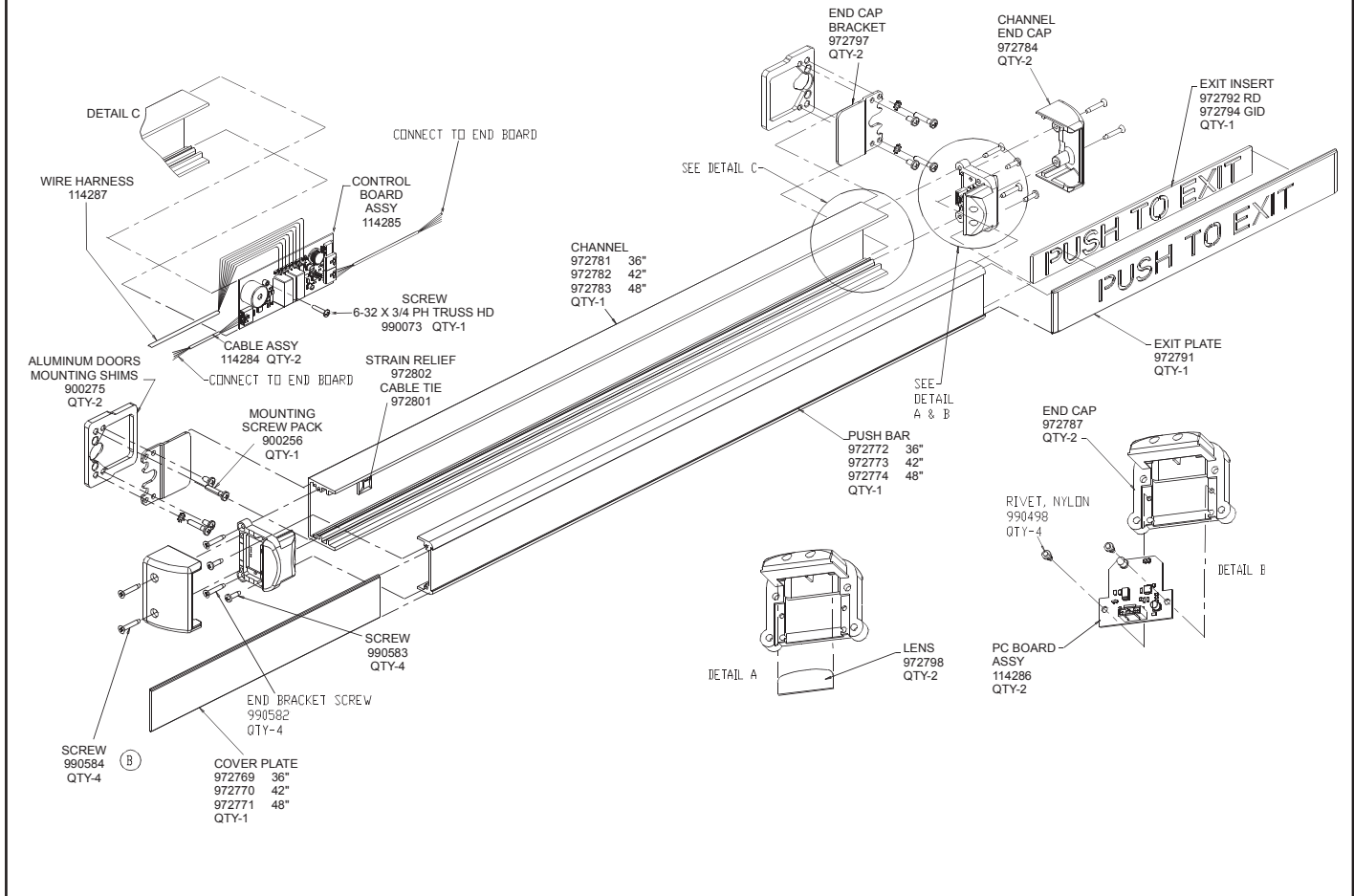
Beam blocked for more than 15 seconds.

Too much light getting into detector.

Normal self-test.

Cycle power off then on again. (Always have good connections before applying power.)

## PARTS BREAKDOWN:





# 801-KS LOCAL MONITORING & CONTROL STATION

## INSTALLATION INSTRUCTIONS

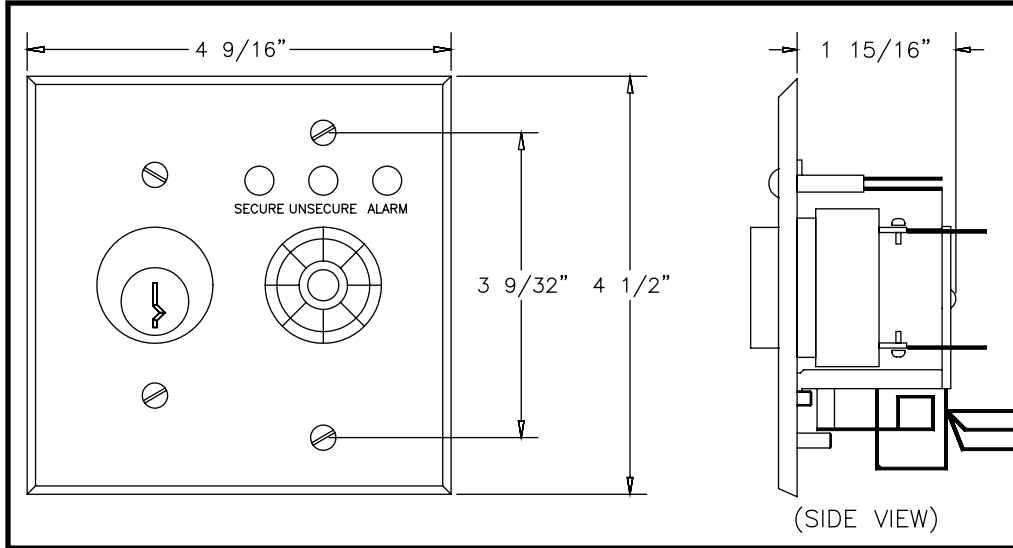
Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (866) 322-1233



FORM NUMBER: 80103

REV D

DATE: 1-2007



### SPECIFICATIONS:

#### AUDIBLE:

INPUT: 10-28VDC / 3-14mA  
OUTPUT: 80dB @ 2ft @ 28VDC

#### KEYSWITCH:

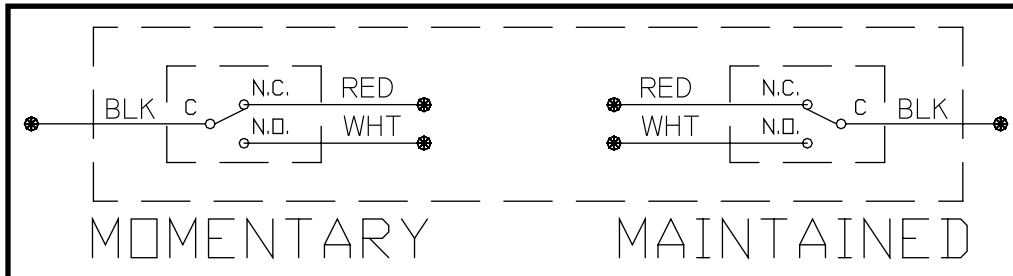
Contacts: 7amp /250VAC  
Wire Leads: 22AWG - 6" long

#### HOOK-UP LEADS:

(4) 24AWG - 6" long  
BLK (C) - Common  
RED (U) - Unsecured  
RED (S) - Secure  
RED (A) - Alarm

#### LED INDICATORS:

Input Req: 12-24 VDC@30mA ea.  
Secure - Green  
Unsecured - Red  
Alarm - Yellow



### DESCRIPTION:

Provides local signal to assure users that a delayed egress system is functioning (code requirement). Includes audible and visual indication of lock status and delay activation. Provides two SPDT switches: one momentary, one maintained, which can be wired to release lock and/or reset alarm condition. The keyswitch requires a standard 1-1/4" mortise cylinder with a standard straight cam. Unit mounts in a standard, double-gang electrical box.

### DESCRIPTION OF OPERATION:

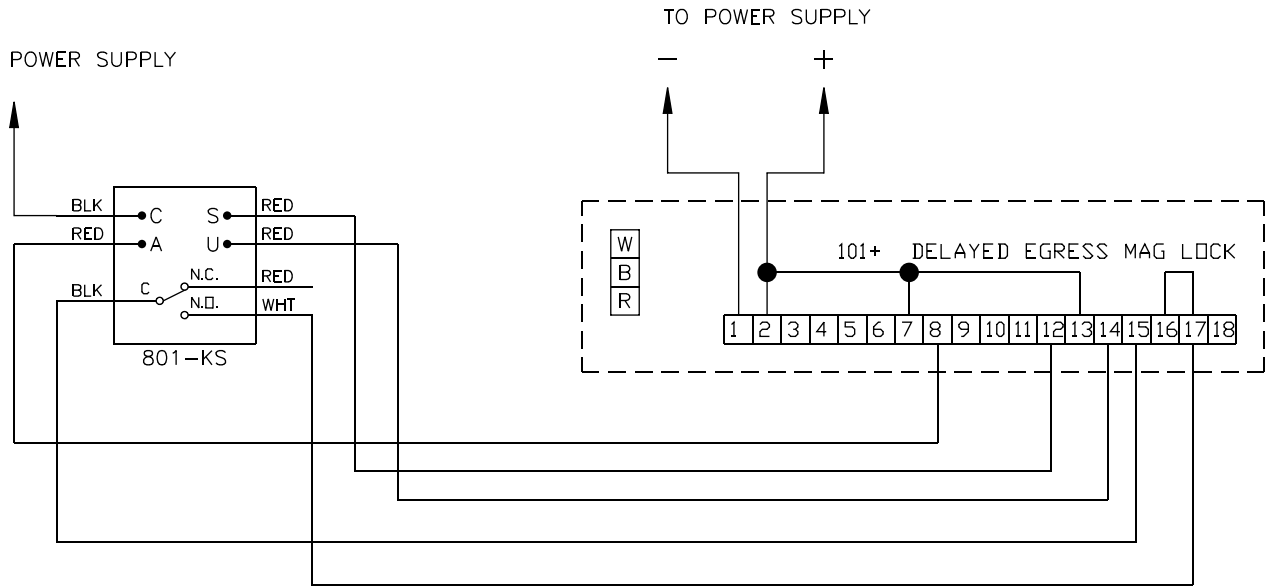
The 801-KS is wired to a magnetic lock delayed egress system. The following is an operation sequence from normal (secure) condition - through an unauthorized egress attempt - to system reset:

### CONDITION

- Door closed and secure
- Unauthorized egress attempt
- After 15 (or 30) second delay
- System reset
- Legal release

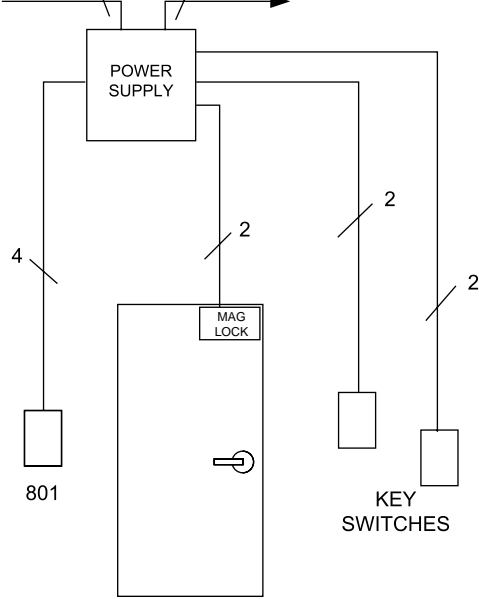
# Unit must be equipped with MBS option for LEDs to work.

TO GROUND ON POWER SUPPLY



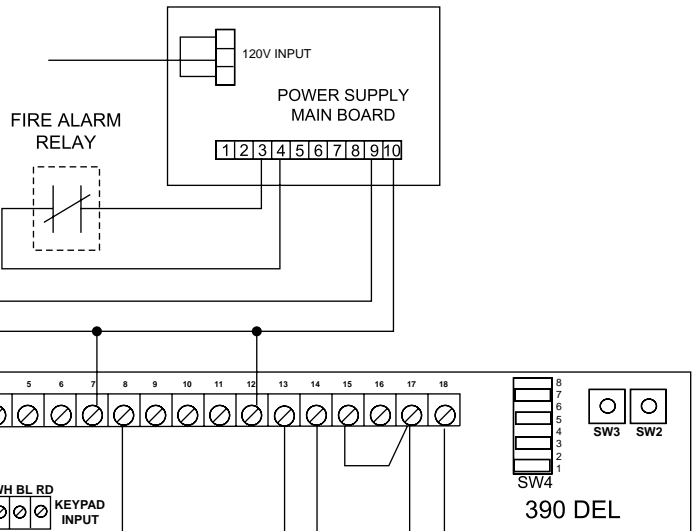
3, 120 VAC

2, TO F.A.



TYPICAL - EACH OPENING

RISER FOR GRAPHIC REFERENCE.  
LOCATE ALL DEVICES PER A-E/G.C./O.R.  
ADDITIONAL WIRING FOR OTHER  
DEVICES MAY BE REQUIRED.



NOTES;  
ALL LOW VOLATGE RUNS -18 GA. MINIMUM,  
EXCEPT AS NOTED.  
RECOMMEND 2 SPARES PER RUN.  
ALL WIRING TO COMPLY WITH ALL APPLICABLE  
NATIONAL, STATE AND LOCAL CODES.



# 801-TE LOCAL MONITORING & CONTROL STATION

## INSTALLATION INSTRUCTIONS

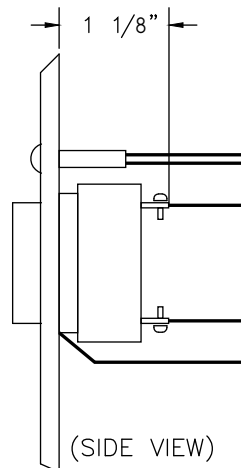
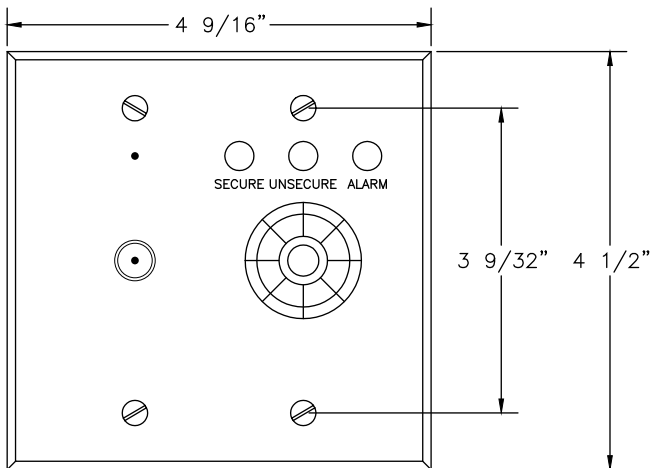
Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (866) 322-1233



FORM NUMBER: 80105

REV A

DATE: 1-2007



### SPECIFICATIONS:

#### AUDIBLE:

Input Req: 10-28VDC / 3-14mA  
Rated: 80dB @ 2ft @ 28VDC

#### HOOK-UP LEADS:

(4) 24 AWG - 6" long  
BLK (C) - Common  
RED (U) - Unsecured  
RED (S) - Secure  
RED (A) - Alarm

#### LED INDICATORS:

Input Req: 12-24 VDC @ 30mA ea.  
Secure - Green  
Unsecured - Red  
Alarm - Yellow

#### TOUCH ENTRY LEADS:

2 Conductor, 22 AWG., 1ft  
White and Black

### DESCRIPTION:

Provides local signal to assure users that a delayed egress system is functional (code requirement). Includes audible and visual indication of lock status and delay activation. Provides a Touch Entry™ reader for legal release and reset of the system by a Touch Entry™ Key (TEK). Mounts in standard two gang electrical box.

### DESCRIPTION OF OPERATION:

The 801-TE is wired to a magnetic lock delayed egress system as shown on wiring diagram (other side). The following is an operation sequence from normal (secure) condition - through an unauthorized egress attempt - to system reset:

#### CONDITION

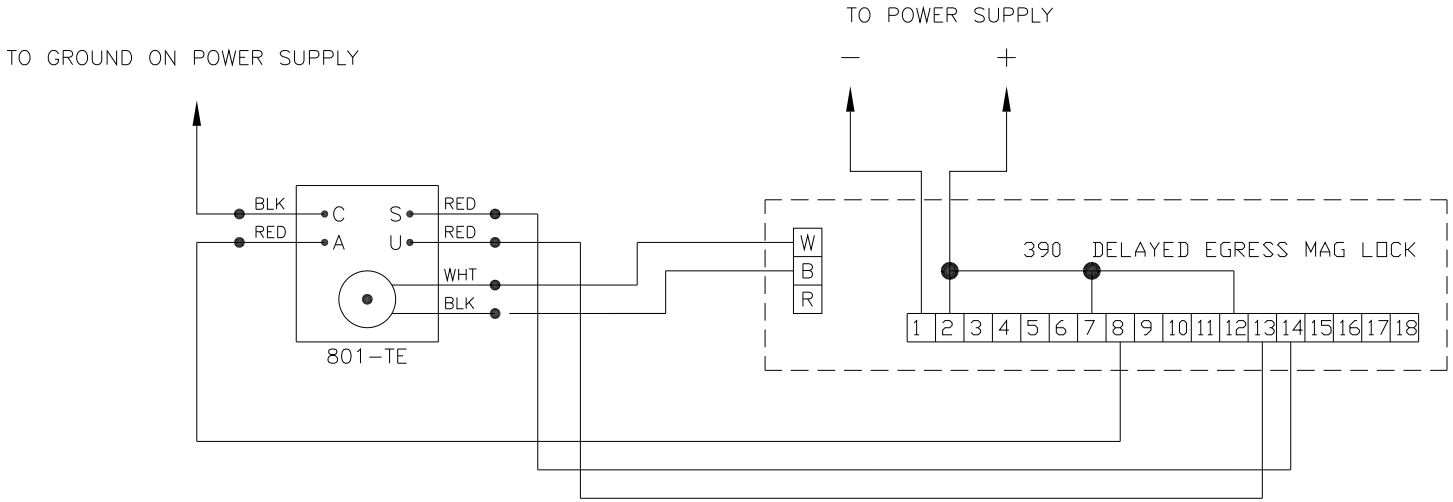
Door closed and secure  
Unauthorized egress attempt  
After 15 (or 30) second delay  
System reset  
Legal release

#### 801 STATUS

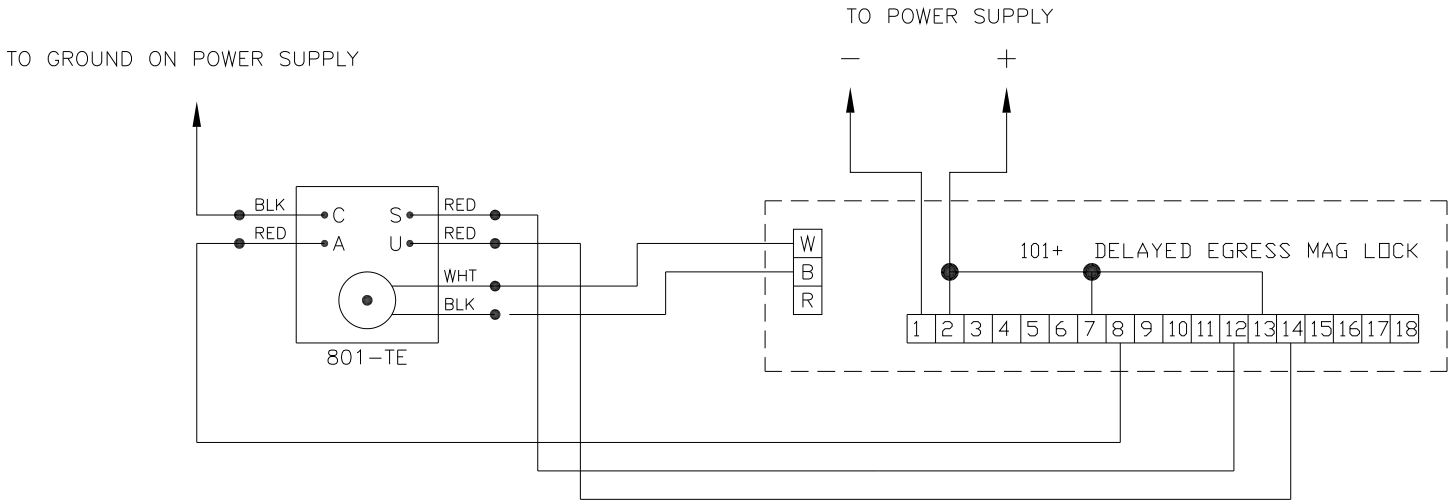
Alarm Silent - Green LED on  
Alarm Sounds - Green & Yellow LED on  
Alarm Sounding - Yellow & Red LED on  
Alarm Silent - Green LED on  
Alarm Silent - Red LED on

# Unit must be equipped with MBS option for LEDs to work.

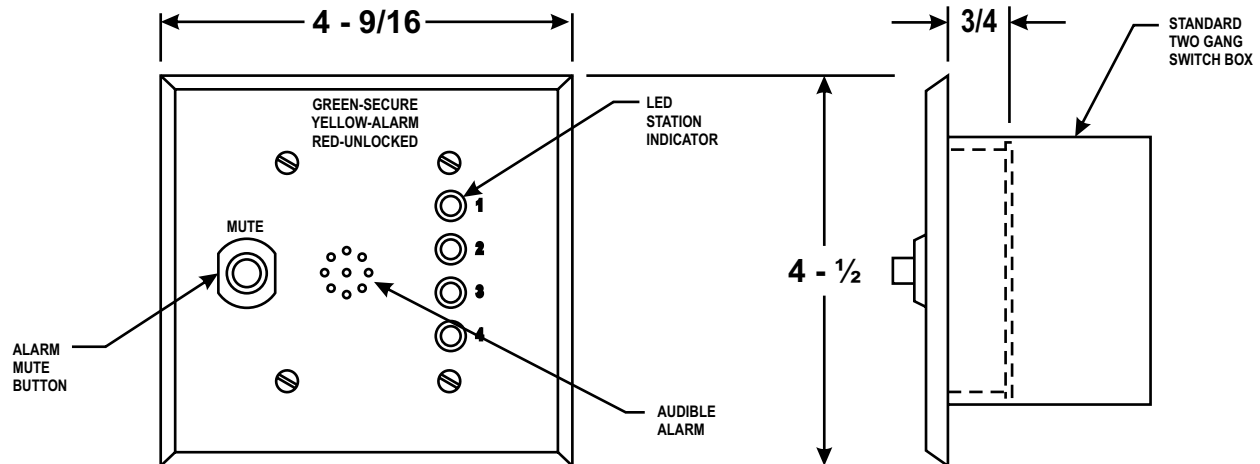
## 390DEL



## 101+







**EACH UNIT IS SHIPPED WITH THE FOLLOWING ITEMS:**

- |   |                               |
|---|-------------------------------|
| (1) 804 Assembly with a two gang switch box | (1) Cable Set                 |
| (1) Power Transformer                       | (1) Installation Instructions |

**804 SPECIFICATIONS:**

OPERATING POWER: 12 TO 24VAC/VDC  
(Transformer supplied 120VAC Input)  
CURRENT DRAW: 100mA maximum  
AUDIBLE: 83db @ 3  
CABLE KIT: Five cables, 8 feet long, 22 AWG plenum cable

**MECHANICAL:**

ENCLOSURE: Two gang steel switch box, 2-1/2" deep w/ears  
FINISH: Satin Stainless US32D  
TOTAL SHIPPING WEIGHT: 5 lbs

**DESCRIPTION:**

The 804 interfaces with up to four Model 101 (or 390DEL) x MBS delayed egress locks. It remotely monitors the lock status and unauthorized egress attempts. The unit provides an alarm annunciator, a mute and tri-color LED indicator for each of four stations. The assembly will fit any standard two gang electrical box. Five plug-in interconnection cable assemblies and a box mountable power transformer are also supplied.

**DESCRIPTION OF OPERATION:**

The following is an operating sequence from normal condition - thru unauthorized egress attempt - to system reset:

**CONDITION**

Door Closed & Secure  
Unauthorized Egress Attempt  
After 15 (or 30) second delay (Door Unlocks)  
101 Lock is Reset

**804 STATUS**

Alarm Silent - LED Green  
Alarm Sounds - LED Yellow  
Alarm Sounding - LED Red  
Alarm Silent - LED Green

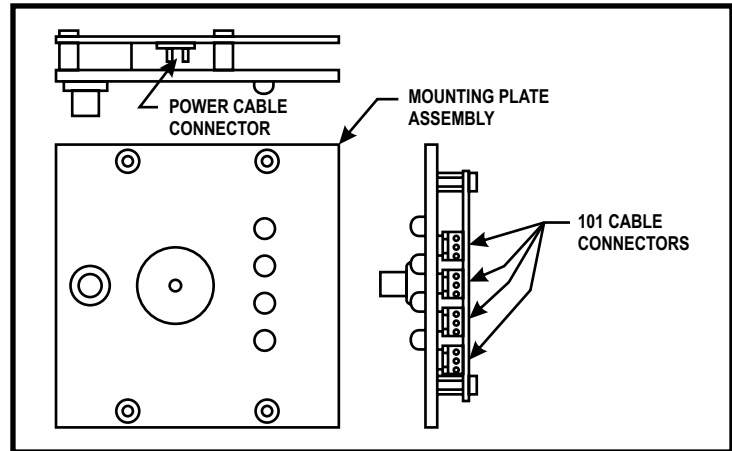
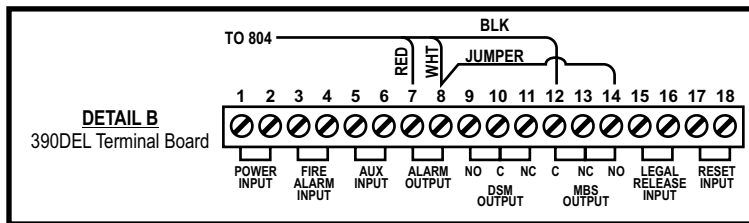
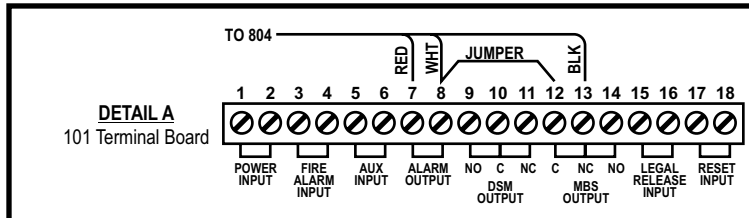
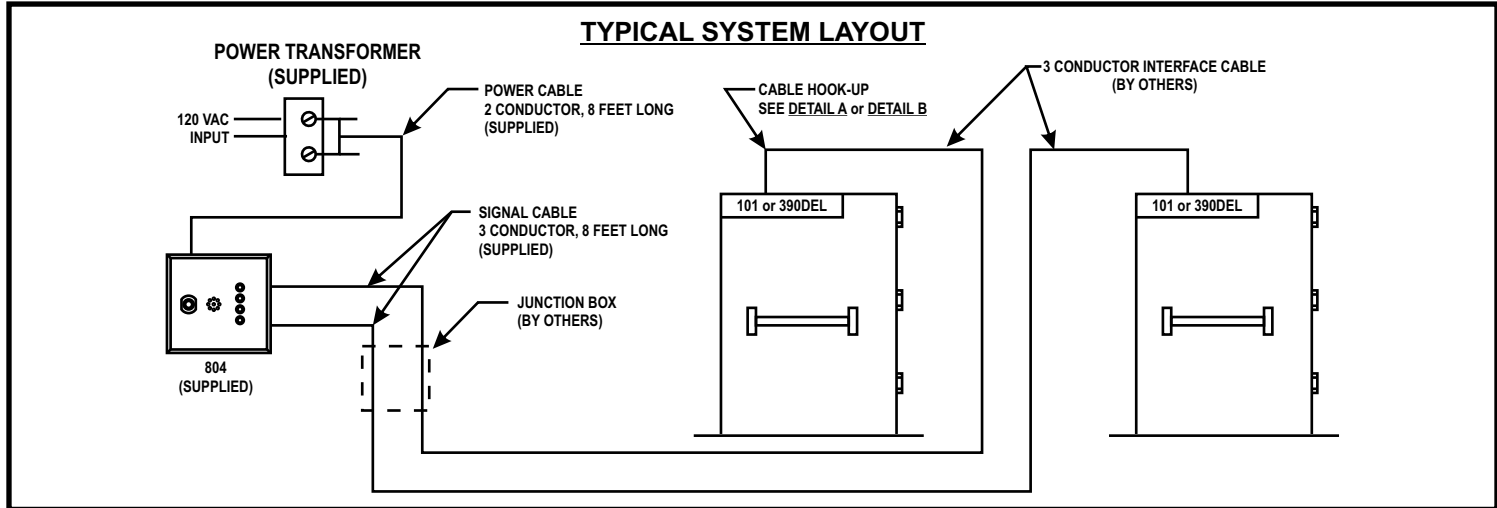
**NOTES:**

1. The 804 audible may be silenced by pushing the mute button. Should another 101 lock go into alarm, the audible will sound again.
2. When a 101 or 390DEL lock is reset, the 804 will return to normal, provided no other 101 is in the alarm state.
3. The 804 LED will not be illuminated if the 101 or 390DEL lock is legally unlocked or has lost power.

### INSTALLATION INSTRUCTIONS

FORM NUMBER: 80401-A

DATE: 08-15-2005



**SUGGESTED INSTALLATION PROCEDURE:**

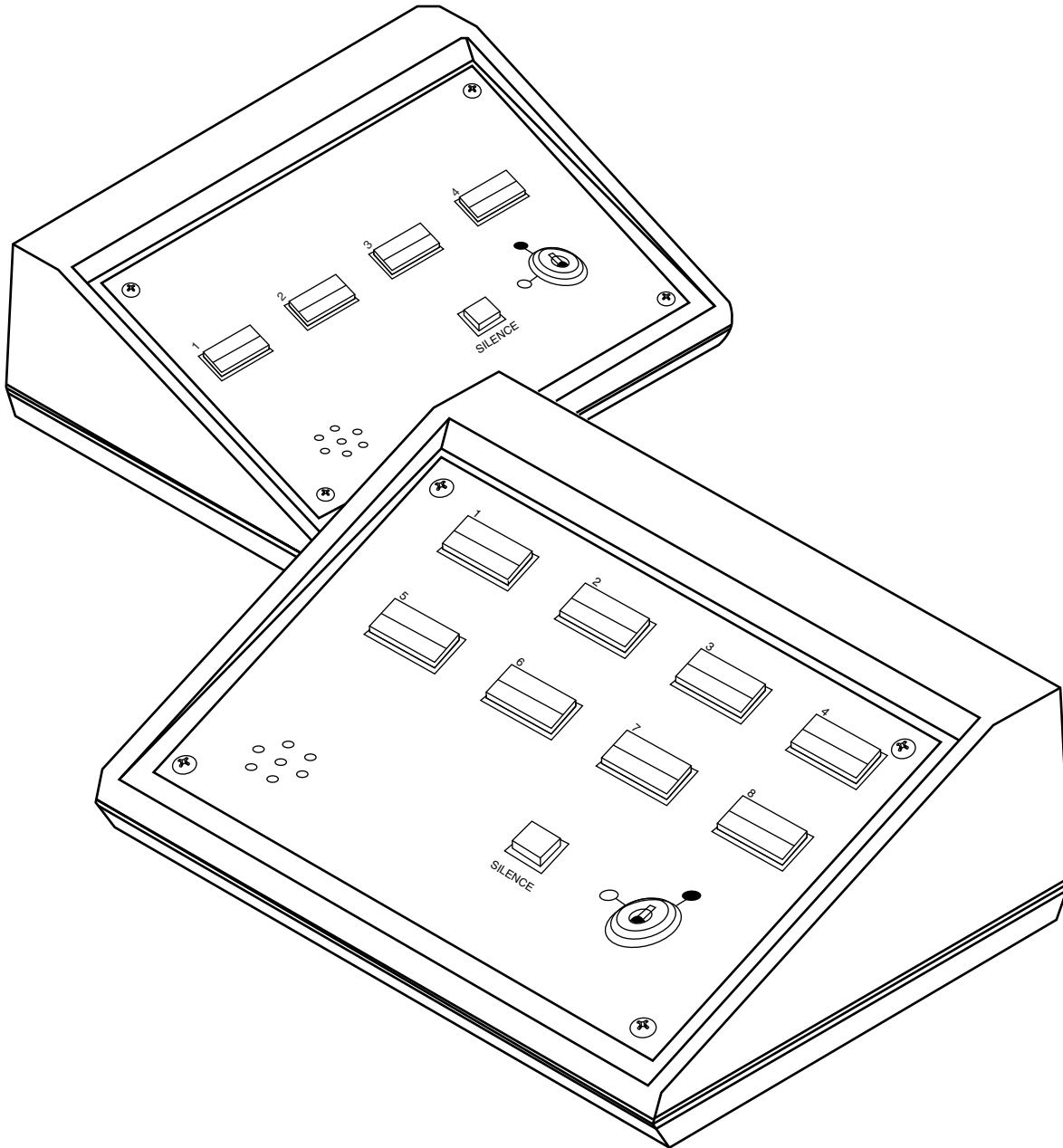
- Plan interconnection layout.  
 The 804 is supplied with 8 foot signal cables, 3 conductor plenum type, 22 AWG, non-shielded, color coded: red, white and black. Interconnection cable run from either the 101 or 390DEL lock, must be of a type suitable to code requirements. For distances up to 1000 feet, 22 AWG wire is sufficient. Non-shielded cable, color coded red, white and black is suggested.
- If the supplied transformer is located more than 8 feet from the 804, 22 AWG wire is sufficient for up to 200 feet distance. Any other conditions require calculations.
- Remove the four, 804 face plate mounting screws and the pushbutton mounting nut. Lift off the face plate.
- Remove the four slotted flat head screws that retain the mounting plate assembly to the switch box. Lift out the assembly.
- Select and remove the desired cable entry "knockout(s)" from the switch box. (Note location of plug-in connectors on mounting plate assembly in relation to switch box knockouts).
- Mount the switch box in the desired location.
- Route signal cable(s) and power cable through the knockout hole(s) and cable clamp(s). Determine the amount of slack cable needed for assembly before tightening the cable clamps.
- Plug the 2-conductor power cable into the power cable connector at the top of assembly.
- Plug the 3-conductor 101 cable(s) into the appropriate 101 cable connectors at the right hand side of assembly. Use this method for 390DEL locks.
- Replace the mounting plate assembly and four slotted flat head screws.
- Replace the face plate, pushbutton nut and the four mounting screws.
- The cables may now be routed to a junction box or common location for connection to the cable runs from the transformer and 101 or 390DEL lock(s).
- Complete system hook-up at the power transformer and 101 unit(s). Refer to Typical System Layout.



# 8200-Series Desk Console

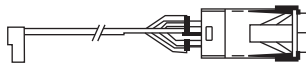
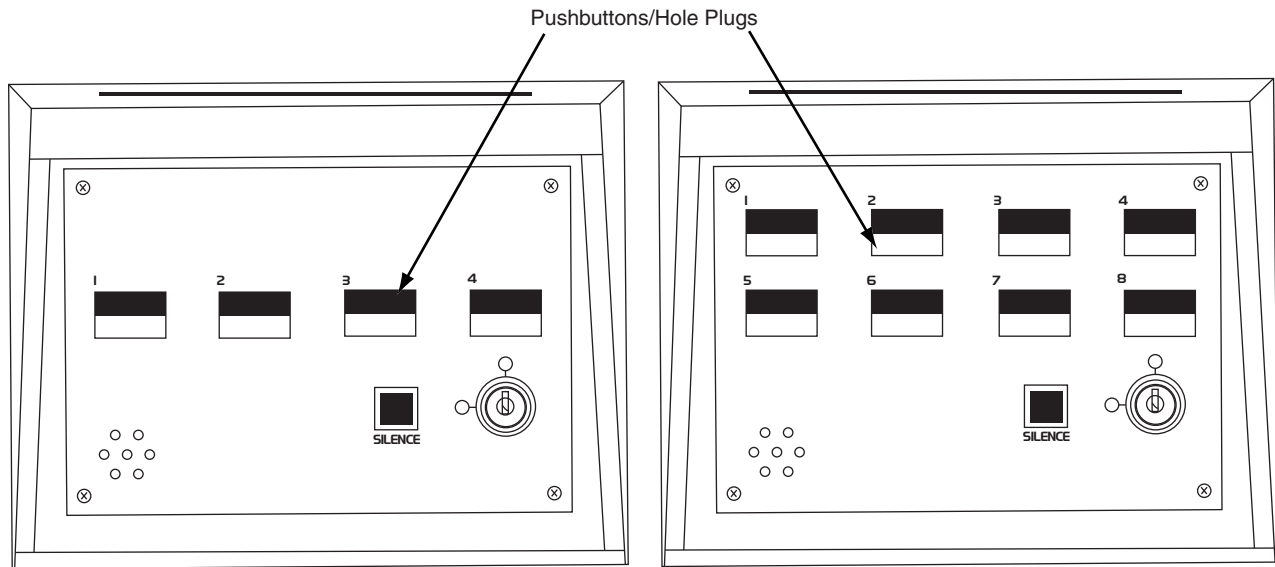


## Installation Instructions for Single Locks



# LIST OF PARTS

- Pushbuttons/Hole Plugs
- Maintained or Momentary Pushbutton Assembly\*
- Hole Plug\*
- Keyswitch Keys (2)



Maintained or Momentary Pushbutton Assembly\*



Hole Plug\*



Keyswitch Keys (2)

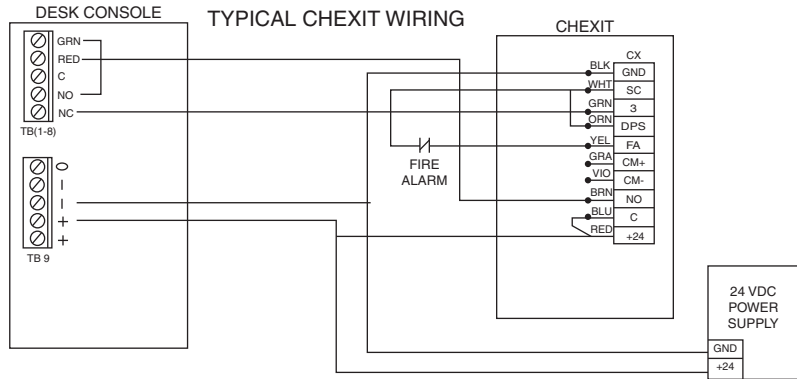
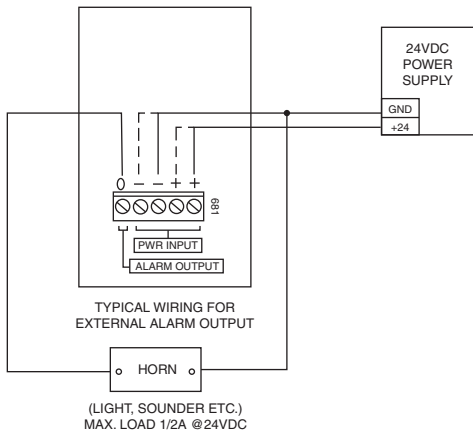
\* Each console will have installed any combination of these in the switch/hole plug position

## SPECIFICATIONS/FUNCTION

Power	<ul style="list-style-type: none"> <li>• 24 VDC <math>\pm</math> 15%</li> <li>• 50 milliamp internal console excluding lamps</li> <li>• For UL applications, the power source shall be a UL294 listed class 2 (power limited) power supply</li> </ul>
Pushbutton (Momentary or Maintained)	<ul style="list-style-type: none"> <li>• 1 Amp, 24 VDC</li> </ul>
Lamps (Green or Red)	<ul style="list-style-type: none"> <li>• 0.04 Amps @ 24 VDC (#85 lamp)</li> </ul>
Terminal Blocks	<ul style="list-style-type: none"> <li>• Maximum of 14 Ga wire, 18-22 recommended</li> <li>• Rated torque/screw size 0.50 Nm/M<sup>3</sup></li> </ul>
Alarm Output	<ul style="list-style-type: none"> <li>• 0.5 Amp @ 24 VDC common to all zones, protected by automatically resettable breaker</li> </ul>
Keyswitch	<ul style="list-style-type: none"> <li>• Off (CCW) – Powers NC (FS) outputs and removes power from NO (FSE) outputs by breaking pushbutton common. Powering NC contacts can be field modified to eliminate this feature - see <i>User Selectable Options</i></li> <li>• ON (CW) – Powers pushbutton common and allows the pushbuttons to have full control over the zone</li> </ul>
Reset Button	<ul style="list-style-type: none"> <li>• Momentary pushbutton that resets the internal latching horn and the Alarm Output that has been triggered by voltage on the RED terminal</li> </ul>
Temperature Range	<ul style="list-style-type: none"> <li>• 32°F – 120°F</li> </ul>

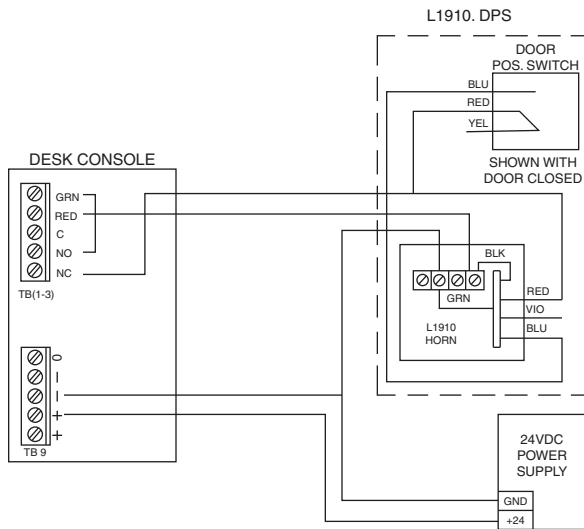
# Wiring Examples

## TYPICAL EXTERNAL HORN WIRING



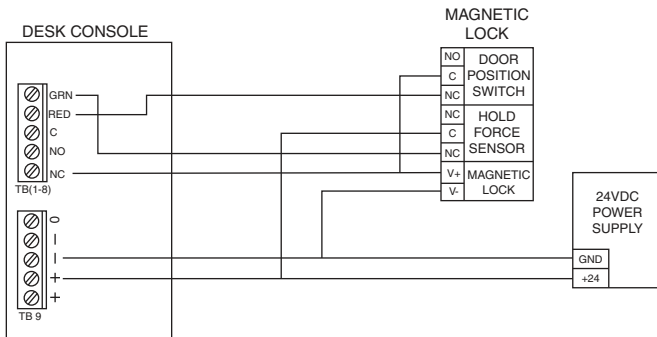
- When pushbutton is depressed, the CHEXIT device is disarmed and the GREEN light is on.
- When pushbutton is released, the CHEXIT is armed and the pushbutton light is off.
- If the pushbar is depressed while the CHEXIT is armed, the RED light will come on and the alarm will sound.

## Typical L1910 Wiring



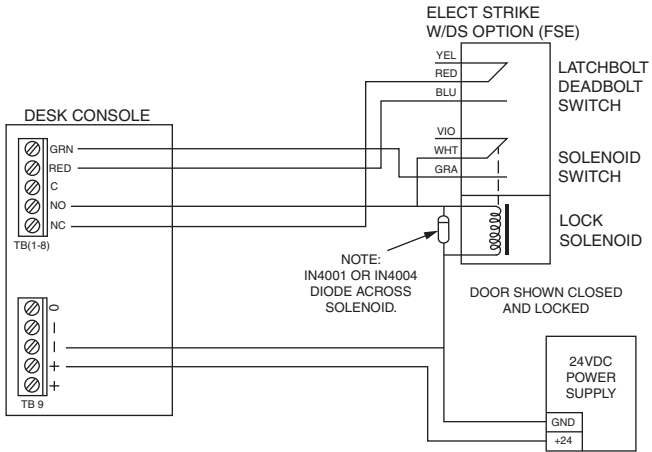
- When pushbutton is depressed, the L1910 horn is disarmed (passage through door allowed) and GREEN light in pushbutton will come on.
- When pushbutton is released, the L1910 horn is armed (passage through door will sound alarm) and RED light in pushbutton will come on.

## Typical Magnetic Lock with DPS & HFS Option Wiring



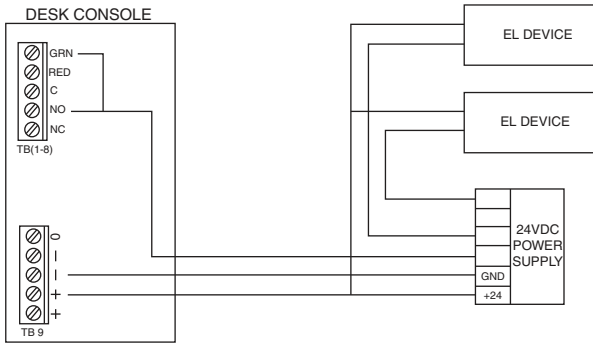
- When pushbutton is depressed, the magnetic lock is unlocked and the GREEN light will come on.
- When the pushbutton is released, the magnetic lock is locked and the pushbutton light is off.
- If the door is forced open while the magnetic lock is locked, the RED light will come on and the alarm will sound.

### Typical 6000 Series Electric Strike Wiring



- When pushbutton is depressed, the electric strike is unlocked and the GREEN light is on.
- When pushbutton is released, the strike is locked and the pushbutton light is off.
- If the door is forced open while the strike is locked, the RED light will come on and the alarm will sound.

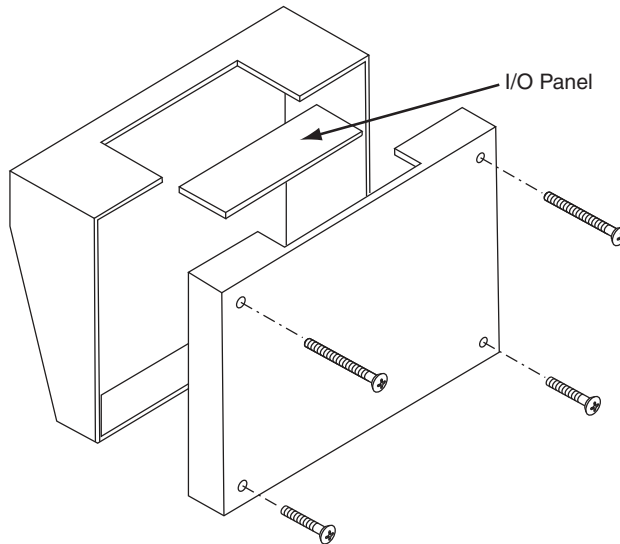
### Typical EL Device Wiring



- When pushbutton is depressed, the EL devices are unlocked and the GREEN light in the pushbutton will come on.
- When pushbutton is released, the EL devices are locked and the pushbutton light is off.
- **Refer to PS914 x 900-2RS PCB instructions for proper wiring instructions for the EL device.**

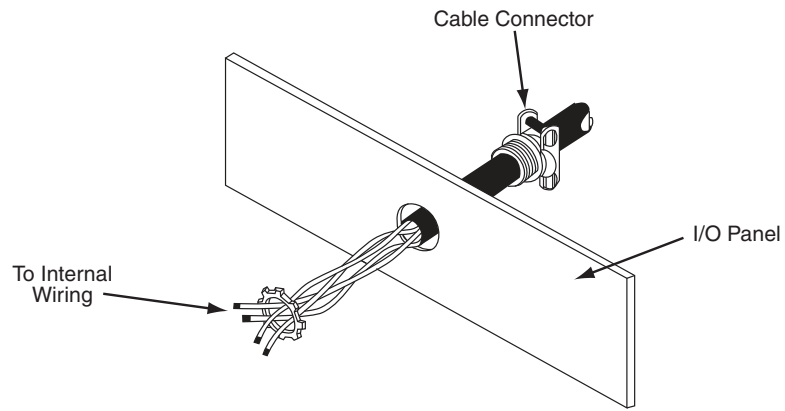
## INSTALLATION/WIRING

### 1 REMOVE ALL FOUR (4) SCREWS



## 2 REMOVE I/O PANEL AND DRILL HOLE FOR WIRE USED

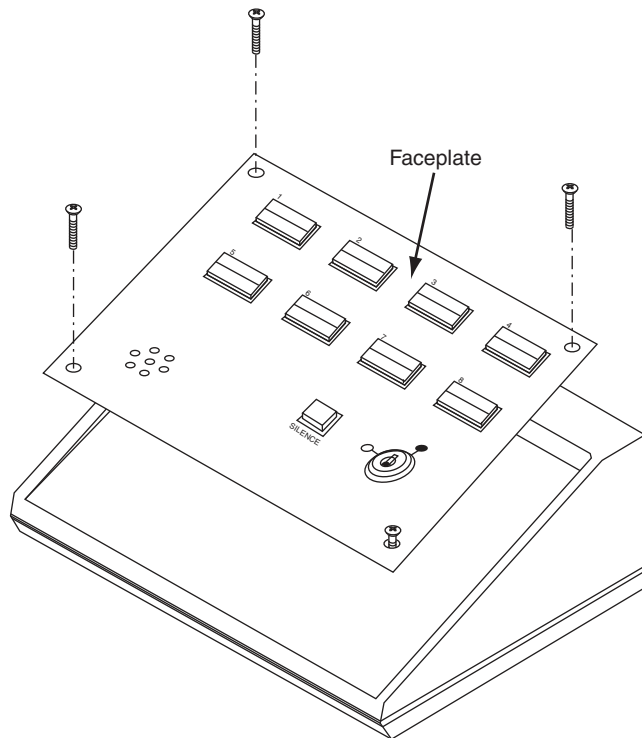
If required, use a strain relief or cable connector for wires.



Conduit Size	Drill Size
1/2"	7/8"
3/4"	1 1/8"

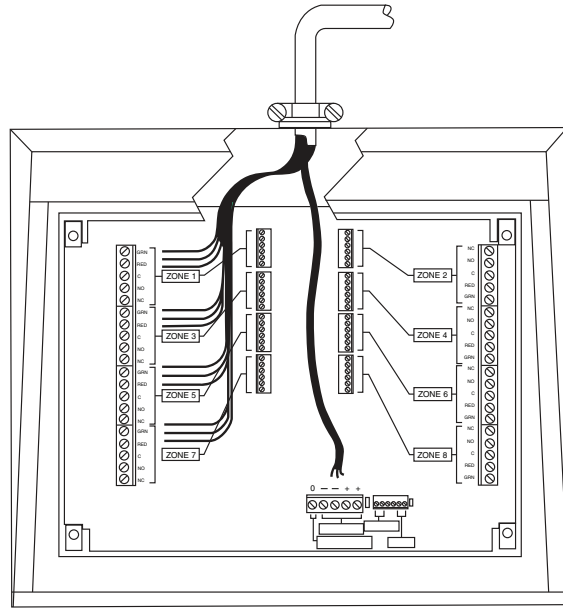
## 3 REASSEMBLE BOX

## 4 REMOVE ALL FOUR (4) FACEPLATE SCREWS



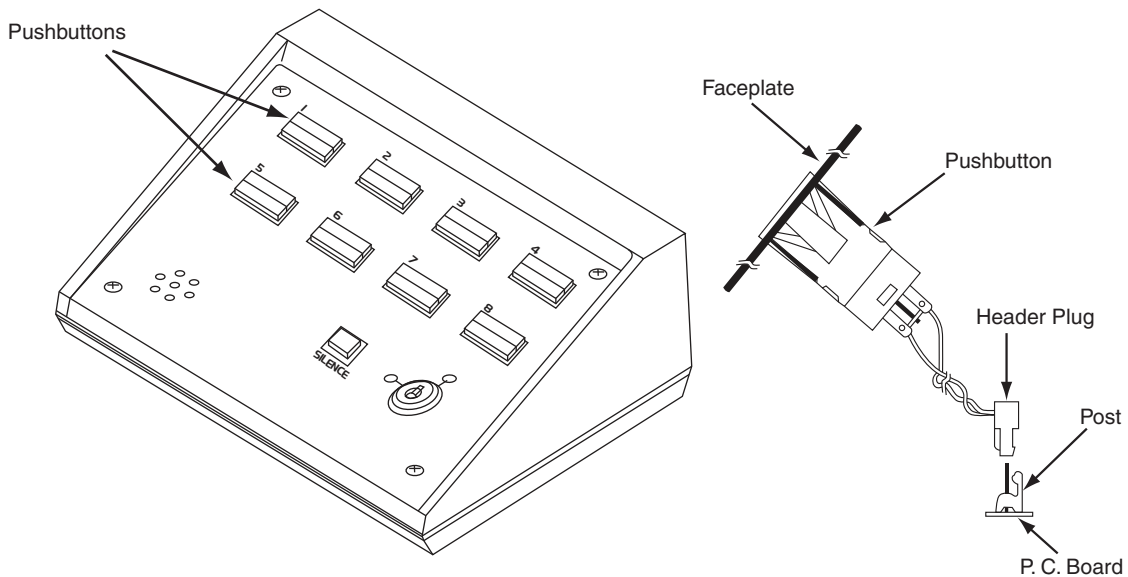
## 5 CONNECT PROPER GAUGE WIRE TO THE APPROPRIATE TERMINALS AS REQUIRED

- TB1 corresponds to pushbutton 1, TB2 to pushbutton 2, etc.
- Keep excess wire out of console for easier installation.
- For ease of wiring, faceplate with pushbuttons can be unplugged and reconnected later.



## 6 RECONNECT PUSHBUTTONS, IF NEEDED

Make sure they are properly polarized, then replace faceplate and secure screws.





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## TROUBLESHOOTING

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Pushbutton contacts and lights do not work

- Check that the pushbutton connector is fully seated in the proper plug

Lamp does not work

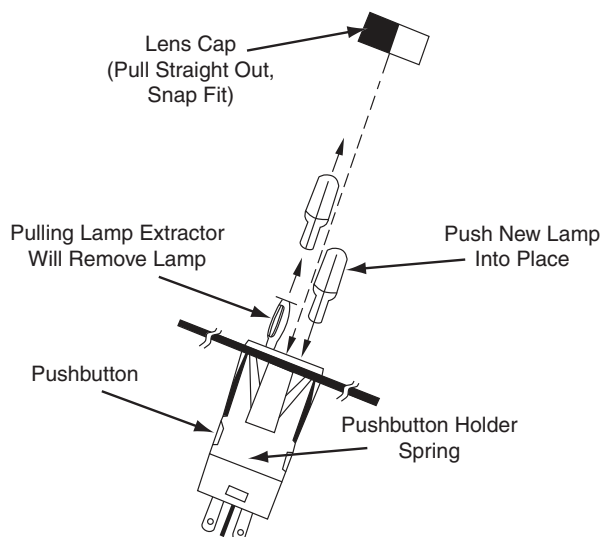
- Check for 24 VDC on the RED or GRN terminal
  - Replace the bulb - see Maintenance
- 

## MAINTENANCE

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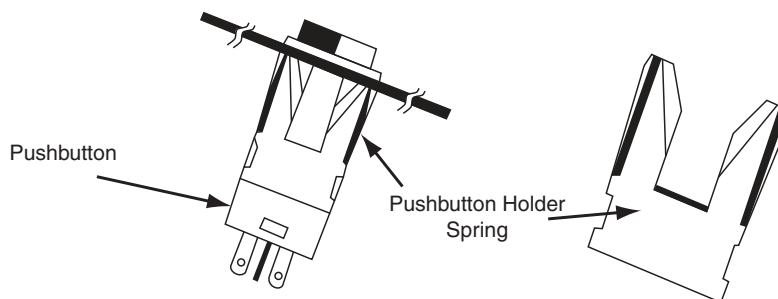
Lamp Replacing

Replace with #85 lamp as shown below



Replacing/Adding a Pushbutton

Pushbuttons can be replaced, changed (either from maintained to momentary, or vice versa) or added. With the faceplate removed, using a small flathead screwdriver, remove the two pushbutton holder springs. Remove the pushbutton assembly from the faceplate.



Note: Make sure pushbuttons are plugged into the proper zones per Table 1 and the red lens is in the lower position.

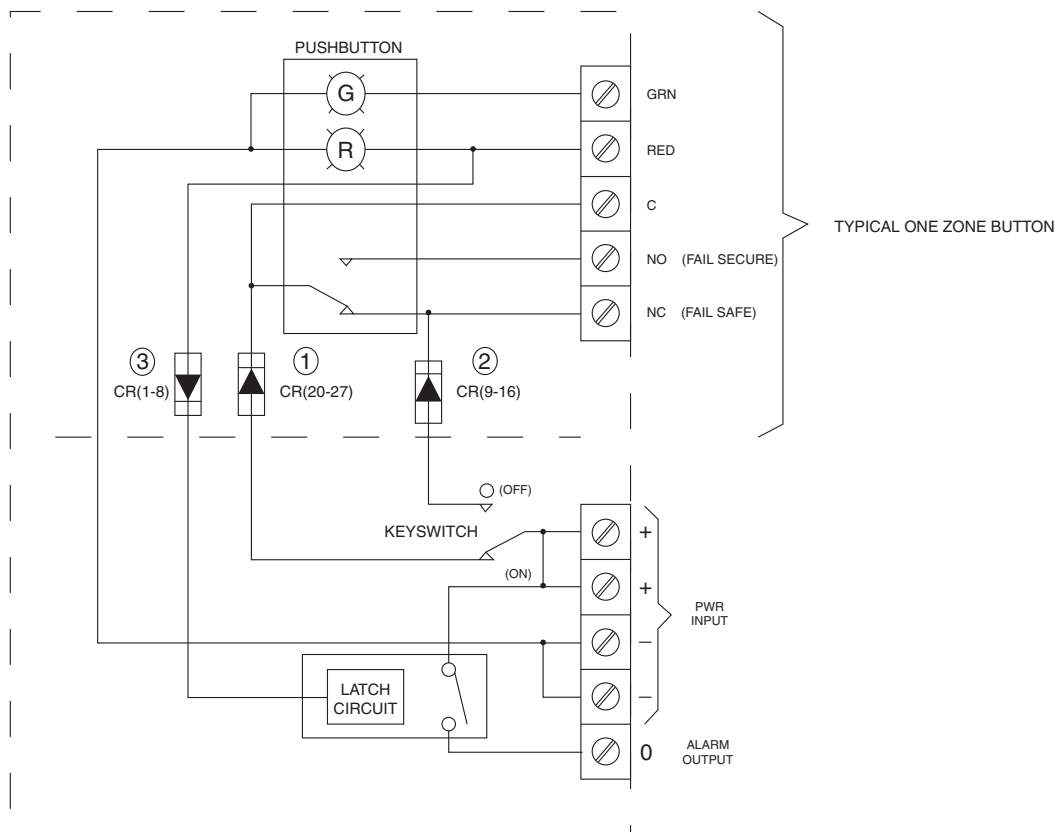
Cleaning

Use a mild cleaner to clean the console off.

**Do not spray directly onto the face.**

## USER SELECTABLE OPTIONS

1. **Pushbutton common isolation:** Normally all pushbutton commons are connected to +PWR INPUT when keyswitch is ON. To isolate any pushbutton from +PWR INPUT voltage, cut proper diode (CR20-27) see Table 1.
2. **NC contact control:** When the keyswitch is in the OFF position, the NC output is powered (pushbutton has no control). To control NC contacts, select and cut proper diode (CR9-16), see Table 1.
3. **Red terminal latch disable:** Application of 24 VDC to the RED terminal not only lights the RED light, but latches the internal buzzer and 24 VDC on the Alarm Output. If the latching feature is not desired on a zone, cut proper diode (CR1-8), see Table 1.

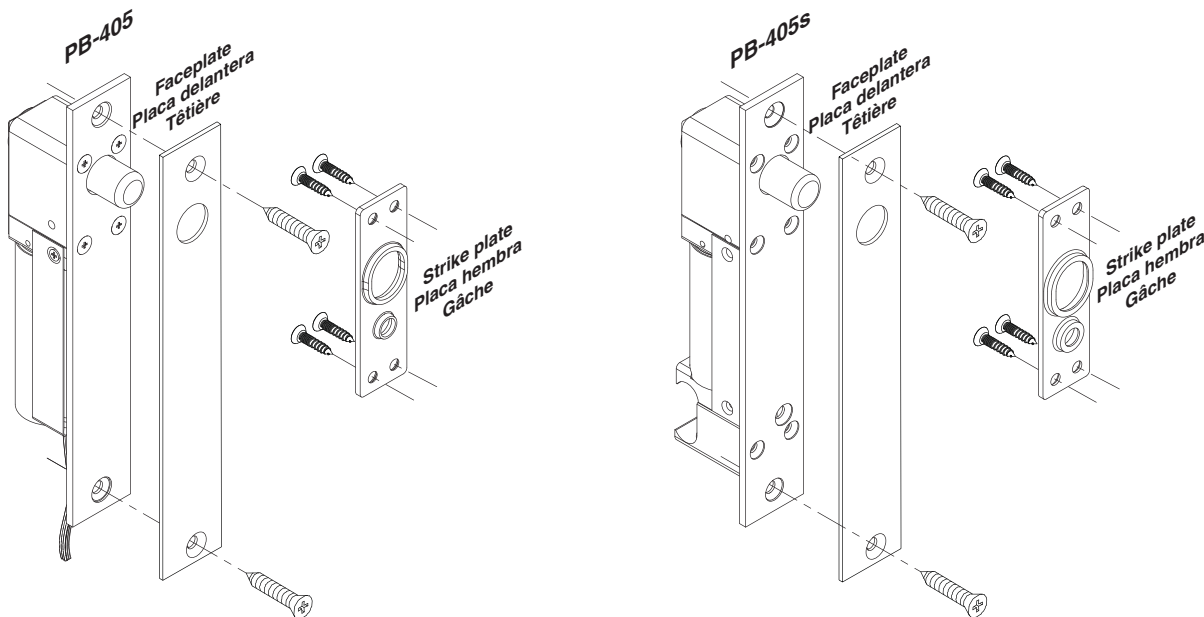


**Table 1**

Pushbutton (or TB#)	1	2	3	4	5	6	7	8
PCB Plug	P1	P2	P3	P4	P5	P6	P7	P8
Pushbutton Common Isolation	CR20	CR21	CR22	CR23	CR24	CR25	CR26	CR27
NC Contact Control	CR9	CR10	CR11	CR12	CR13	CR14	CR15	CR16
Red Term. Latch Disable	CR1	CR2	CR3	CR4	CR5	CR6	CR7	CR8



SOCA Powerbolt



Accesorios

Accessories

Accessoires

Large Shims  
for Lock Body

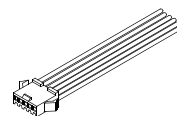
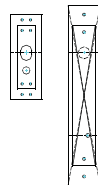
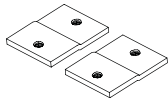
Small Shims  
for Strike Plate

Templates  
Plantillas  
Modèles

6 PIN Connector  
Conector PIN 6  
Connecteur NIP 6

Cuñas grandes para  
el cuerpo de la cerradura  
Large cales pour le verrou

Cuñas pequeñas para  
la placa hembra  
Petites cales pour la gâche



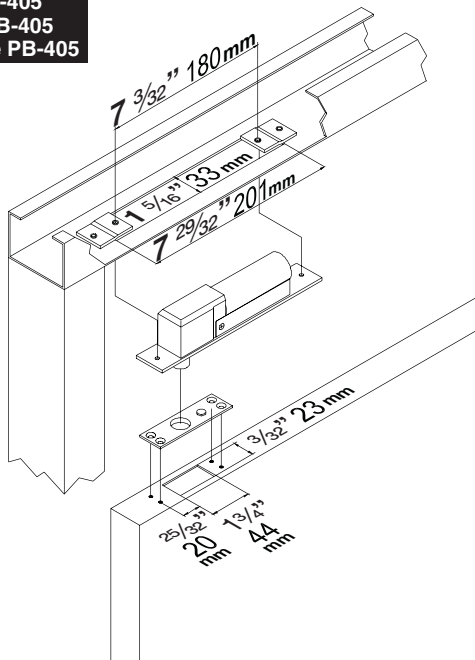
1

Check Dimensions

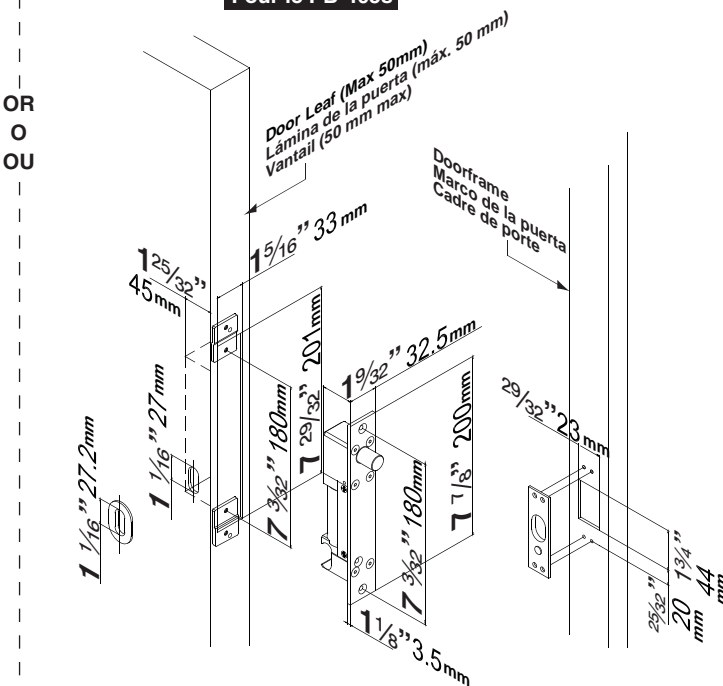
Verifique las Dimensiones

Vérifier les dimensions

For PB-405  
Para PB-405  
Pour le PB-405

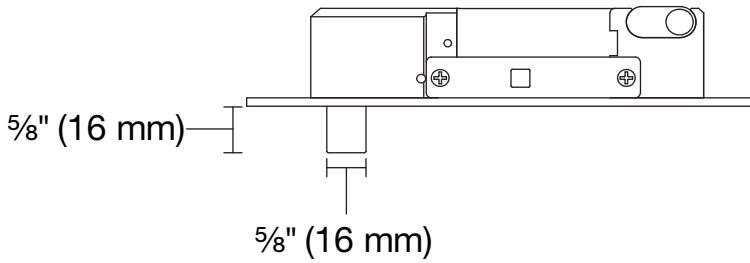


For PB-405s  
Para PB-405s  
Pour le PB-405s



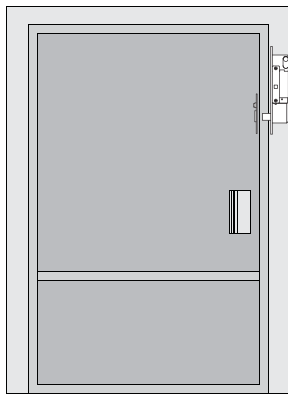
OR  
OU

**2** Verify Bolt Throw Dimensions  
 Verifique las dimensiones del cerrojo  
 Vérifier les dimensions de la course du verrou



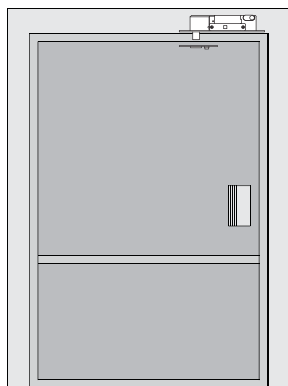
**3** Determine Lock Installation Position  
 Determine la posición de instalación de la cerradura  
 Déterminer la position d'installation du verrou

Installation in the Side of the Door  
 Instalación al costado de la puerta  
 Installation sur le côté de la porte

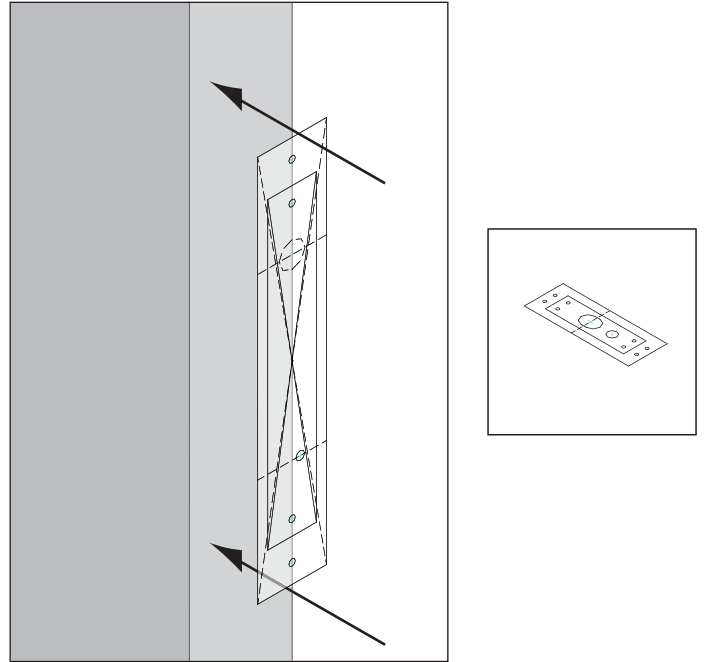


OR  
 O  
 OU

Installation Above the Door  
 Instalación sobre la puerta  
 Installation au-dessus de la porte

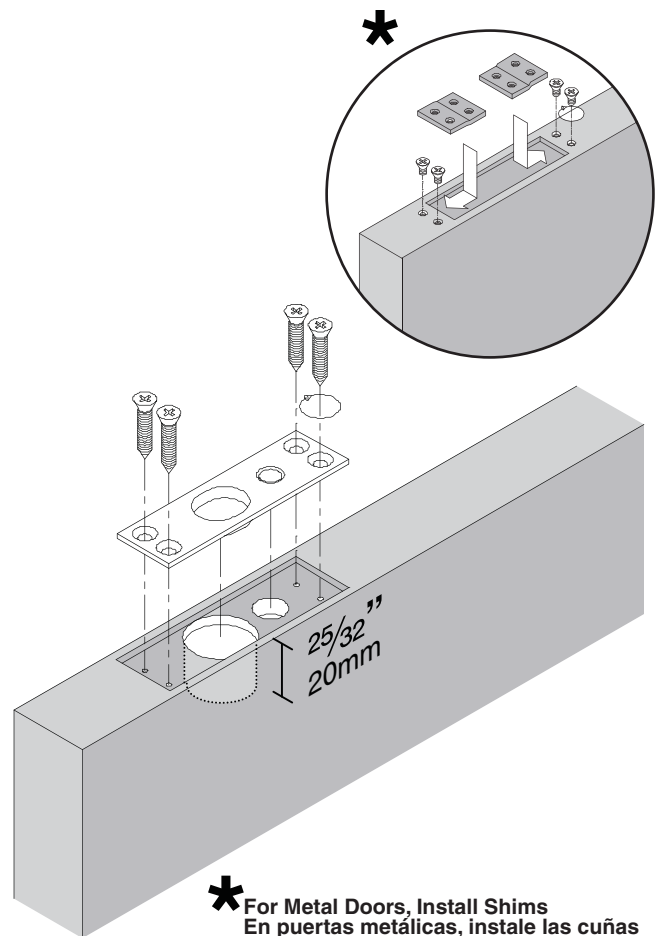


**4** Affix Templates and Prepare Door\*  
 Pegue las plantillas y prepare la puerta\*  
 Fixer les modèles et préparer la porte\*

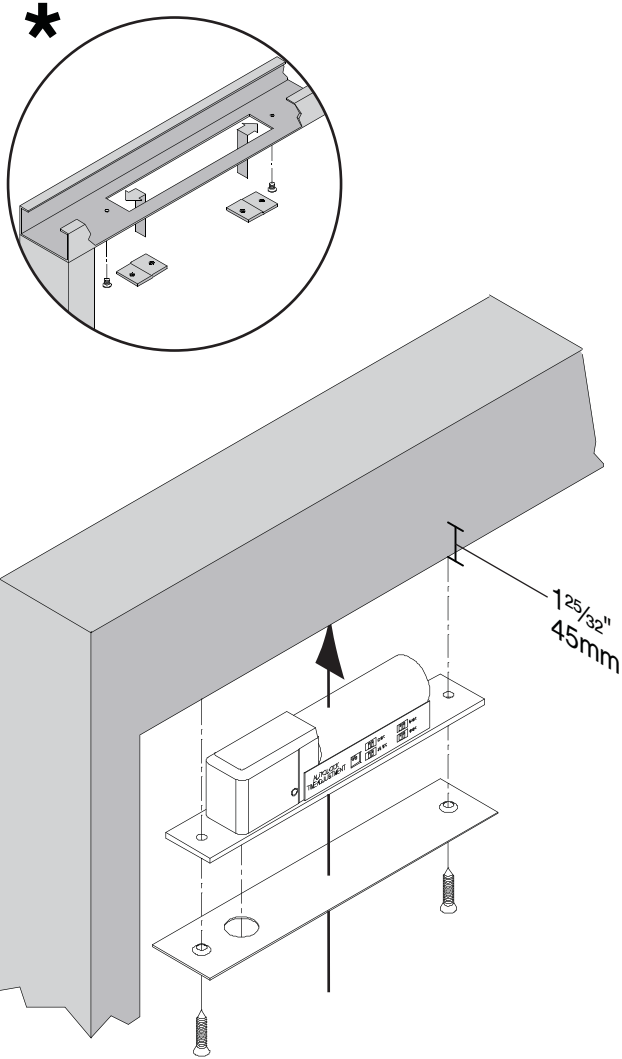


\*Instructions on Template  
 \*Instrucciones en la plantilla  
 \*Instructions sur le modèle

**5** Install Strike Plate in Prepared Area  
 Instale la placa hembra en el área preparada  
 Installer la gâche dans la zone préparée



\* For Metal Doors, Install Shims  
 En puertas metálicas, instale las cuñas  
 Pour les portes métalliques, installer les cales

**Install Lock in Prepared Area****Instale la cerradura en el área preparada****Installer le verrou dans la zone préparée**

**\* For Metal Doors, Install Shims**  
**En puertas metálicas, instale las cuñas**  
**Pour les portes métalliques, installer les cales**

## Additional Information

### Información adicional

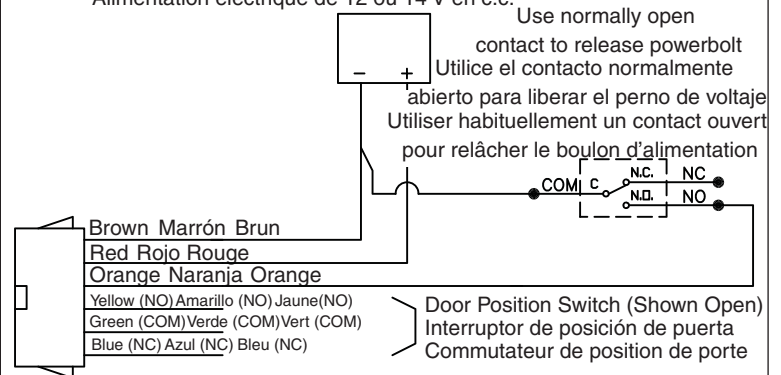
### Informations supplémentaires

#### Typical fail safe or fail secure wiring (3 wire)

#### Cableado típico con protección contra fallas (3 cables)

#### Câblage à sécurité intégrée typique (3 fils)

12 or 24 VDC Power Supply  
 Suministro de energía de 12 ó 24 V de CC  
 Alimentation électrique de 12 ou 14 V en c.c.

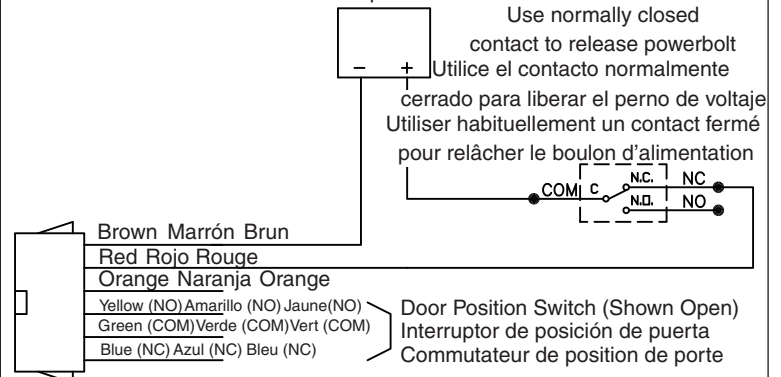


#### Optional Fail Safe Wiring (2 wire)

#### Câblage à sécurité intégrée en option (2 fils)

#### Cableado opcional con protección contra fallas (2 cables)

12 or 24 VDC Power Supply  
 Suministro de energía de 12 ó 24 V de CC  
 Alimentation électrique de 12 ou 14 V en c.c.



Current Draw: Starting Current: 925mA@12VDC; Holding Current: 334mA@12VDC

Starting Current: 472mA@24VDC; Holding Current: 193mA@24VDC

Door Position Switch: SPDT Contact Rating 0.5A@30VDC

Consumo de corriente: Potencia de arranque: 925mA@12VDC; Corriente de retención:

334mA@12VDC Potencia de arranque: 472mA@24VDC; Corriente de

retención: 193mA@24VDC Interruptor de posición de puerta: Calificación de

contacto SPDT 0.5A@30VDC

Appel de courant: Courant de départ: 925mA@12VDC; courant de maintien: 334mA@

12VDC Courant de départ: 472mA@24VDC; Courant de maintien: 193mA@

24VDC Commutateur de position de porte: Taux de contact de l'interrupteur

unipolaire bidirectionnel de 0,5 A à 30 V en c.c.

#### Setting Lock Delay Timer:

#### Configuración del temporizador de retardo de bloqueo:

#### Configuration de la minuterie de délai de la serrure:



0 Sec.



5 Sec.



3 Sec.

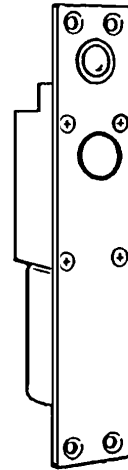
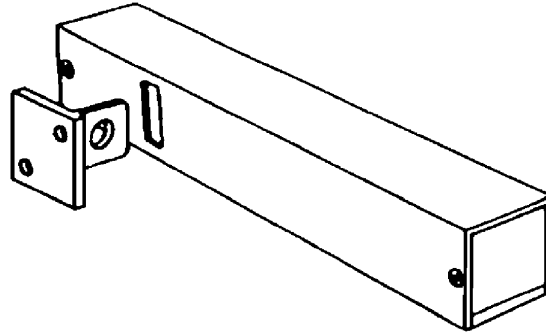
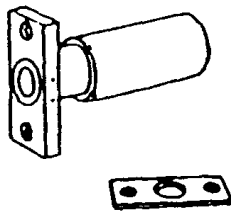


9 Sec.

\*Power should be cycled to confirm change in DIP switch value.

\*Debe alternarse la electricidad para confirmar la modificación en el valor de cambio DIP.

\*L'alimentation doit être itérée pour confirmer le changement de la valeur du commutateur DIP.



### Description of Operation

Electromechanical Power Bolts are designed for those applications where a positive latching action is needed. When extended, the bolt enters the strike with a positive engagement. Power bolts are available in several forms for a wide variety of uses.

### Standard Features

Input Voltages - 12VDC or 24VDC field selectable.

Bolt Operation - *Fail Safe* - Bolt retracts when power is removed.

*Fail Secure* - Bolt extends when power is removed.

### Options:

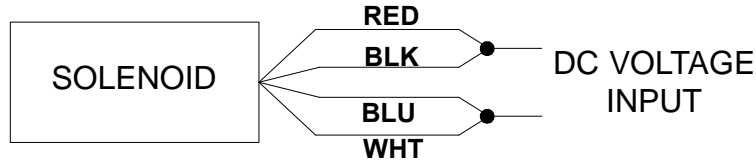
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<u>RC1</u> -	A rectifier/filter (RC1) externally mounted to convert an AC voltage to DC voltage at the lock.
<u>ATS</u> ( <i>Antitamper Switch</i> ) -	Detects the unauthorized removal of the housing cover on surface mounted Power Bolts.
<u>BPS</u> ( <i>Bolt Position Switch</i> ) -	A switch which indicates the bolt is extended or retracted.
<u>DSM</u> ( <i>Door Status, Magnetic</i> ) -	Magnetic switch contacts which change state when the door is closed, actuated by a magnet located in the strike plate.
<u>DSB</u> ( <i>Door Status, Ball</i> ) -	A ball switch mounted on the Power Bolt face which is mechanically actuated by the closing of the door.
<u>ARSM</u> ( <i>Automatic Relock Switch, Magnetic</i> ) -	Switching contacts in the solenoid coil circuit which prevent the bolt from extending until the magnetic switch senses that the door is closed.
<u>ARSB</u> ( <i>Automatic Relock Switch, Ball</i> ) -	Same as the ARSM, except that door closure is detected by a ball switch.

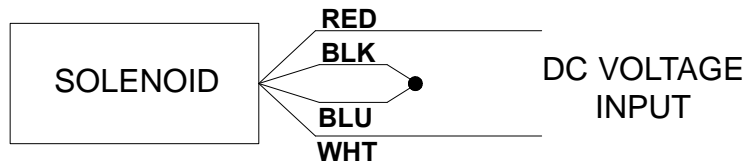
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575 Birch Street, Forestville, CT 06010  
 (860) 584-9158 Fax (860) 584-2136

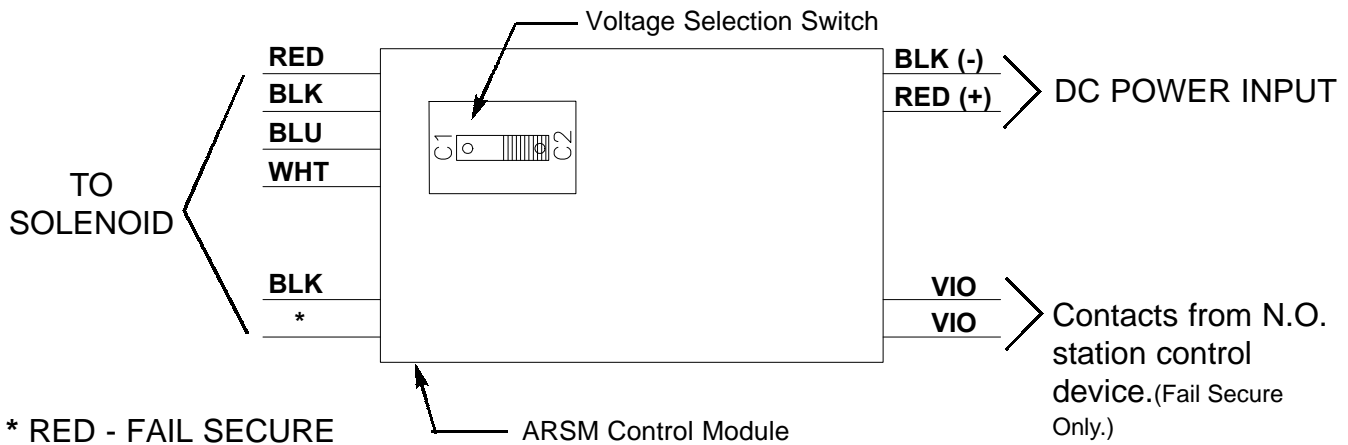
**Figure 1 - 12V configuration without ARSM option**



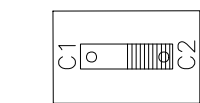
**Figure 2 - 24V configuration without ARSM option**



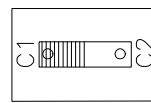
**Figure 3 - 12V or 24V configuration with ARSM option**



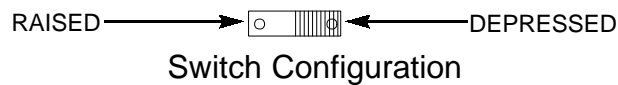
\* RED - FAIL SECURE  
 WHT - FAIL SAFE



24VDC Position



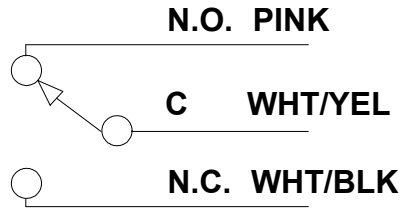
12VDC Position



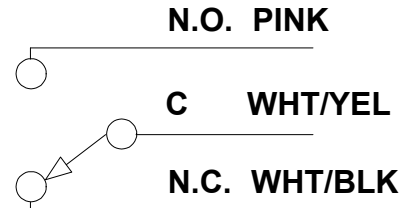
575 Birch Street, Forestville, CT 06010  
 (860) 584-9158 Fax (860) 584-2136

**Figure 4 - ATS (Antitamper Switch)**

The ATS provides a signal to indicate removal of the housing cover. The ATS can be wired to an alarm, indicator or console to warn unauthorized tampering with the lock. The ATS provides a signal via a set of Form "C" dry contacts.



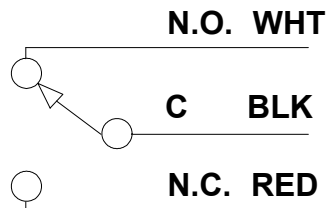
Contact configuration when the housing cover is in place.



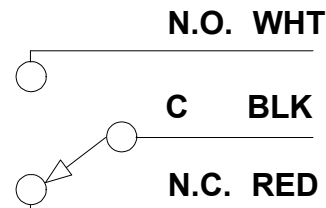
Contact configuration when the housing cover is removed.

**Figure 5 - DSM, DSB (Door Status Switch)**

The DSM, and DSB provides a signal to indicate whether the door is open or closed. The lock mounting instructions should be followed closely to ensure reliable performance of this option. The DSM, and DSB provides a signal via a set of Form "C" dry contacts.



Contact configuration when the door is closed.



Contact configuration when the door is open.

**Figure 6 - BPS (Bolt Position Switch)**

The BPS senses whether the bolt is projected or retracted. The BPS provides a signal via a set of Form "C" dry contacts.

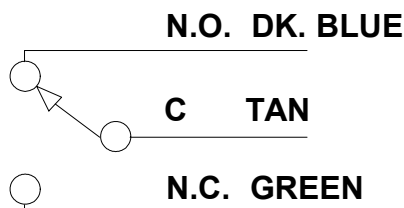


Figure A

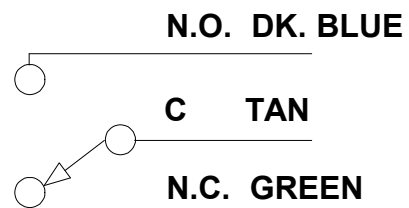


Figure B

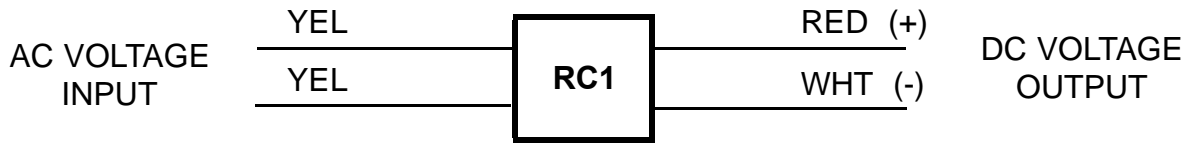
BOLT FUNCTION	MODEL	BPS INDICATED	NOT ENERGIZED	ENERGIZED
FAIL SECURE	405S & 406S ALL OTHERS	BOLT RETRACTED BOLT PROJECTED	FIGURE A FIGURE B	FIGURE B FIGURE A
FAIL SAFE	405 ALL OTHERS	BOLT PROJECTED BOLT RETRACTED	FIGURE A FIGURE B	FIGURE B FIGURE A



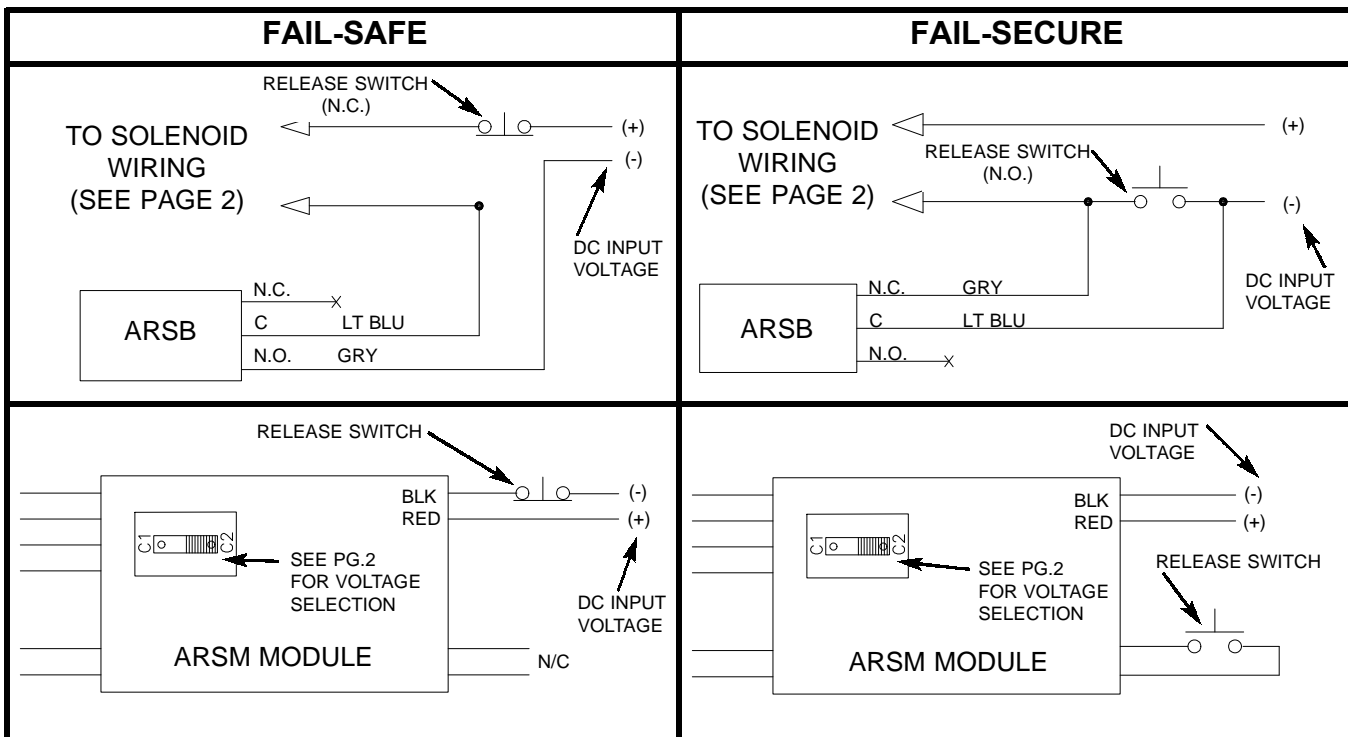
575 Birch Street, Forestville, CT 06010  
 (860) 584-9158 Fax (860) 584-2136

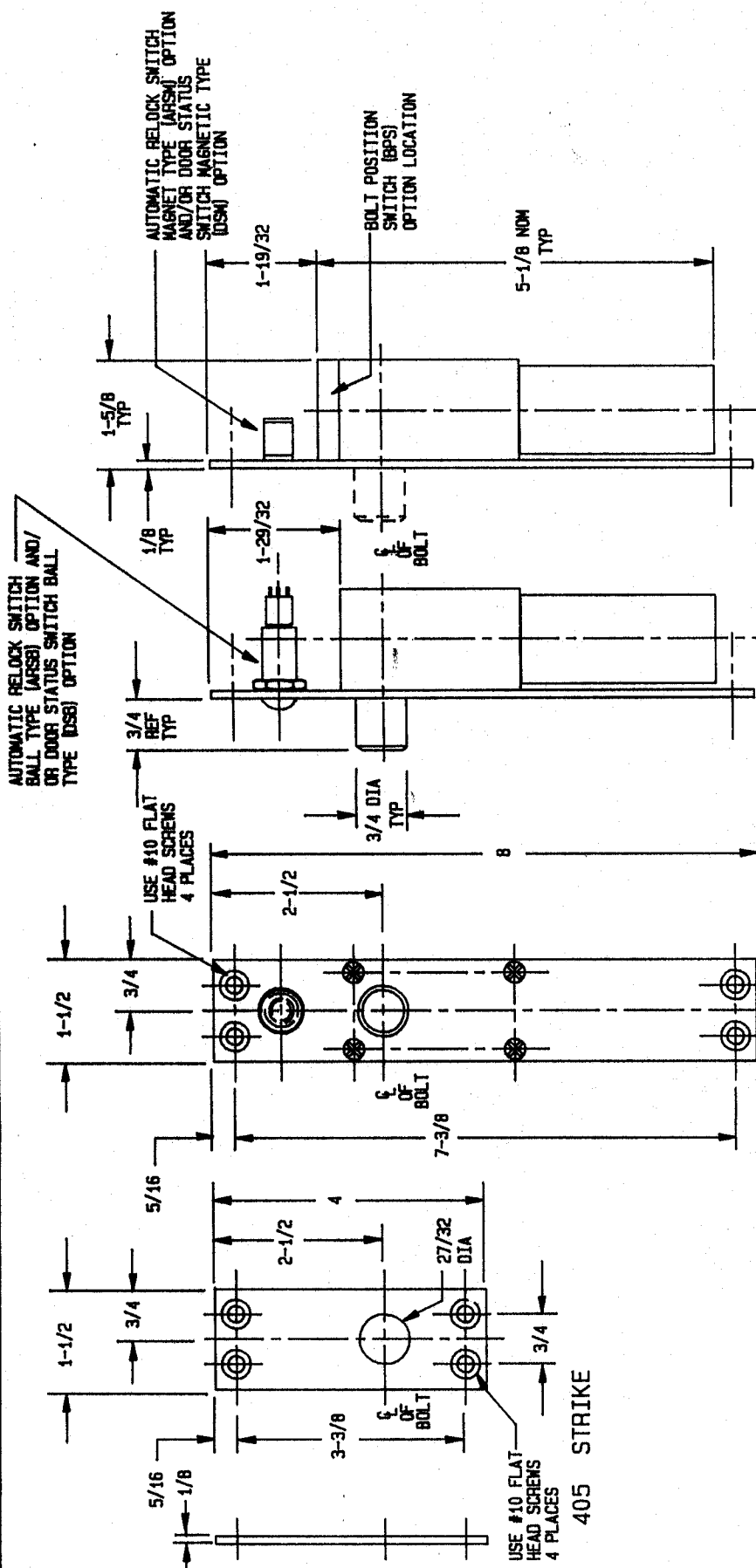
**Figure 7 - RC1 (Rectifier Capacitor Option)**

The RC1 converts 12 or 24 volts AC to 12 or 24 Volts DC. The RC1 has four wires. The two yellow wires are the AC Voltage Input. The Red wire is the positive DC output. The White wire is the negative DC output.



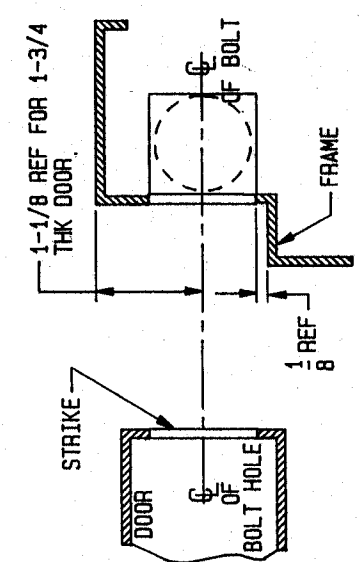
**Figure 8 - Typical Release Switch Wiring**





405 FAIL-SECURE SHOWN WITH ARSB/DSB OPTION  
 405 FAIL-SAFE SHOWN WITH ARSM/DSM & BPS OPTIONS

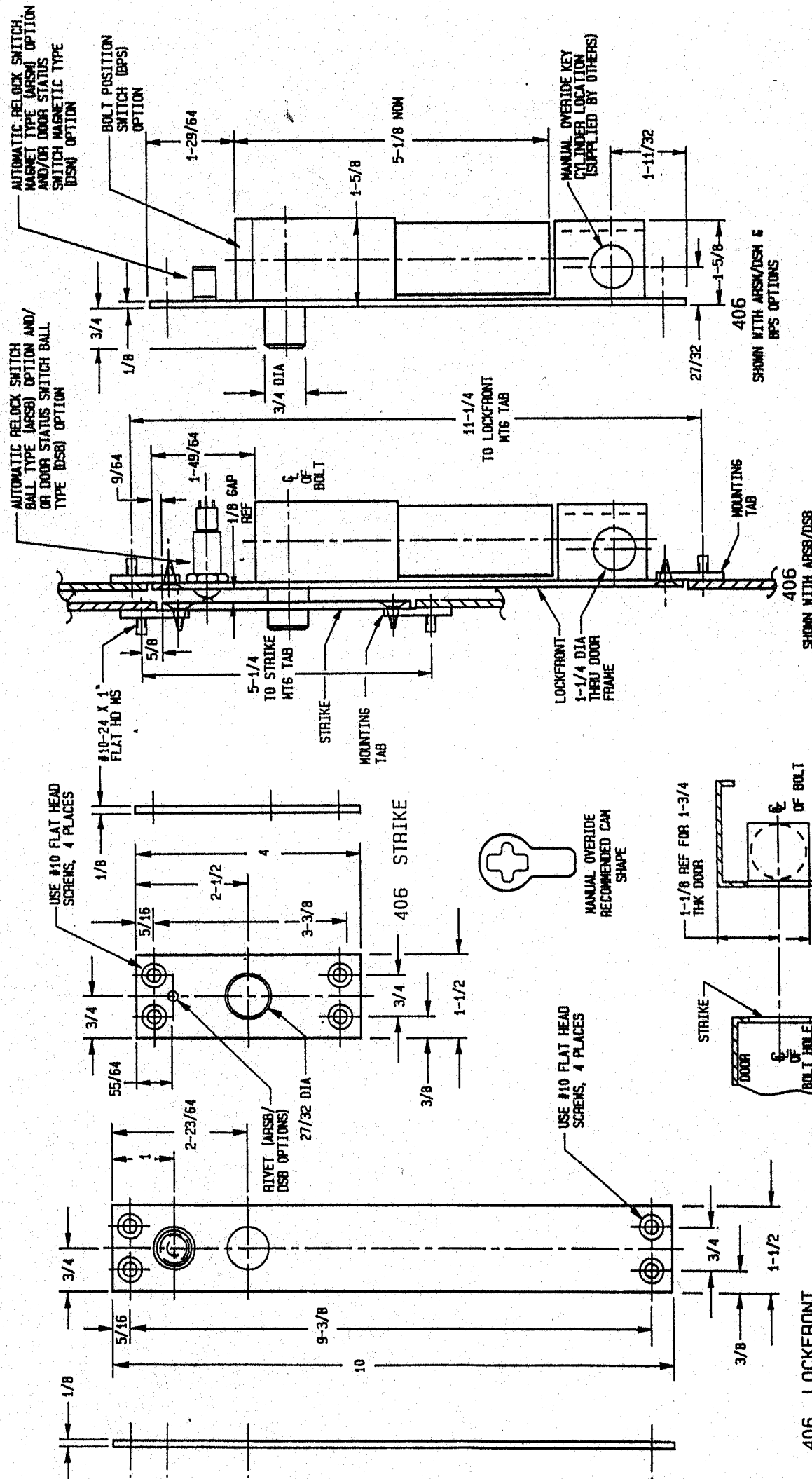
405 LOCKFRONT



DOOR AND FRAME PREPARATION DETAIL

FOR WIRING INFORMATION SEE DRAWING 21003

DRAWN BY SUE	CHECKED BY	APPRD. BY	DATE	UNIT NAME POWER BOLTS	UNIT NO. 405
LOCKNETICS SECURITY ENGINEERING FORESTVILLE, CT				TITLE 405 FAIL-SAFE & FAIL-SECURE POWER BOLTS MOUNTING INFORMATION	
				DRWG. NO. REV. A 40005 4-5-90 P/N MAS 21024	



DRAWN BY SIE CHECKED BY APPROVED BY DATE UNIT NAME POWER BOLTS UNIT NO. 406  
 FOR WIRING INFORMATION SEE DRAWING 21003

**LOCKNETICS**  
 SECURITY ENGINEERING  
 FURSTVILLE, CT

TITLE 406 FAIL-SECURE POWER  
 POWER BOLTS MOUNTING INFORMATION  
 SHEET 1 OF 1

DOOR AND FRAME PREPARATION DETAIL



19102

# 1910S-1/L1910S-1 Horn Strobe and Latching Horn Strobe



Installation Instructions



## SPECIFICATIONS

Voltage: 12 or 24 VDC  
Current: 28 mA maximum average  
Temperature: 32° F to 120° F (not for outdoor use)

**Customer Service**

1-877-671-7011

[www.allegion.com](http://www.allegion.com)

# INSTALLATION

## 1 Set horn strobe options.

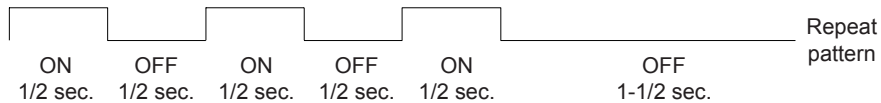
The following horn strobe options can be set in the field:

**Brightness:** Strobe brightness measured in candella. Strobe brightness is set using the slider switch on the back of the horn strobe (Figure 1).

**Volume:** High or low

**Tone:** Electromechanical tone

**Code:** Non-temporal code (continuous tone) or temporal code (interrupted tone). Non-temporal code uses the pattern shown below.



The horn strobe is shipped factory set for high volume temporal (interrupted) code.

If necessary, change the setting before installing the horn strobe assembly.

Change the setting by turning switch on the back of the horn strobe (Figure 1). Switch settings are shown in raised lettering on the back of the horn strobe.

### ⚠ CAUTION ⚠

Remove power from horn strobe before changing settings.



Figure 1, Location of Setting Switches (back of horn strobe)

## 2 Wire the horn strobe.

### Typical wiring for 1910S-1 horn strobe

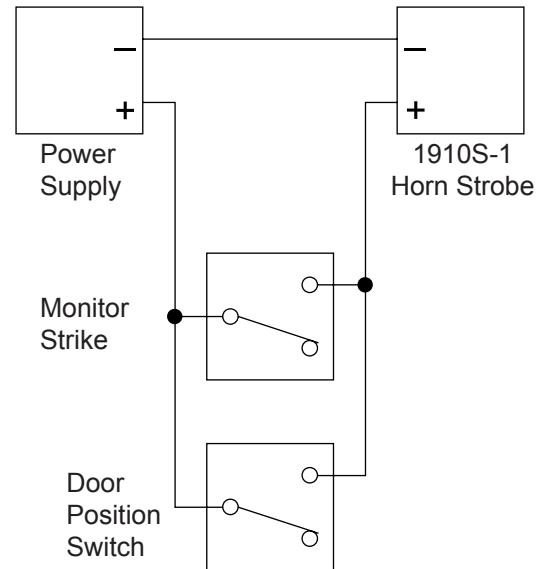
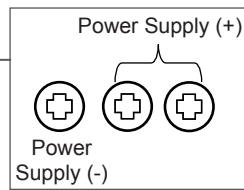


Figure 2, Wiring (front of mounting plate)

- Horn strobe activates when latchbolt retracts or when door opens.
- Horn strobe stops when latchbolt engages strike and door closes.
- Switches are shown with latchbolt engaging strike, door closed.

### Typical wiring for L1910S-1 latching horn strobe

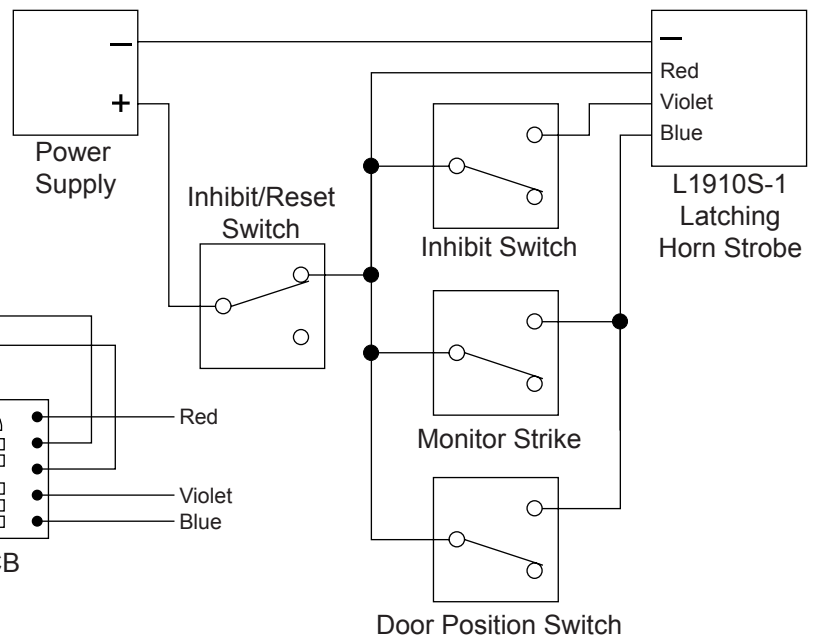
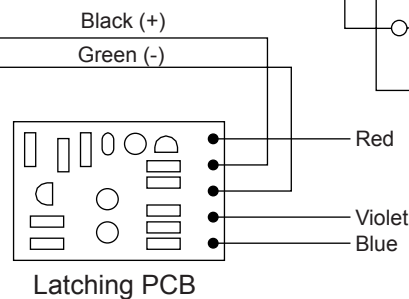


Figure 3 Wiring (front of mounting plate)

- Horn strobe activates when latchbolt retracts or when door opens.
- Horn strobe remains active when latchbolt engages strike and door closes.
- Toggle Inhibit/Reset Switch OFF and ON to reset latched horn strobe.
- Close Inhibit Switch or open Inhibit/Reset Switch to prevent horn strobe from activating when voltage is applied to the blue wire.
- Switches are shown with latchbolt engaging strike, door closed.

**Blue:** Apply voltage to latching PCB and to activate horn strobe.

**Red:** Must apply voltage for horn strobe to operate. Remove and reapply voltage to reset latched horn strobe.

**Violet:** Apply voltage to prevent horn strobe from activation.

### 3 Mount the horn strobe.

#### Flush Mount

- Secure flush mount plate to 4" back box with two #8-32 x 3/4" screws.
- Complete field wiring.
- Attach the horn strobe assembly to the mounting plate. Refer to Figure 6.
- Secure horn strobe assembly with the captured screw\*.

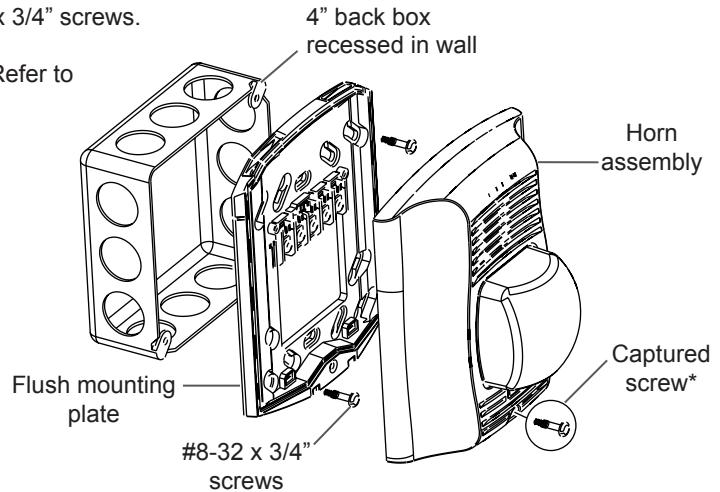


Figure 4, Flush Mounting

#### Surface Mount

- Secure surface mount back box to mounting plate with two #8-32 x 3/4" screws.
- Complete field wiring.
- Attach the horn strobe assembly to the mounting plate. Refer to Figure 6.
- Secure horn strobe assembly with the captured screw\*.

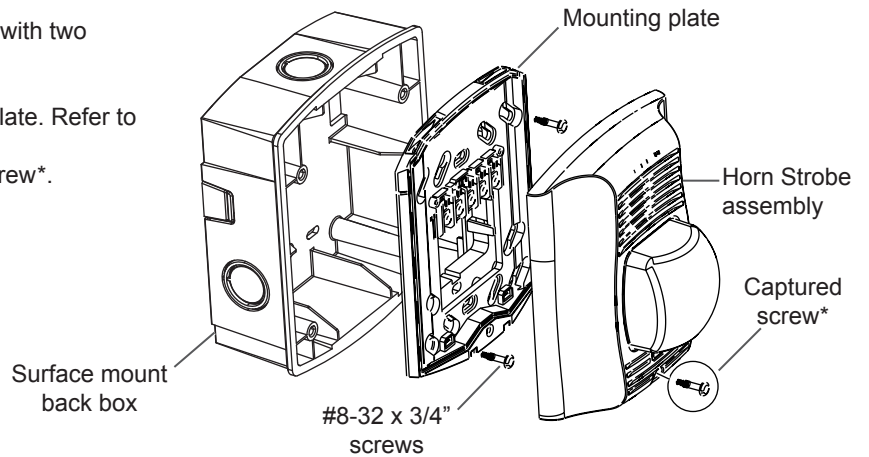
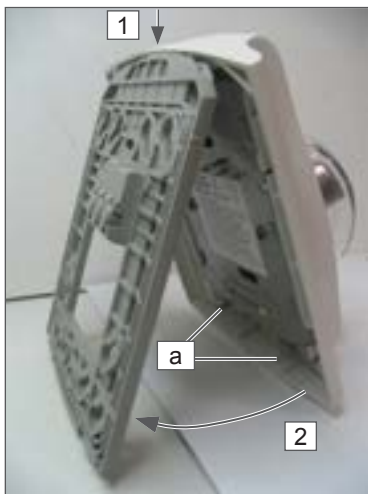


Figure 5, Surface Mounting

\*Captured screw may be replaced with Torx screw (provided) for tamper resistance.

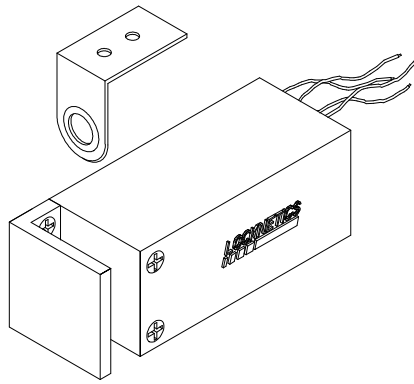
Screw pack contains: #8-32 x 3/4" screws (4), Torx head screw (1)



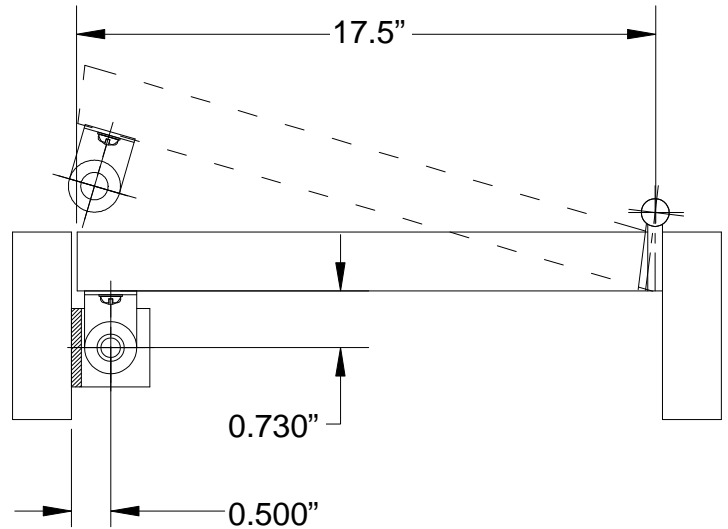
- Lower horn strobe assembly onto the top of mounting plate.
- Swing bottom towards mounting plate until tabs (a) on horn strobe assembly click into slots on mounting plate.

Figure 6, Attach Horn Strobe Assembly

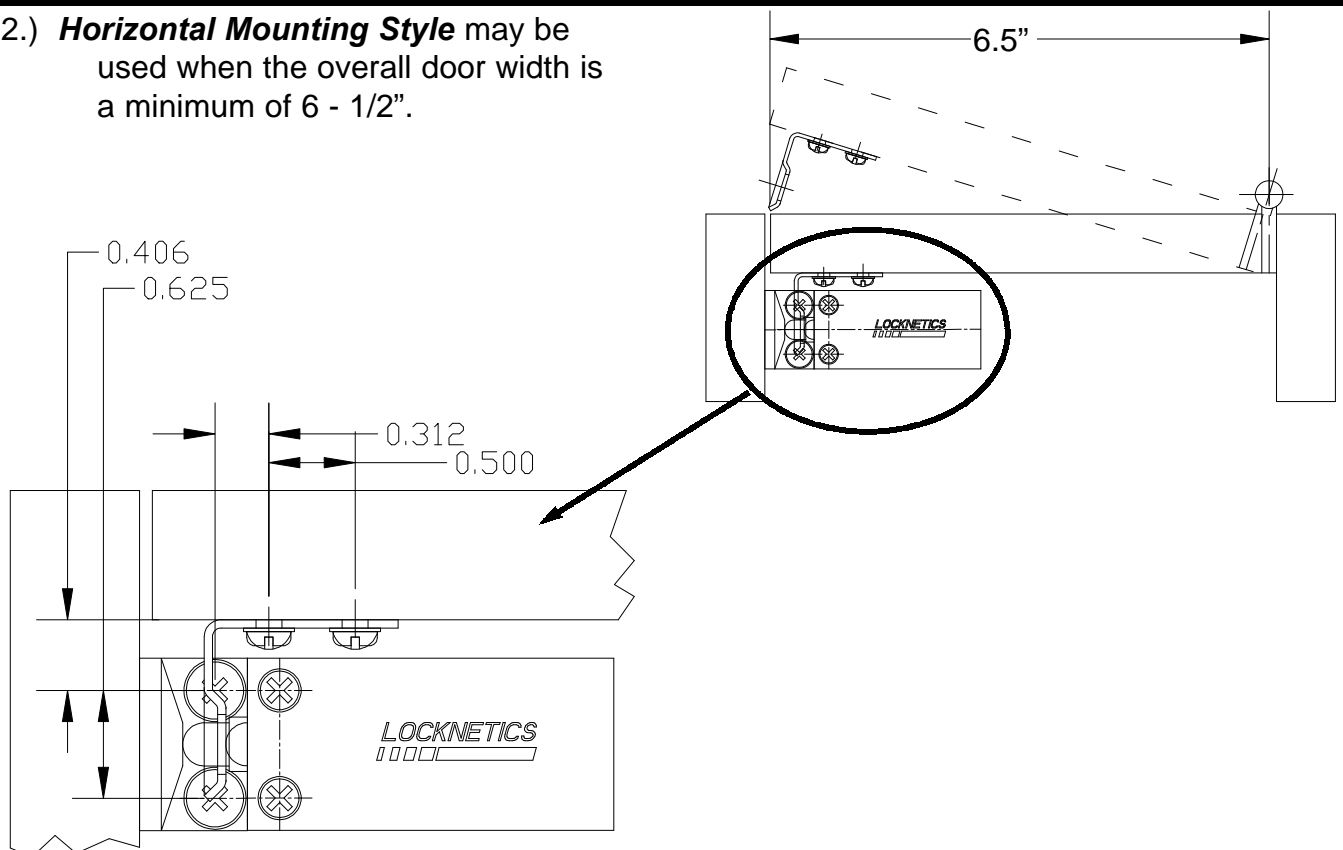




- 1.) **Vertical Mounting Style** may be used when the overall door width is a minimum of 17 - 1/2".



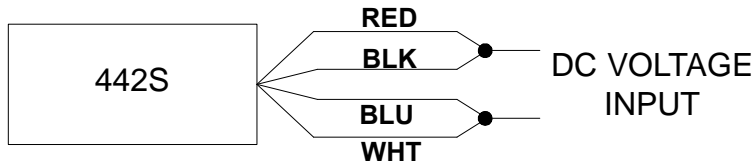
- 2.) **Horizontal Mounting Style** may be used when the overall door width is a minimum of 6 - 1/2".



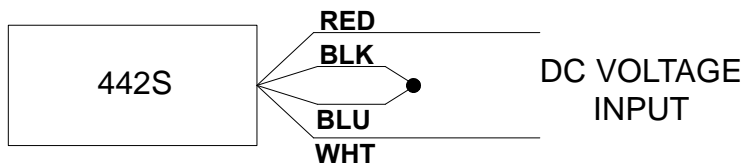


**Wiring Installation**

**Figure 1 - 12V Configuration**

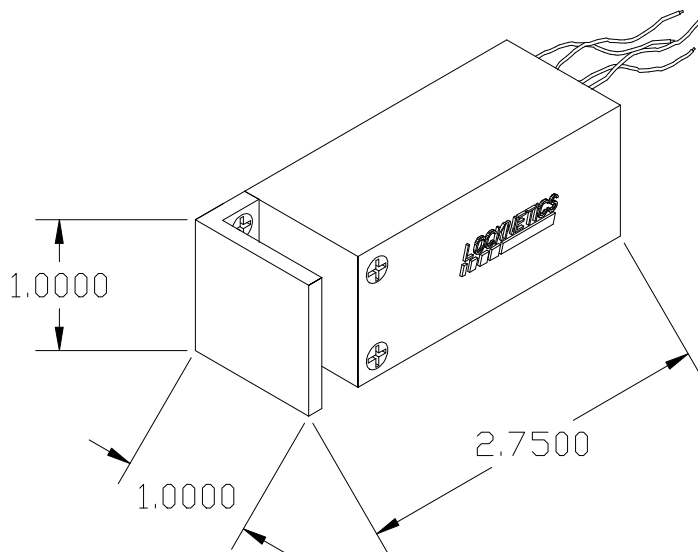
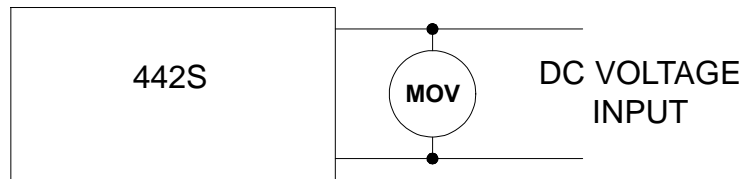


**Figure 2 - 24V Configuration**



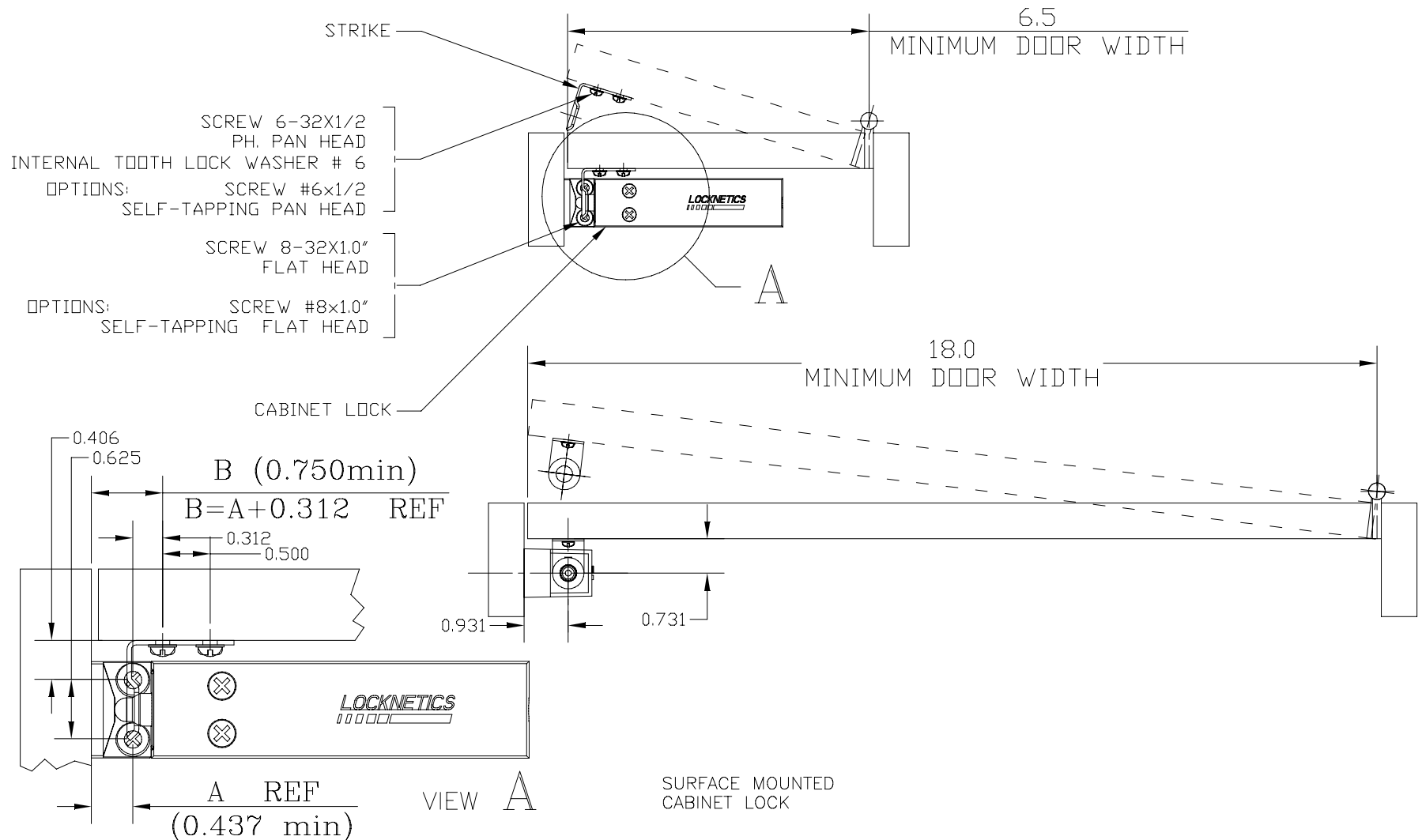
**Spike Suppressor Installation**

Install your suppressor across the input voltage wires as close to the solenoid as possible.



# 443 BATTERY POWERED CABINET LOCK

## TEMPLATE AND INSTALLATION INFORMATION





# 6062 - Multi-purpose Timer

## Overview:

Model 6062 programmable timer is suitable for many functions that require a timed operation e.g. Access Control Applications, Siren/Bell Cut Off Module, Dialer Delay, Guard Tour Supervisory Timer, etc. Some optional functions include: One Shot, Delayed Release, Delayed Operate, Delayed Pulse and Pulsar/Flasher. A new feature has been added which provides a momentary relay activation at the end of a desired timing cycle. This feature eliminates the need for having to use two (2) timers to achieve this function. Another new feature will cancel (interrupt) timing cycle and reset timer if desired.

## Specifications:

- 12 or 24VDC operation is selectable.
- Quick and extremely accurate time range adjustment from 1 sec. to 60 min.
- LED indicates relay is energized.
- Form "C" relay contacts are 8 amps at 120VAC/28VDC.
- Current Draw: Stand-by 3mA, Relay Energized 40mA.
- Triggers via positive DC (+) voltage, dry contact closure, or removal of contact closure.
- Selectable relay activation at the start or end of the timing cycle.
- One (1) second momentary relay activation at the end of the timing cycle (eliminates the need to use two (2) timers for this function).
- Built-in reset feature which cancels timing cycle.
- Repeat (pulsar/flasher) mode.
- Snap Trac compatible (order Altronix model #ST3)
- DIN Rail Mount version available (order Altronix model #DTMR1).

Board dimensions: 3"L x 2.5"W x .75"H



## Installation Instructions:

1. Mount 6062 in desired location/enclosure.
2. Set proper DC Input Voltage Dip Switch 3: 12VDC ON, 24VDC OFF.
3. Refer to **Dip Switch Selection** and **Jumper Selection Tables** for desired functions (e.g.: Timing, Trigger, Pulse)
4. Refer to **Terminal Identification Table** and **Typical Applications Fig. 1 thru Fig. 8.** for desired wiring connections.

**Note:** It is good operating practice to measure and verify DC input voltage before powering device to ensure proper operation.

**Note:** When triggering via a N.O. (normally open), momentary or maintained trigger, connect the dry contact trigger to Pos (+) and TRG terminals.

When triggering via a N.C. (normally closed), momentary or maintained trigger, connect the trigger to Neg. (-) and TRG terminals and install a 1K (1,000 ohm) resistor between the Pos (+) and TRG terminals (fig. 8).

## Dip Switch Selection Table:

Dip #	Off	On
1	Relay energizes at start of timing cycle.*	Relay energizes at the end of timing cycle.*
2	1-60 minutes timing range. (adjust trimpot)	1-60 seconds timing range. (adjust trimpot)
3	24VDC operating voltage.	12VDC operating voltage.
4	Timing begins immediately upon trigger input.	Timing starts after removal of trigger input.

\* When relay energizes (LED is on) [N.O. & C] switch from open to close and [N.C. & C] switch from close to open.

## Jumper Selection Table:

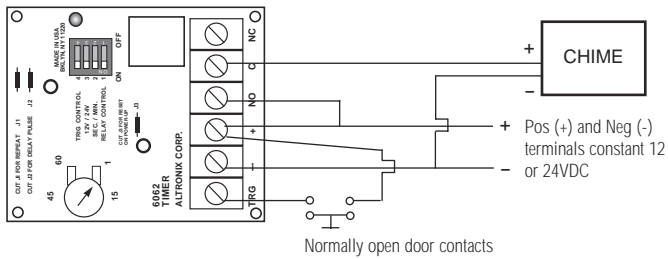
Number	Function/Description
J1	Cutting J1 selects the pulsar/flasher mode. Relay will flip ON and OFF continuously in equally set timed intervals when timer is powered up.
J2	Cutting J2 puts timer in delayed output mode. Relay will pulse for 1 second at the end of a preset timing cycle. *Dip Switch 1 must be ON for this function.
J3	6062 will go through an initial timing cycle when first powered up unless J3 is cut. If J3 is cut, timing can only be initiated via TRG terminal

## Terminal Identification:

Terminal Legend	Function/Description
TRG	Applying a positive voltage will activate timing cycle. Trigger voltage range: 7-12VDC at 12 volt setting, 15-24VDC at 24 volt setting.
-, +	Connect 12 or 24VDC filtered and regulated voltage. Refer to <b>Dip Switch Selection Table</b> for voltage setting.
N.O., C, N.C.	Dry form "C" relay contacts are rated 8 amps at 120VAC/28VDC.

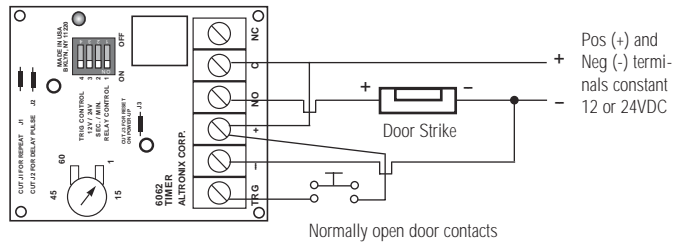
## 6062 Typical Applications

**Fig. 1 - Timed Door Annunciator:**



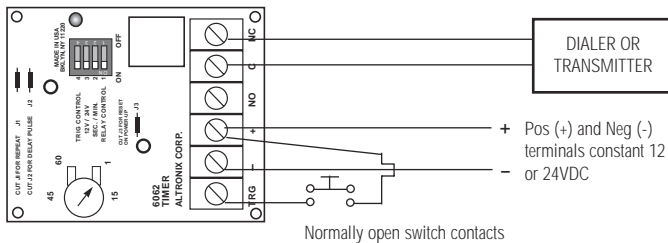
For this application Switch #1 and Switch #4 should be in the OFF position.

**Fig. 5 - Timed Door Strike:**



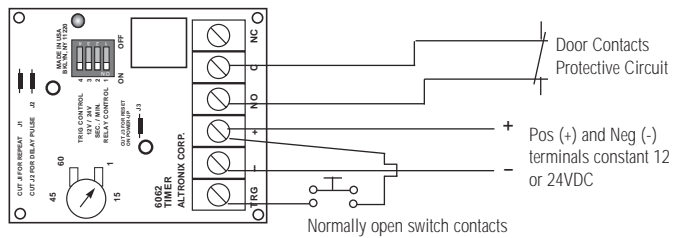
For this application Switch #1 should be in the OFF position and Switch #4 should be in the ON position.

**Fig. 2 - Guard Tour Supervisory Timer:**



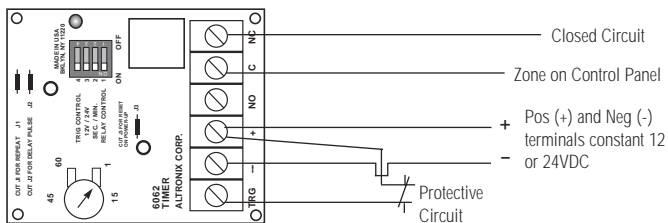
For this application Switch #1 and Switch #4 should be in the OFF position.

**Fig. 6 - Timed Shunt for a Door:** Use to bypass alarm contacts.



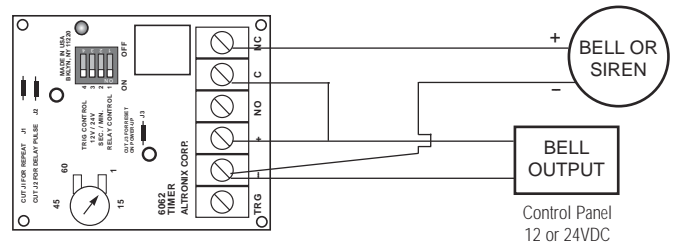
For this application Switch #1 should be in the OFF position and Switch #4 should be in the ON position.

**Fig. 3 - Swinger Eliminator:**



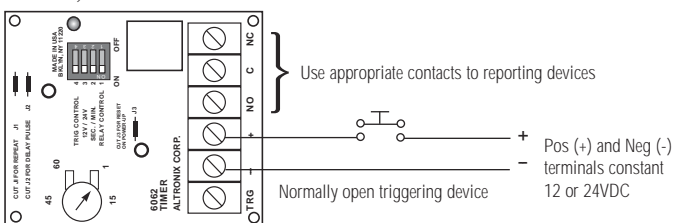
For this application Switch #1 should be in the OFF position and Switch #4 should be in the ON position.

**Fig. 7 - Bell Cut Off Timer:**



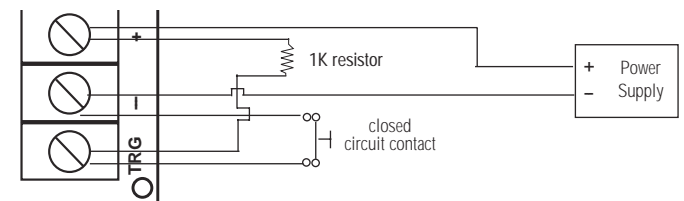
For this application Switch #1 should be in the ON position and Switch #4 is not used in this application.

**Fig. 4 - Delay Timer:** Use for Door Ajar Alarm, Delayed Activation of Digital Dialer, Defrost Cycle Timer, etc...



For this application Switch #1 should be in the ON position and Switch #4 is not used in this application.

**Fig. 8 - Closed Circuit Trigger Option:**



For this application a 1K (1,000 ohm) resistor must be installed as shown. (resistor not supplied)

Altronix is not responsible for any typographical errors. Product specifications are subject to change without notice.



*Installation/Programming  
Guide for*



***PT724A***  
*365 Day 24 Hr.  
Timer/Controller*



# PT724A - 365 Day 24 Hr. Timer/Controller

## Overview:

Model PT724A is an extremely versatile 24 Hour 365 Day Event Timer designed to support a wide range of applications. Such applications include: Home and Building Automation, Security, Access Control, Lighting Control, Etc. PT724A is equipped with an independently controlled form “C” relay contact that provides many latching and/or momentary operations during a program schedule of your choice. The EE prom memory allows for programming of unit prior to/and during field installation. Events may be set for single or multiple operations on a daily and/or weekly schedule. The block programming feature enables repeating an event on any combination of consecutive days. PT724A will compensate for daylight savings time if desired. Individually selected holiday exceptions can be programmed to override regularly scheduled events.

## Specifications:

- 12 to 24 volts AC or DC operation
- Standby current: 10mA (relay off) 50mA (relay on).
- Battery charging current: 100mA.
- Form “C” relay contacts are rated 10amp @120VAC/28VDC.
- EE Prom memory protects against loss of programming due to power failure.
- Accurate crystal controlled clock.
- Momentary and/or Latching Events.
- 50 individually programmed daily/weekly events.
- Block programming capacity can accommodate a total of 350 events per week.
- 10 programmable Holiday dates.
- “First man in” option.
- Alphanumeric LCD display simplifies programming.
- Standard or Daylight Savings Time settings.
- Automatic compensation for leap year.
- Built-in charger for 12VDC sealed lead acid or gel type batteries (Max charge current 100mA).
- Lithium battery backup maintains clock (optional).
- User friendly programming.

Board dimensions: 5.25”W x 3”L x 1”D



## Installation Instructions:

1. Mount PT724A in desired location / enclosure.

### Carefully Review:

**Basic Operation** (pg. 3)

**Terminal Identification Table** (pg. 3)

**Push Button Layout and Description** (pg. 4)

**Programming Instructions** (pgs. 4-6)

2. Connect 12 to 24 Volts AC or DC to terminals marked [+ DC – AC ]. (when using DC carefully observe polarity).
3. Connect 12VDC battery (optional) to terminals marked [+ BAT – 12VDC].
4. Insert lithium battery (optional/not supplied. Order part LB2032) in battery holder as shown in fig. 1 pg. 4. With the + positive side facing up.
5. Connect devices to be controlled to dry outputs marked [NO, C, NC].

**Note:** It is important when connecting DC powered electromechanical devices such as Mag Locks, Electric Strikes, Bells, Relays, etc. to install a catch diode across the pos (+) and neg (-) terminals of the device. Connect diode as close to the device as possible with the banded side facing the pos (+) terminal. This will reduce the possibility of interference.

6. Program clock and desired event schedule (see programming instructions pg. 4-6).

**Basic Operation:**

PT724A controls an independently operated dry form “C” relay output. Relay can be programmed to: turn on (latch), turn off (release latch) or pulse (momentary toggle) at a specified time and day (this is referred to as an event). Events are programmed via the push buttons and LCD display. Events may be programmed to occur on any day of the week at any time. In addition, events may be repeated at a specific time on two (2) or more consecutive days (i.e. M-F, Sun-Th, etc) Multiple combinations of individual and block events may be programmed. Holiday exceptions are individually selected by date and will over-ride all regularly scheduled events.

The four (4) output relay modes consist of:

Relay OFF - De-energizes the relay until a relay ON event is detected

Relay ON - Energizes the relay until a relay OFF event is detected.

Disable - Used to cancel an existing programmed event.

Pulse - Momentarily energizes the relay for a selectable time period of 1 sec. to 15 secs.

Time is displayed in 24 hr. military format.

**Terminal Identification Table:**

Terminal Legend	Function/Description
NO, C, NC	Dry Contact output used to switch controlled devices. When these relays are energized (ON) the NC and C terminals are open and the NO and C terminals are closed. When this relay is de-energized (Off) the NC and C terminals are closed and the NO and C terminals are open.
+ DC - ~ AC ~	AC or DC Input 12 to 24 volt. When using DC carefully observe polarity.
+ BAT - 12VDC	12VDC standby battery input (battery leads provided).
FM	When this terminal is connected to DC neg. (-) the “First Man in” feature is enabled. The relay will remain in its present position until this connection is terminated. At that time the relay will resume normal operation and latest scheduled events will occur.

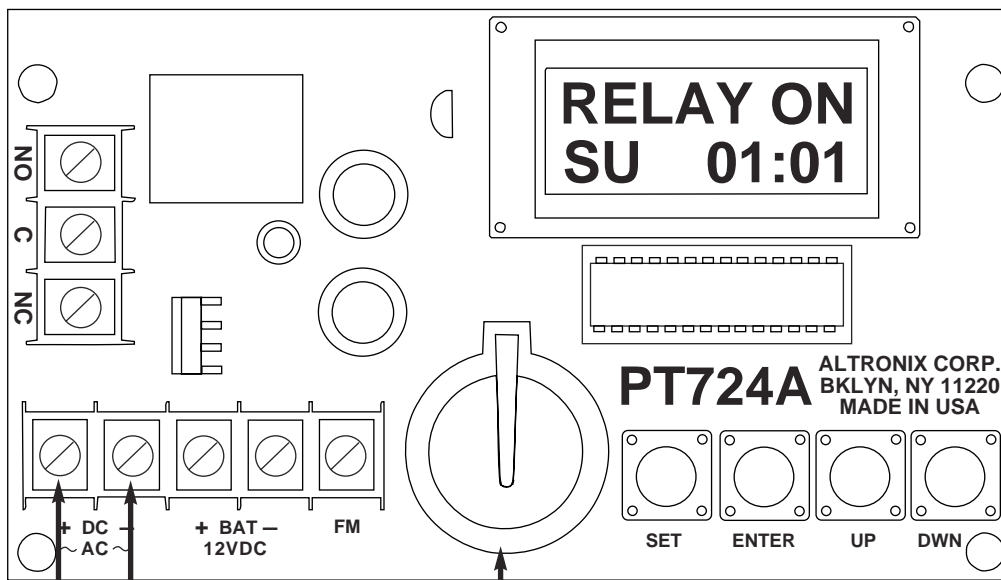
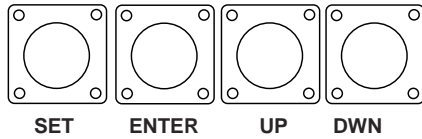


Fig. 1

12-24 Volt  
AC/DC input

Lithium Battery Socket  
(order Model # LB2032)

**Push Button Layout:**



**Push Button Description Table:**

Push Button	Function/Description
SET	Scrolling keys for programming. Escaping out of existing programming.
ENTER	Accepts selections made to programming.
UP	Scrolls through selections.
DWN	Scrolls through selections.

UP and DOWN keys can be used to select data entries. After scrolling to the correct entry, depress ENTER to accept.

**Programming Instructions:**

**Note: The flashing cursor denotes location of data entry selection to be made. If an entry was made in error or requires changing, depress SET to backspace, make the correct selection and depress ENTER to accept data and advance the cursor.**

**A. Setting Events:**

Depress SET until ENTER to SET EVENT appears in display.

Depress ENTER #01 ^ OFF  
SU 00:00 will appear in display.

Depress ENTER until the flashing cursor appears under OFF in display. Now select type of event required, by scrolling using the UP and DWN push buttons until either:

- ON - Relay ON (latching mode).
- OFF - Relay OFF (latching mode).
- PL - Relay Pulse ( momentary).

appears in display and depressing ENTER will make selection.

When selecting the pulse mode PL01 will appear in the display. It is now necessary to assign the length of time (duration of relay activation). The pulse can range in length from 1 second minimum to 15 seconds maximum and is selected by using UP or DWN push buttons, then depressing ENTER to accept.

**Note:** If pulse duration is not selected relay output defaults to 1 second.

Next select the day of the week or BK\* for weekly repeat and time (military) by scrolling using UP and DWN push buttons and depress ENTER to accept.

You may continue to program events by repeating the previous steps or exit programming by depressing SET.

**Note:** When programming additional events it is necessary to select the next consecutive event number following the last event program to continue.

\*see section B

**B. Setting Block (weekly repeat):**

Next select block programming by depressing SET until

ENTER to SET BK appears in display.

Depress ENTER

BK = SA/SU  
TIME = DS will appear in display.

4 Example: To select Monday thru Friday repeat operation. With flashing cursor under SA depress UP or DWN to



change to MO then depress ENTER to move flashing cursor to SU and depress UP or DWN to change FR. Depress ENTER flashing cursor will now be under TIME = DS. Press ENTER if you wish to select DS (daylight savings mode). If your area does not require Daylight Savings adjustment depress UP or DWN to change to (standard time mode) ST will appear in display. Depress ENTER to accept correct selection.

**C. Setting Holiday Events:**

Depress SET until 

ENTER to SET EVENT
-----------------------

 appears in display.

Depress ENTER 

#01^ON HL 00:00
--------------------

 will appear in display.

Next select HL to indicate as holiday event and time by scrolling using UP and DWN push buttons and depress ENTER to accept.

You may continue to program more holiday events by repeating the previous steps or exit programming by depressing SET.

**D. Setting Holiday Dates:**

It is now necessary to assign these holiday events specific calendar dates which they are to occur.

To select Holiday events depress SET until

ENTER to SET HOL
---------------------

 appears in display.

Depress ENTER 

#01 ^ HOL SU 00:00
-----------------------

 will appear in display.

**Note:** Holiday events will override all regularly programmed events.

**E. Delete/Disable Events or Edit Events:**

Previously programmed regularly scheduled and/or holiday events may be deleted/disabled without having to erase all events.

Depress SET until 

ENTER to SET EVENT
-----------------------

 appears in display.

Depress ENTER 

#01 ^ ON TU 00:00
----------------------

 will appear in display.

Now scroll using UP and DWN push buttons to the event you wish to delete, depress ENTER to move flashing cursor under relay option then depress UP and DWN push buttons until DIS is displayed, depress ENTER to confirm.

**F. Setting Clock/Calendar:**

Upon initial power up 

RLY OFF SU 01:01
---------------------

 will appear in display.

Depress SET 

ENTER to SET TIME
----------------------

 will appear in display.

Depress ENTER 

01/01/01 SU/01:01
----------------------

 will appear in display.

Enter the current date, day of week and time (military) by depressing UP and DWN to make the selection then depress ENTER to accept.

**Note: If clock was set prior to programming events. You should re-program clock to insure accuracy.**

**G. Delete All Events:**

All previously programmed events can be deleted by depressing

SET until

ENTER to  
CLR MEM

appears in display.

Depress ENTER

CLEAR  
MEMORY?

will appear in display.

Depress ENTER

PRESS UP  
& ACCEPT

will appear in display.

Depressing UP push button will now clear all events previously programmed.

If you wish to escape from this selection depress any of the other push buttons: SET, ENTER and DWN.

*Customer Event Log*

Event #	Relay #	Day/Block	Holiday Dates	Event Type

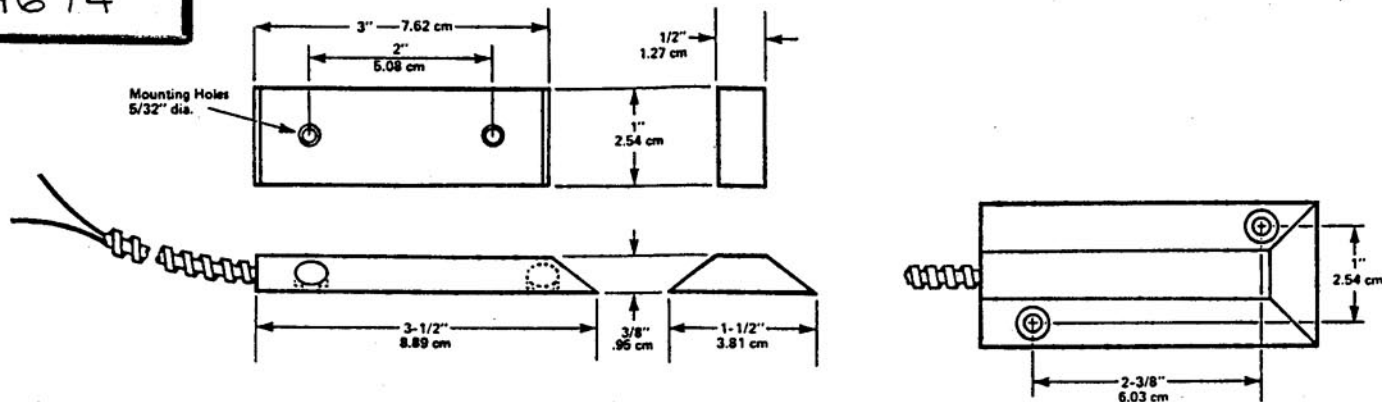
### Customer Event Log

Event #	Relay #	Day/Block	Holiday Dates	Event Type

Altronix is not responsible for any typographical errors.



OH674



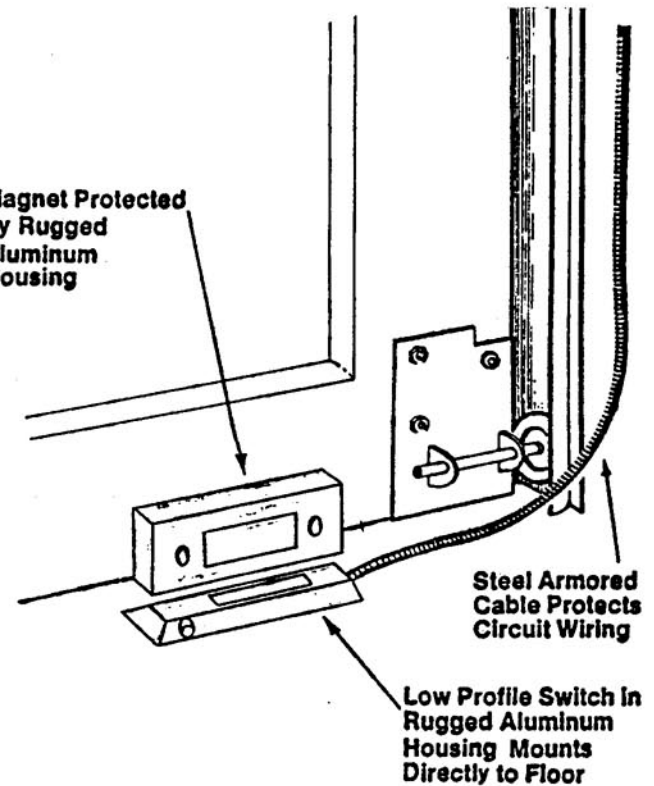
OH674 : 3 ft Stainless Steel Flex Cable

Lead Color	Function
Black	Common
White	Closed Loop (N.O.)
Red	Open Loop (N.C.)

### INSTALLATION INSTRUCTIONS

Secure switch to floor with appropriate fasteners (wood or concrete). Be certain to position the switch where it will be least likely to be a hindrance to traffic. Align labels on switch and magnet so labels read in same direction (switch is polarity sensitive). Attach magnet to door directly, or with L bracket.

Magnet Protected  
by Rugged  
Aluminum  
Housing



**LOCKNETICS**  
HAMDEN, CONNECTICUT 06517 U.S.A.

DOOR STATUS SWITCH  
OVERHEAD DOORS

DRN BY JLS  
DATE 5-2-80  
CH'KD BY

OH674



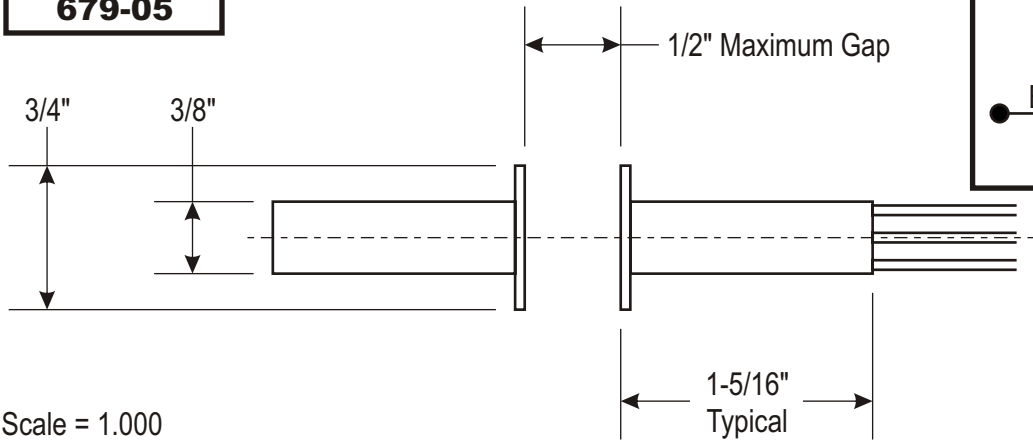
**LOCKNETICS**  
 575 BIRCH STREET  
 FORESTVILLE, CT 06010  
 PHONE: (866) 322-1237  
 FAX: (866) 322-1233

# 679 DOOR SWITCH

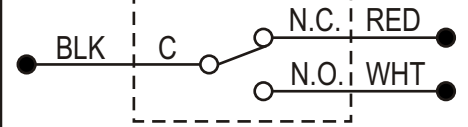
SINGLE POLE, DOUBLE THROW  
 FOR WOOD DOOR AND FRAME

FORM NUMBER	REVISION	DATE
77661	A	12-21-2005

## 679-05



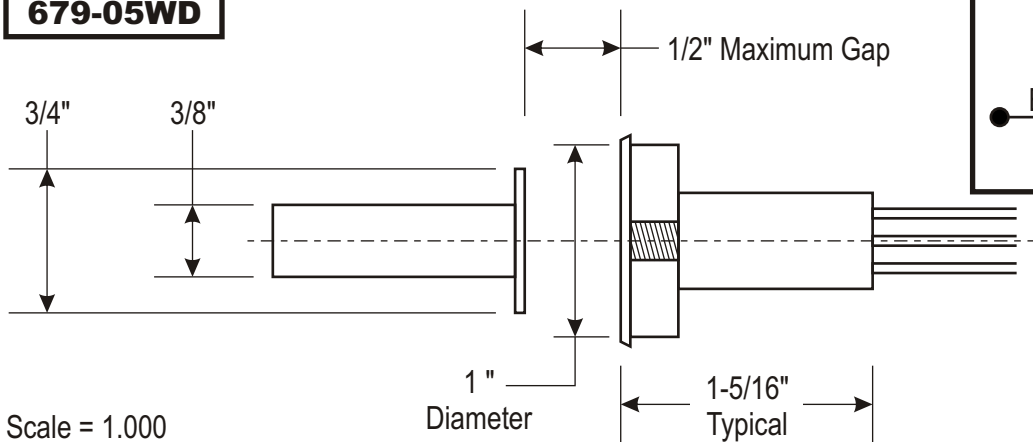
### Schematic of Switch



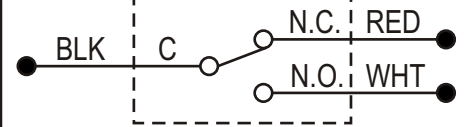
### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

## 679-05WD



### Schematic of Switch

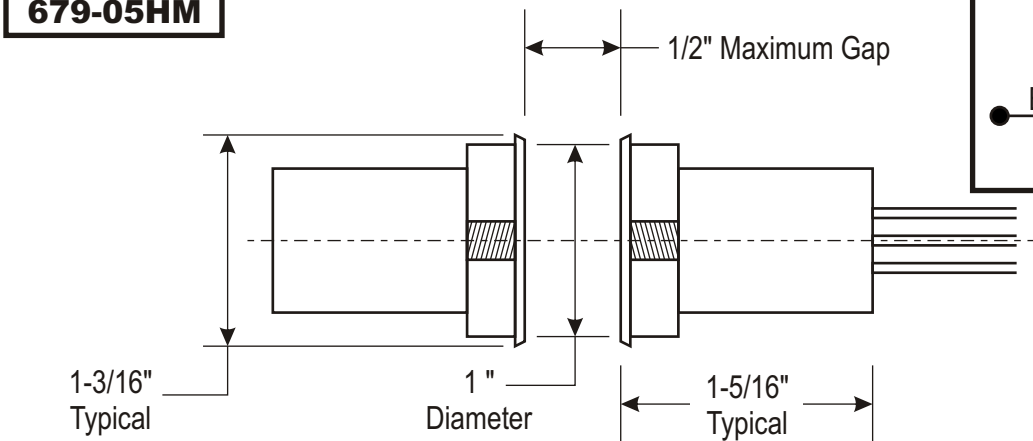


### NOTES:

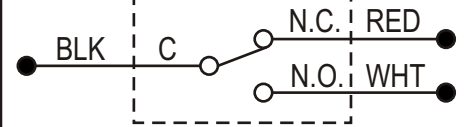
- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

1" DIAMETER MOUNTING HOLE IS REQUIRED

## 679-05HM



### Schematic of Switch



### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

1" DIAMETER MOUNTING HOLE IS REQUIRED



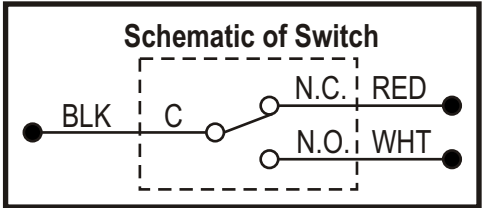
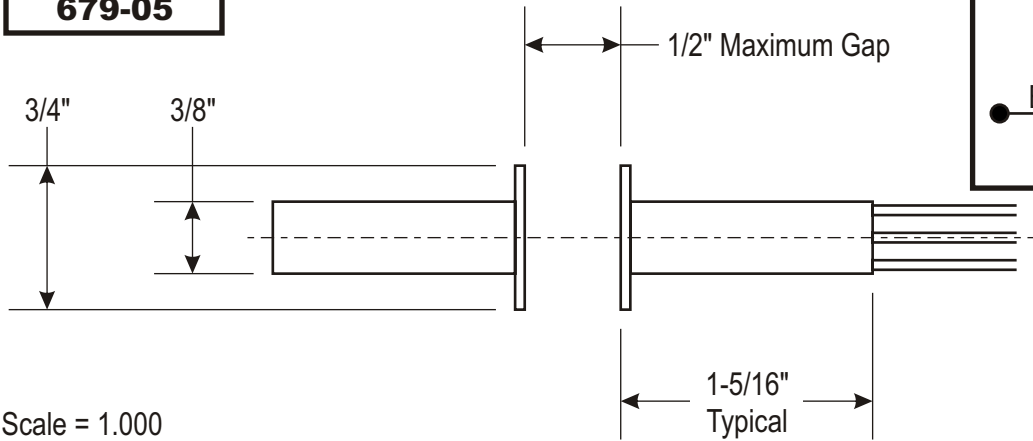
**LOCKNETICS**  
 575 BIRCH STREET  
 FORESTVILLE, CT 06010  
 PHONE: (866) 322-1237  
 FAX: (866) 322-1233

# 679 DOOR SWITCH

SINGLE POLE, DOUBLE THROW  
 FOR WOOD DOOR AND FRAME

FORM NUMBER	REVISION	DATE
77661	A	12-21-2005

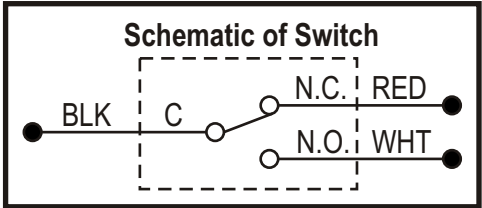
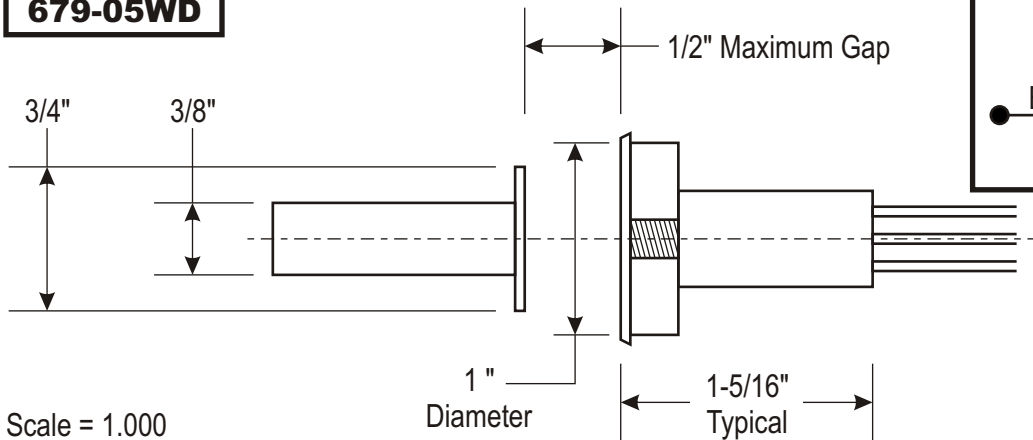
## 679-05



- NOTES:**
- RED IS NORMALLY CLOSED
  - WHITE IS NORMALLY OPEN
  - BLACK IS COMMON

Scale = 1.000

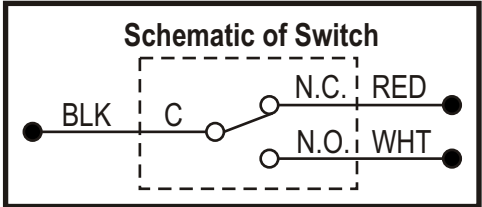
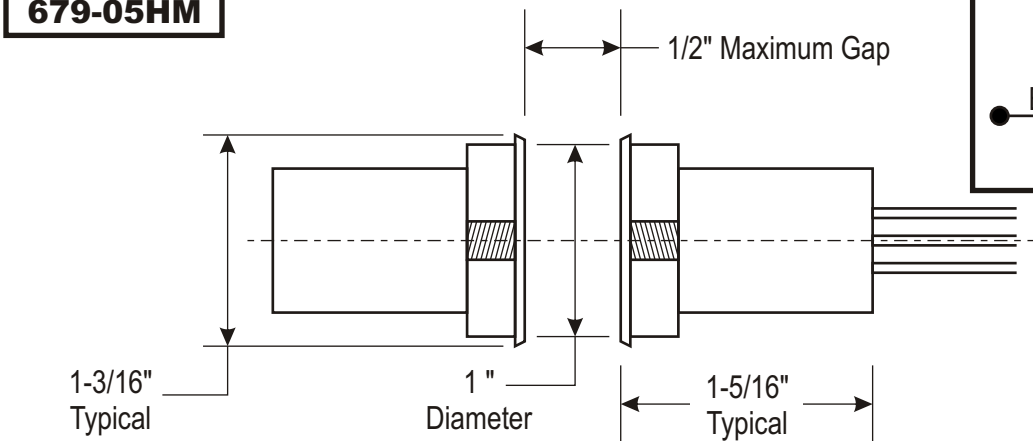
## 679-05WD



- NOTES:**
- RED IS NORMALLY CLOSED
  - WHITE IS NORMALLY OPEN
  - BLACK IS COMMON
- 1" DIAMETER MOUNTING HOLE IS REQUIRED

Scale = 1.000

## 679-05HM



- NOTES:**
- RED IS NORMALLY CLOSED
  - WHITE IS NORMALLY OPEN
  - BLACK IS COMMON
- 1" DIAMETER MOUNTING HOLE IS REQUIRED

Scale = 1.000



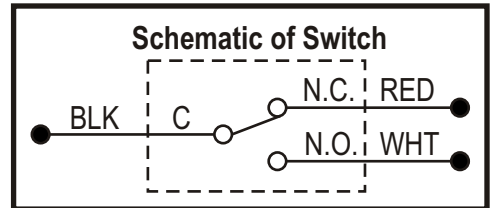
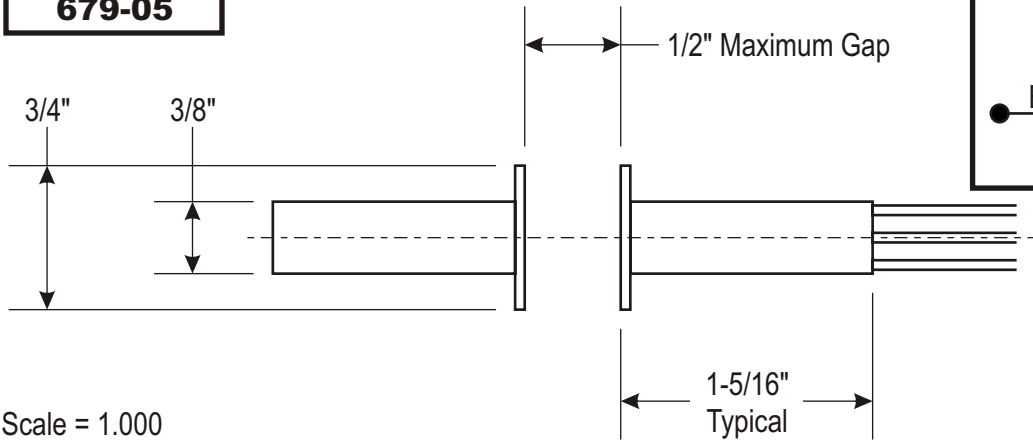
**LOCKNETICS**  
 575 BIRCH STREET  
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# 679 DOOR SWITCH

SINGLE POLE, DOUBLE THROW  
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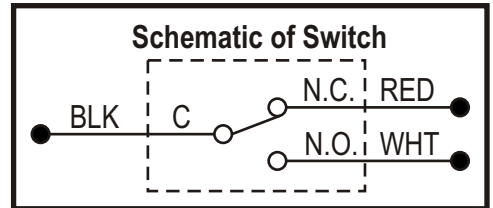
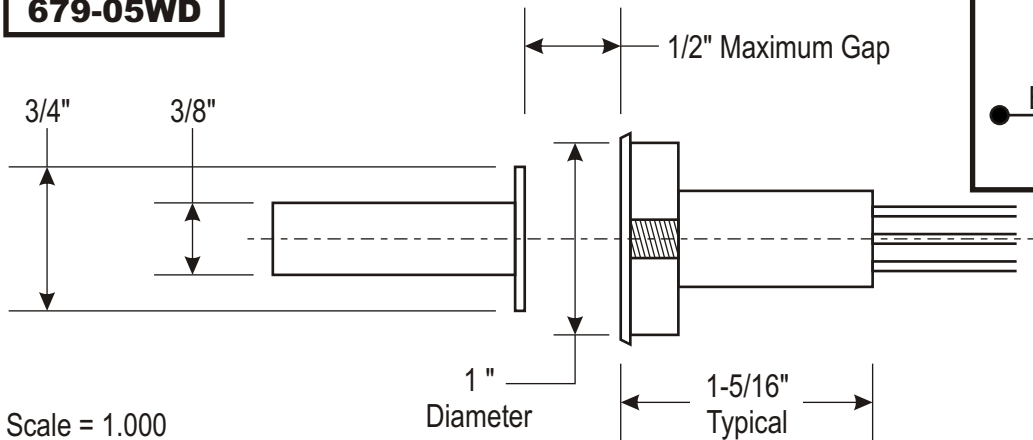
## 679-05



### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

## 679-05WD

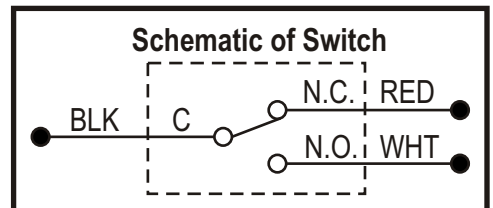
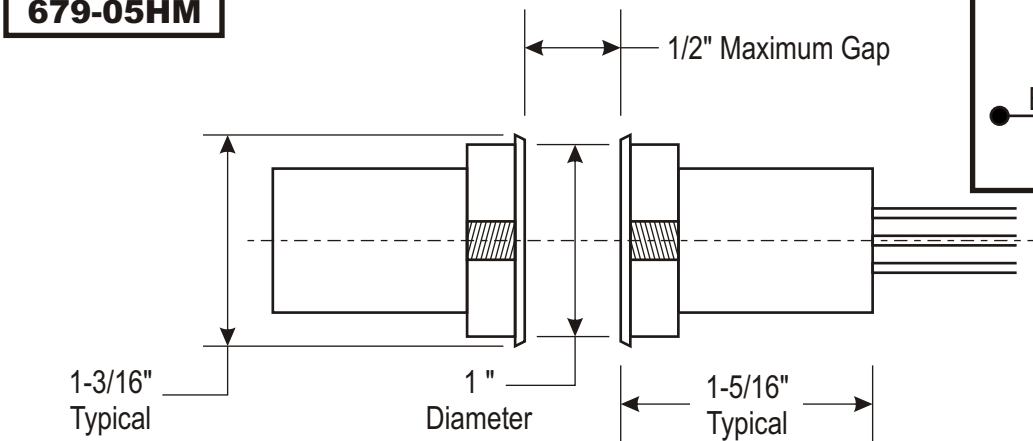


### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

1" DIAMETER MOUNTING HOLE IS REQUIRED

## 679-05HM



### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

1" DIAMETER MOUNTING HOLE IS REQUIRED



## INSTALLATION INSTRUCTIONS:

1. Prepare frame for mortise installation of 7764 (See opposite side of sheet for wood frame.)

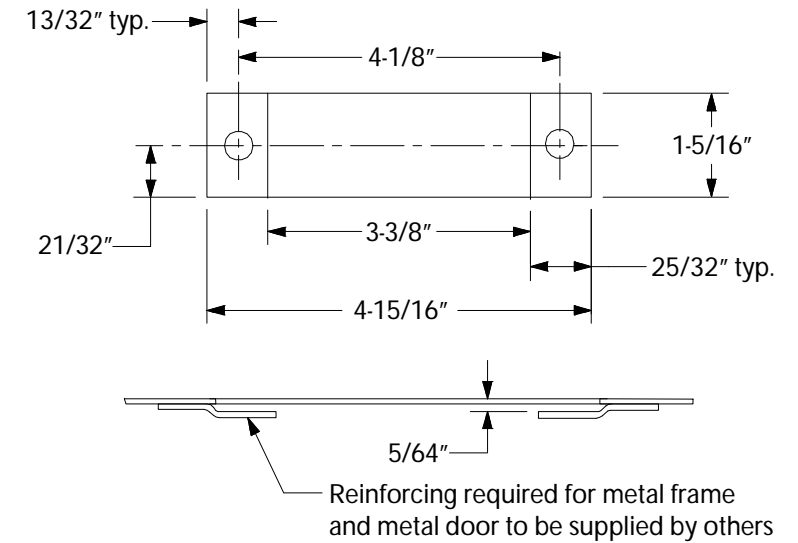
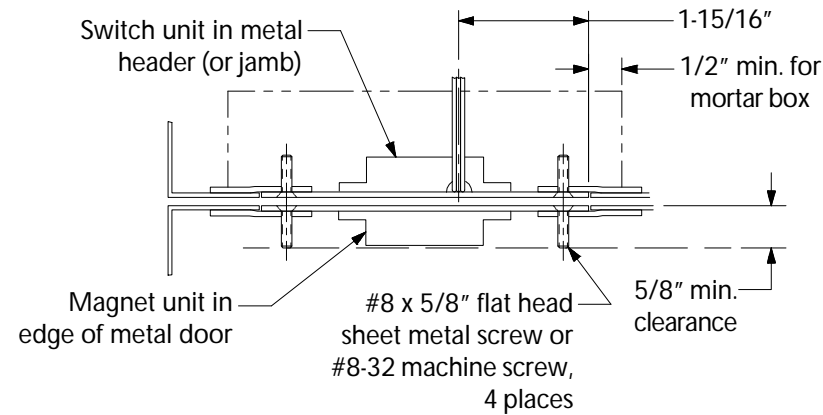
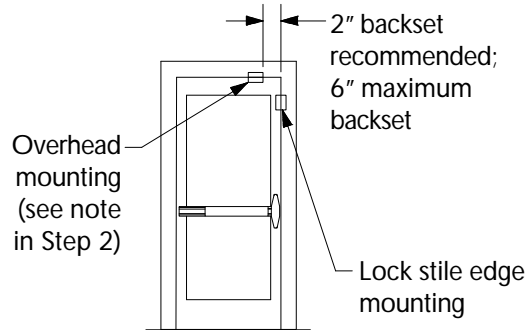
### NOTE

For maximum security, install the switch in the header, 2" from the lock stile edge.

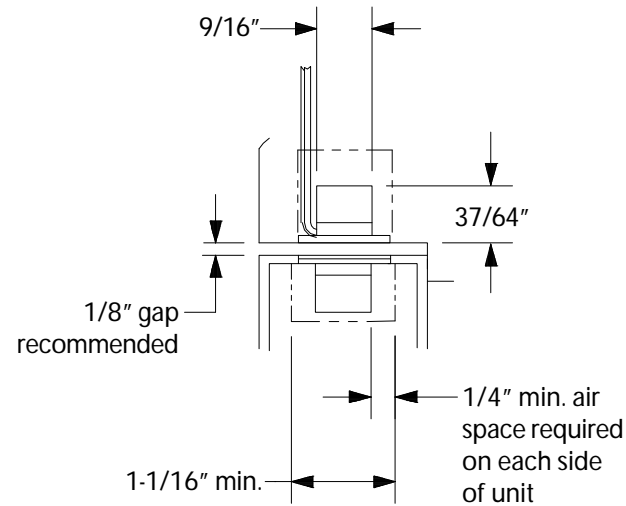
2. Wire and install switch. (See opposite side of sheet for wiring diagram.)
3. Prepare door for magnet. (See opposite side of sheet for wood door.)
4. Install magnet.

### NOTE

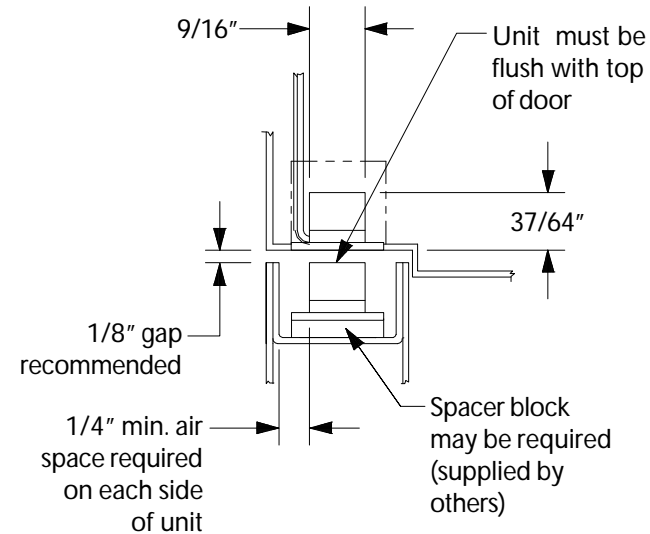
If switch does not work, check recommended gap and decrease if necessary.



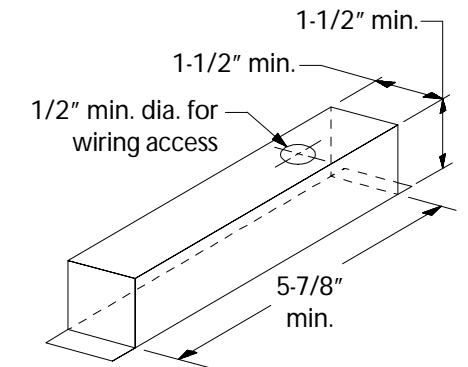
### Hollow Metal Door Installation



### Metal Door with "U" Channel Construction



### Suggested Mortar Box by Others



### DESCRIPTION:

**7764 SERIES MAGNETIC SWITCH  
MORTISE INSTALLATION**

**LOCKNETICS**

Security Engineering

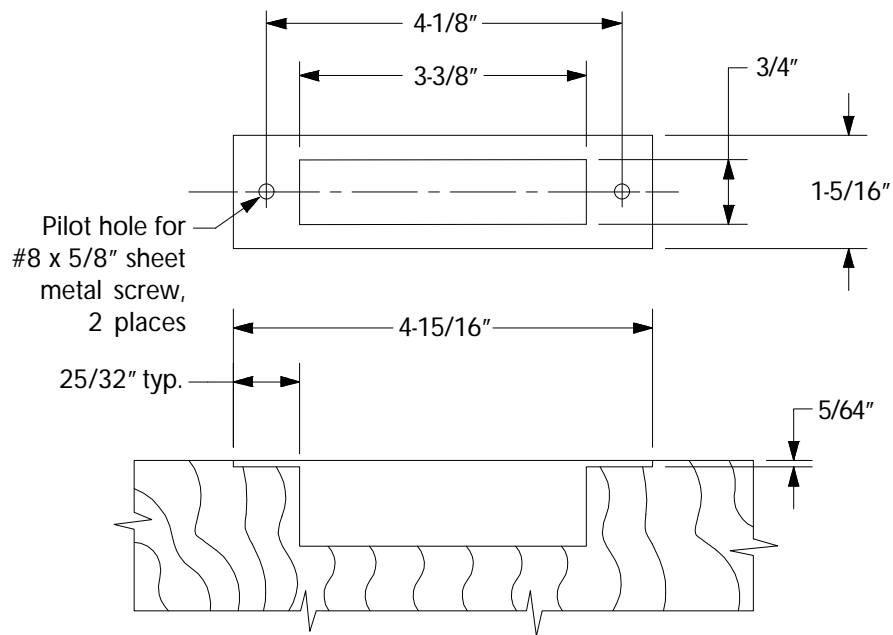
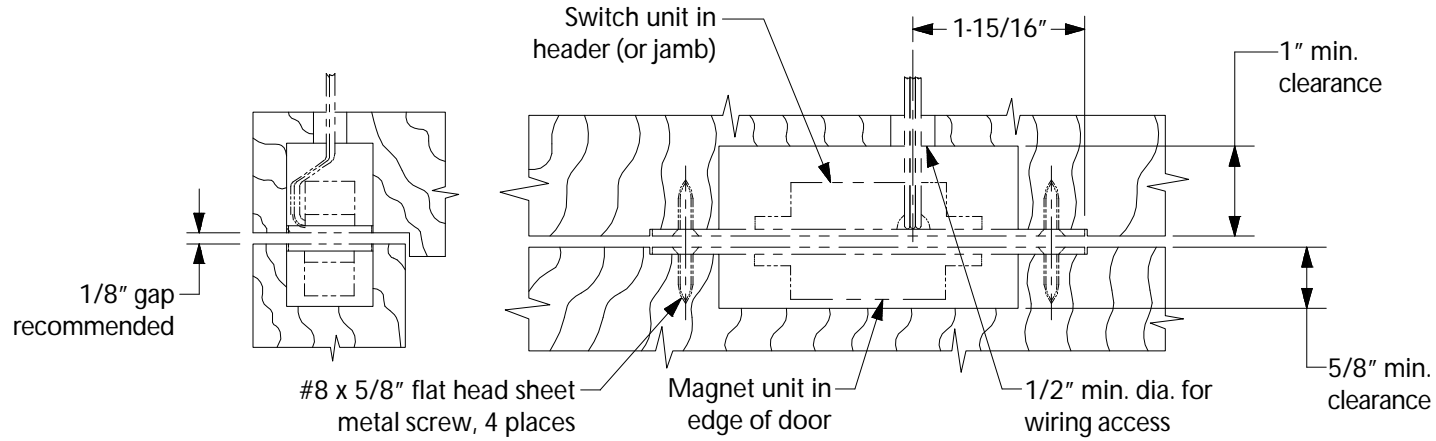
575 Birch St.  
Forestville, CT 06010  
Ph: (860)584-9158  
Fax: (860)584-2136

FORM NUMBER:  
**77640 Rev. A**

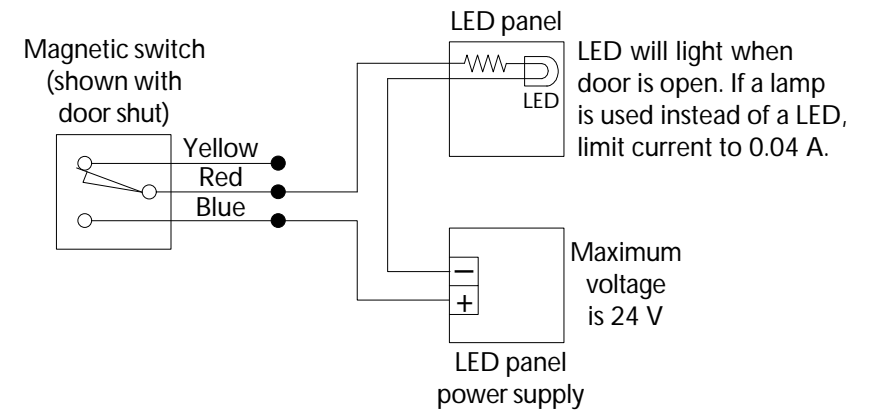
SHEET#:  
**1 of 2**

DATE:  
**11-08-2001**

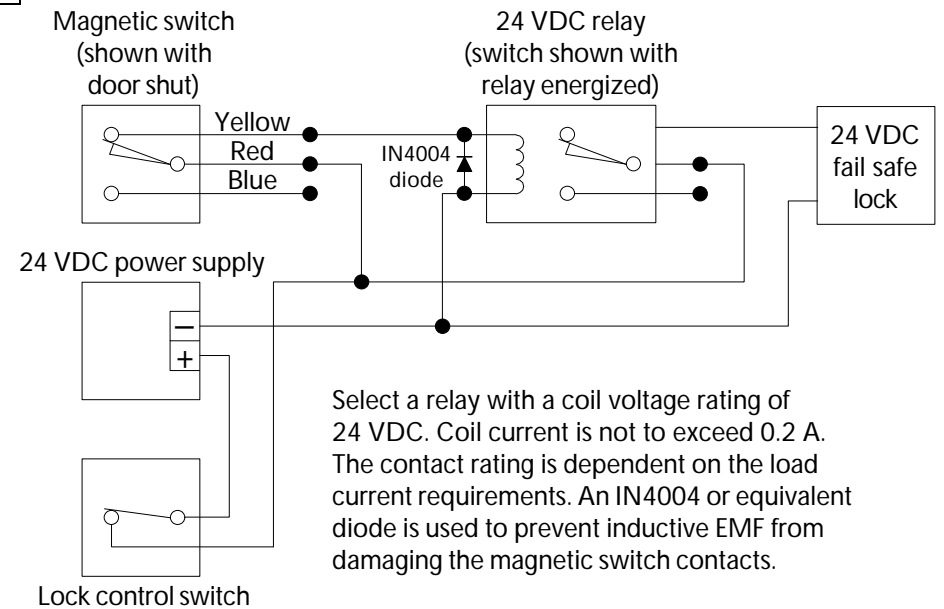
### Wood Door and Frame Preparation



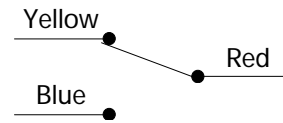
### Typical Signalling Application



### Typical Load Switching Application



### Wiring Diagram



Switch shown magnetically actuated

**WARNING**  
These are signal switches with current ratings of 0.25 A. They are not intended for direct switching.



DESCRIPTION:

**7764 SERIES MAGNETIC SWITCH  
MORTISE INSTALLATION**



575 Birch St.  
Forestville, CT 06010  
Ph: (860)584-9158  
Fax: (860)584-2136

FORM NUMBER:

**77640 Rev. A**

SHEET#:

**2 of 2**

DATE:

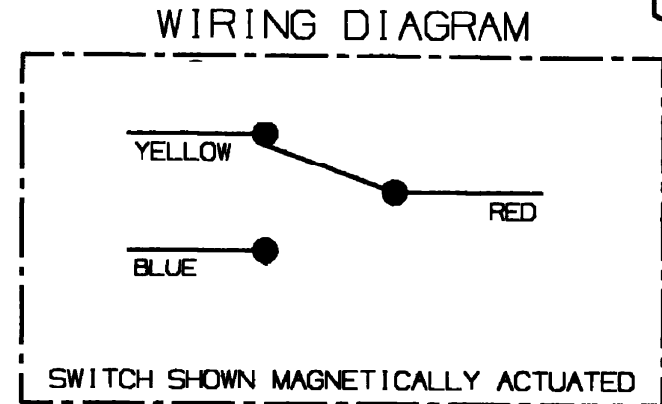
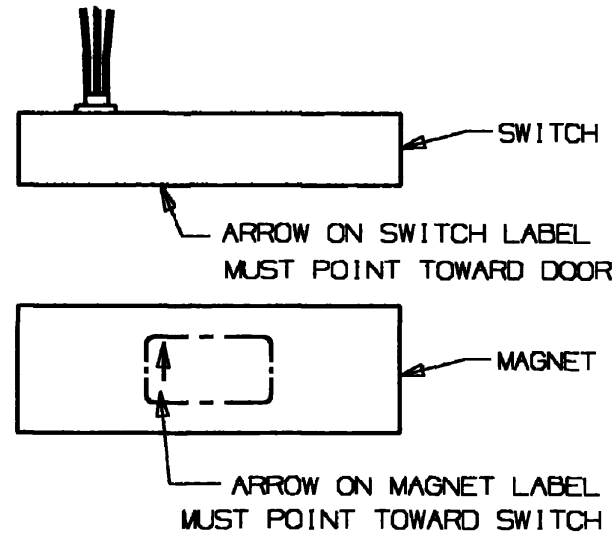
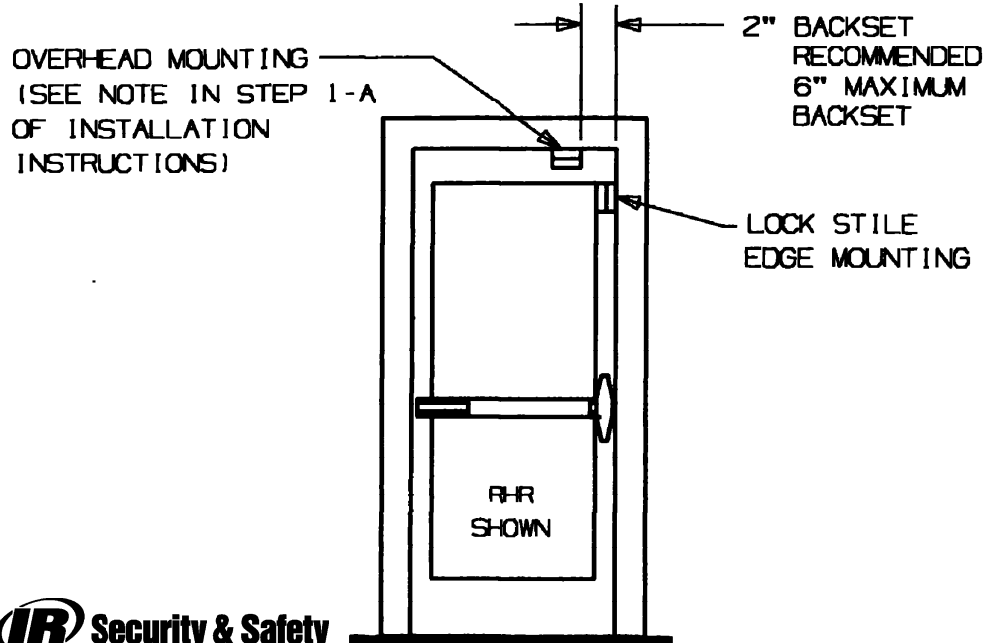
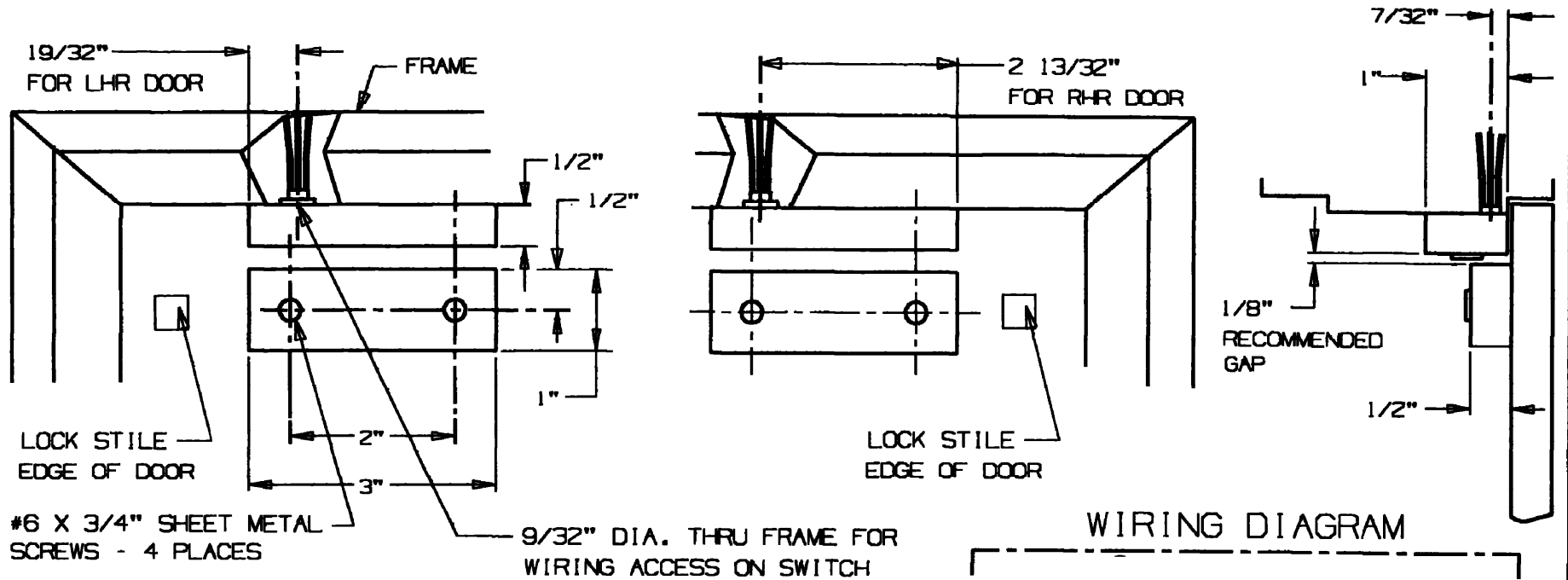
**11-08-2001**

**INSTALLATION INSTRUCTIONS**

1. PREPARE FRAME FOR SWITCH
  - A. PREPARE FRAME FOR SURFACE INSTALLATION OF 7766.  
NOTE: FOR MAXIMUM SECURITY, IT IS RECOMMENDED THAT THE SWITCH BE INSTALLED IN THE HEADER, 2" FROM THE LOCK STILE EDGE.
  - B. WIRE & INSTALL SWITCH
2. PREPARE DOOR FOR MAGNET
  - A. INSTALL MAGNET

**CHECK LIST**

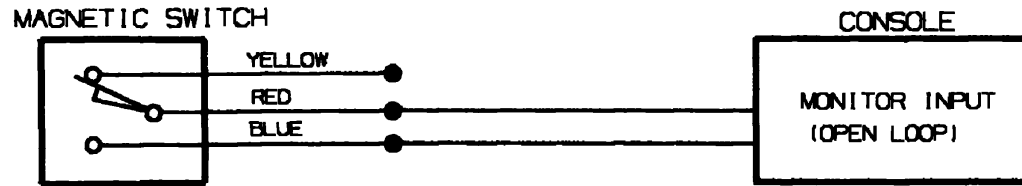
IF SWITCH DOES NOT WORK:  
CHECK RECOMMENDED GAP  
AND DECREASE IF NECESSARY.



**WARNING:**  
THESE ARE SIGNAL SWITCHES. NOT INTENDED FOR DIRECT SWITCHING.

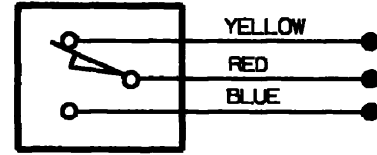
TYPE	CURRENT RATING
7766	.25 AMP

## TYPICAL SIGNALLING APPLICATION

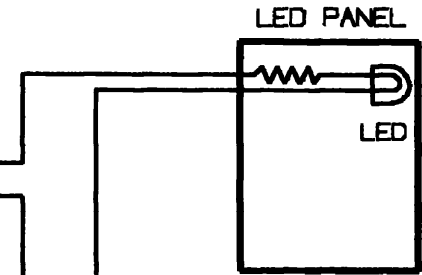


SWITCH SHOWN WITH DOOR SHUT

### MAGNETIC SWITCH

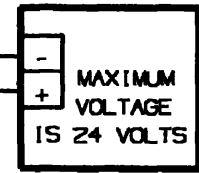


SWITCH SHOWN WITH DOOR SHUT



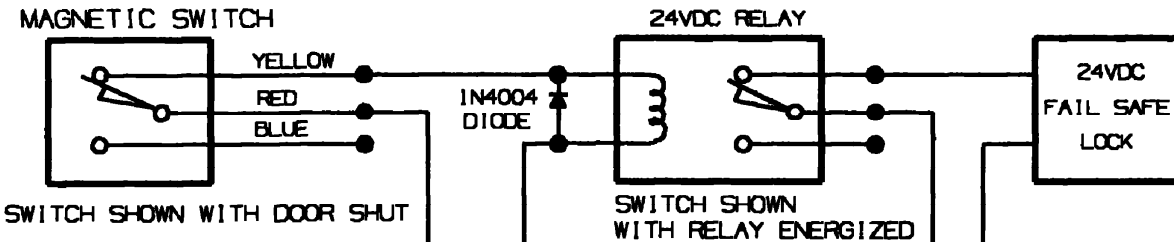
### LED PANEL NOTES:

LED WILL LIGHT WHEN DOOR IS OPEN.  
IF A LAMP IS USED INSTEAD OF AN LED,  
LIMIT CURRENT TO .04 AMP.

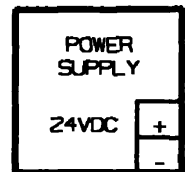


LED PANEL POWER SUPPLY

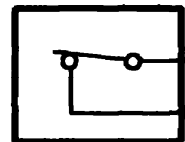
## TYPICAL LOAD SWITCHING APPLICATION



SWITCH SHOWN WITH DOOR SHUT

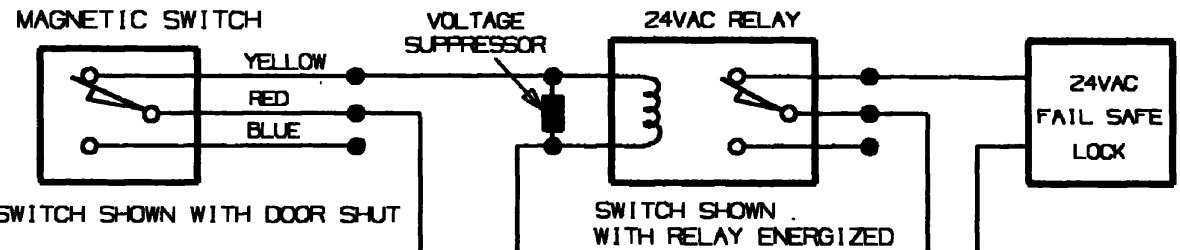


### LOCK CONTROL SWITCH



### RELAY NOTES:

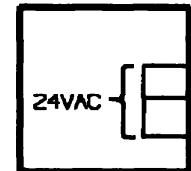
SELECT A RELAY WITH A COIL VOLTAGE RATING OF 24VDC. COIL CURRENT IS NOT TO EXCEED .2 AMP. THE CONTACT RATING IS DEPENDENT ON THE LOAD CURRENT REQUIREMENTS. AN IN4004 OR EQUIVALENT DIODE IS USED TO PREVENT INDUCTIVE EMF FROM DAMAGING THE MAGNETIC SWITCH CONTACTS.



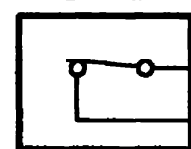
SWITCH SHOWN WITH DOOR SHUT

SWITCH SHOWN WITH RELAY ENERGIZED

### TRANSFORMER



### LOCK CONTROL SWITCH



### RELAY NOTES:

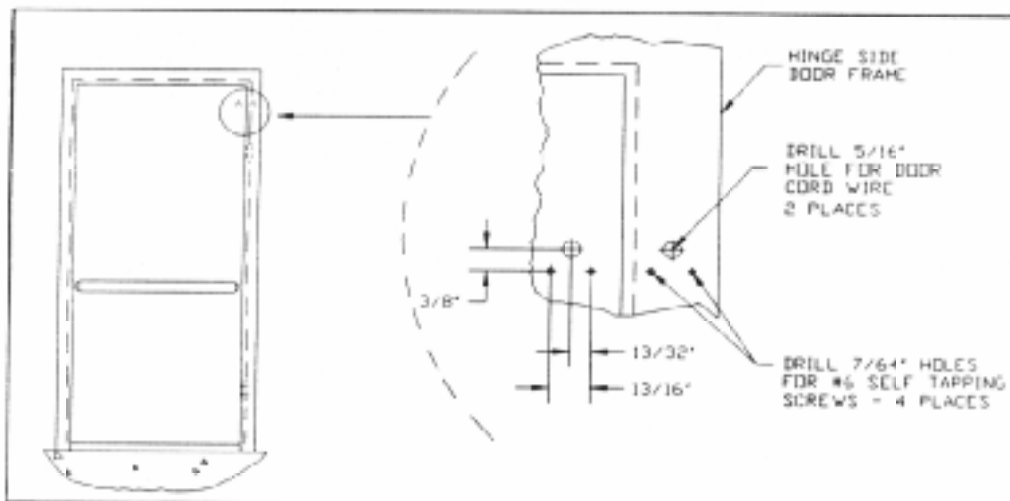
SELECT A RELAY WITH A VOLTAGE RATING OF 24VAC. COIL CURRENT IS NOT TO EXCEED .2 AMP. THE CONTACT RATING IS DEPENDENT ON THE LOAD CURRENT REQUIREMENTS. VOLTAGE SUPPRESSOR CAN BE A P6KE36C TRANSZORB (GENERAL SEMICONDUCTOR) OR A V39ZA1 MOV (GENERAL ELECTRIC), WHICH IS USED TO PREVENT INDUCTIVE EMF FROM DAMAGING THE MAGNETIC SWITCH CONTACTS.

## 788 SERIES FLEXIBLE ARMORED DOOR CORD

PRODUCT #	DESCRIPTION
788-18	FLEXIBLE ARMORED DOOR CORD, 18" LONG (NO WIRES)
788-18C	FLEXIBLE ARMORED DOOR CORD, 18" LONG (WITH WIRES) WIRES: RED, GRN, WHT, BLK, 20AWG, 24" LONG

### DOOR CORD INSTALLATION:

1. Locate Best Position for Door Cord. Although any location along hinge side of door and frame is functional, it is suggested that the higher the cord, the less susceptible it is to vandalism.
2. Layout and mark hole locations as shown.
3. Drill (4) 7/64" Dia. holes for #6 self tapping screws.
4. Drill (2) 5/16" Dia. Holes for wire access. Break sharp edges



### 5. SUGGESTED WIRE INSTALLATION:

Door cord with wire - One end of door cord wire is fed thru frame wire access hole with connections to system wiring being made in the frame. The other end of door cord wire is fed thru door wire access hole. This wire is pulled thru the door structure to the door wire access hole for the door mounted device.

Door cord without wire - Long wire leads from system wiring is fed thru frame wire access hole, thru door cord, thru door wire access hole, thru door structure to the door wire access hole for the door mounted device.

**OR**

Long wire leads from the door device is fed thru in the opposite direction to be connected to system wiring in the frame.

6. Install door cord end caps with (4) #6 self tapping flat head screws. End cap projections in cavity must "trap" armored cable to keep it from being pulled out.



Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136



## 798 DOOR CORD

Includes: 798-12, 798-18, 798C-12, and 798C-18

### INSTALLATION INSTRUCTIONS

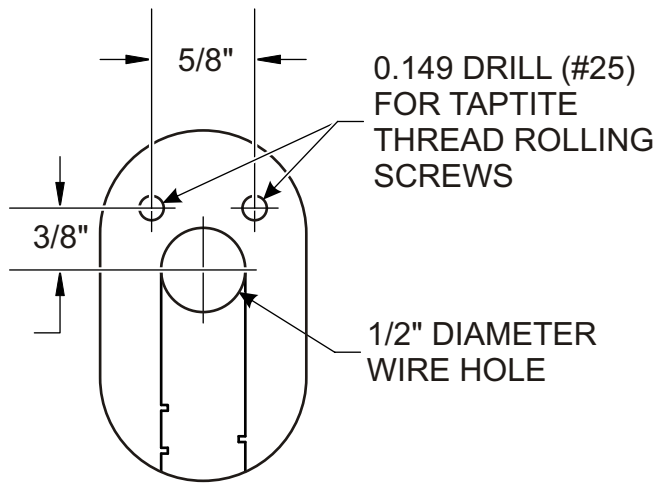
FORM NUMBER: 78802

REV A

DATE: 11-2007

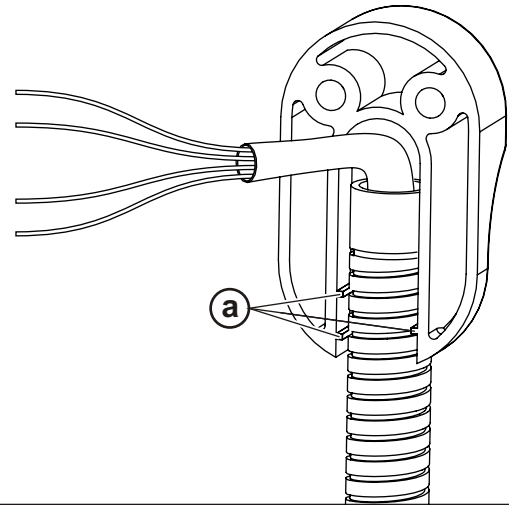
### TEMPLATE (NOT TO SCALE)

The door cord is furnished with four, #8-32 thread rolling screws. It is important that the correct drill be used for the screws to self tap.



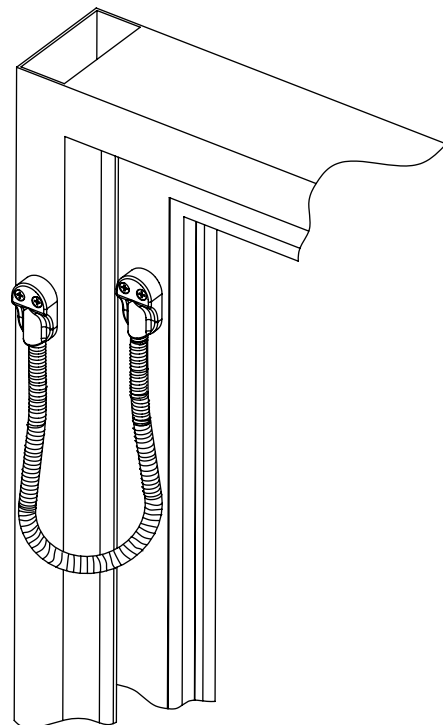
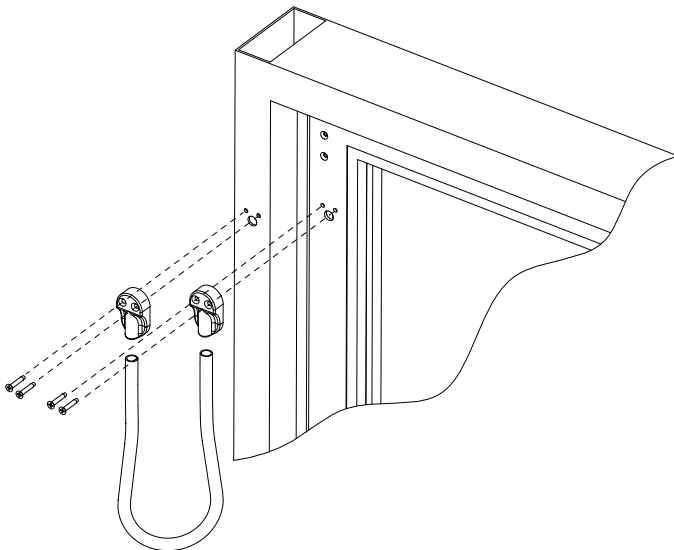
### MOUNTING:

1) After drilling the four screw holes, run wires as required for your system. Install wire/hose assembly into cord ends as shown. Molded-in tabs (a) will engage with the grooves of the hose.



2) Install door cord onto door and frame. Use all four screws.

When finished, installation should look like this.





**LOCKNETICS**  
 575 BIRCH STREET  
 FORESTVILLE, CT 06010  
 PHONE: (866) 322-1237  
 FAX: (866) 322-1233

# Door Status Switch

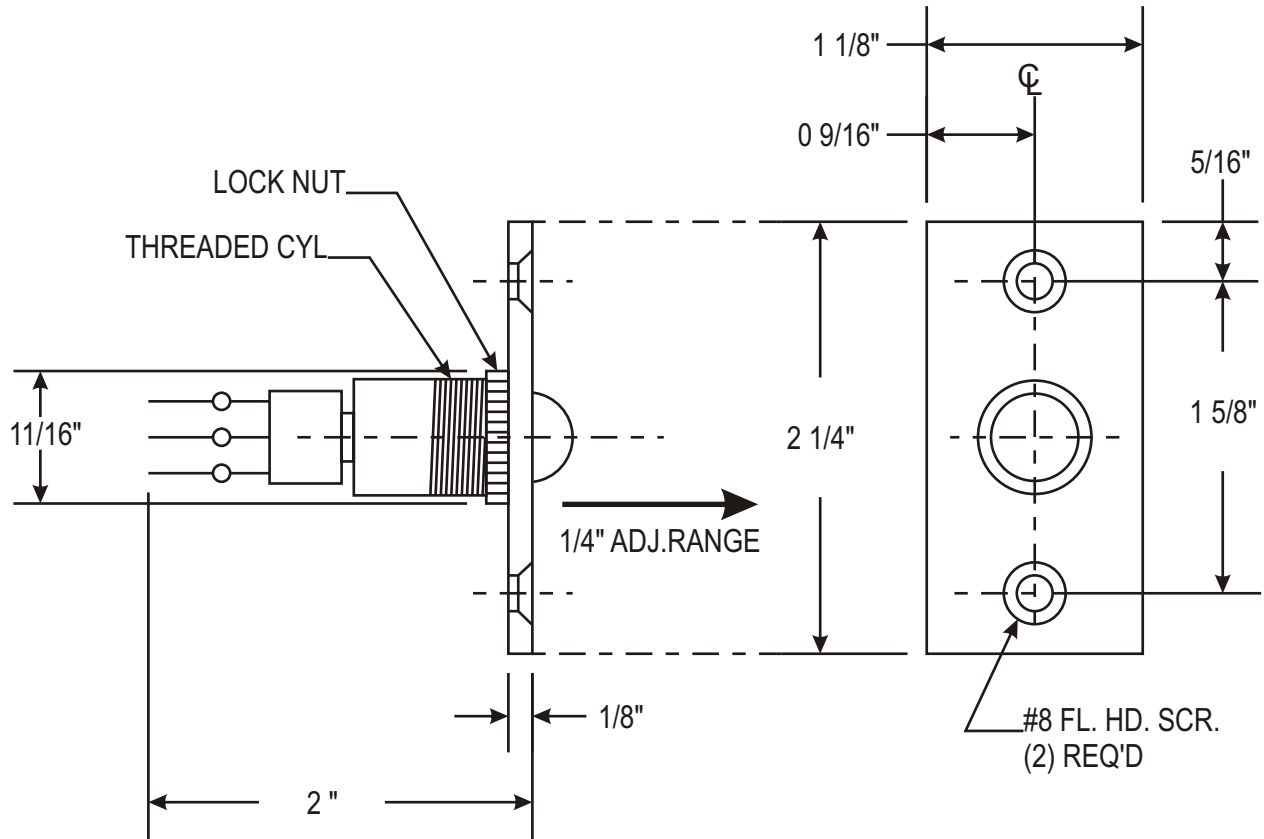
## Ball Type #7803

PART NUMBER: 780410-A

DATE: 11-17-2005

SCALE = 1:1

SPDT	DPDT
C-BLACK NO-WHITE NC-RED	C-LT. BLUE NO-GRAY NC-GREEN



**NOTES:**

1. SWITCH MAY BE ADJUSTED TO ENSURE POSITIVE ACTUATION OR DESIRED SENSITIVITY.
2. SWITCH MAY BE EITHER SPDT OR DPDT.

**Installation Instructions**  
**SCAN II Series**  
**Request to Exit PIR Sensors**

**1.0 Description**

- The SCAN II is a Passive Infrared Detector UL Listed as an Access Control Device under UL 294 standard. It is designed for "request to exit" applications.
- The relay output consists of two Form "C" contacts that can be adjusted to latch from approximately 0.25 to 60 seconds. The latch time features two modes of operation: resettable (R) and non-resettable (NR). The relay can also be programmed to fail safe or fail secure in the event of a power loss.
- The SCAN II may be mounted on the ceiling or the wall, and its pattern may be aimed and/or masked for more effective use based on installation needs. It is not designed as a primary means of exit for emergency egress applications.
- The SCAN II is available in an off-white (SCAN II-W) or a black (SCAN II-B) enclosure. An optional trimplate is also available in off-white (TP160) and black (TP161).

**2.0 Specifications**

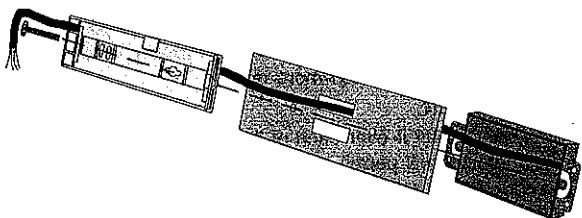
- **Input Power:** 12 or 24 VDC or AC; 35 mA @12 VDC; 38 mA @ 24 VDC; 38 mA avg. @ 12 VAC, 45 mA avg. @ 24 VAC.
- **Standby Power:** There is no internal standby battery. Provide 38 mAh for each hour of standby time required.
- **Relay:** Two Form "C" contact sets rated 2.0 amps @ 30 VDC maximum for DC resistive loads.
- **Temperature:** The temperature range is -20° to +120°F (-29° to +49°C). For UL certified installations, the temperature range is +32° to +120°F (0° to +49°C.)
- **Enclosure:** The enclosure measurements are 1.50 in. H., by 6.25 in. W., by 1.50 in. D. (3.8 cm H., 15.8 cm W., 3.8 cm D.).

**3.0 Mounting**

- Select a mounting location over the center of the door or doors to be covered. **The target must walk directly toward the detector.** The detector may be mounted on the ceiling, wall, or door frame. It may be surface mounted or mounted to a keyswitch plate with a size "D" hole.



The SCAN II is not tall enough to completely cover a single gang box. Where aesthetics are important, it is recommended that the detector be mounted using the optional trimplate (TP160 or TP161). See the diagram below for additional instructions for mounting with the trimplate.



- The mounting height range is from 7 to 15 ft. (2.1 to 4.6 m) above the floor.
- Remove the back cover from the detector. Insert the head of a small straight edge screwdriver into the locking tab and pry the back cover off.



Once the back cover is removed, the front cover and detector module will also separate.

- Route the wiring as necessary through the wiring entrance (see Figure A). For surface wiring, use the break out wiring entrance on the front cover (at the same end as the wire entrance).
- Loosely mount the back cover to the mounting surface. Use the supplied mounting screws.
- Mount the detector module to the back cover. Aim the detector for the desired coverage.

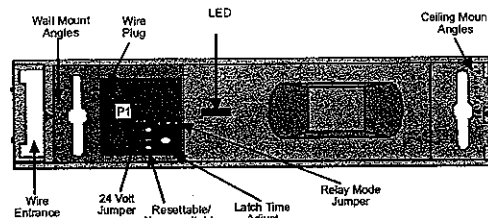


Figure A - Location of Major Items

**4.0 Select Voltage Input**

- Select 12 or 24 V operation. When selecting 24 VDC or AC operation, remove the 24 V Jumper (See Figure A).

**5.0 Wiring**

- Connect the wiring connector (provided) to the wire plug on the circuit board as shown in Figure B.

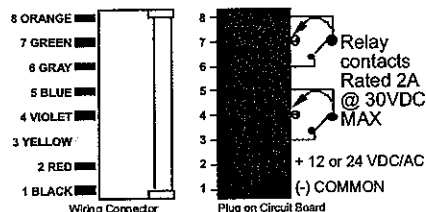


Figure B - Connector to Plug Orientation



Only apply power after all connections have been made and inspected.



Excess wiring may be coiled behind the back cover along the channels provided.

- **Wiring for non-spike protected inductive loads:** If operating an inductive load that is not spike-protected, wire as shown in Figure C.

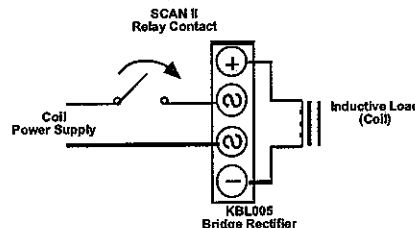


Figure C - Wiring the Bridge Rectifier

**6.0 Latch Time**

- Adjust the relay latch time by turning the Latch Time Adjust Potentiometer (see Figure A). The latch time is adjustable from 0.25 to 60 seconds. Latch time indicates the amount of time the relay can remain active after the detector first sees motion.

**7.0 Resettable / Non-resettable Timer Selection**

- The jumper selection of the timer mode determines if the relay resets at the end of the latch time, or if the latch time is extended by additional motion.
- Select the resettable or non-resettable timer mode with the jumper as seen in Figure D.
- **Resettable:** The relay will activate when the detector first sees motion. Any additional motion restarts the latch timer so that the relay deactivates only when the detector is no longer seeing motion and the latch time has expired. **Hint:** This setting works best when bypassing a 24 hour contact.
- **Non-resettable:** The relay will activate when the detector first sees motion. It will deactivate at the end of the latch time even if motion is still present. **Hint:** This setting works best when used with an access control system.

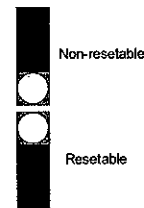


Figure D - (R), (NR) Jumper Placement





The timer will default to the resettable mode if the jumper is not in place.

IMPORTANT

### 8.0 Relay Mode

Select the relay mode with the Relay Mode Jumper (See Figure E). This lets you select a "fail safe" by default, or a "fail secure" mode.

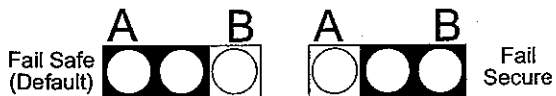


Figure E - Relay Mode Jumper

Figure F (below) displays the relay and LED responses to certain conditions in both A and B modes.

Condition	A		B	
	Relay	LED	Relay	LED
Activation				
No Activation				
Power Loss				

Figure F - Relay/LED Response Chart

### 9.0 Setup and Testing

- Apply power to the unit.
- Wait at least three minutes for the detector to settle.
- Test the unit. Walk directly through the coverage area, toward the door.
- Aim the detector up or down if necessary to obtain the proper coverage. Tighten the mounting screws after aiming the detector.
- Check that the relay latch time is sufficient. Adjust if necessary.
- After confirming proper operation, replace the cover and walk test one more time to ensure the coverage has not changed.

### 10.0 Other Information

- **Single Door Use:** The pattern may be masked using the supplied masking kit to remove the outer zones. Snap the masking wedges into place on the outer surface of the lens (see Figure G). The masking wedges eliminate zones A, B, K, and L.
- **Testing:** The detector should be tested at least once a year to ensure continued operation.

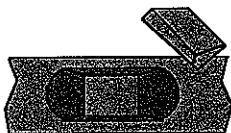


Figure G - Pattern Masking

### 11.0 Coverage

Figures H and J depict the standard patterns from a wall mounted unit:

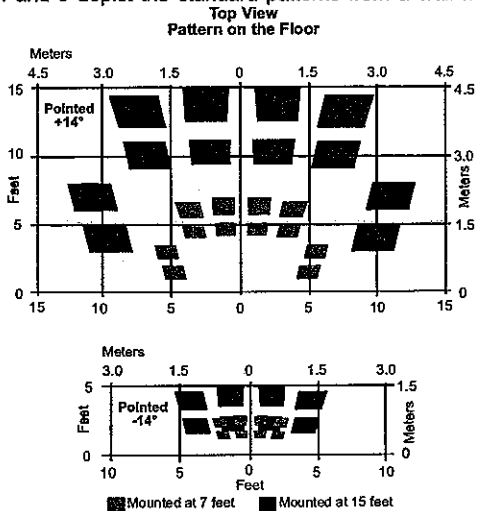


Figure H - Standard Patterns for a Wall Mounted Unit

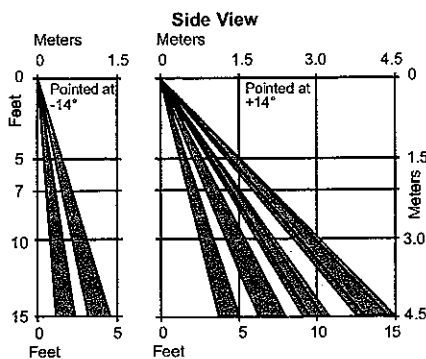


Figure J - Standard Patterns for a Wall Mounted Unit

### 12.0 Application Notes

#### 12.1 General

Double entry/exit doors **without** a center post present a problem resulting from a gap that may exist between doors. While the gap is usually filled with soft or pliable weather stripping, an opening still exists that can be used by vandals to insert an object (e.g. a comb or ruler) through and into the coverage pattern of the detector. If the object is a different temperature than the background, the SCAN II will interpret the temperature change as a request to exit. Installing a SCAN II over the center of double doors **with** a center post is the recommended installation practice. When no center post exists, however, alternative mounting options should be considered. The alternative mounting options should move the center of the pattern away from the gap.

#### 12.2 Ceiling Mount

Mount the SCAN II to the ceiling away from the door. Longer objects might still be used to enter the coverage pattern. However, this type of entry would now be much more difficult.

#### 12.3 Dual Mount

Install one SCAN II over each of the two doors and wire the outputs so either detector will permit exiting. Center the SCAN II over each door. To reduce the probability of interference by foreign objects, mask out the inside zones (K & L of one detector, and A & B of the other detector). See Figure K below:

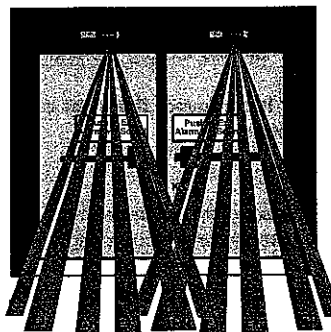


Figure K - Masking a Dual Mount

# Schlage

## Electronic security

### System Components

Parts Guides  
Master Index



## 40/70 Mag Locks

Item	Part Number	Description
	P700153	Armature Assembly 40
	P700155	Armature Assembly 70
	P700155-1	Armature Assembly Offset 70
	P700183	Mounting Hardware 40
	P700187	Mounting Hardware 70TJ
	P700189	Mounting Hardware 70
	P700192	Mounting Hardware 72
	P700200	Mounting Hardware 40TJ

### 390 PIR / 390 DEL

Item	Part Number	Description
	P390538B	Armature Assembly Black - 390DEL
	P390538W	Armature Assembly White - 390DEL
	P390964-2	Armature Assembly 390PIR
	P391453-2	Armature Holder Black 390DEL/390PIR
	P391453-1	Armature Holder White 390DEL/390PIR
	P394488	ATR Chip (Audit Trail)
	P390255	Beveled Armature Washer
	P390500	Cable kit 390DEL-2
	P101265-2-628	Cover Assembly (Black) - 390DEL
	P101265-2-630	Cover Assembly (Black) - 390DEL
	P101265-2-666	Cover Assembly (Black) - 390DEL
	P101265-2-668	Cover Assembly (Black) - 390DEL
	P101265-2-672	Cover Assembly (Black) - 390DEL
	P101265-2-710	Cover Assembly (Black) - 390DEL
	P101265-2-711	Cover Assembly (Black) - 390DEL
	P101265-1-628	Cover Assembly (White) - 390DEL
	P101265-1-630	Cover Assembly (White) - 390DEL
	P101265-1-666	Cover Assembly (White) - 390DEL
	P101265-1-668	Cover Assembly (White) - 390DEL
	P101265-1-672	Cover Assembly (White) - 390DEL
	P101265-1-710	Cover Assembly (White) - 390DEL
	P101265-1-711	Cover Assembly (White) - 390DEL
	P390001-2	Cover with Sensor (Black) - 390PIR
	P390001-1	Cover with Sensor (White) - 390PIR
	P390352-1	DSM Switch Assembly 7"
	P774358	Emergency Exit Label Replacement
	P390892-1	Mounting Hardware Kit - 390DEL
	P390937	Mounting Hardware Kit - 390PIR
	P390876	Mounting Plate - 390DEL/390PIR
	P390498-Y	Sex Nut
	P390498	Sex Nut 1-3/4" Door
	P390002-628W	Slave Unit - 390DEL-2

Sex Nut Length Chart	
Y = 1-1/4	1-1/4"
Y = 1-3/8	1-3/8"
Y = 1-1/2	1-1/2"
Y = 1-5/8	1-5/8"
Y = 1-7/8	1-7/8"
Y = 2	2"
Y = 2-1/8	2-1/8"
Y = 2-1/4	2-1/4"
Y = 2-3/8	2-3/8"
Y = 2-1/2	2-1/2"
Y = 2-5/8	2-5/8"
Y = 2-3/4	2-3/4"
Y = 2-7/8	2-7/8"
Y = 3	3"

## 101+ Delayed Egress Locks

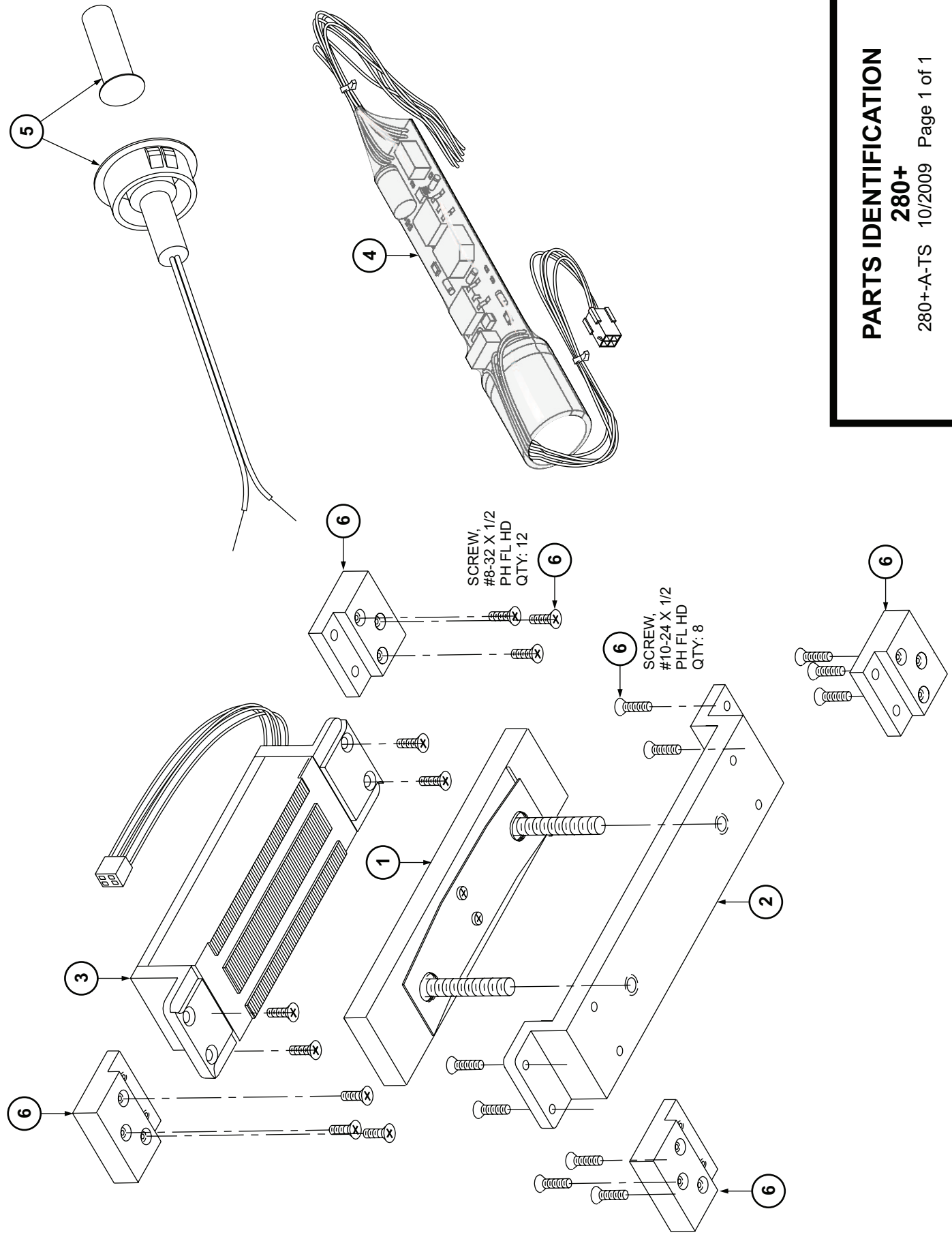
Item	Part Number	Description
	P390495	Armature Assembly 101+
	P394488	ATR Chip (Audit Trail)
	P390255	Beveled Armature Washer
	P390571	Block DSM Assembly w/ Screws
	P101045	Bracket Guard 101+
	P101243	Cover 101+
	P774358	Emergency Exit Label Replacement
	P107002	End Block 101+
	P101033	Mounting Hardware Kit 101+
	P103010	Mounting Plate 101+
	P101211	Mounting Plate 101+ DB
	P101135	Plate Bottom 101+
	P101212	Security Screw Kit 101+
	P390498-Y	Sex Nut
	P390498	Sex Nut 1-3/4" Door

Sex Nut Length Chart	
Y = 1-1/4	1-1/4"
Y = 1-3/8	1-3/8"
Y = 1-1/2	1-1/2"
Y = 1-5/8	1-5/8"
Y = 1-7/8	1-7/8"
Y = 2	2"
Y = 2-1/8	2-1/8"
Y = 2-1/4	2-1/4"
Y = 2-3/8	2-3/8"
Y = 2-1/2	2-1/2"
Y = 2-5/8	2-5/8"
Y = 2-3/4	2-3/4"
Y = 2-7/8	2-7/8"
Y = 3	3"

# PARTS IDENTIFICATION

280+

280+-A-TS 10/2009 Page 1 of 1



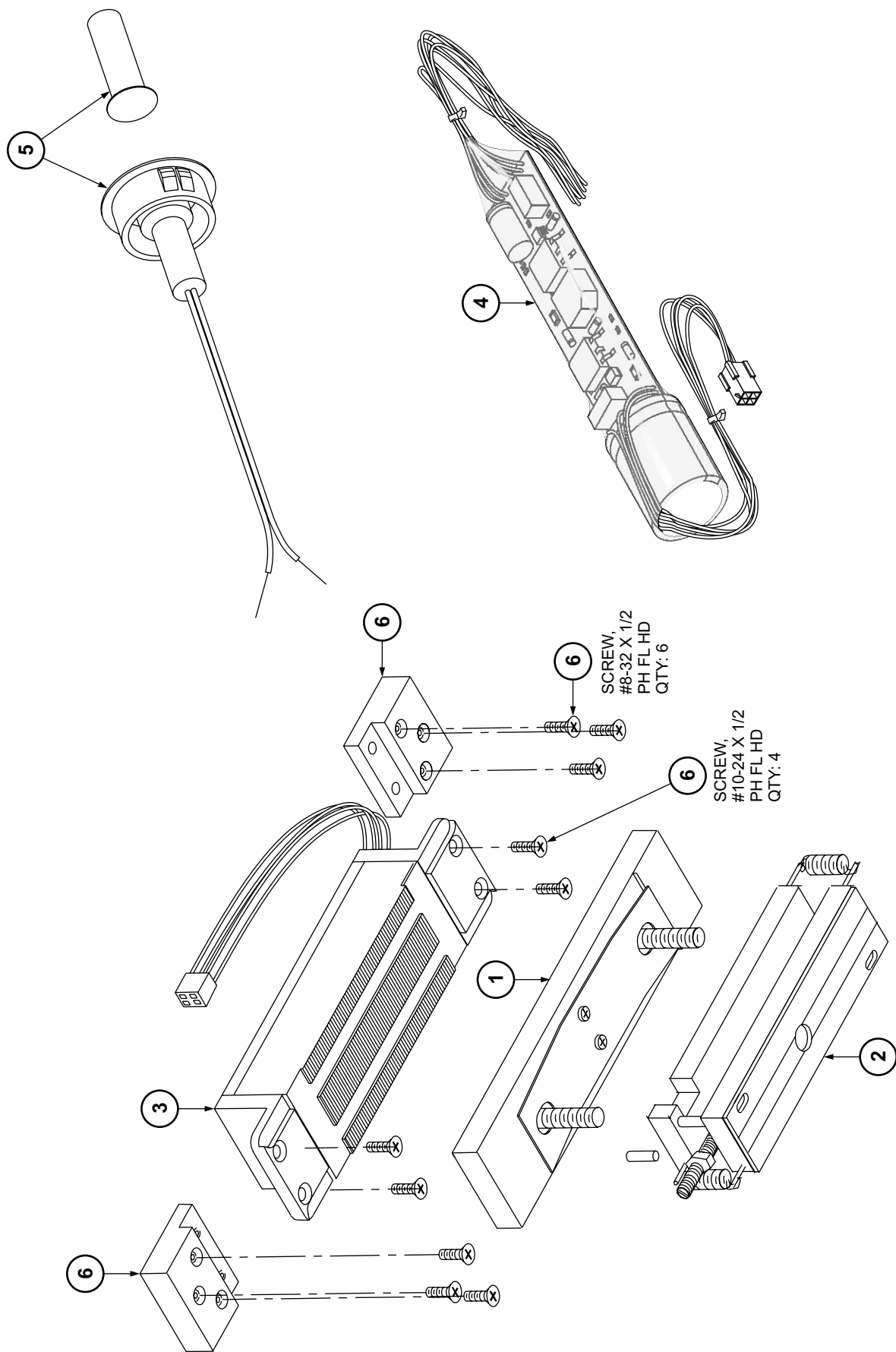
## 280+ Shear Locks

Item	Part Number	Description
1	P280014	Armature Assembly 280+
2	P280067	Armature Mounting Bracket 280+
3	P280000	Coil Assembly 280+
3	P280001	Coil Assembly MBS 280+
4	P395049	Control Module MBS 280+
5	P280024	DSM Switch Kit 280+
6	P280028	Mounting Hardware 280+



# PARTS IDENTIFICATION 280+TRD

280+TRD-A-TS 10/2009 Page 1 of 1

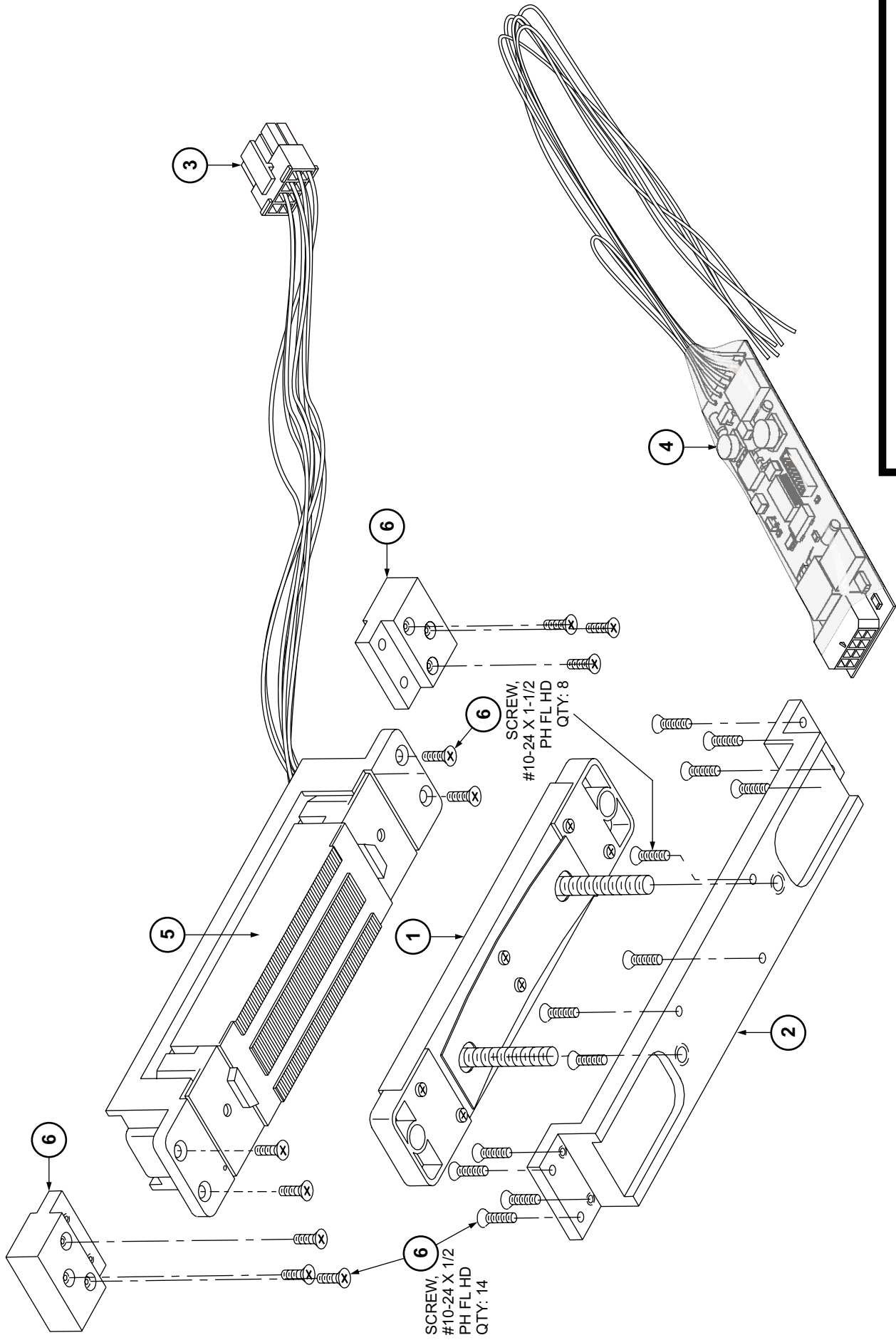




## 280+ TRD Shear Locks

Item	Part Number	Description
1	P280097	Armature Assembly - 280+TRD
2	P280037	Armature Mounting Assembly 280+TRD
3	P280000	Coil Assembly 280+
3	P280001	Coil Assembly MBS 280+
4	P395049	Control Module MBS 280+
5	P280024	DSM Switch Kit 280+
6	P280028	Mounting Hardware 280+

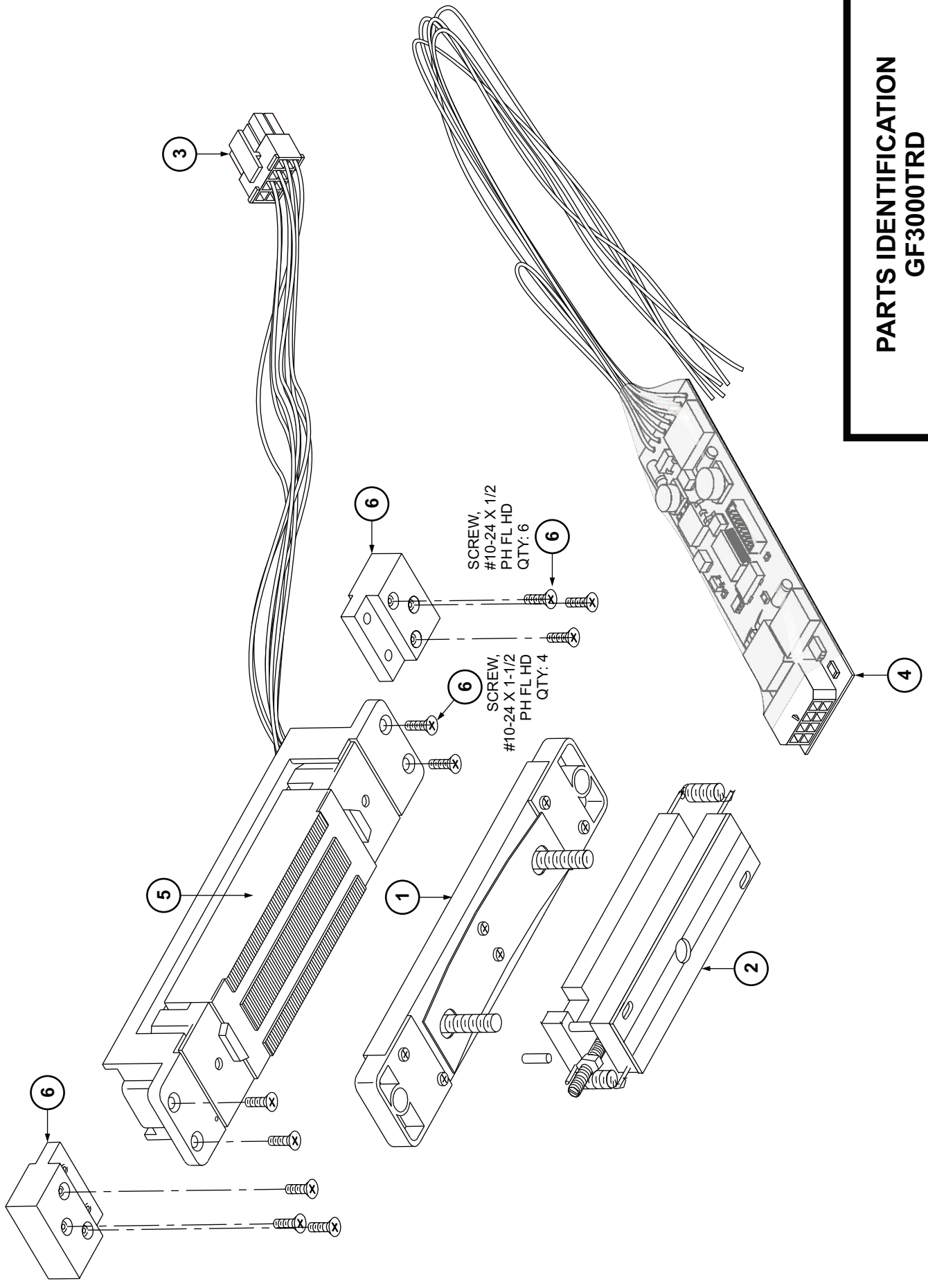




**PARTS IDENTIFICATION**  
**GF3000 (Standard)**

## GF3000 Shear Lock

Item	Part Number	Description
1	P280120	Armature GF3000
2	P280124	Armature Bracket GF3000
3	P300001	Connector Assembly
4	P280130-2	Control Module GF3000
-	P679024	DSM Switch GF3000
5	P280160	Magnet and Bracket Assembly
-	P280113	Magnet Bracket
6	P280135	Mounting Hardware



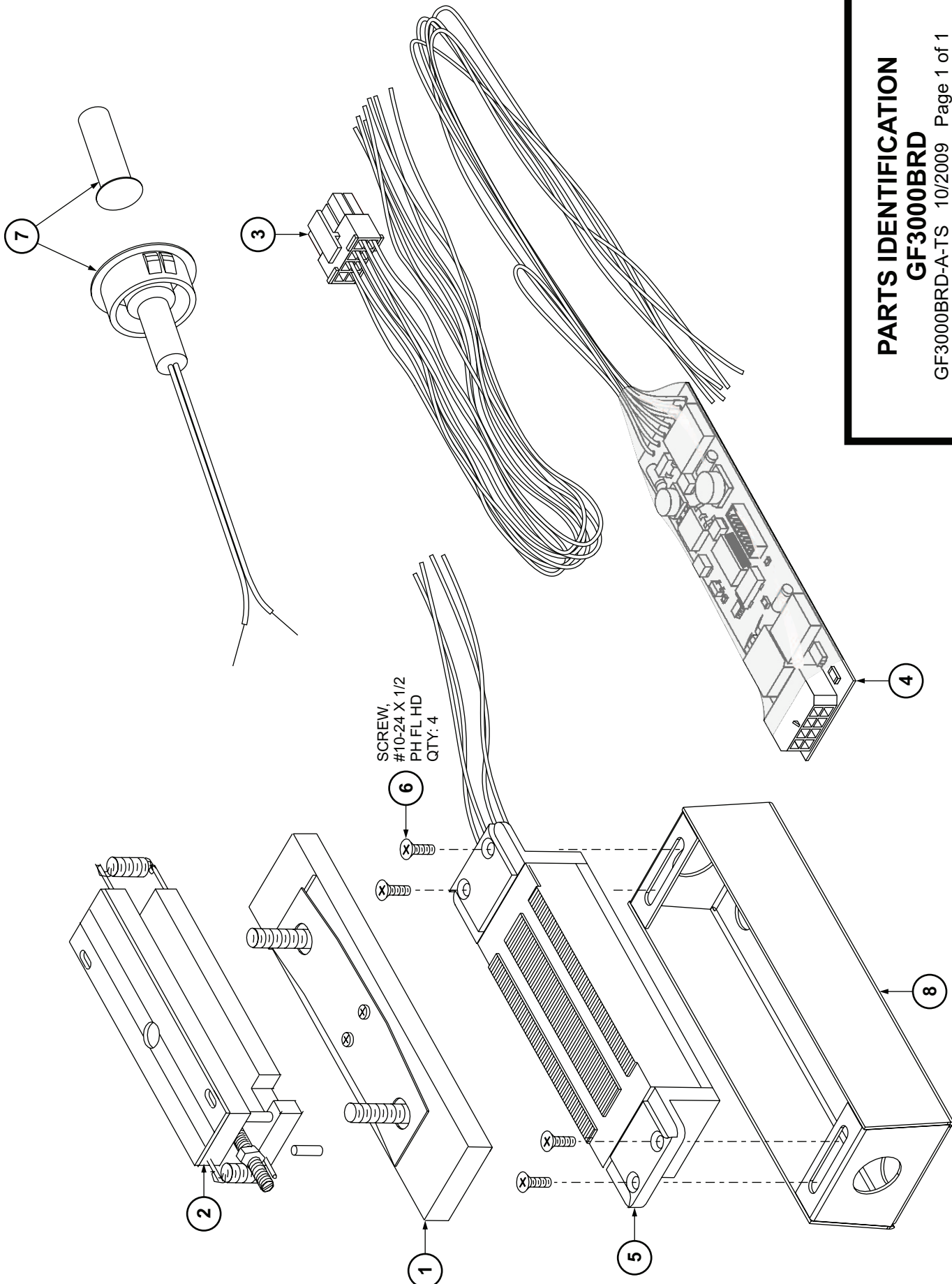
**PARTS IDENTIFICATION**  
**GF3000TRD**

## GF3000TRD Shear Lock

Item	Part Number	Description
1	P280147	Armature Assembly GF3000TRD
2	P280037	Armature Mounting Assembly - GF3000TRD
3	P300001	Connector Assembly
4	P280130-2	Control Module GF3000
-	P679024	DSM Switch GF3000
5	P280160	Magnet and Bracket Assembly
-	P280113	Magnet Bracket
6	P280135	Mounting Hardware GF3000

**PARTS IDENTIFICATION**  
**GF3000BRD**

GF3000BRD-A-TS 10/2009 Page 1 of 1



## GF3000BRD Shear Lock

Item	Part Number	Description
1	P280052	Armature Assembly - GF3000BRD
2	P280037	Armature Mounting Assembly
3	P300000	Connector Assembly - GF3000BRD
4	P280130-2	Control Module GF3000
5	P300088	Magnet Assembly - GF3000BRD
5	P300090	Magnet Assembly, MBS - GF3000BRD *
6	P280053	Mounting Hardware - GF3000BRD
7	P280055	Switch Kit, ARSM - GF3000BRD
8	P280043	Threshold Box - GF3000 BRD

\* Includes Armature Assembly P280052

### 390G+ Electromagnetic Gate Lock

Item	Part Number	Description
	P391235	Armature Assembly - 390G+
	P391453-2	Armature Holder Black 390G+
	P391453-1	Armature Holder White 390G+
	P390255	Beveled Armature Washer
	P391209	Bottom Bracket - 390G+
	P391206	Dress Plate - 390G+
	P391237	Mouting Hardware - 390G+
	P391568	Mounting Plate - Standard - 390G+
	P391210	Mounting Plate - TJ - 390G+
	P390498	Sex Nut 1-3/4" Door
	P391208	Top Bracket - 390G+



## 40/70 Mag Locks

Item	Part Number	Description
	P700153	Armature Assembly 40
	P700155	Armature Assembly 70
	P700155-1	Armature Assembly Offset 70
	P700183	Mounting Hardware 40
	P700187	Mounting Hardware 70TJ
	P700189	Mounting Hardware 70
	P700192	Mounting Hardware 72
	P700200	Mounting Hardware 40TJ

## 650 KEYSWITCHES

Item	Part Number	Description
	P653067	Anti-Tamper Switch and Magnet
	P701660	Cover Weather Resistant 653
	P630013-XXX	Heavy Duty Mounting Hardware
	P630013	Heavy Duty Mounting Hardware - 626
	P630013-2	Heavy Duty Mounting Hardware (Black Pc) Finish
	P630013-1	Heavy Duty Mounting Hardware (White Pc) Finish
	P653009-XXX	Heavy Duty Plate
	P653015-XXX	Heavy Duty Plate - L2
	P653009-1	Heavy Duty Plate - (White PC) Finish
	P653009-2	Heavy Duty Plate - (Black PC) Finish
	P653015-2	Heavy Duty Plate 2 (Black PC) Finish - L2
	P653015-1	Heavy Duty Plate 1 (White PC) Finish - L2
	P653026-1	Heavy Duty Plate Narrow - (White PC) Finish
	P653026-2	Heavy Duty Plate Narrow - (Black PC) Finish
	P653026-XXX	Heavy Duty Plate Narrow
	P653027-1	Heavy Duty Plate Narrow - (White PC) Finish - L2
	P653027-2	Heavy Duty Plate Narrow - (Black PC) Finish - L2
	P653027-XXX	Heavy Duty Plate Narrow - L2
	P653001	Keyswtich Main Sub-Assembly
	P394389	LED Amber
	P394382	LED Green
	P394381	LED Red
	P653062	Modular Stock Component Pack
	P653061	Mounting Screwpack Stainless Steel
	P653063	Plate Stainless Steel
	P653064	Plate Stainless Steel - L2
	P653065	Plate Narrow Stainless Steel
	P653066	Plate Narrow Stainless Steel - L2
	P653059	Switch and Lead Assembly

Finish Chart	
XXX = 605	Bright Brass
XXX = 612	Satin Bronze
XXX = 613	Dark Satin Bronze
XXX = 625	Bright Chrome
XXX = 626	Satin Chrome

## 620 & 631 PushButtons

Item	Part Number	Description
	P630032	Anti-Tamper Plug 631
	P620136	Button 1-1/4" Metal
	P620026-626	Button 1-1/4" Metal Push to Exit
	P620014-BK	Button 1-5/8" Black
	P620032-BL	Button 1-5/8" Blue Handicap
	P620014-GID	Button 1-5/8" GID
	P620031-GID	Button 1-5/8" GID Push to Exit
	P620032-GID	Button 1-5/8" GID Handicap
	P620014-GR	Button 1-5/8" Green
	P620031-GR	Button 1-5/8" Green Push to Exit
	P620014-RD	Button 1-5/8" Red
	P620031-RD	Button 1-5/8" Red Push to Exit
	P620029-BK	Button 2-3/4" Black
	P620027-BL	Button 2-3/4" Blue Handicap
	P620029-GID	Button 2-3/4" GID
	P620027-GID	Button 2-3/4" GID Handicap
	P620028-GID	Button 2-3/4" GID Push to Exit
	P620029-GR	Button 2-3/4" Green
	P620028-GR	Button 2-3/4" Green Push to Exit
	P620029-RD	Button 2-3/4" Red
	P620028-RD	Button 2-3/4" Red Push to Exit
	P620092-BL	Handicap Cap 1-1/4" Blue
	P620092-GID	Handicap Cap 1-1/4" GID
	P620008-XXX	Heavy Duty Plate
	P620008-1	Heavy Duty Plate (White PC Finish)
	P620008-2	Heavy Duty Plate (Black PC Finish)
	P620020-XXX	Heavy Duty Plate Narrow
	P620020-2	Heavy Duty Plate Narrow (Black PC) Finish
	P620016-1	PB Sub-Assembly AA-SPDT, Narrow
	P620016	PB Sub-Assembly AA-SPDT, Single-Gang
	P620016-3	PB Sub-Assembly AA-DPDT, Narrow,
	P620016-2	PB Sub-Assembly AA-DPDT, Single-Gang
	P620022-1	PB Sub-Assembly DA, Narrow
	P620022	PB Sub-Assembly DA, Single-Gang
	P620000	PB Sub-Assembly MOM, Single-Gang
	P620000-1	PB Sub-Assembly MOM - Narrow

Item	Part Number	Description
	P620009-1	PC Board Assembly DPDT
	P620009	PC Board Assembly SPDT
	P395362	PC Board Assembly L2/ILL
	P620090-BK	Plastic Cap 1-1/4" Black
	P620090-GID	Plastic Cap 1-1/4" GID
	P620090-GR	Plastic Cap 1-1/4" Green
	P620090-RD	Plastic Cap 1-1/4" Red
	P620088	Plate Narrow Stainless Steel
	P620033	Plate Single-Gang Stainless Steel
	P620091-GID	Push to Exit Cap 1-1/4" GID
	P620091-GR	Push to Exit Cap 1-1/4" Green
	P620091-RD	Push to Exit Cap 1-1/4" Red

Finish Chart	
XXX = 605	Bright Brass
XXX = 612	Satin Bronze
XXX = 613	Dark Satin Bronze
XXX = 625	Bright Chrome
XXX = 626	Satin Chrome

## 701 Push Button

Item	Part Number	Description
	P100682	Button 7/8" Red 701
	P100688	Button 7/8" Black 701
	P701629	Narrow Stainless Steel Plate 701
	P701607	Stainless Steel Plate 701
	P701628	Stainless Steel Plate L2 701
	P700026	Switch Body ILL w/ Wires AA 701
	P700025	Switch Body ILL w/ Wires MOM 701
	P700010	Switch Body w/ Wires AA 701
	P700009	Switch Body w/ Wires MOM 701

## 709 Push Button

Item	Part Number	Description
	P709010	Button Assembly RD EX 24V 709
	P709025	Lamp 14V 6Pk 709
	P709026	Lamp 28V 6Pk 709
	P709006	Stainless Steel Plate 709
	P709008	Stainless Steel Plate L2 709

New component PN	New Description
P692001	692 Beam Housing Assembly - Black
P692001-1	692 Beam Housing Assembly - Gray
P114285	Control Board Assy - 692
P972769-313	692 Cover Plate - 36"- 313
P972769-628	692 Cover Plate - 36"- 628
P972770-313	692 Cover Plate - 42"- 313
P972770-628	692 Cover Plate - 42"- 628
P972771-313	692 Cover Plate - 48"- 313
P972771-628	692 Cover Plate - 48"- 628
P972766-313	672 Cover Plate - 36"- 313
P972766-628	672 Cover Plate - 36"- 628
P972767-313	672 Cover Plate - 42"- 313
P972767-628	672 Cover Plate - 42"- 628
P972768-313	672 Cover Plate - 48"- 313
P972768-628	672 Cover Plate - 48"- 628
P972784-BLK	672 Channel End Cap - Black 672
P972784-GRY	672 Channel End Cap
P972797	CHAN END CAP BRKT - 672/692
P972792	Exit Insert - Red
P972794	Exit Insert - GID
P972791	Exit Plate - Black
P900256	Mounting Screw Pack 672/692
P114281	PCB Assembly DPDT 672
P900257-628	REX SNB KIT QTY-4 US32D
P900257-313	REX SNB KIT QTY-4 SP313
P900275-BLK	Spacer Adaptor - Black
P900275-GRY	Spacer Adaptor - Gray
P972772-313	Standard Pushbar-36-313
P972772-628	Standard Pushbar-36-628

P972773-313	Standard Pushbar-42-313
P972773-628	Standard Pushbar-42-628
P972774-313	Standard Pushbar-48-313
P972774-628	Standard Pushbar-48-628
P690038	798-18 ARMORED DOOR CORD KIT
P114287	692 Wire Harness - 6 Ft
P114284	End Cap PCB Cable Assy - 692

## 8200 Console

Item	Part Number	Description
	P810033	8 Zone PCB Assembly
	P810047	8 Zone Faceplate Assembly
	P810049	Console Silence Button
	P810050	Console Keypad
	P810052	Console Blank Plug
	P810074	Console Replacement Bulb

## 405 and 406S Electromechanical Bolts

Item	Part Number	Description
	P132107	ARSB Assembly
	P132242	ARSB/DSB Assy
	P132239	ARSM Module w/ Switch
	P220013	BPS Switch Assembly
	P132244	DSB Assembly
	P150416	Lock Front ARSB/DSB 405
	P132206	Lock Front, ARSB/DSB 406S
	P132205	Lock Front ARSM/DSM 405
	P405003	Lock Front Kit 1-3/4" 405
	P132108	Mounting Hardware Kit 405/406S
	P405004	Retrofit Kit 405
	P132267	Solenoid Only 405
	P132236	Solenoid Only 405S
	P132232	Solenoid Only 406S
	P132259	Strike, Universal 405
	P132260	Strike, Universal 406S



# Schlage

## Electronic security

### System Components

Templates  
Master Index

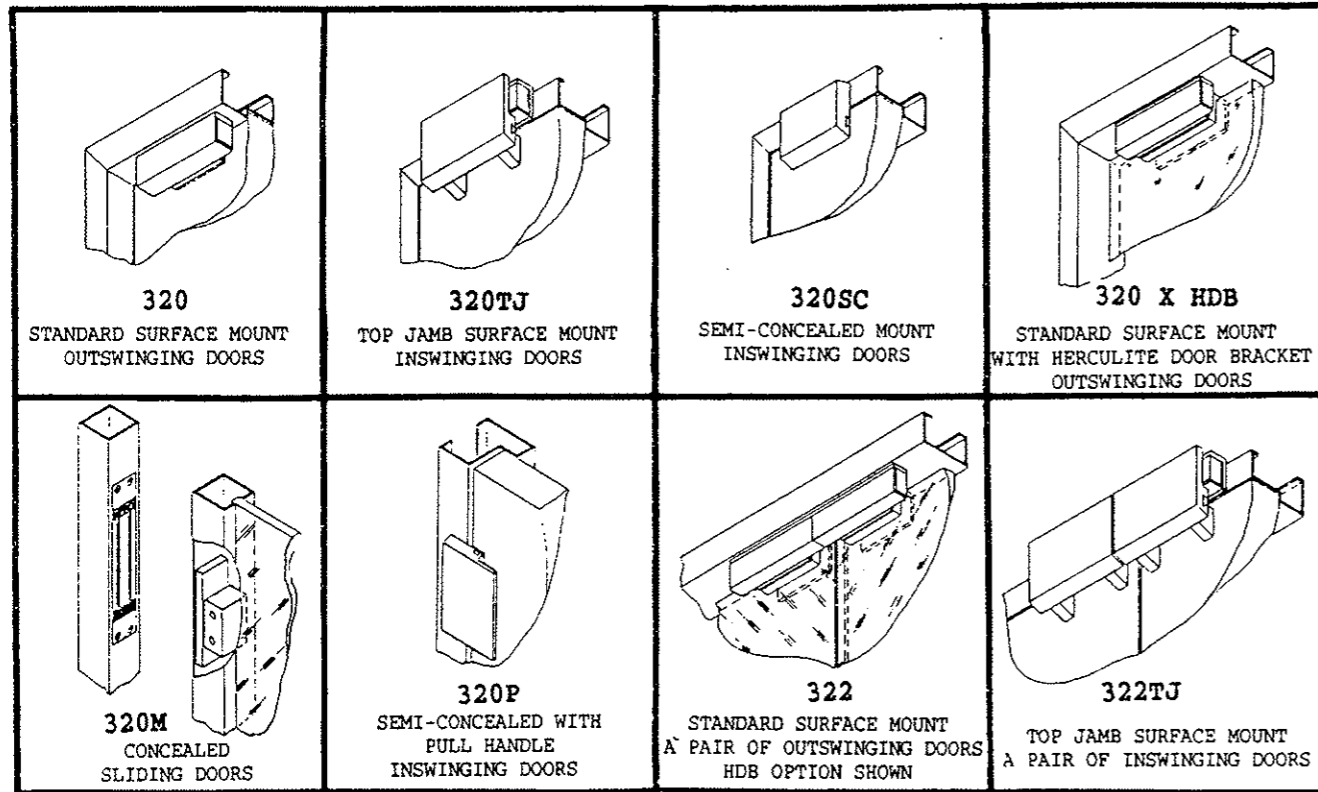




# **320 AND 322 SERIES LOCKS**



# 320 AND 322 SERIES LOCKS GENERAL INFORMATION



THE 320 AND 322 SERIES LOCKS ARE MEDIUM SECURITY, HIGH PERFORMANCE LOCKING DEVICES, WHEN PROPERLY MOUNTED ON A QUALITY DOOR AND FRAME WILL WITHSTAND UP TO 650 LBS OF DIRECT FORCE. ANY OTHER CONDITIONS (IE: WEAK HEADER) MAY REQUIRE REINFORCEMENT.

**HOLDING FORCE:**

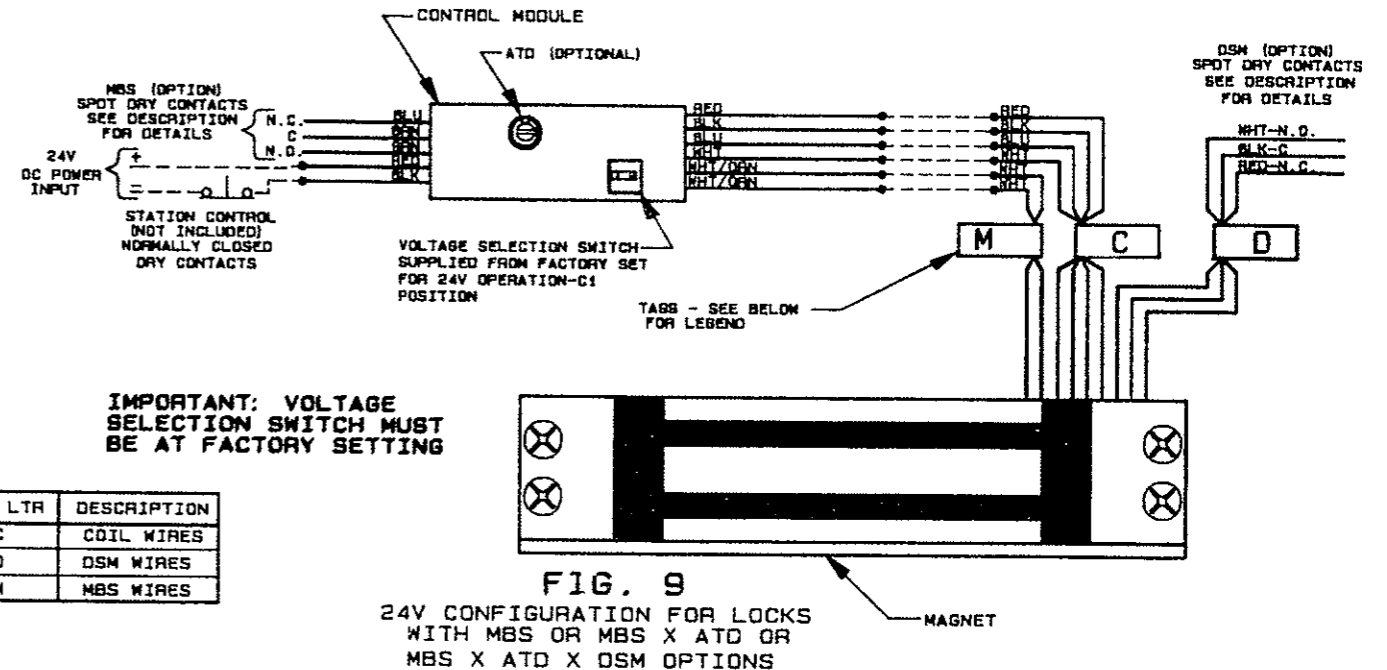
320 SERIES: 500 LBS @ 12V, 650 LBS @ 24V  
322 SERIES: 500 LBS PER DOOR @ 12V  
650 LBS PER DOOR @ 24V

**INDEX**

General Information-----Page 1  
Installation Instructions---Page 2  
Parts Identification:  
Model 320 Series-----Page 4  
Model 320T-----Page 5  
Model 320SC-----Page 6  
Model 320M-----Page 7  
Model 320P-----Page 8  
Model 322 Series-----Page 9  
Model 322TJ-----Page 10  
Parts List-----Page 11  
Template Drawings-----Page 12  
Wiring Instructions-----Page 15

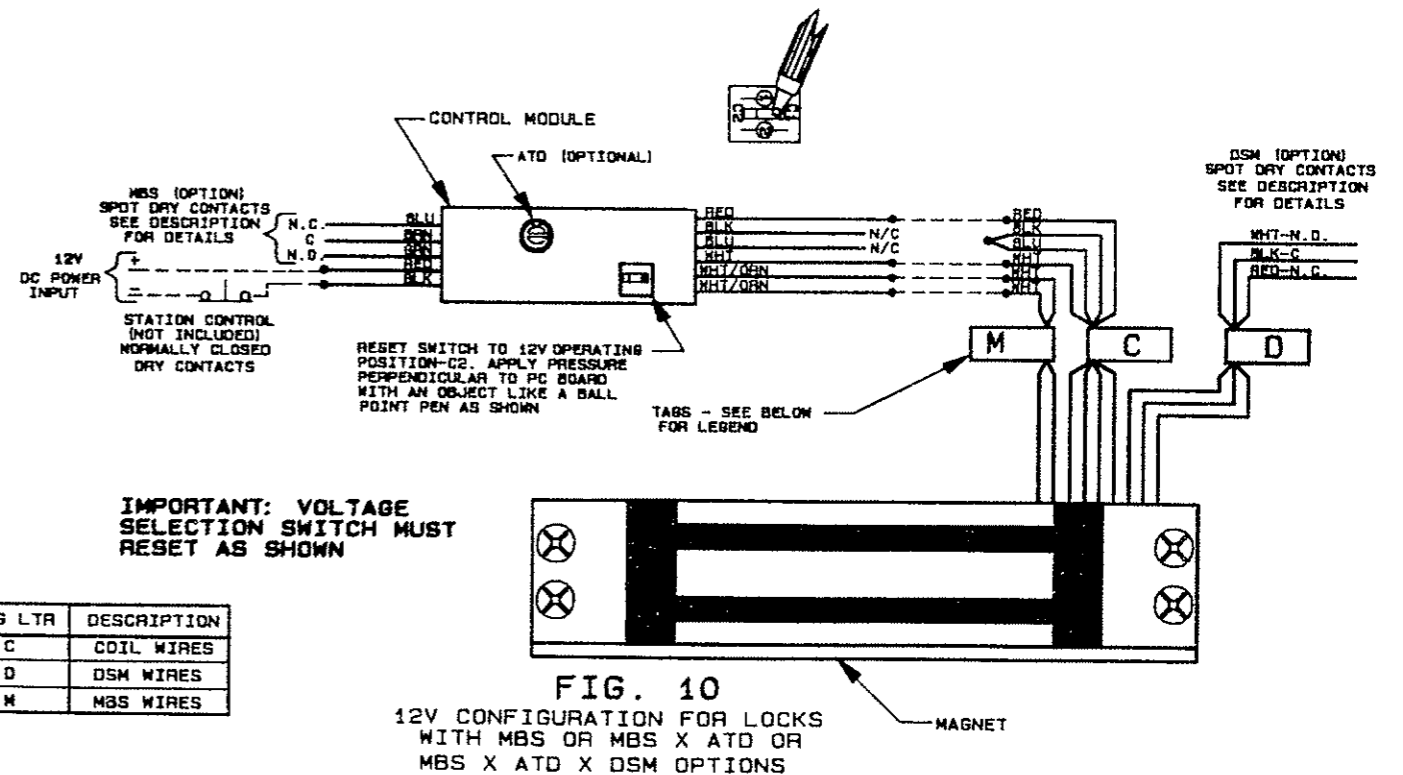


# 320 SERIES LOCKS WIRING DETAILS ALL MODELS



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES
M	MBS WIRES

**IMPORTANT: VOLTAGE SELECTION SWITCH MUST BE AT FACTORY SETTING**



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES
M	MBS WIRES

**IMPORTANT: VOLTAGE SELECTION SWITCH MUST RESET AS SHOWN**





# 320 SERIES LOCKS

## WIRING DETAILS

### ALL MODELS



# 320 AND 322 SERIES LOCKS

## INSTALLATION INSTRUCTIONS

**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK**

**GENERAL INFORMATION:**

- \* Handle the equipment carefully. Damaging the mating surfaces of the electromagnet or the armature may reduce locking efficiency.
- \* The electromagnet mounts rigidly to the door frame header. The armature mounts to the door and is designed to pivot about its center compensating for door misalignment.
- \* When installing an electromagnetic lock with the DSM option, care must be used to be certain that the end of the armature holding the permanent magnet will be directly opposite the DSM magnetic switch in the magnet assembly.

**CAUTION:**

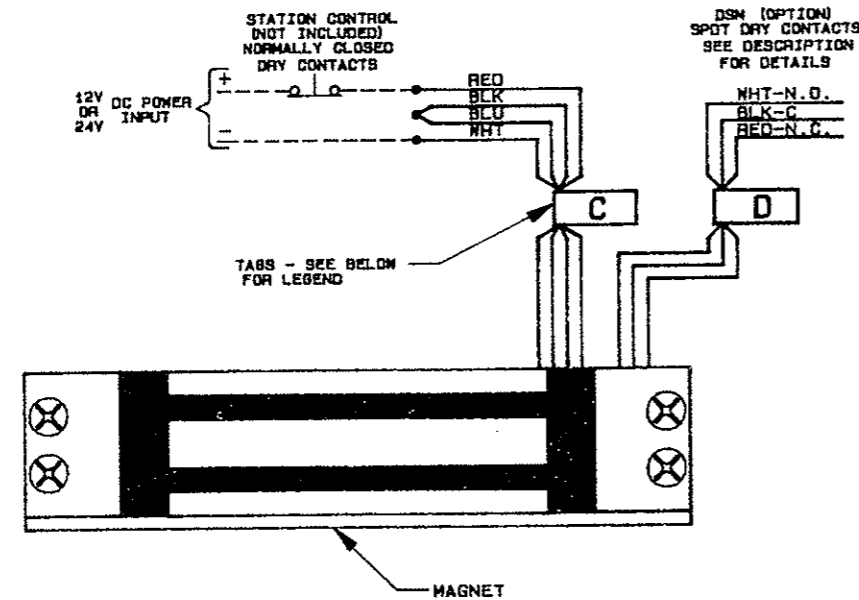
FAILURE TO SECURE THE ARMATURE TO THE DOOR MAY RESULT IN SERIOUS INJURY TO DOOR USER. FOR PROPER OPERATION, SAFETY AND SECURITY, SEX NUT/BOLT ASSEMBLY, WASHERS AND SPACERS MUST BE ASSEMBLED IN THE ORDER ILLUSTRATED AND SECURELY TIGHTENED 1/8 TO 1/4 TURN PAST HAND TIGHT.

**MAINTENANCE:**

- \* The electromagnet and armature are plated for corrosion resistance and require little maintenance. For maximum performance, occasional cleaning and an application of a protective coating to the electromagnet and the armature is recommended.

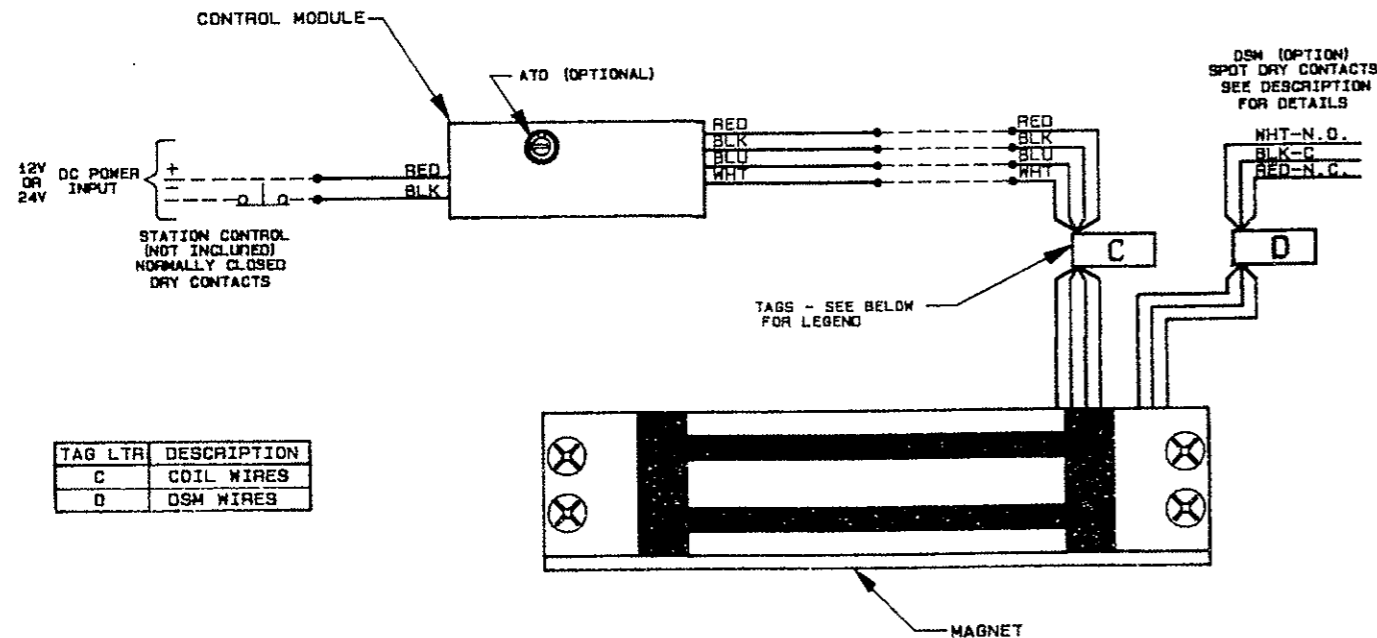
The following service should be done to both the armature and the electromagnet as required:

1. Clean the functional surfaces of the electromagnet and the armature by applying a light coating of silicon lubricant and wipe with a clean dry cloth.



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES

**FIG. 7**  
12V OR 24V CONFIGURATION FOR LOCKS WITHOUT OPTIONS OR LOCKS WITH DSM OPTION



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES

**FIG. 8**  
12V OR 24V CONFIGURATION FOR LOCKS WITH ATD AND ATD X DSM OPTIONS

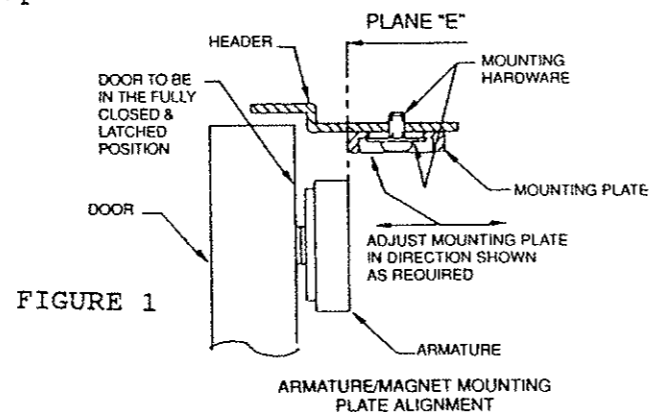


# 320 AND 322 SERIES LOCKS INSTALLATION INSTRUCTIONS

MODELS: 320, 320 X HDB, 322 AND 322 X HDB ONLY

NOTE: Hardware provided is for 1-3/4" door. If door thickness exceeds 1-3/4", an alternate sex nut is required.  
Order P/N - 399025 for 2" doors  
- 399026 for 2-1/4" doors  
or if additional information is required, consult factory.

- 1.0 Prep door and frame according to the appropriate template drawing. When using paper template, follow instructions on the template.
- 1.1 Install armature(s). Refer to Figures 2, 3 and 4 on page 12 and exploded views on pages 4, and 9 for parts identification.
- 1.2 Install the adjustable mounting plate onto frame, placing screws through the slots and into the holes "A" prepped for #10 screws.
- 1.3 With the door fully closed and latched, check the alignment of the magnet mounting plate with the armature as shown in Figure 1, below. When the magnet mounting plate and the armature are in the correct alignment, firmly tighten the screws. Using the mounting plate as a template, drill the remaining mounting holes "C".  
**WARNING: INSTALLATION OF THE REMAINING HARDWARE IS NECESSARY TO MAINTAIN ALIGNMENT.**
- 1.4 Refer to exploded views on pages 4 and 9 to complete mechanical installation.
- 1.5 Go to All Models, paragraph 3.0.



MODELS: 320TJ, 320M, 320P AND 322TJ ONLY

- 2.0 Prep door and frame according to the appropriate template drawing. When using paper template, follow instructions on the template.
- 2.1 Refer to exploded views on pages 5, 6, 7, 8 and 10 to complete mechanical installation.

### ALL MODELS

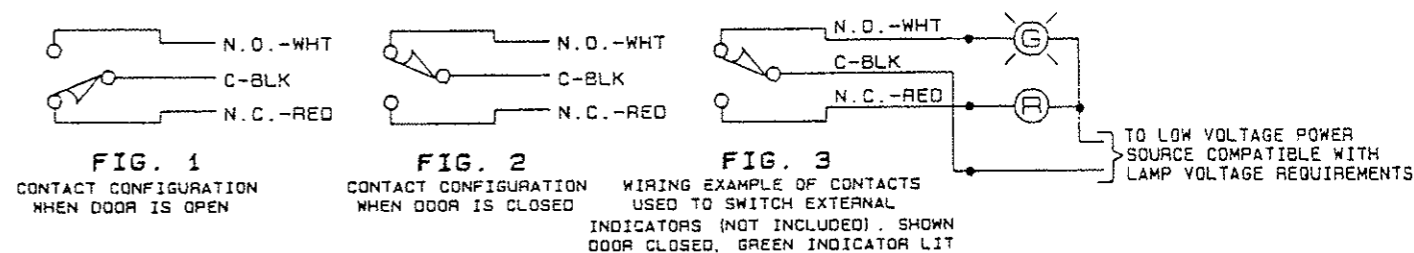
- 3.0 See wiring instructions on pages 15, 16, 17 and 18 and other applicable instructions to complete full installation.



# 320 SERIES LOCKS SPECIFICATION AND ELECTRICAL OPTIONS ALL MODELS

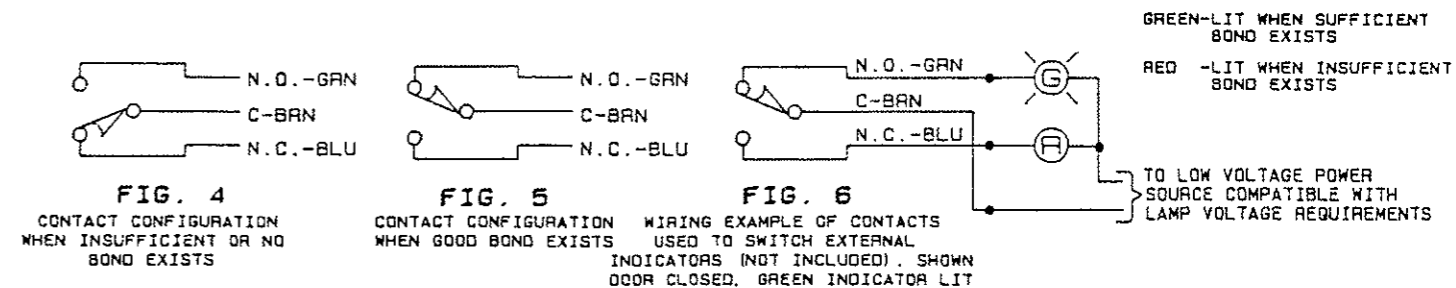
### DOOR STATUS SWITCH (DSM) OPTION:

The DSM provides a signal to indicate whether the door is open or closed. The lock mounting instructions should be followed closely to ensure reliable performance of this option. The DSM provides a signal via a set of form "C" dry contacts rated 100mA resistive at 24VDC. These contacts are accessed by the red, black and white wires. The contacts are labeled in the door opened condition which are: white-N.O. (normally open), black-C (common) and red-N.C. (normally closed). Closing the door causes the contacts across the black and white wires to close and the black and red wires to open. See Figures 1, 2 and 3 below.



### MAGNETIC BOND SENSOR (MBS) OPTION:

The MBS senses whether sufficient magnetic holding force exists to ensure adequate locking. It will respond to low line voltage, foreign materials in the magnetic gap, damage or dirty surfaces of the lock and/or armature. The MBS option provides a signal via a set of form "C" dry contacts rated 1 amp at 30VDC resistive load maximum. The dry contacts are accessed by three (3) wires which are green, blue and brown. They are labeled in a deenergized/no bond condition which are green-N.O. (normally open) and blue-N.C. (normally closed) and brown-C (common). Once the lock is energized and the magnet and armature are properly bonded, the contacts will switch, at which time the common (brown wire lead) and the normally open (green wire lead) will be closed contacts. See Figures 4, 5 and 6 below.





# 320 SERIES LOCKS

## SPECIFICATION AND ELECTRICAL OPTIONS

### ALL MODELS

#### SPECIFICATIONS:

VOLTAGE: 12V OR 24V FIELD SELECTABLE

CURRENT: .225 AMP @ 12V  
.450 AMP @ 24V

RATED HOLDING FORCE;  
500 lbs @ 12v  
650 lbs @ 24v

#### ELECTRICAL OPTIONS:

##### RECTIFIER (RCP) OPTION:

The RCP option allows operation of a direct current (DC) lock from a low voltage alternating current (AC) supply, such as a 12 or 24 volt transformer. The RCP Module converts the AC voltage to DC voltage supplied to the lock. One (1) RC Module should be used for each lock. The RCP Module has four (4) leads. The two yellow wires are the low voltage AC input. The are connected to the low voltage side of the transformer. The red lead is the positive (+) DC output. It is connected to the positive (+) lock input. The black lead is the negative (-) DC output. It is connected to the negative (-) lock input.



##### ADJUSTABLE TIME DELAY (ATD) OPTION:

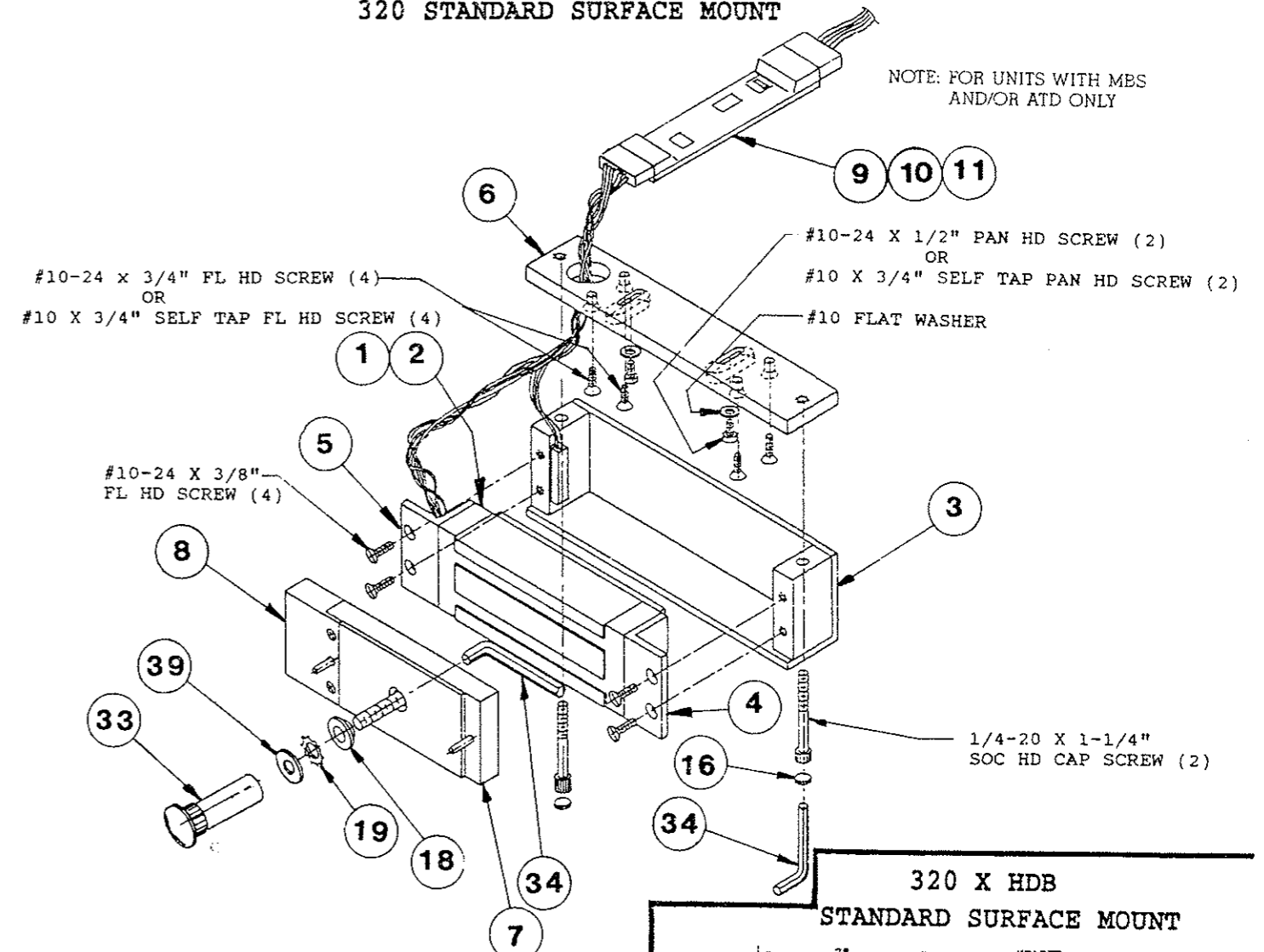
The ATD can be set to delay the relock from 0 to 30 seconds. To increase time, turn adjustment potentiometer clockwise. To decrease time, turn potentiometer counter-clockwise. The ATD will operate whenever input power is interrupted and then reapplied. For location of potentiometer, see Figures 8, 9 and 10.



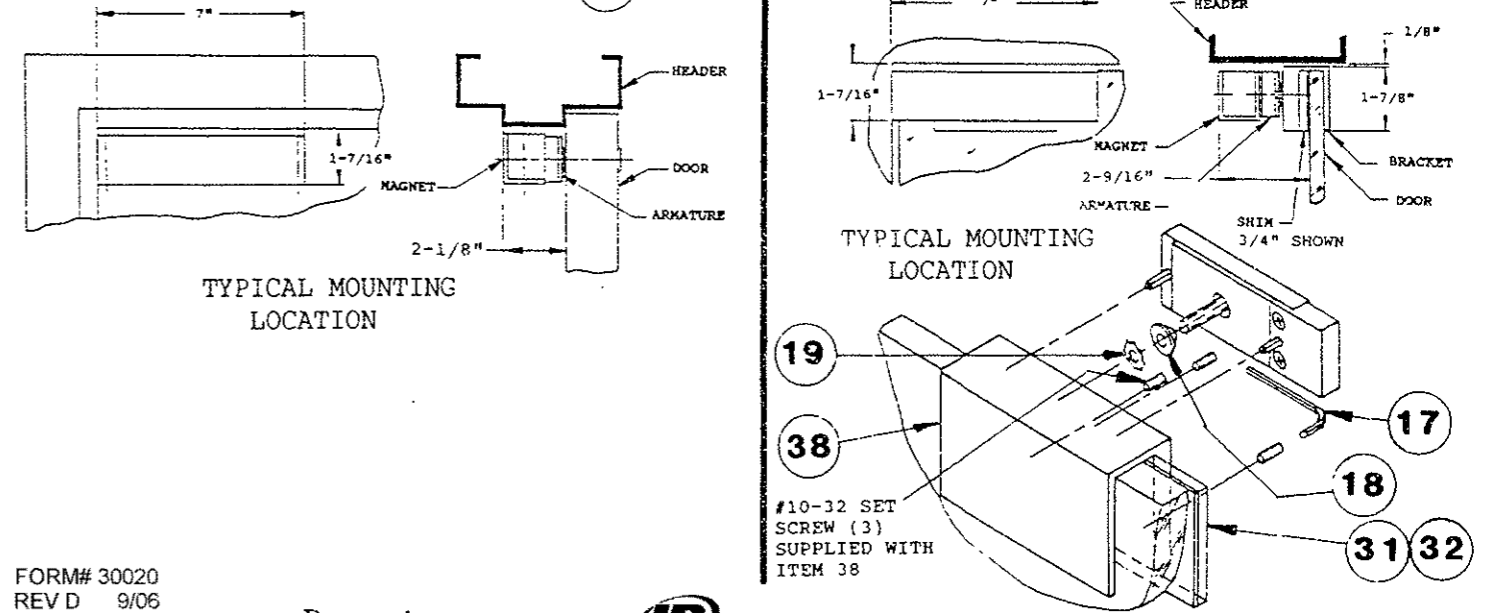
# 320 AND 322 SERIES LOCKS

## EXPLODED VIEW

### 320 STANDARD SURFACE MOUNT



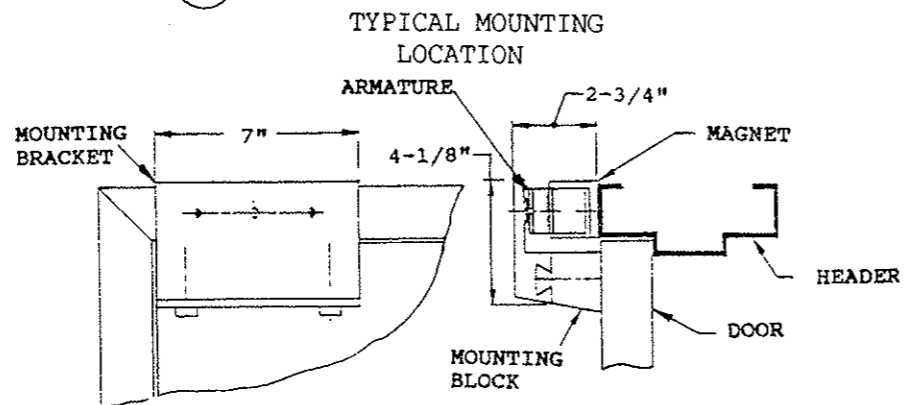
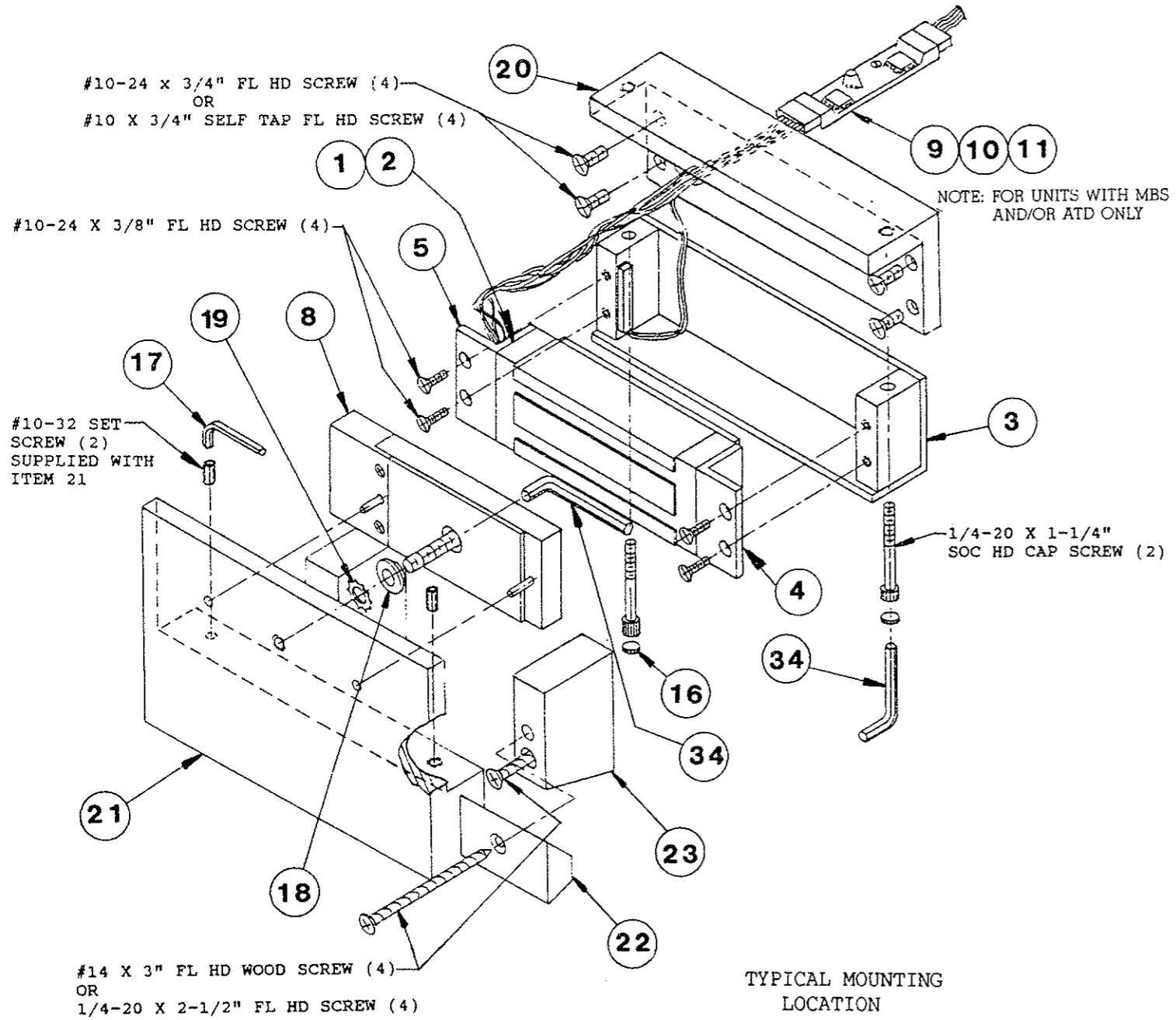
NOTE: FOR UNITS WITH MBS AND/OR ATD ONLY





# 320 AND 322 SERIES LOCKS EXPLODED VIEW

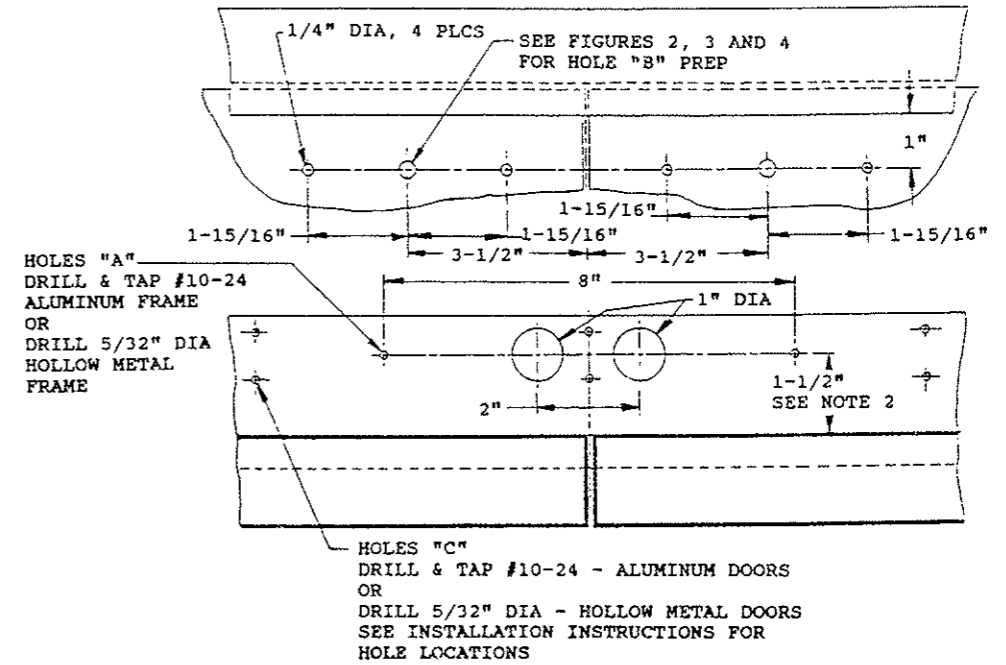
## 320TJ SERIES



# 320 AND 322 SERIES LOCKS

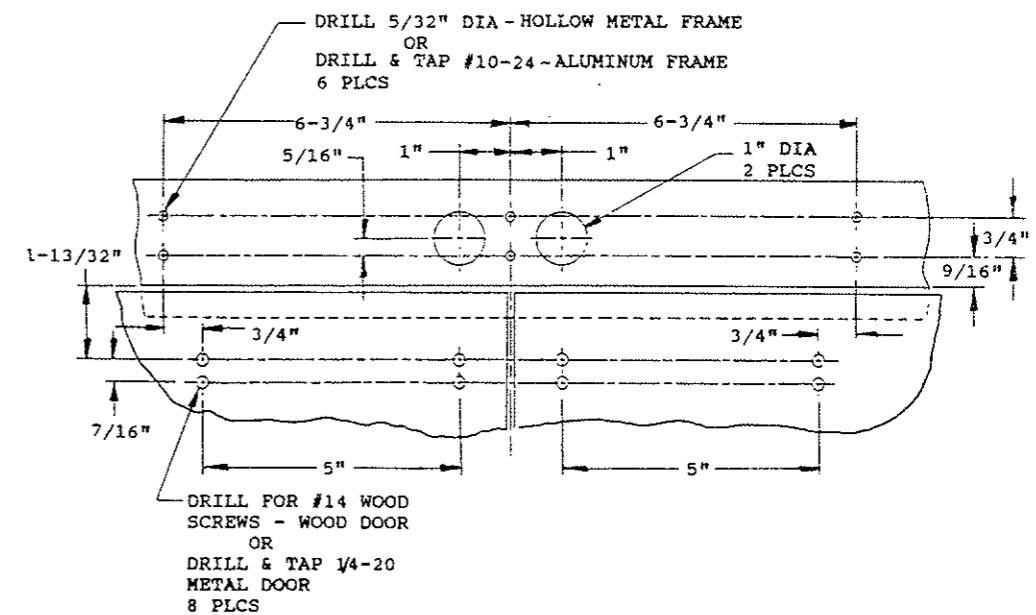
## TEMPLATE DRAWING

### 322 AND 322 X HDB TEMPLATE DRAWING



- NOTES:
1. MODEL 322 X HDB REQUIRES FRAME PREP ONLY
  2. FOR MODEL 322 X HDB 1-1/2" DIMENSION IS FROM ARMATURE BRACKET

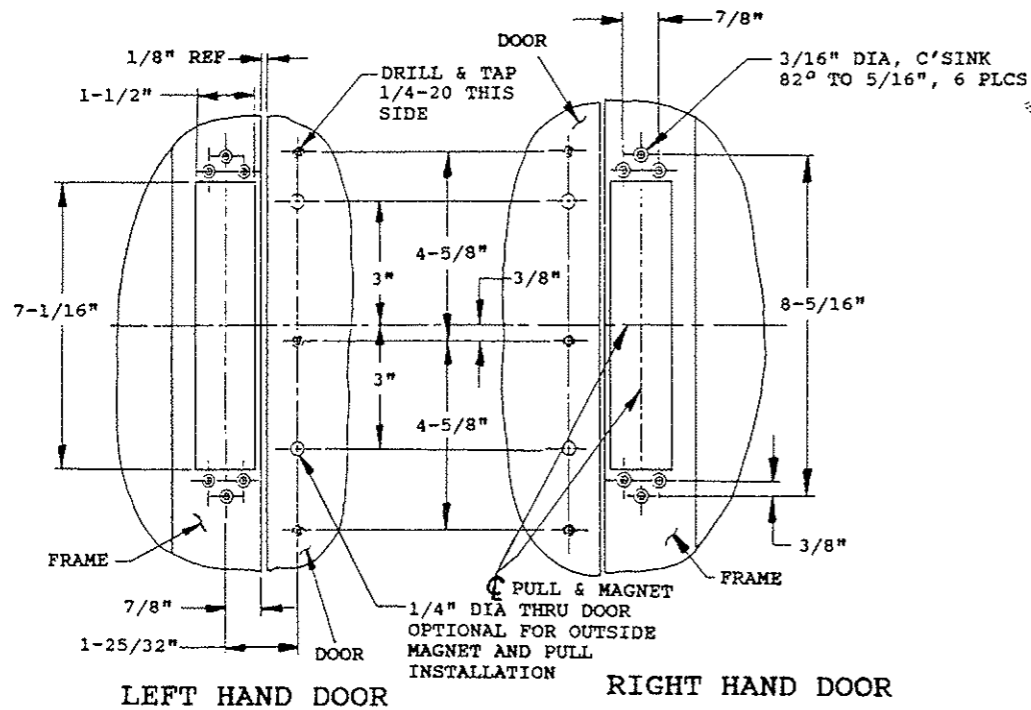
### 322TJ TEMPLATE DRAWING





# 320 AND 322 SERIES LOCKS TEMPLATE DRAWING

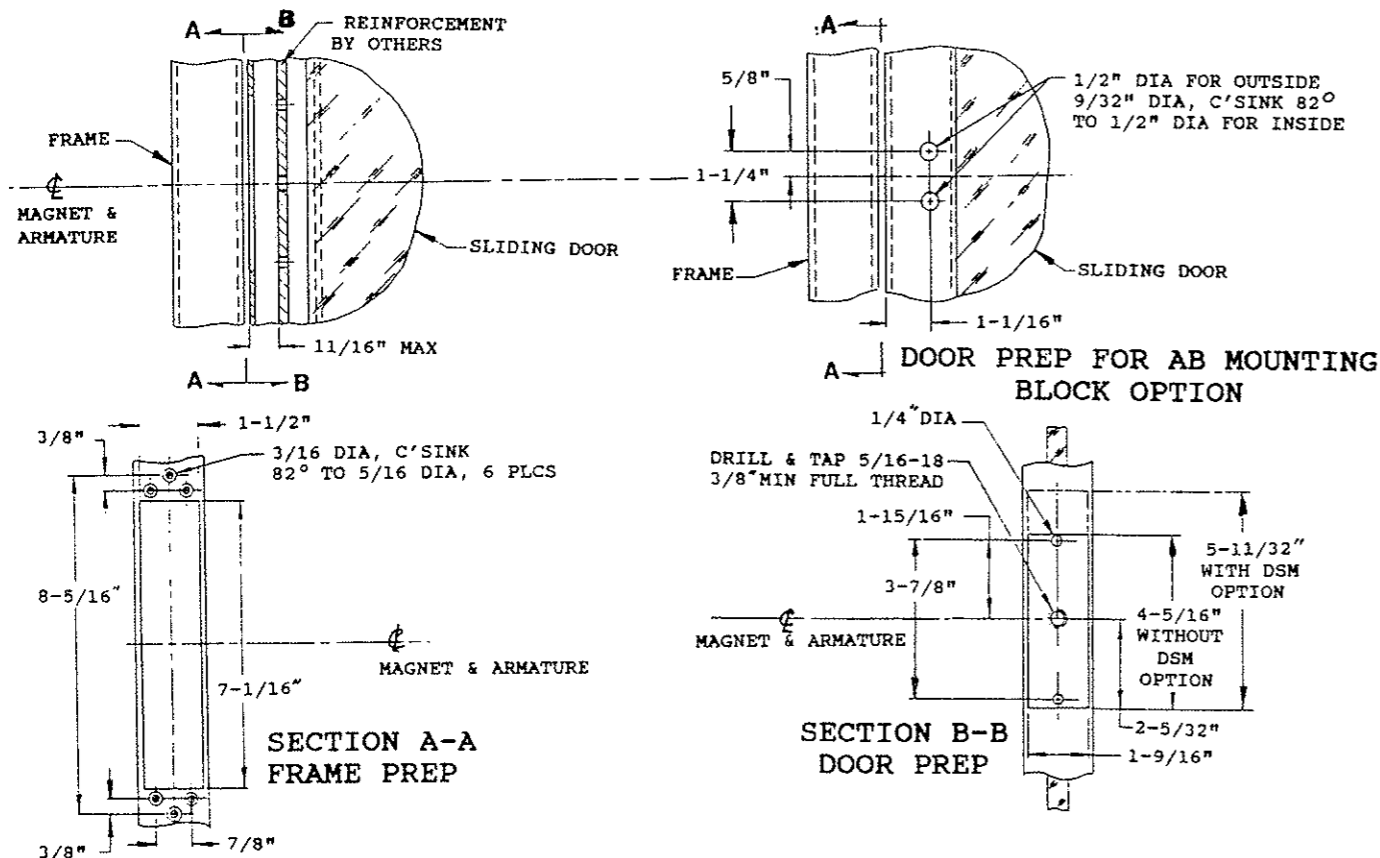
320P  
TEMPLATE DRAWING



LEFT HAND DOOR

RIGHT HAND DOOR

320M  
TEMPLATE DRAWING



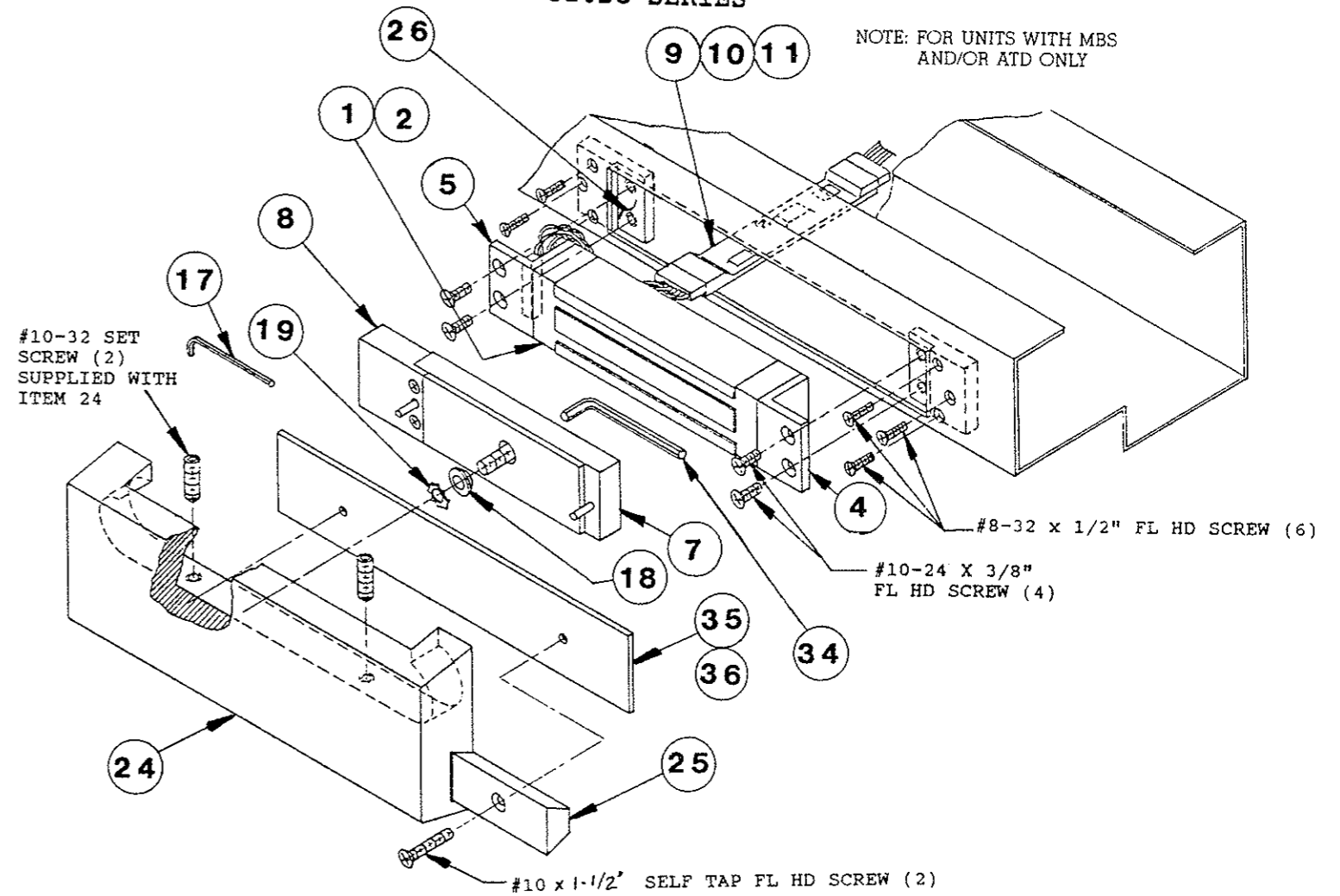
SECTION A-A  
FRAME PREP

SECTION B-B  
DOOR PREP



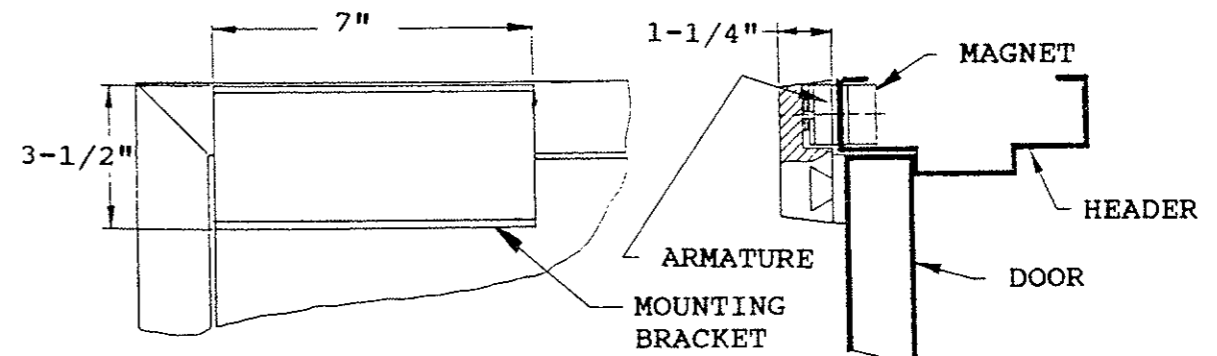
# 320 AND 322 SERIES LOCKS EXPLODED VIEW

320SC SERIES



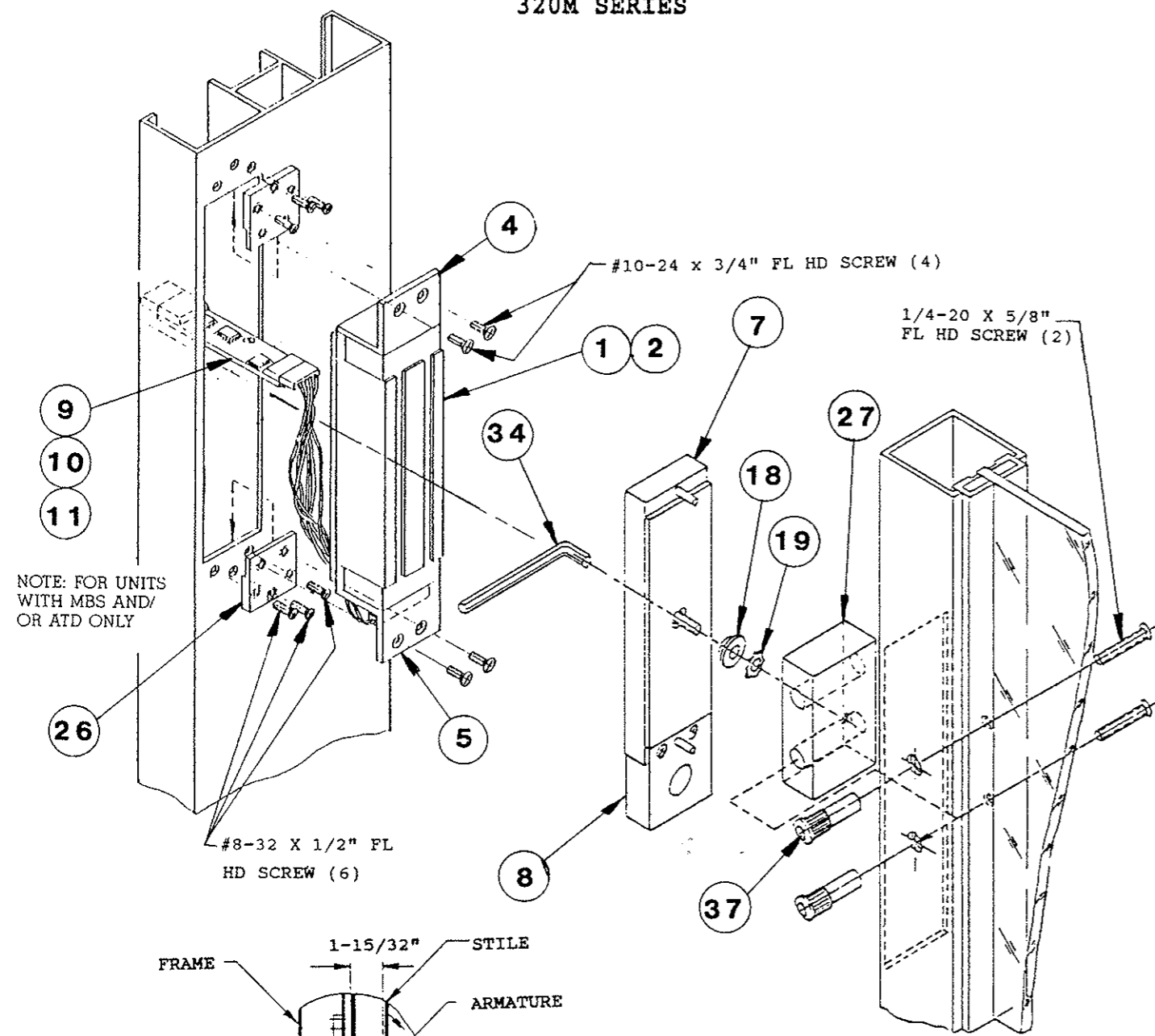
NOTE: FOR UNITS WITH MBS  
AND/OR ATD ONLY

TYPICAL MOUNTING  
LOCATION

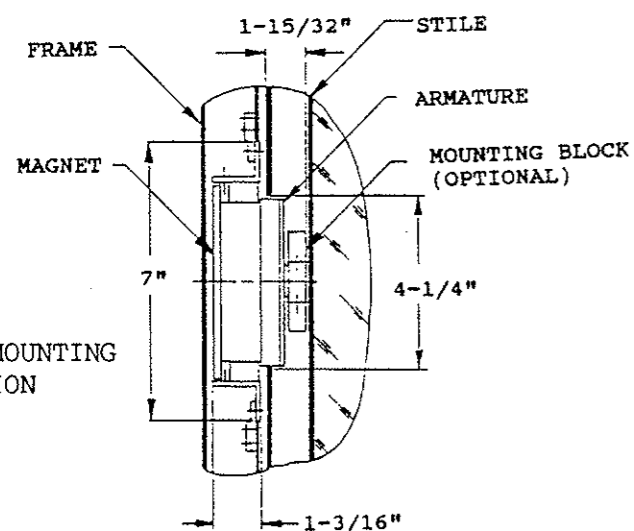




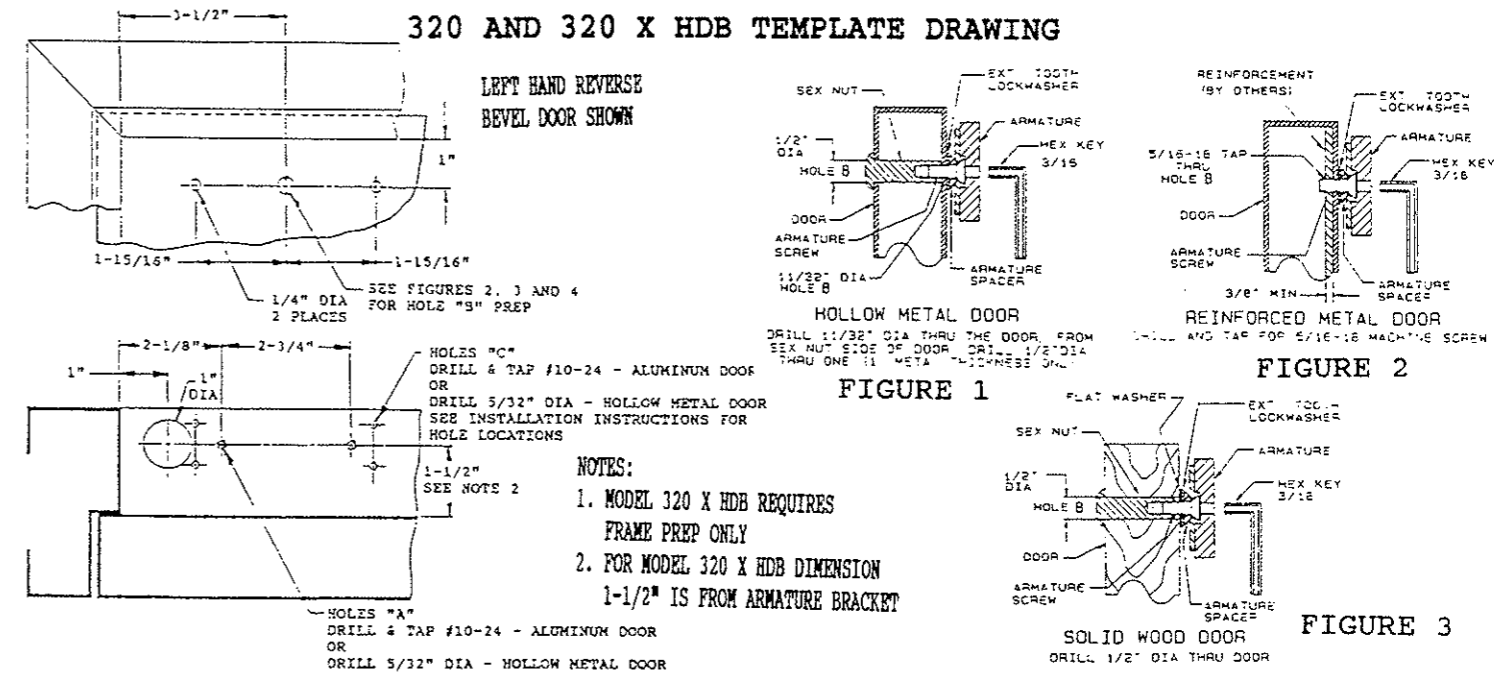
### 320M SERIES



TYPICAL MOUNTING LOCATION

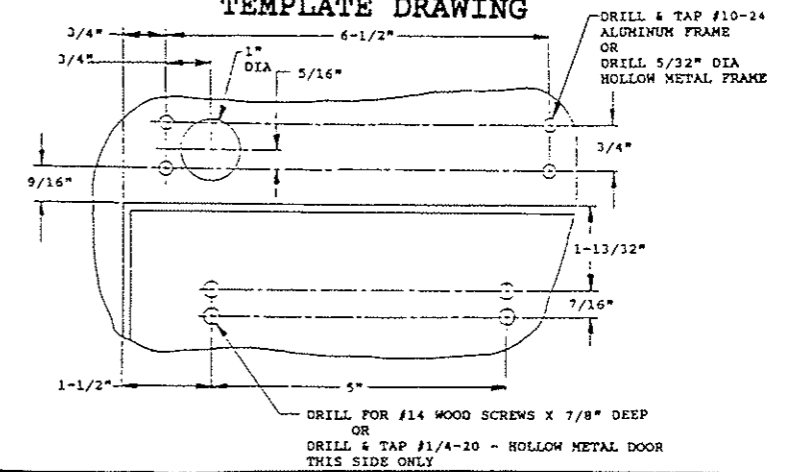


### 320 AND 320 X HDB TEMPLATE DRAWING



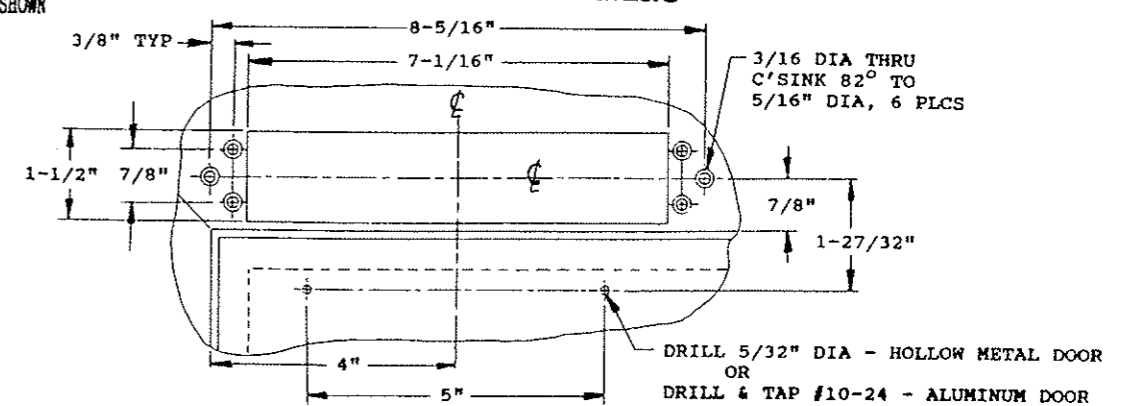
### 320TJ TEMPLATE DRAWING

LEFT HAND DOOR SHOWN



### 320SC TEMPLATE DRAWING

LEFT HAND DOOR SHOWN



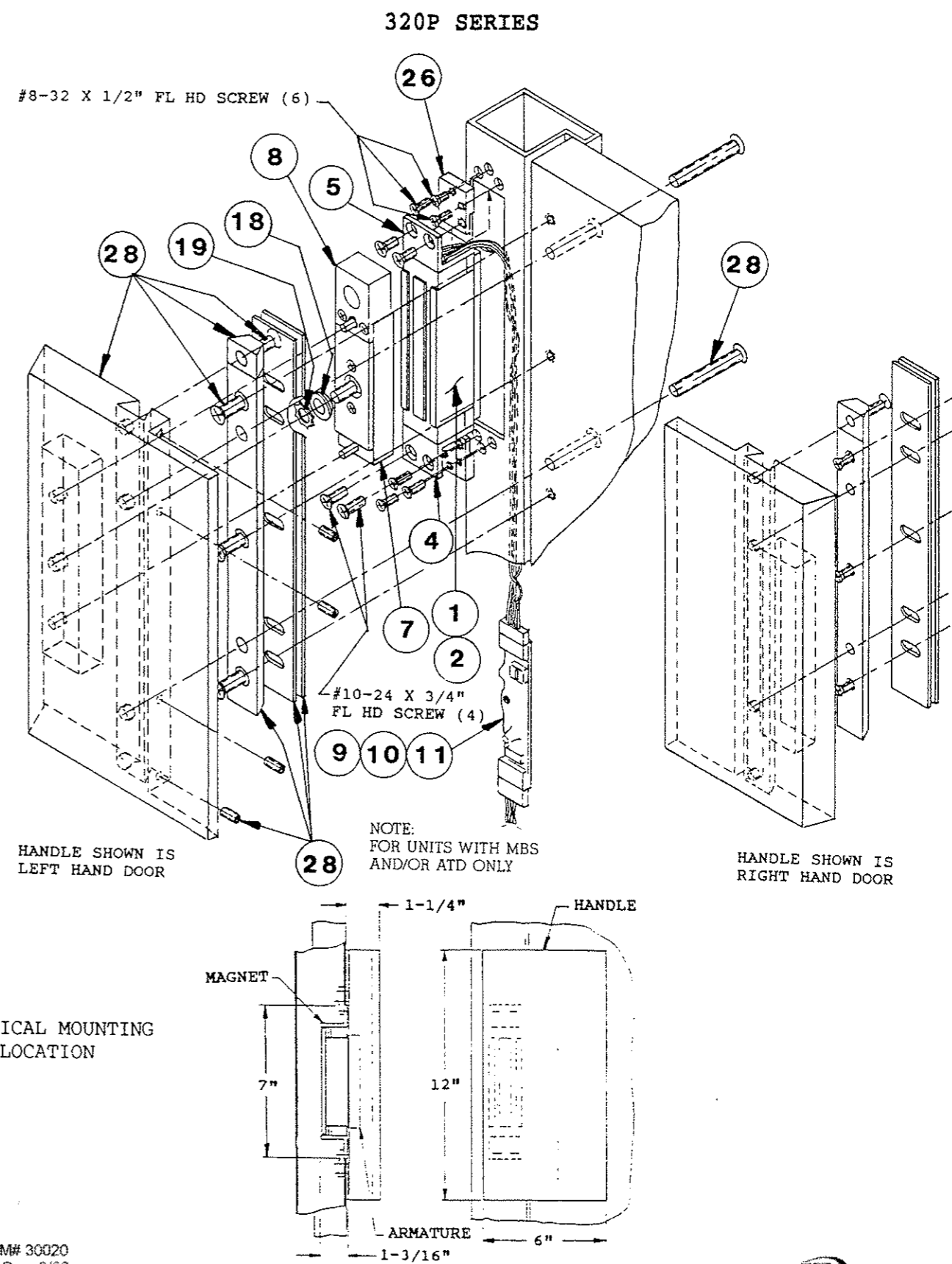


# 320 AND 322 SERIES LOCKS PARTS LIST

ITEM	PART NO.	DESCRIPTION	MODEL									
			320	320 HDB	320 TJ	320 SC	320 M	320 P	322	322 HDB	322 TJ	
1	320096	ELECTROMAGNET ASSY NO MBS	1	1	1	1	1	1	2	2	2	
2	320118	ELECTROMAGNET ASSY MBS	1	1	1	1	1	1	2	2	2	
3	CONSULT FACTORY	HOUSING-MAGNET	1	1	1	-	-	-	2	2	2	
4	320106	BRACKET-MOUNTING MAGNET	1	1	1	1	1	1	2	2	2	
5	320105	BRACKET-MOUNTING MAGNET	1	1	1	1	1	1	2	2	2	
6	320107	PLATE-MOUNTING	1	1	-	-	-	-	-	-	-	
7	320109	ARMATURE ASSY	1	1	1	1	1	1	2	2	2	
8	320115	BLOCK-DSM, ARMATURE	1	1	1	1	1	1	2	2	2	
9	320208	CONTROL MODULE MBS	1	1	1	1	1	1	2	2	2	
10	320209	CONTROL MODULE ATD	1	1	1	1	1	1	2	2	2	
11	320210	CONTROL MODULE ATD X MBS	1	1	1	1	1	1	2	2	2	
12												
13												
14												
15												
16	390022	ANTI-TAMPER PLUG	2	2	2	-	-	-	4	4	4	
17	270076	HEX WRENCH-3/32	1	1	1	1	-	-	1	1	1	
18	390255	SPACER-ARMATURE	1	1	1	1	1	1	2	2	2	
19	990185	LOCKWASHER-EXT TH	1	1	1	1	1	1	2	2	2	
20	320128	BRACKET-MTG, TJ MAGNET	-	-	1	-	-	-	-	-	-	
21	320130	BRACKET-MTG, TJ ARMATURE	-	-	1	-	-	-	-	-	2	
22	320170	DOVETAIL-TJ ARMATURE	-	-	1	-	-	-	-	-	2	
23	320172	BLOCK-MTG, TJ ARMATURE	-	-	2	-	-	-	-	-	4	
24	320168	BRACKET-MTG, SC ARMATURE	-	-	-	1	-	-	-	-	-	
25	320171	DOVETAIL-SC ARMATURE	-	-	-	1	-	-	-	-	-	
26	280006	MOUNTING TAB	-	-	-	2	2	2	-	-	-	
27	320177	MTG BLOCK, ARMATURE	-	-	-	-	1	-	-	-	-	
28	320191	HANDLE-PULL KIT	-	-	-	-	-	1	-	-	-	
29	320108	PLATE-MOUNTING	-	-	-	-	-	-	1	-	-	
30	320129	BRACKET-MTG, TJ MAGNET	-	-	-	-	-	-	-	-	1	
31	320145	SHIM ASSY-3/4 DOOR	-	1	-	-	-	-	-	2	-	
32	320129	SHIM ASSY-1/2 DOOR	-	1	-	-	-	-	-	2	-	
33	390498	SEX NUT, 1-3/4 DOOR	1	-	-	-	-	-	2	-	-	
34	270078	HEX WRENCH-3/16	1	1	1	1	1	1	1	1	1	
35	320174	SHIM-MTG, .187 THK	-	-	-	1	-	-	-	-	-	
36	320173	SHIM-MTG, .093 THK	-	-	-	1	-	-	-	-	-	
37	290014	SEX NUT, 1-3/4 DOOR	-	-	-	-	2	-	-	-	-	
38	320147	HDB ASSY	-	1	-	-	-	-	-	2	-	
39	990183	FLAT WASHER-5/16	1	-	-	-	-	-	2	-	-	



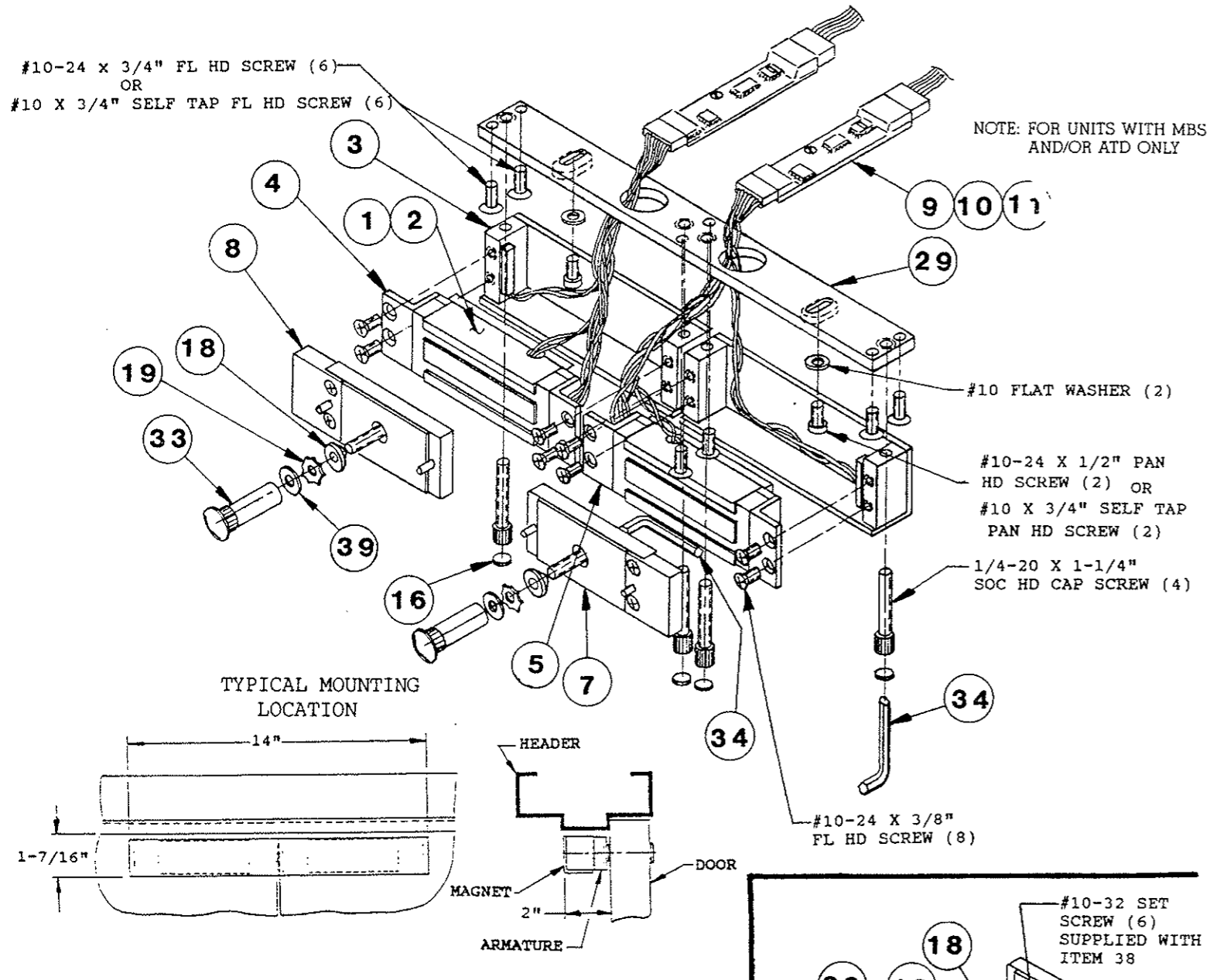
# 320 AND 322 SERIES LOCKS EXPLODED VIEW



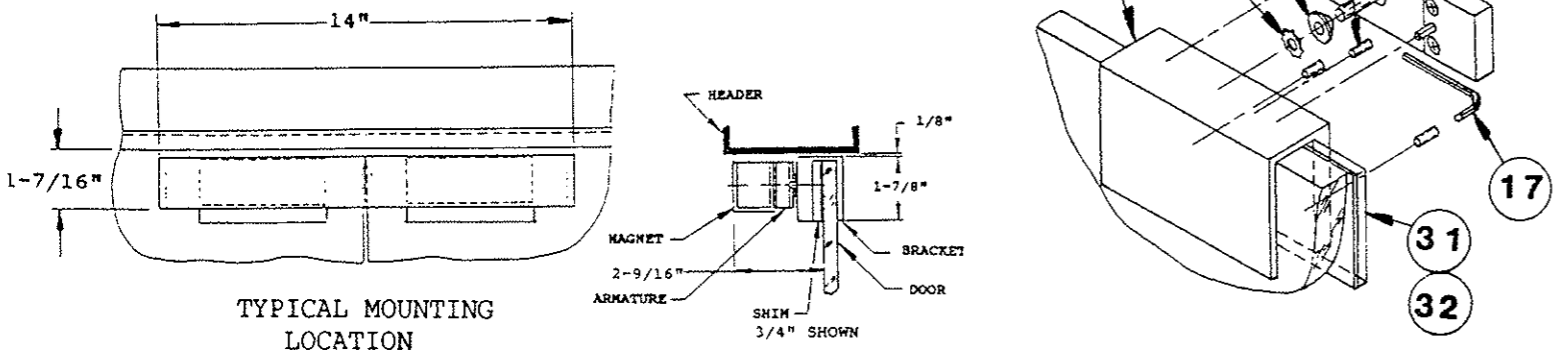


# 320 AND 322 SERIES LOCKS EXPLODED VIEW

## 322 STANDARD SURFACE MOUNT



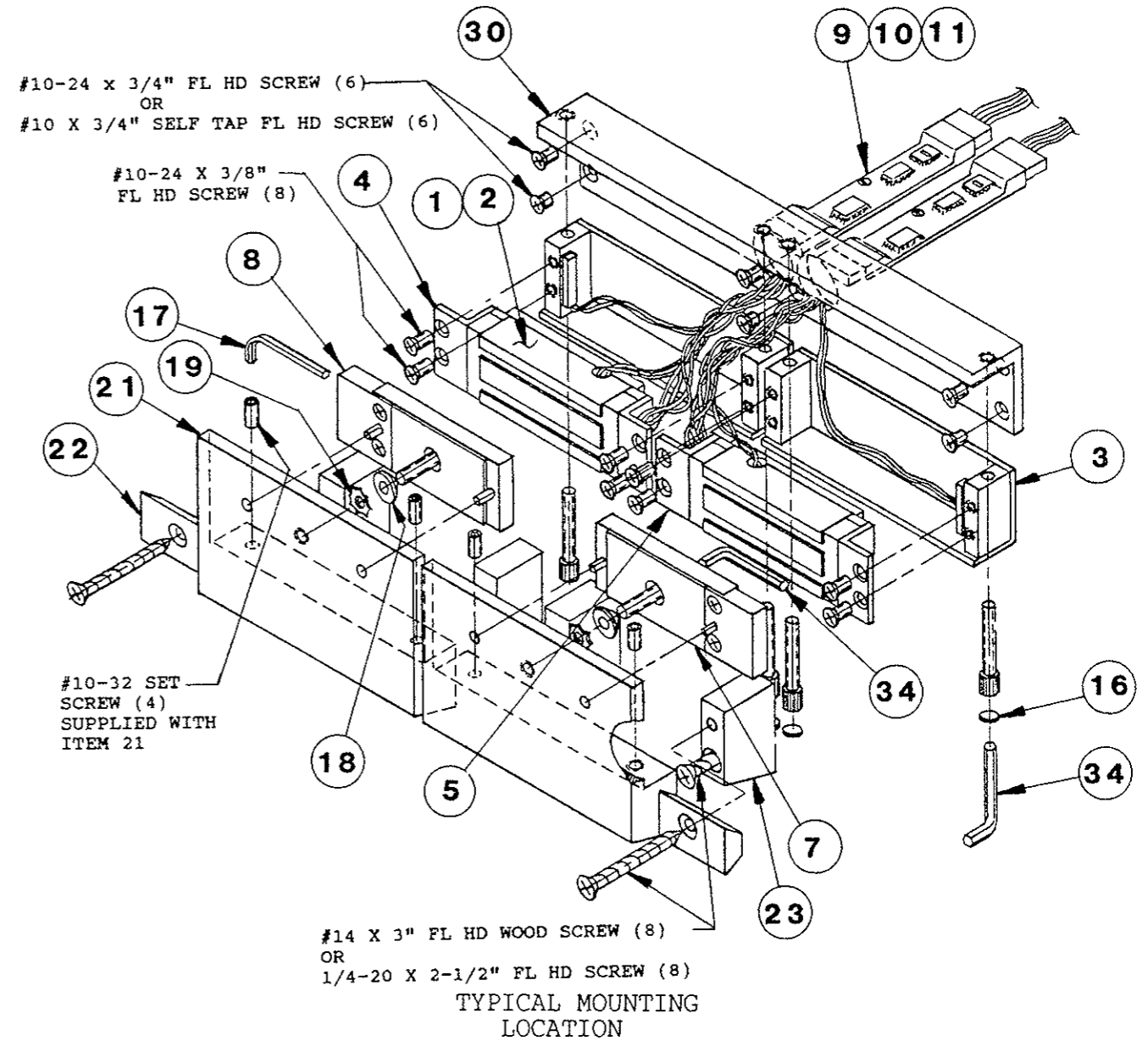
## 322 X HDB STANDARD SURFACE MOUNT



# 320 AND 322 SERIES LOCKS EXPLODED VIEW

## 322TJ SERIES

NOTE: FOR UNITS WITH MBS  
AND/OR ATD ONLY



# LOCKNETICS.

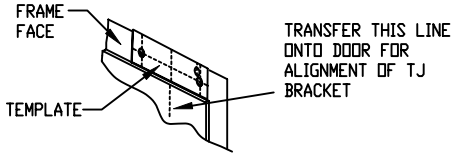
## 40TJ SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

# TEMPLATE & INSTALLATION SHEET

THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

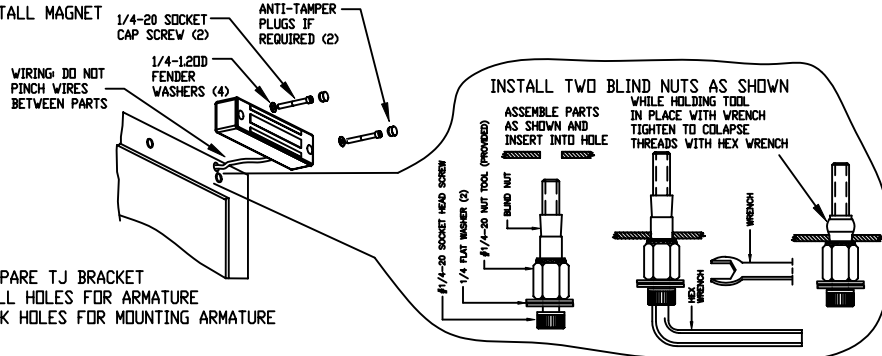
- ① PLACE TEMPLATE ON FRAME FACE AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.



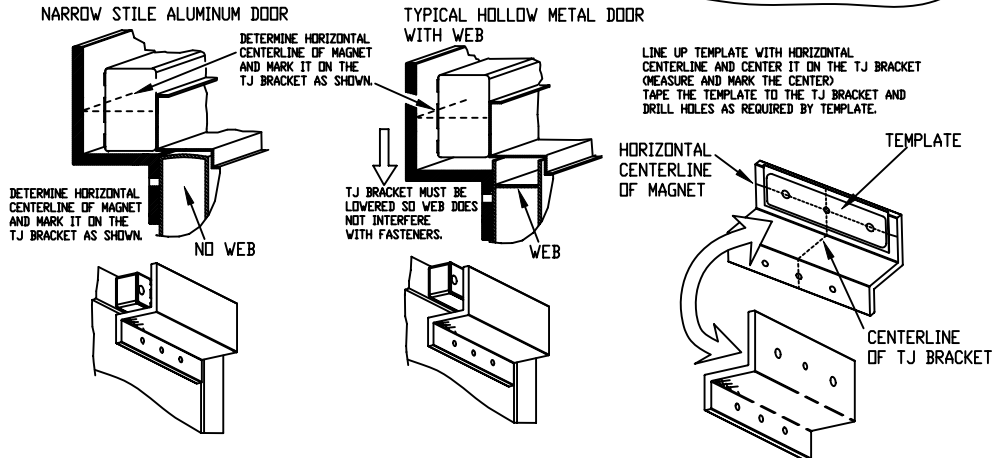
- ② MAKE WIRING CONNECTIONS (AFTER INSTALLING BLIND NUTS - SEE STEP 3)

WIRING:	(+)	0.300 AMP @ 12VDC
RED:	(-)	0.150 AMP @ 24VDC
BLACK:		
WHITE:	MBS C	1 AMP MAX. @ 30VDC
GREEN:	MBS NO	
ORANGE:	MBS NC	
YELLOW:	DSM C	0.10 AMP MAX. @ 30VDC
BLUE:	DSM NO	
BROWN:	DSM NC	

- ③ INSTALL MAGNET



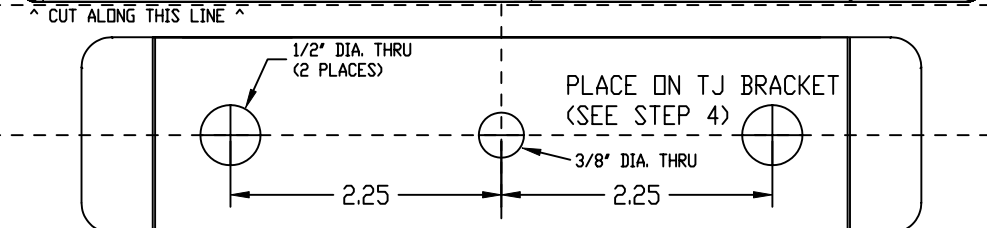
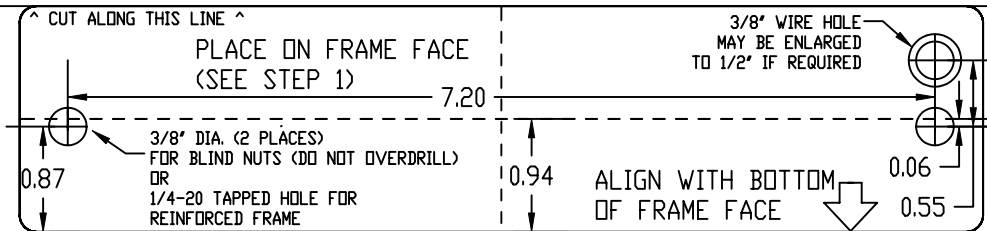
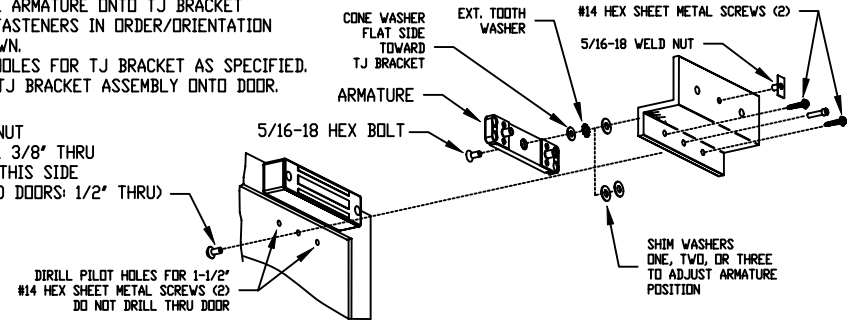
- ④ PREPARE TJ BRACKET  
DRILL HOLES FOR ARMATURE  
MARK HOLES FOR MOUNTING ARMATURE



PART NUMBER 700196

- ⑤ INSTALL ARMATURE ONTO TJ BRACKET USING FASTENERS IN ORDER/ORIENTATION AS SHOWN. DRILL HOLES FOR TJ BRACKET AS SPECIFIED. MOUNT TJ BRACKET ASSEMBLY ONTO DOOR.

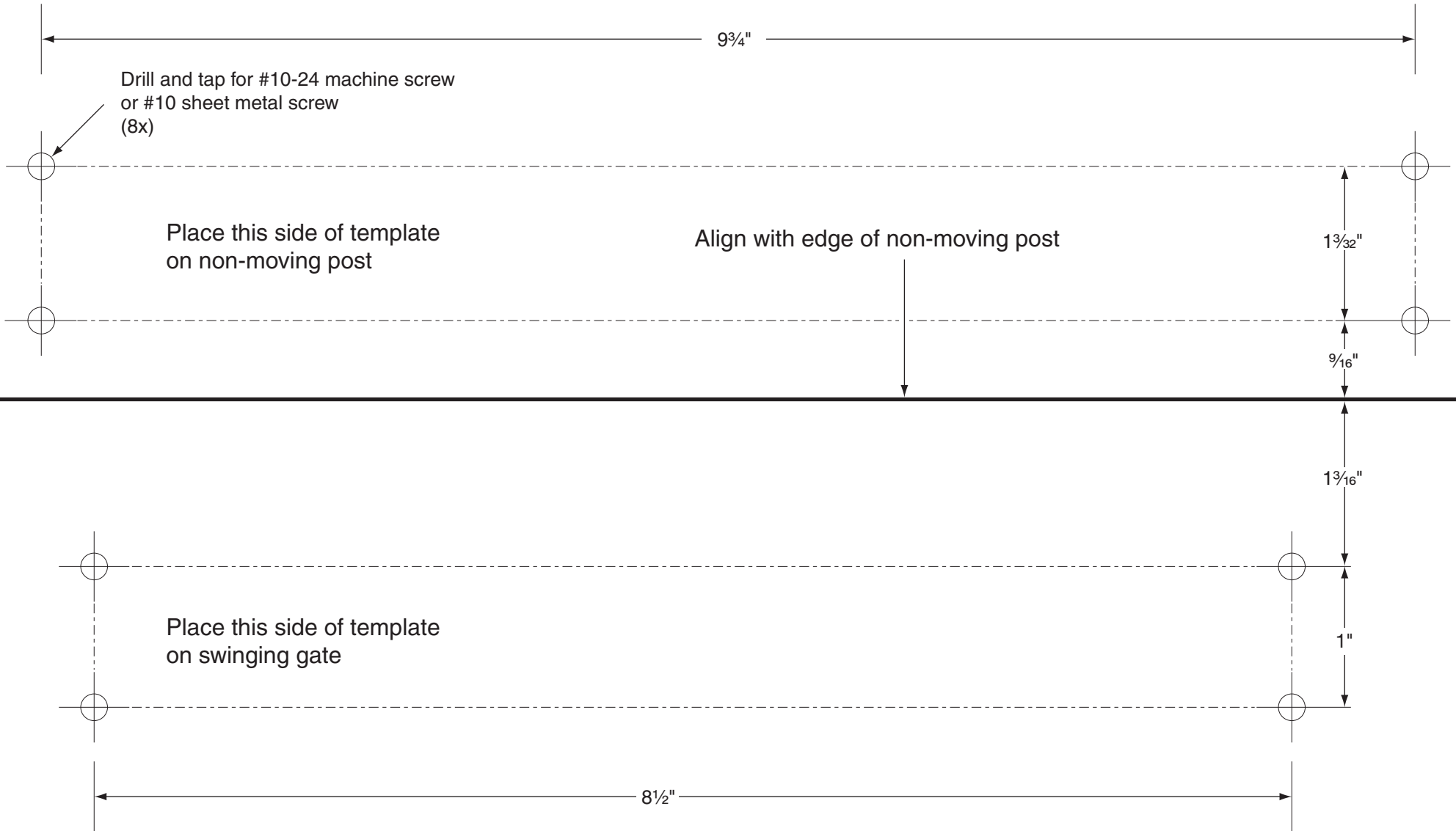
SEX NUT  
DRILL 3/8" THRU 1/2" THIS SIDE (WOOD DOORS: 1/2" THRU)



PART NUMBER 700196



# M490G Magnetic Lock Template for Swinging Application



**▲ ATTENTION:**

When printing, verify that print is scaled to 100%  
by measuring dimensions shown on template.



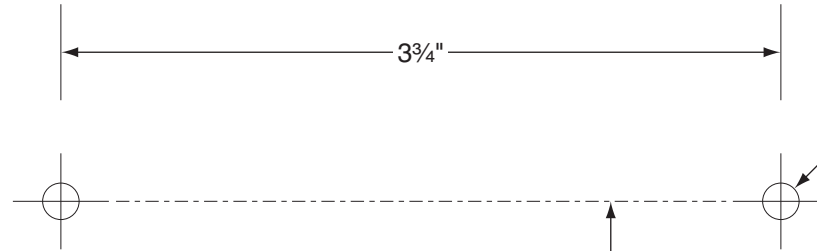
©2010 Ingersoll-Rand Company  
Printed in Country.  
44488914 Rev. 09/10\_a



# M490G Magnetic Lock Template for Sliding Application

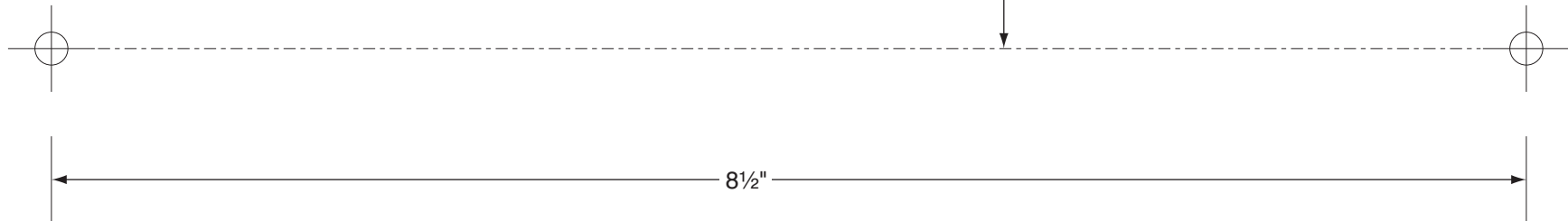
Place this side of template  
on non-moving post

Align with edge of non-moving post



Drill and tap for #10-24 machine  
screw or #10 sheet metal screw  
(4x)

Place this side of template  
on sliding gate



**▲ ATTENTION:**

When printing, verify that print is scaled to 100%  
by measuring dimensions shown on template.

# LOCKNETICS.

## 70TJ SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED) - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

# TEMPLATE & INSTALLATION SHEET

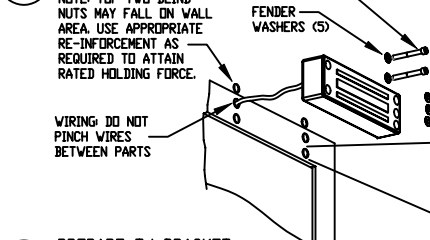
THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

1 PLACE TEMPLATE ON FRAME FACE AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.

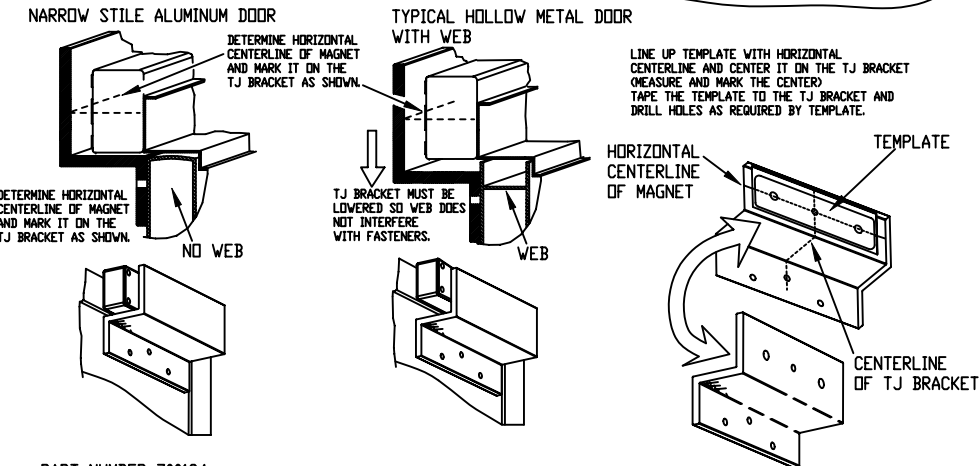
2 MAKE WIRING CONNECTIONS (AFTER INSTALLING BLIND NUTS - SEE STEP 3)

WIRING:		
RED:	(+)	0.300 AMP @ 12VDC
BLACK:	(-)	0.150 AMP @ 24VDC
WHITE:	MBS C	1 AMP MAX. @ 30VDC
GREEN:	MBS ND	
ORANGE:	MBS NC	
YELLOW:	DSM C	0.10 AMP MAX. @ 30VDC
BLUE:	DSM ND	
BROWN:	DSM NC	

3 INSTALL MAGNET  
NOTE: TOP TWO BLIND NUTS MAY FALL ON WALL AREA. USE APPROPRIATE RE-INFORCEMENT AS REQUIRED TO ATTAIN RATED HOLDING FORCE.



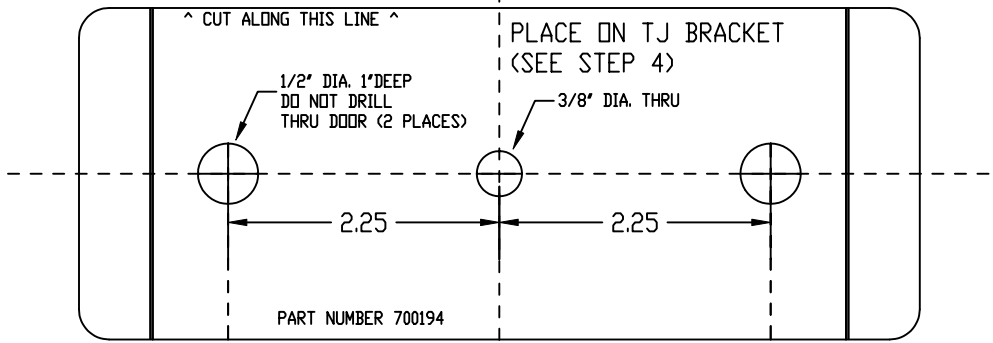
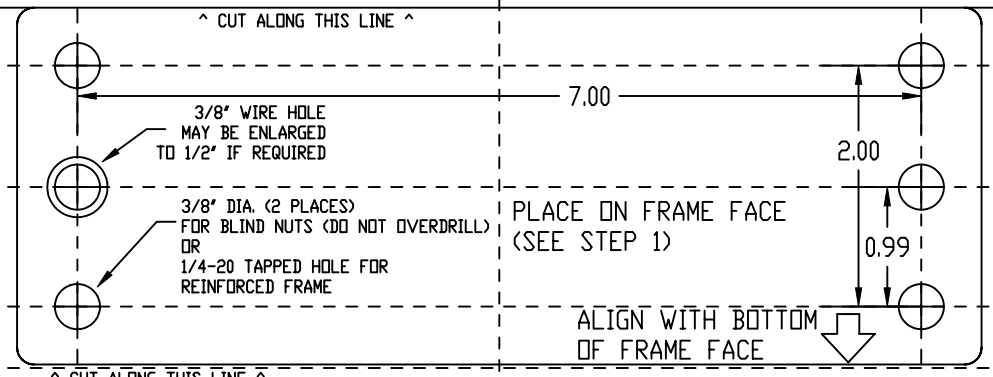
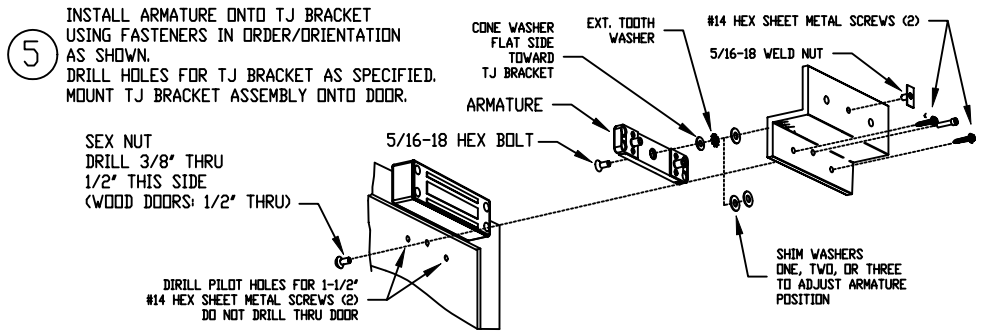
4 PREPARE TJ BRACKET  
DRILL HOLES FOR ARMATURE  
MARK HOLES FOR MOUNTING ARMATURE



PART NUMBER 700194

5 INSTALL ARMATURE ONTO TJ BRACKET USING FASTENERS IN ORDER/ORIENTATION AS SHOWN.  
DRILL HOLES FOR TJ BRACKET AS SPECIFIED.  
MOUNT TJ BRACKET ASSEMBLY ONTO DOOR.

SEX NUT  
DRILL 3/8" THRU 1/2" THIS SIDE (WOOD DOORS: 1/2" THRU)



PART NUMBER 700194

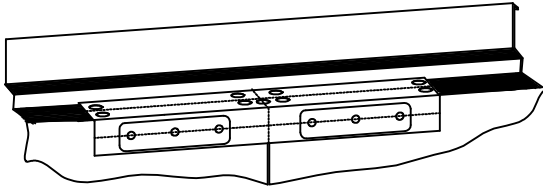
# LOCKNETICS®

## 72 SERIES MAGNETIC LOCK

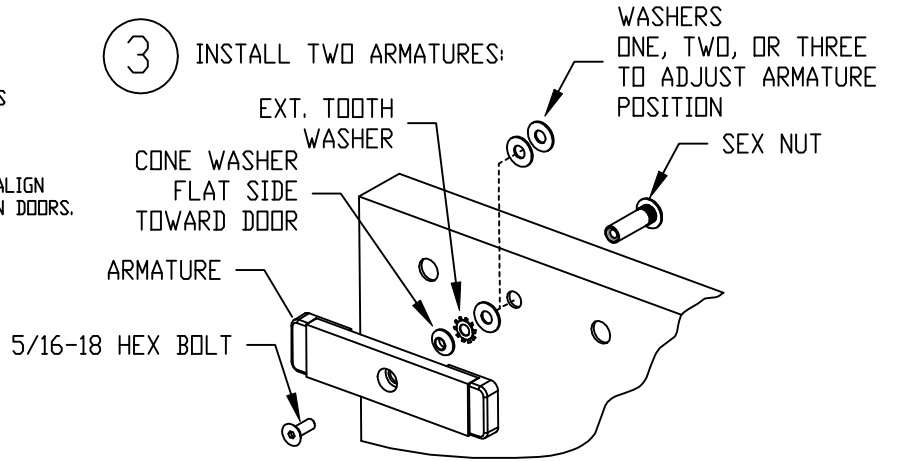
# INSTALLATION SHEET

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING WASHERS.

- 1 PLACE TEMPLATE ON DOOR AND FRAME AS SHOWN. ALIGN CENTER OF TEMPLATE WITH PARTING LINE BETWEEN DOORS. TAPE IN PLACE AND DRILL REQUIRED HOLES.

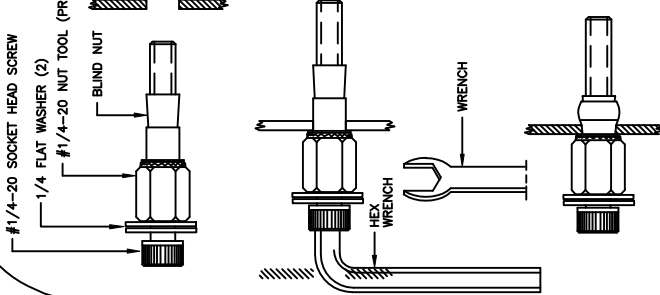


- 3 INSTALL TWO ARMATURES:

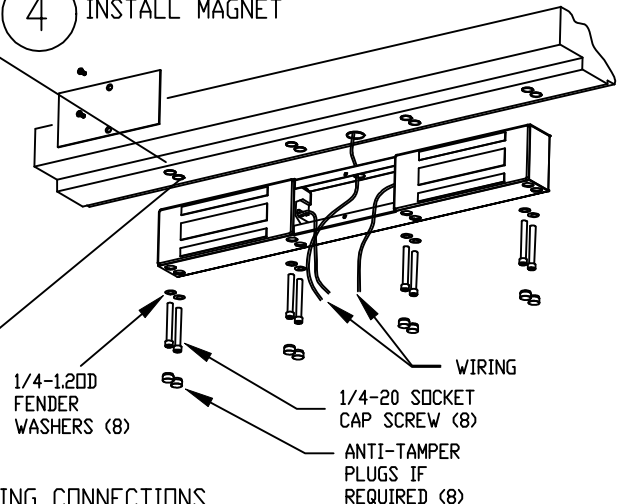


- 2 INSTALL EIGHT BLIND NUTS AS SHOWN

ASSEMBLE PARTS AS SHOWN AND INSERT INTO HOLE WHILE HOLDING TOOL IN PLACE WITH WRENCH TIGHTEN TO COLAPSE NUT WITH HEX WRENCH



- 4 INSTALL MAGNET

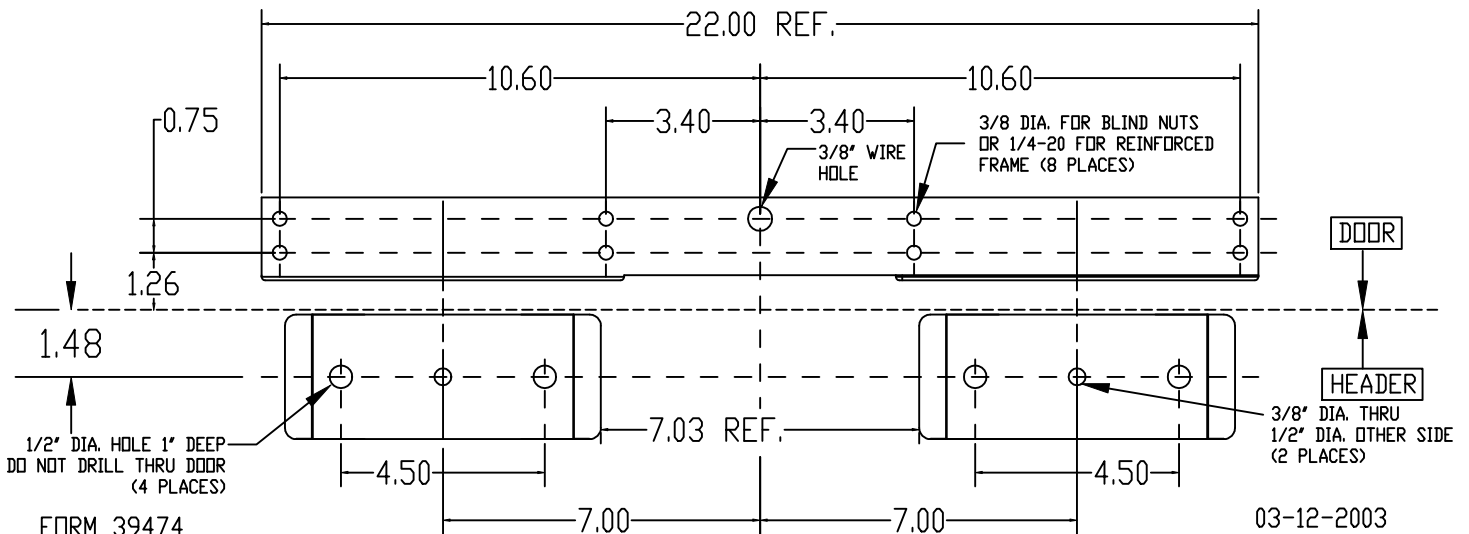


THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

- 5 MAKE WIRING CONNECTIONS AND INSTALL WIRE COVER.

WIRING:	(CURRENT PER MAGNET)
RED:	(+) } 0.300 AMP @ 12VDC
BLACK:	(-) } 0.150 AMP @ 24VDC
WHITE:	MBS C } 1 AMP MAX.
GREEN:	MBS NO } @ 30VDC
ORANGE:	MBS NC } @ 30VDC
YELLOW:	DSM C } 0.10 AMP MAX.
BLUE:	DSM NO } @ 30VDC
BROWN:	DSM NC } @ 30VDC

## 72 TEMPLATE: NOT TO SCALE







30500

# GF3000



## INSTALLATION MANUAL

### Models Covered: Standard, TRD, BRD, SM, and TJ

GF3000 (Standard Model)	GF3000TRD	GF3000BRD
GF3000SM	GF3000TJ	

**Gravity Force Shear Locks:  
Mortise & Surface Mount**

**Customer Service**  
 1-877-671-7011    [www.allegion.com/us](http://www.allegion.com/us)



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 30500 1/15-f

# GF3000 SERIES INSTALLATION MANUAL

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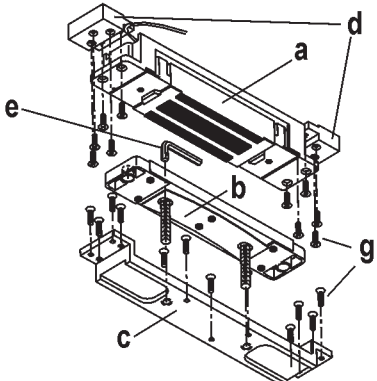
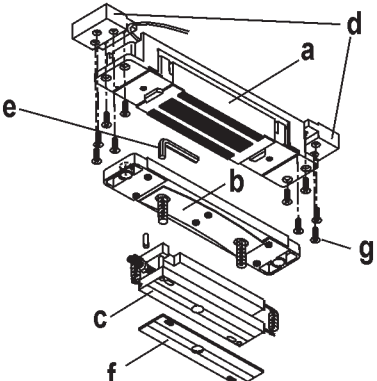
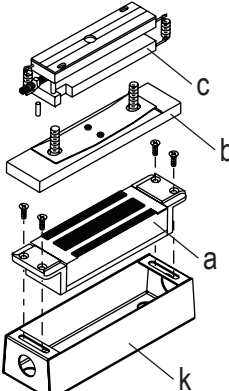
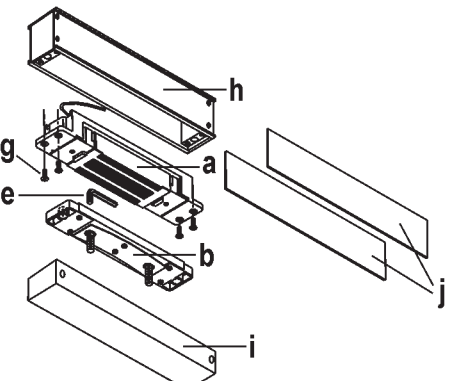
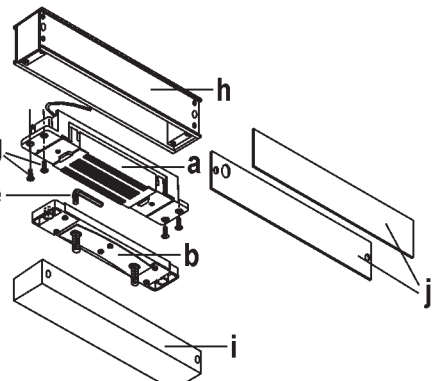
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# GF3000 SERIES INSTALLATION MANUAL

## Confirming the Box Contents

### Confirming the Box Contents

<p>GF3000(STANDARD)</p> 	<p>GF3000TRD</p> 	<p>GF3000BRD</p> 
<p>GF3000SM</p> 	<p>GF3000TJ</p> 	
<p>a - MAGNETIC COIL ASSEMBLY  b - ARMATURE  c - ARMATURE MOUNTING ASSEMBLY  d - MOUNTING TABS  e - HEX WRENCH  f - SHIM PLATE  g - HARDWARE PACK  h - MAGNETIC COIL HOUSING  i - ARMATURE HOUSING  j - FACE PLATES  k - THRESHOLD BOX</p>		

# GF3000 SERIES INSTALLATION MANUAL

## *Introduction / Tools and Materials Needed / Contact Info*

---

### **Introduction**

This manual covers the complete installation and wiring instructions for the following GF3000 Series models:

#### **MORTISE:**

- GF3000 (Standard model)
- GF3000TRD (Top Rail Door)
- GF3000BRD (Bottom Rail Door)

#### **SURFACE MOUNT:**

- GF3000SM (Surface Mount)
- GF3000TJ (Top Jamb)

### **Tools and Materials Needed Not Included in Box**

Whichever model you are installing, you should have all of the following tools on hand:

- Pencil
- Tape Measure
- Hammer
- Center Punch
- Power Drill w/Set of Drill Bits
- Chisel
- Small Sawsall or other metal cutting saw
- Set of Hex (Allen) Wrenches
- Set of Philips Head Screwdrivers
- Electrical Tool Kit (containing: wire cutter/stripper, electrical tape, needle-nose pliers, etc.)

If you are installing a GF3000BRD, you might also need:

- Pavement Breaker or Demolition Hammer

**Contact Information:**      1-877-671-7011

# GF3000 SERIES INSTALLATION MANUAL

## Specifications

---

### Specifications:

#### Electrical

Input Voltage . . . . .	Filtered, regulated 12 or 24 VDC (auto voltage selection)
Input Current . . . . .	0.9 Amps at 12VDC, 0.45 Amps at 24VDC
Adjustable Time Delay (ATD) . . . . .	Adjustable from 2 to 30 seconds.
. . . . .	Factory default: expect approx. 3-5 seconds.
Automatic Relock Switch (ARS) . . . . .	Integral magnetic reed switch
Optional Monitoring Outputs (Standard, TRD, SM, and TJ)	
DSM . . . . .	Contact rating - 0.1 Amps maximum at 28VDC
MBS . . . . .	Contact rating - 0.2 Amps maximum at 30VDC
Optional Monitoring Outputs (BRD)	
DSM . . . . .	Contact rating -0.2 Amps maximum @ 30VDC
MBS . . . . .	Contact rating - 0.1 Amps maximum @ 24VDC

#### Mechanical

Mounting Position/Type . . . . .	Horizontally. Mortise and Surface. Non-handed
Shear Holding Force . . . . .	3000 pounds maximum
Door Thickness . . . . .	1-3/4" minimum
Plating . . . . .	Magnetic face and armature; nickel plated to resist corrosion

Warranty . . . . . Magnetic coil: Lifetime    Electronics: 1 year limited

Certifications/Compliance . . . . . UL# R12092; MEA# 222-96-E; CSFM# 3774-0544:107

Shipping Weight . . . . . GF3000 - 6 Pounds;    GF3000TRD & BRD - 8 Pounds

Dimensions - Mortise Mount . . . . .	Magnet - 9.5L x 1.5W x 1.5H
. . . . .	Magnet w/Mounting Tabs - 11.56L x 1.5W x 1.5H
. . . . .	Armature - 8.38L x 1.38W x 0.5D
. . . . .	Armature Bracket - 10.63L x 1.38W x 1.0D
Dimensions - Surface Mount . . . . .	Magnet Housing - 9.81L x 1.25H x 1.5D
. . . . .	Armature Housing - 8.38L x 1.38W x 0.5D

### Operation:

A shear lock is designed to rely on the shear strength of steel for holding force. A strong magnet is energized that attracts an armature which overcomes an air gap to engage with the magnet. The magnet and the armature, besides being bonded by magnetic force, are also designed to mechanically interlock. This gives the system 3000 pounds of holding force. Because of this design, precise door and frame preparation is necessary. Also important is that the centerlines of the magnet and armature line up to form a vertical axis. It is also critical that the air gap be adjusted to be as close as possible without interfering with door operation. This ensures the best reliability possible.

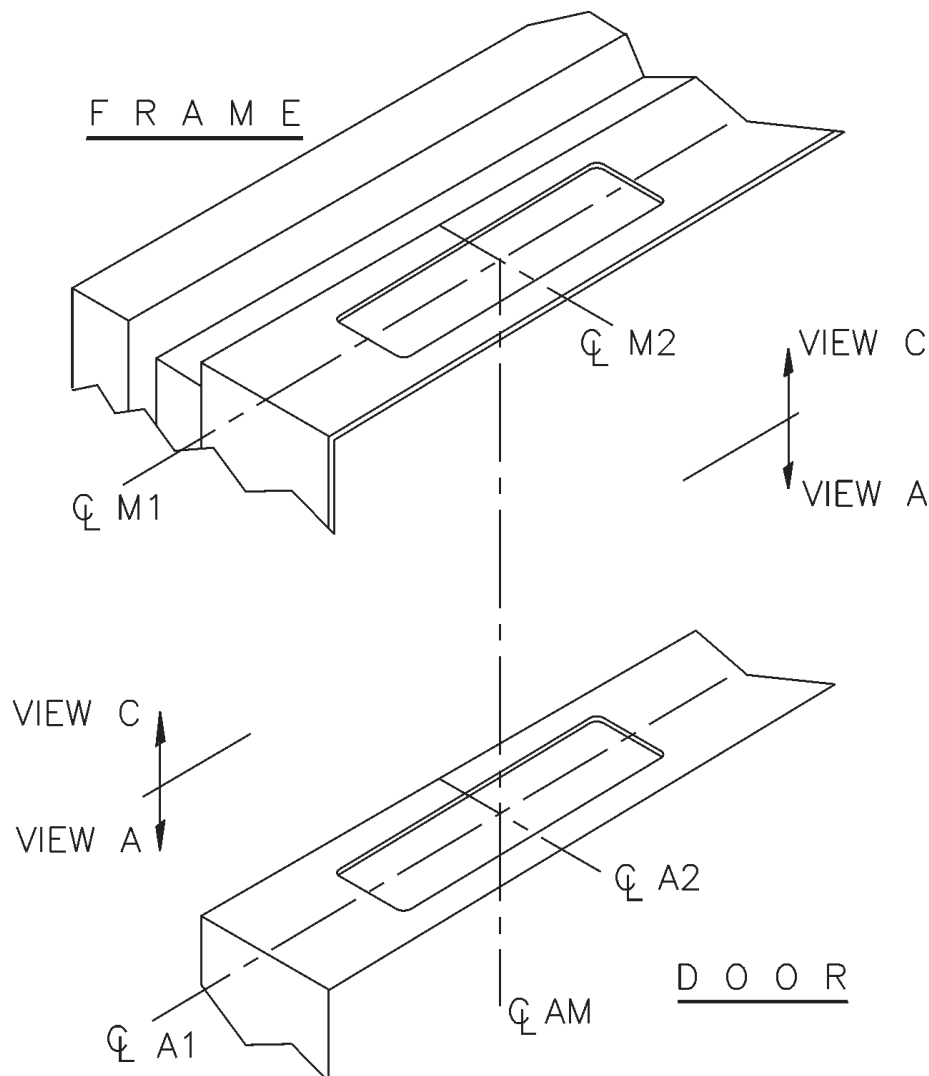
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Preparing the Frame and Door

#### 1) Establish Frame and Door Centerlines (Standard and TRD):

- For proper operation, it's critical to establish centerlines of magnet and armature assembly that line up to form a vertical axis. The figure below shows the centerline scheme for a standard GF3000 and a GF3000TRD. Note that centerlines for magnet (M1 and M2) are directly above centerlines for armature assembly (A1 and A2) thus forming a vertical axis (AM).
- Check door & frame for any structural member or hardware component that might interfere with magnet and armature mounting areas before selecting template location.
- Remove existing hung doors for template application and armature installation.
- The standard model GF3000 can be installed in a horizontal or vertical configuration.
- To achieve maximum resistance to forced entry, position as follows:
  - > Horizontal configuration - position unit closest to the latch side of door.
  - > Vertical configuration - positioning unit closest to the strike plate is recommended.
- In some applications, the door and frame may require reinforcement.

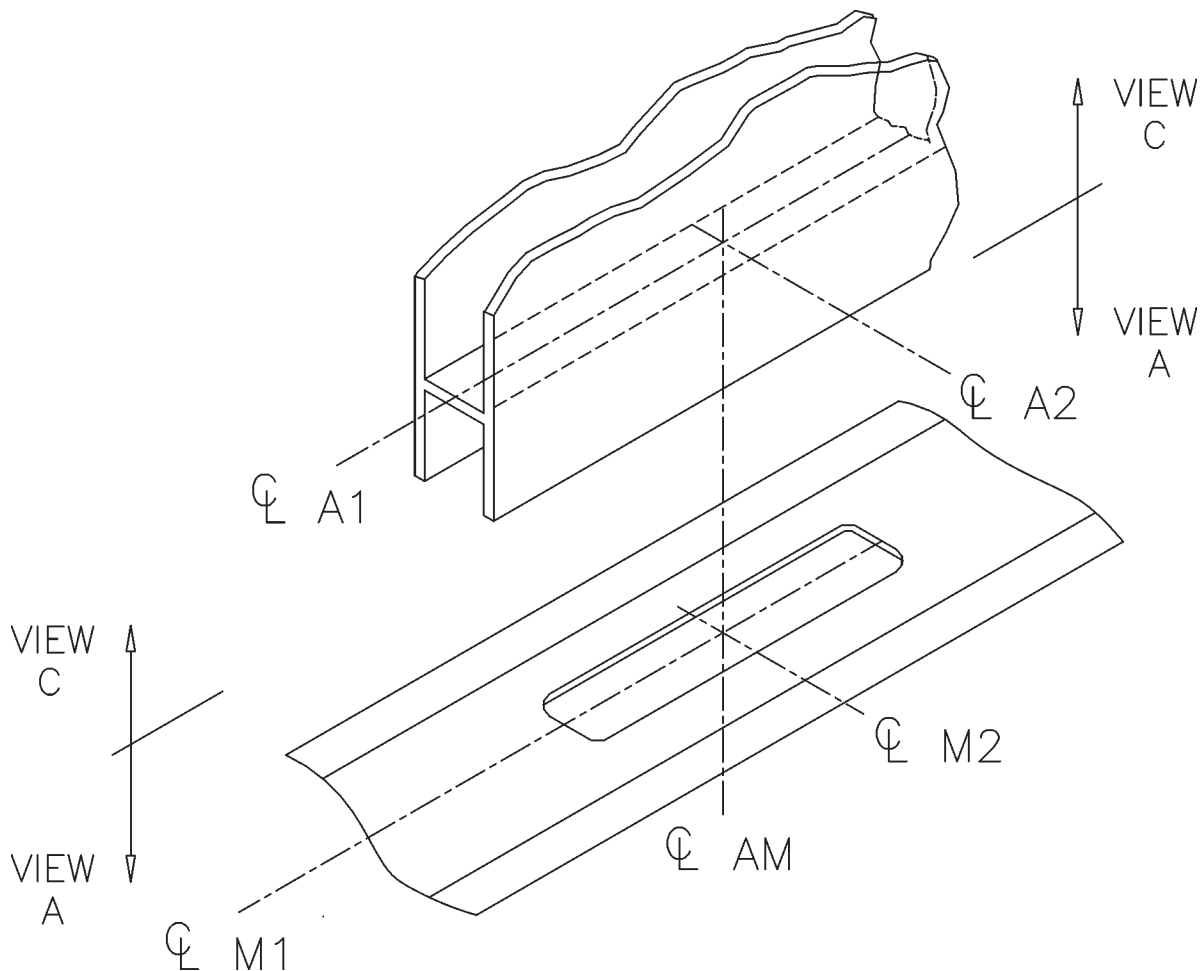


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 1) Establish Frame and Door Centerlines (BRD):

- For proper operation, it's critical to establish centerlines of the magnet and armature assembly that line up to form a vertical axis. The figure below shows the centerline scheme for a GF3000BRD. Note that centerlines for magnet (M1 and M2) are directly below centerlines for armature (A1 and A2) thus forming a vertical axis (AM).
- To achieve maximum resistance to forced entry, position unit closest to latch side of door.
- Adjusting screw must be accessible with a long bladed screwdriver when door is hung.
- Check both door & frame for any structural member or hardware component that might interfere with magnet and armature mounting areas before selecting template location.
- Existing hung doors will normally have to be removed for template application and armature installation.
- In some applications, the door and frame may require reinforcement.



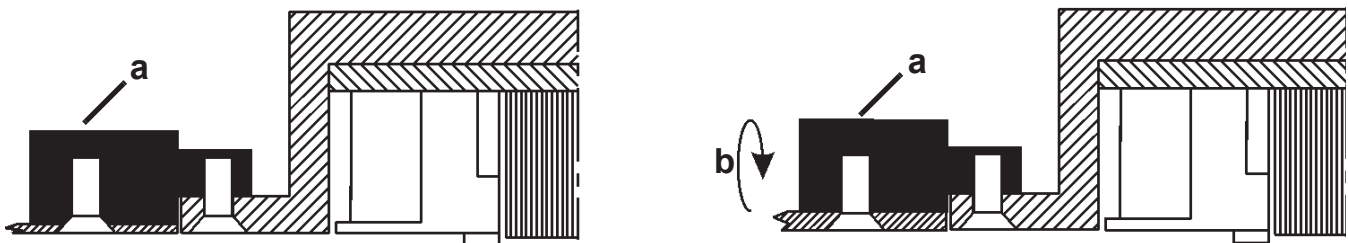
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Installing the Lock - Standard, TRD, TJ, SM

#### 1) Mounting Tabs (Standard, TRD):

Secure two mounting tabs (a) to ends of lock cutout in frame. Mounting tabs can be installed upside-down (b) so that they may be used with 16 gauge hollow metal or 1/8" thick aluminum frames.



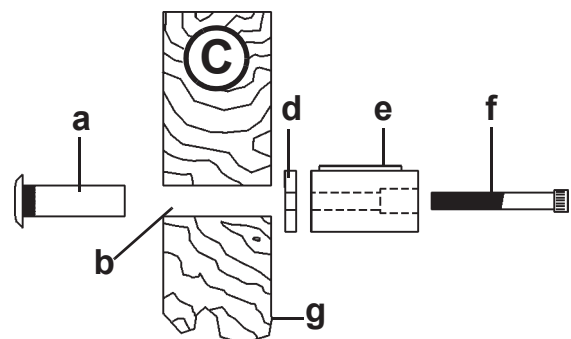
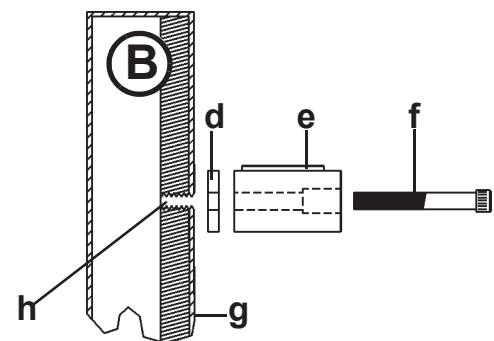
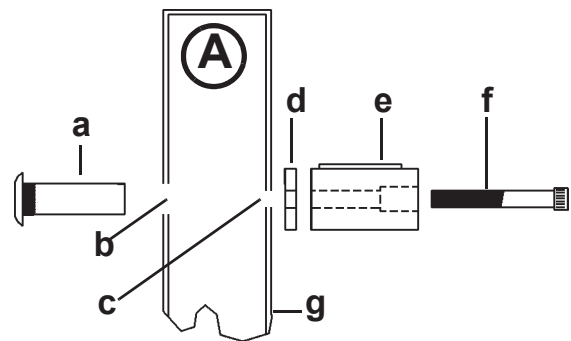
#### 2) Surface Mount Armature Housing Sex Bolt Hole Sizes (TJ, SM):

##### Door Types:

- A = Hollow Metal
- B = Reinforced
- C = Solid Wood

##### Hole Sizes and Parts:

- a = sex bolt
- b = 1/2" hole
- c = 1/4" hole
- d = mounting spacer
- e = armature
- f = 1/4-20 x 2
- g = inside of door
- h = 1/4-20 threaded hole (thru reinforced side of door only)





# GF3000 SERIES INSTALLATION MANUAL

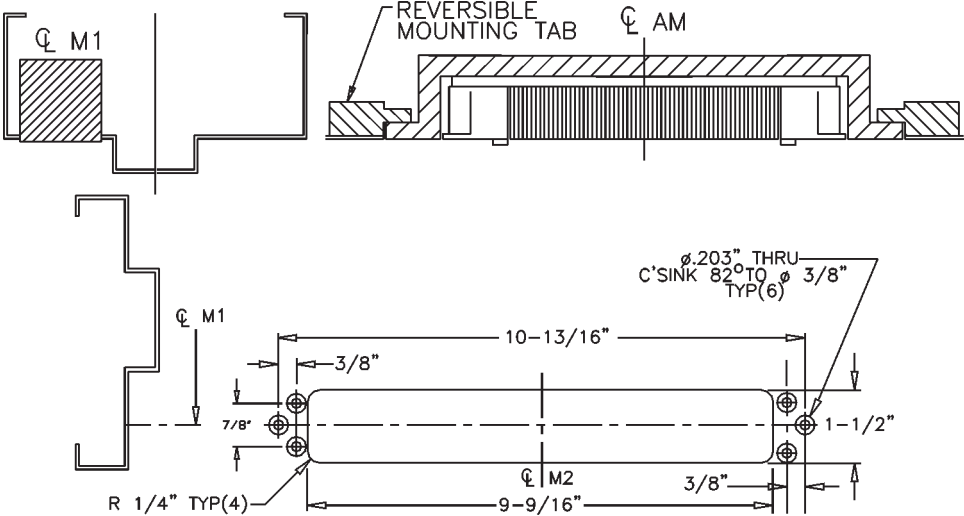
## Installing a GF3000 Series Lock

### • FRAME AND DOOR PREP - Standard, TRD, TJ, SM

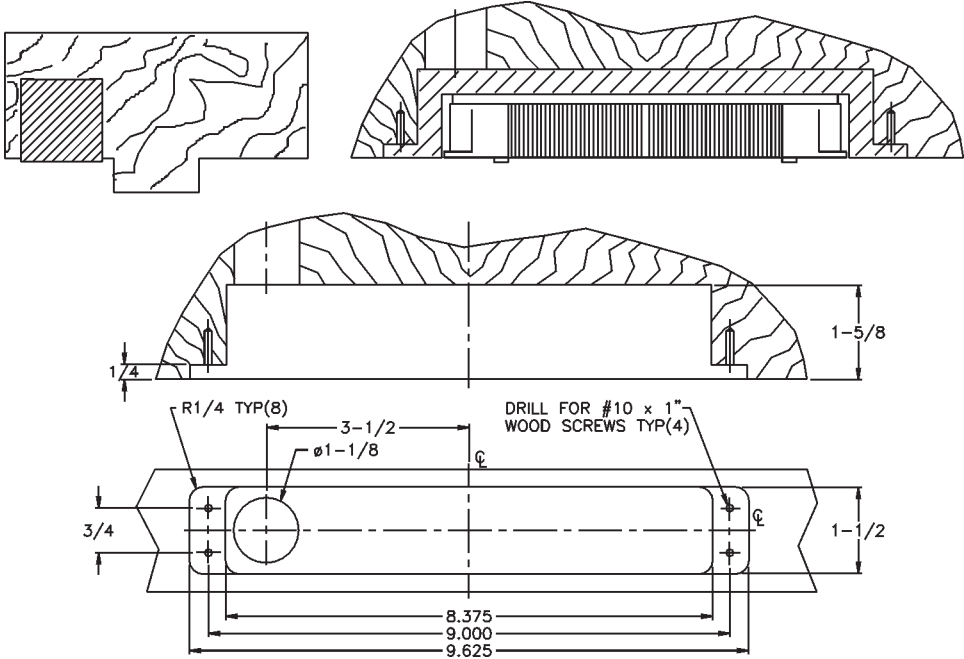
#### 3) Frame Prep (Standard and TRD):

- The frame prep is the same for the Standard and the TRD models. The door prep for the standard model has many options (see - ) depending on the depth of the channel (if any). The TRD model has a specific prep of its own (see - ). The lock should be located as close to the strike side as possible while still allowing room for the mounting tabs and screws.

#### Frame Prep - Hollow Metal or Aluminum



#### Frame Prep - Wood



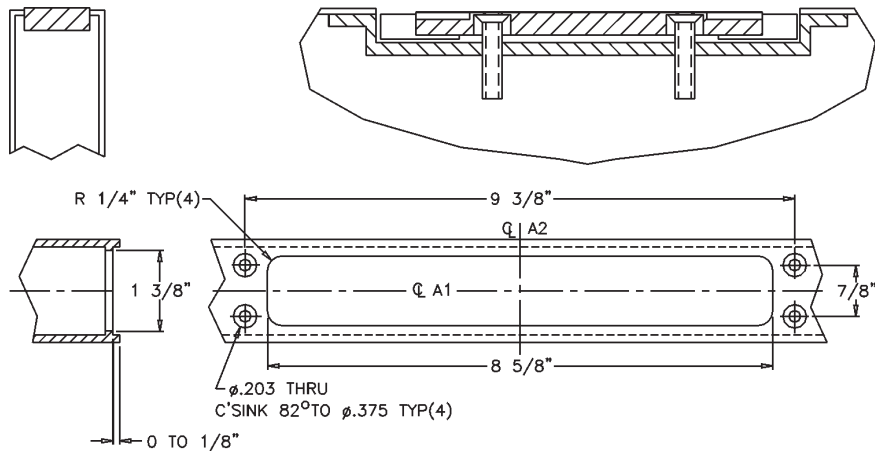
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 4) Door Prep (Standard and TRD):

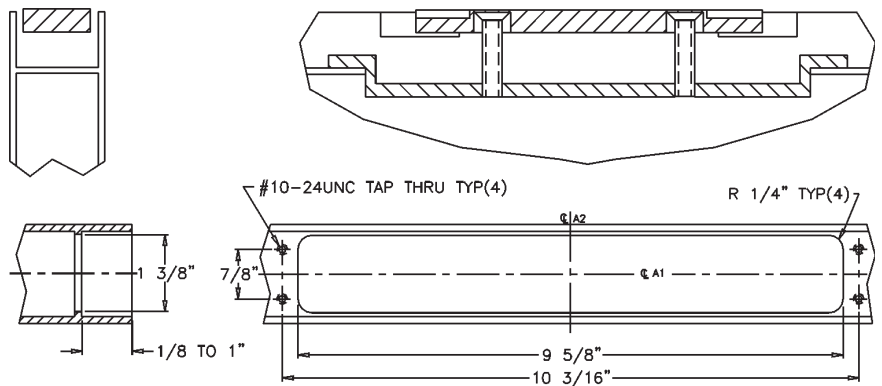
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: flush to 1/4"



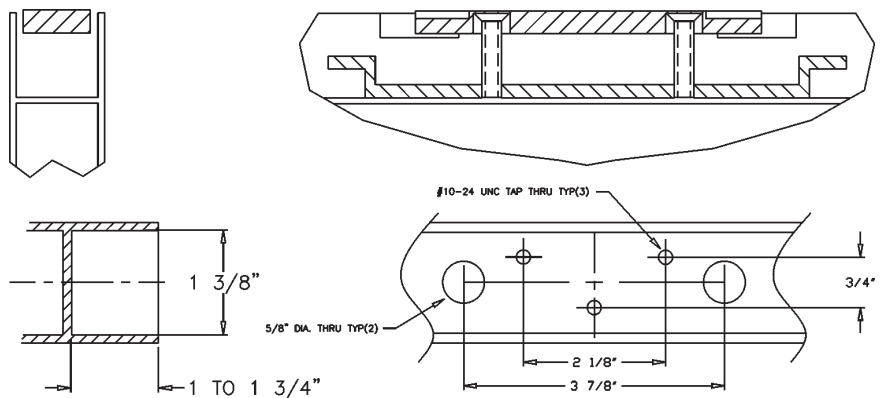
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1/4" to 1"



#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1/4" to 1-3/4"



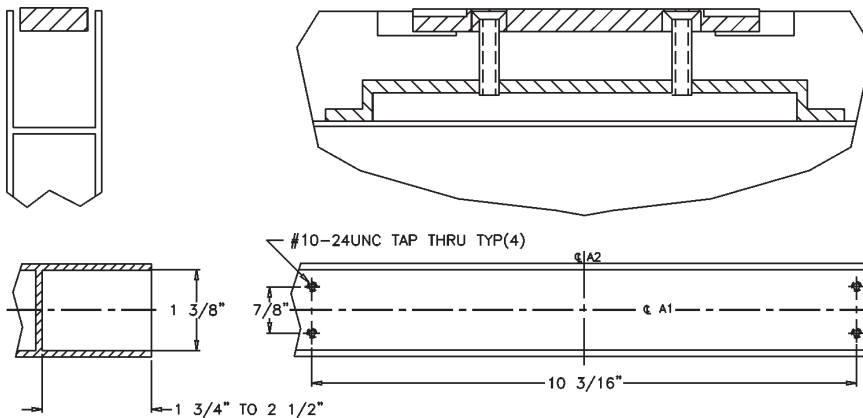
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Standard and TRD Door Prep (continued):

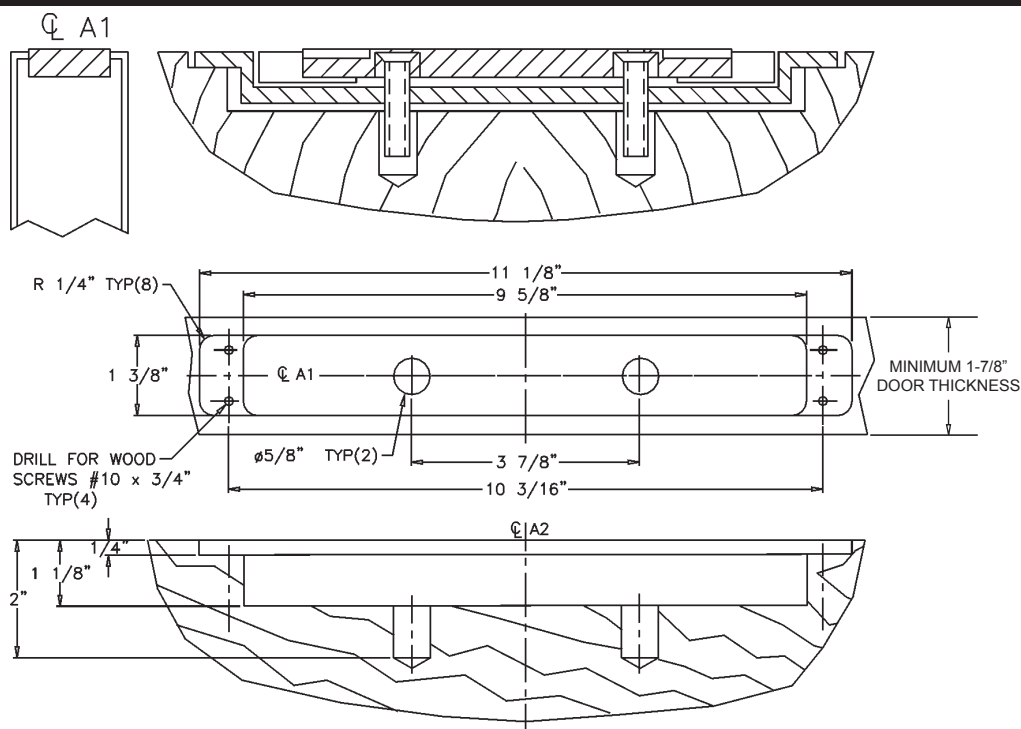
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1-3/4" to 2-1/2"



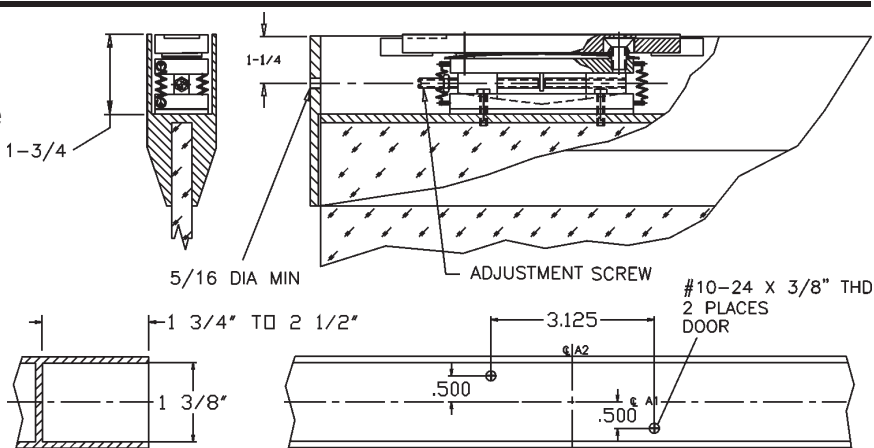
#### DOOR PREP

- Wood



#### DOOR PREP - TRD

- Hollow Metal or Aluminum door where the top adjustment is not accessible.
- Depth: 1-3/4"

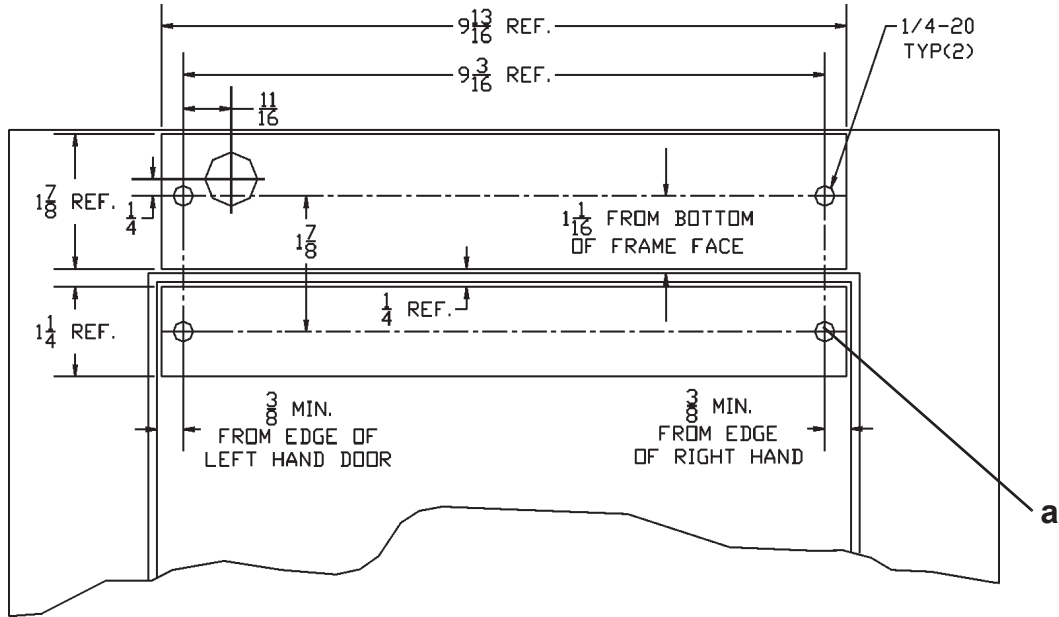


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 5) Template information (TJ):

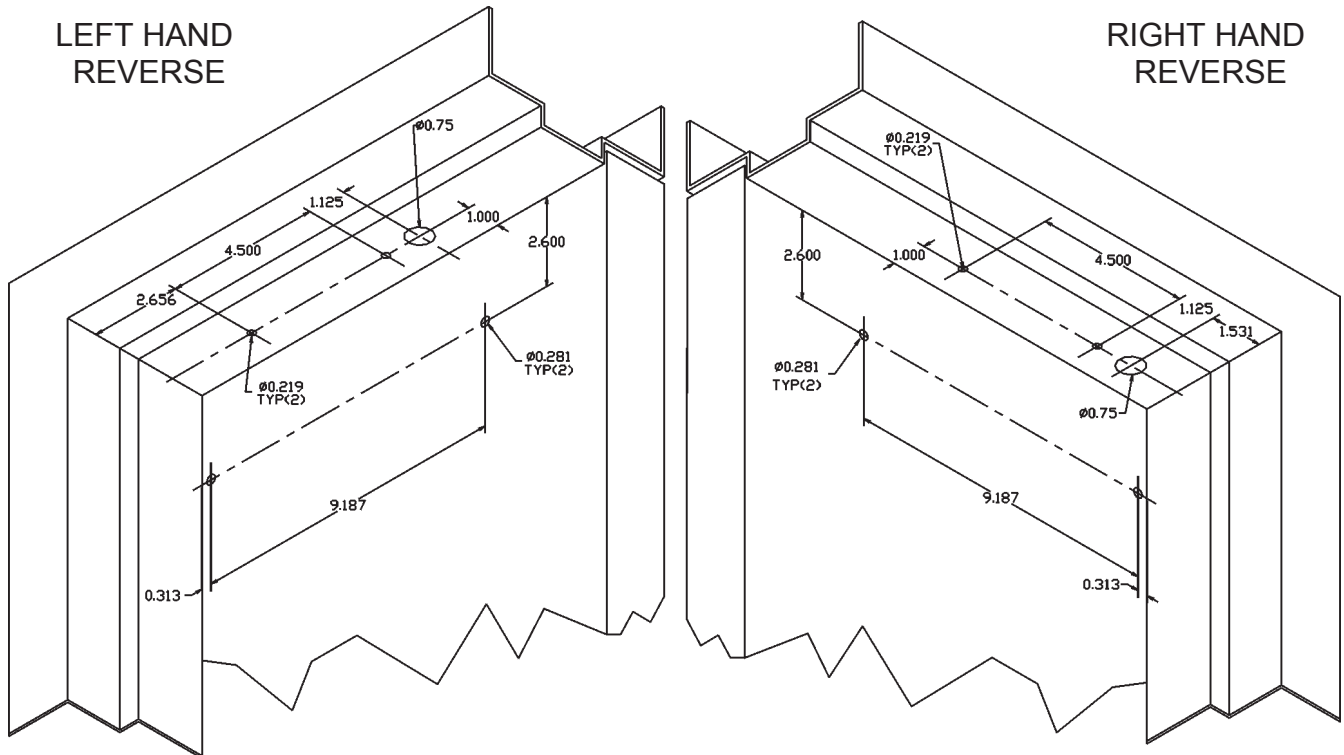
All dimensions in inches.



**NOTE:** Hole (a) - size and type depends on door type and mounting style.

### 6) Template information (SM):

All dimensions in inches.



# GF3000 SERIES INSTALLATION MANUAL

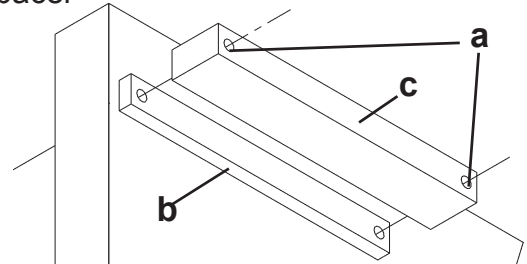
## Installing a GF3000 Series Lock

### Mounting the Lock - Standard, TRD, TJ, SM

After the door and frame have been prepared, do the following:

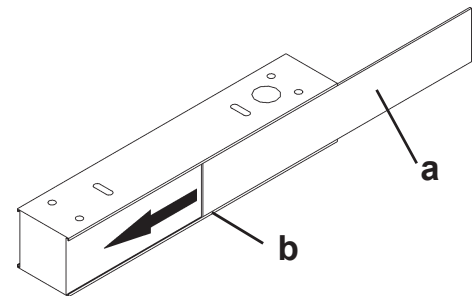
#### 1) Install Armature Mounting Spacer:

- Using two, 1/4 x 20 screws, secure mounting spacer (b) and armature housing (c) onto door.
  - > Use through-holes (a).



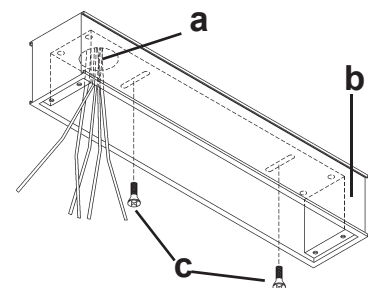
#### 2) Install Faceplate:

- Install faceplate (a) into magnet housing.
- Tighten set screws (b).



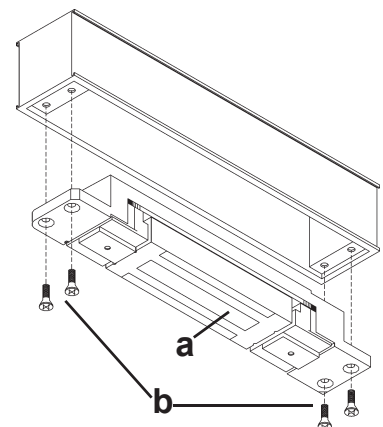
#### 3) Attach Magnet Housing to Frame:

- Carefully feed wires through access hole (a) in magnet housing (b).
- Using either two, 10 x 3/4 sheet metal screws or two, 10 x 1/2 machine screws (c), loosely attach magnet housing to frame.
  - > **DO NOT COMPLETELY TIGHTEN AT THIS TIME**



#### 4) Install Magnet:

- Make final wiring connections (see **Wiring Diagram: on page 21**).
- Insert GF3000 magnet (a) into magnet housing.
- Using four, 10-24 x 1/2 screws (b), secure mounting spacer and armature housing onto door.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Installing the Lock - BRD

#### • INSTALLING THE MAGNET AND ARMATURE

##### 1) Preparing the Floor for the GF3000BRD Magnet:

Since the GF3000BRD magnet is installed in the floor directly below the bottom rail of the door, a threshold box (that will hold the magnet) that is inset into a pocket (a) in the floor, and a trench (b) for the electrical conduit is required.

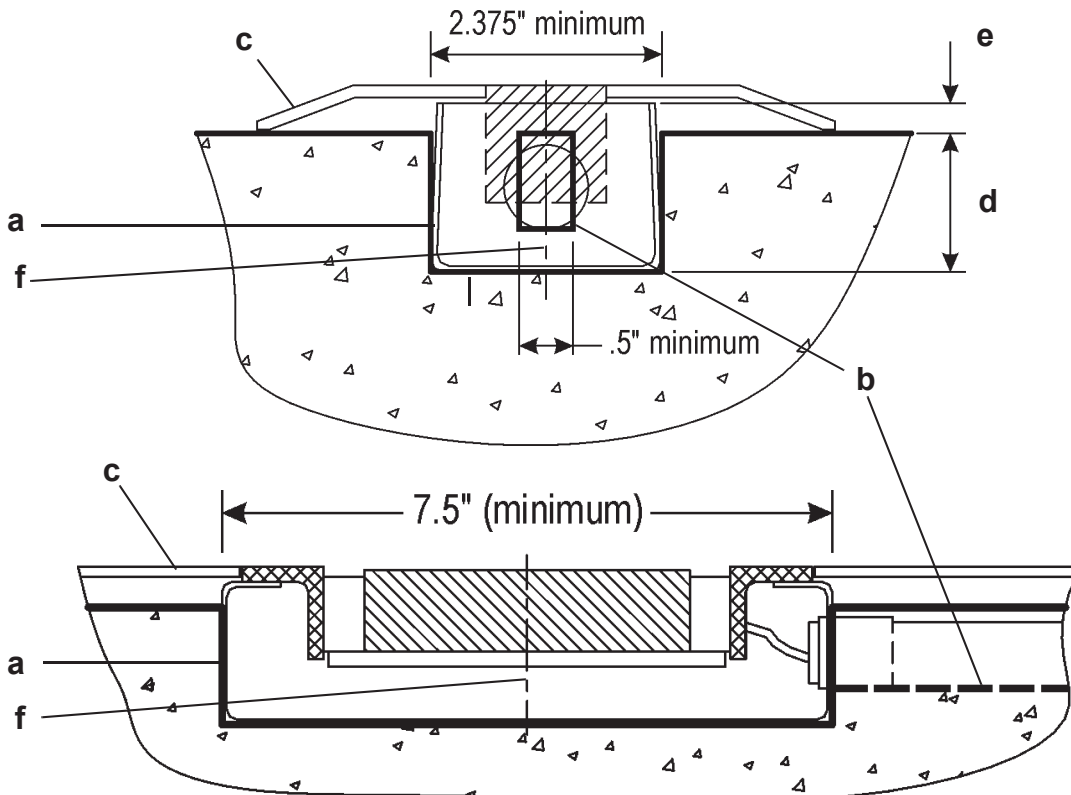
**NOTE: Retrofit Installations - You may find that conditions vary from site to site after the threshold plate (c) is removed. If a cement, stone, or other hard material is encountered, using a pavement breaker or demolition hammer might be useful for chiseling out the pocket and trench in the floor.**

Using tools applicable for conditions found at the site, create a pocket that is at least 2.375" wide x 7.5" long within the threshold area, centered directly below door's bottom rail and furthest away from hinges. Depth of this pocket (d) may vary from site to site. The guiding dimension for depth of the pocket is distance (e). Distance (e) is from top of the threshold box that is inset into the pocket to the underside of the threshold plate. Distance (f) is from centerline of the threshold box to the centerline of the door.

**IMPORTANT: Considerations to keep in mind for position of metal box are:**

- > When magnet and threshold are installed, magnet must not protrude above threshold.
- > You should be able to use box's shim washers to raise and lower magnet to proper level.
- > Box centerline (f) must be placed on centerline of door.

The trench for the conduit should be at least 1/2" wide and deep enough so that the conduit can be easily inserted into the 7/8" hole in end of box. Direction and length of the trench away from the metal box may vary from site to site.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

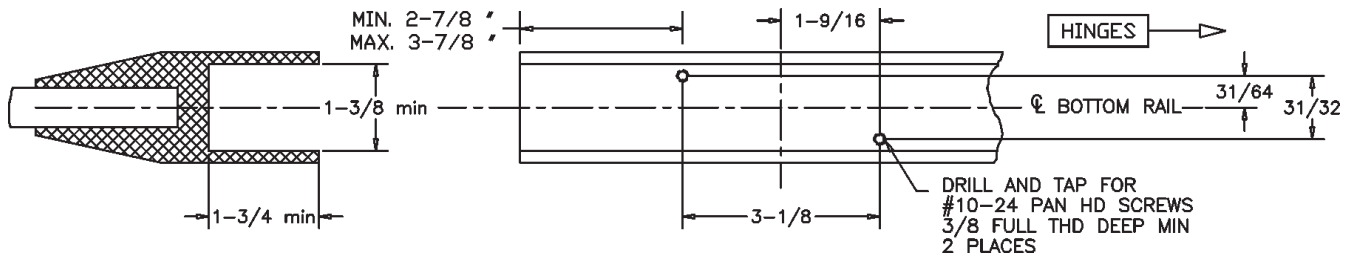
### 2) Installing the GF3000BRD Threshold Box:

After the pocket and trench are created, do the following:

- Feed 1/2" conduit into either 7/8" diameter hole in threshold box.
- Secure conduit with nut.
- Position box in pocket and conduit in trench.
- Pour concrete around threshold box and conduit and allow to cure.

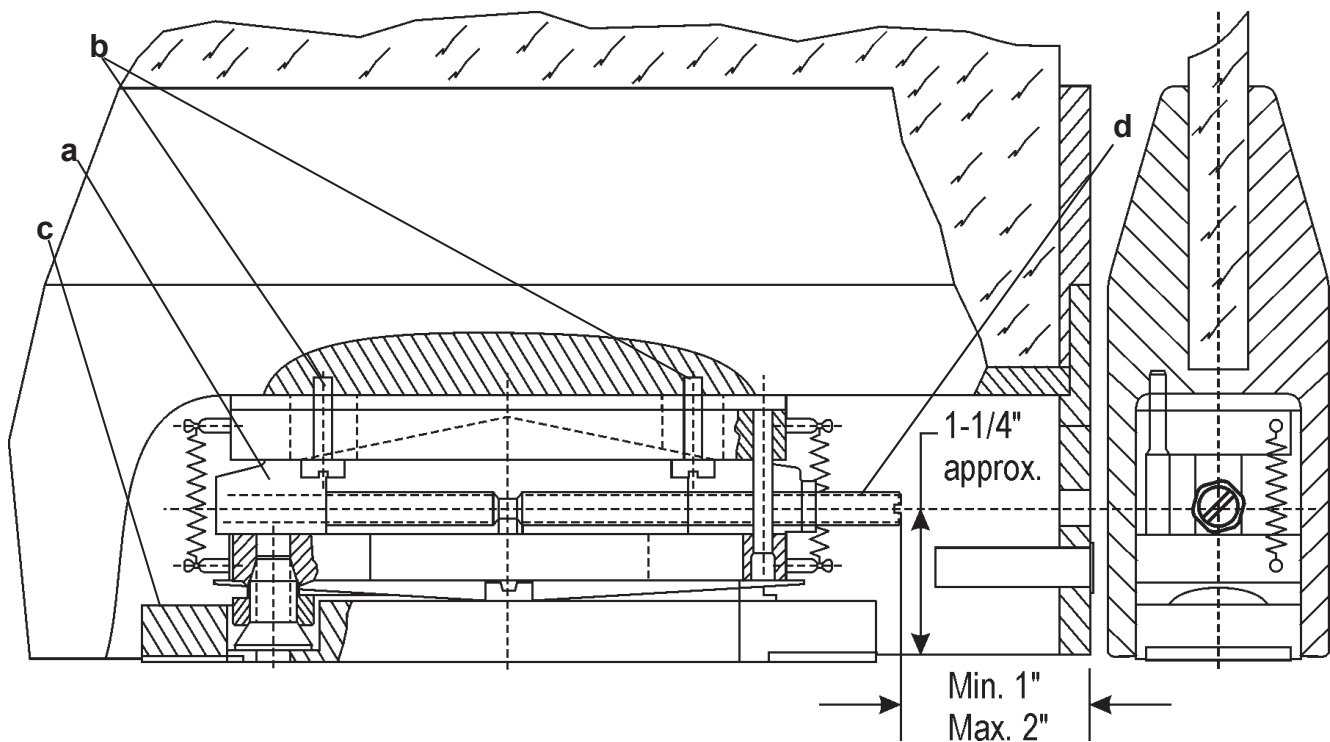
### 3) Preparing the Door for the Armature:

in the Door's Bottom Rail:



### 4) Mounting the GF3000BRD Armature in the Door's Bottom Rail:

- Mount armature mounting bracket assembly (a) to bottom rail using #10-24 x 3/4" Pan head screws (b) supplied.
- Mount armature assembly (c) to armature mounting bracket assembly (a)
- Remove end cap on door to expose adjusting screw (d). If door doesn't have a removable end cap, an access hole will have to be drilled in edge of door according to the approximate dimensions as shown.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

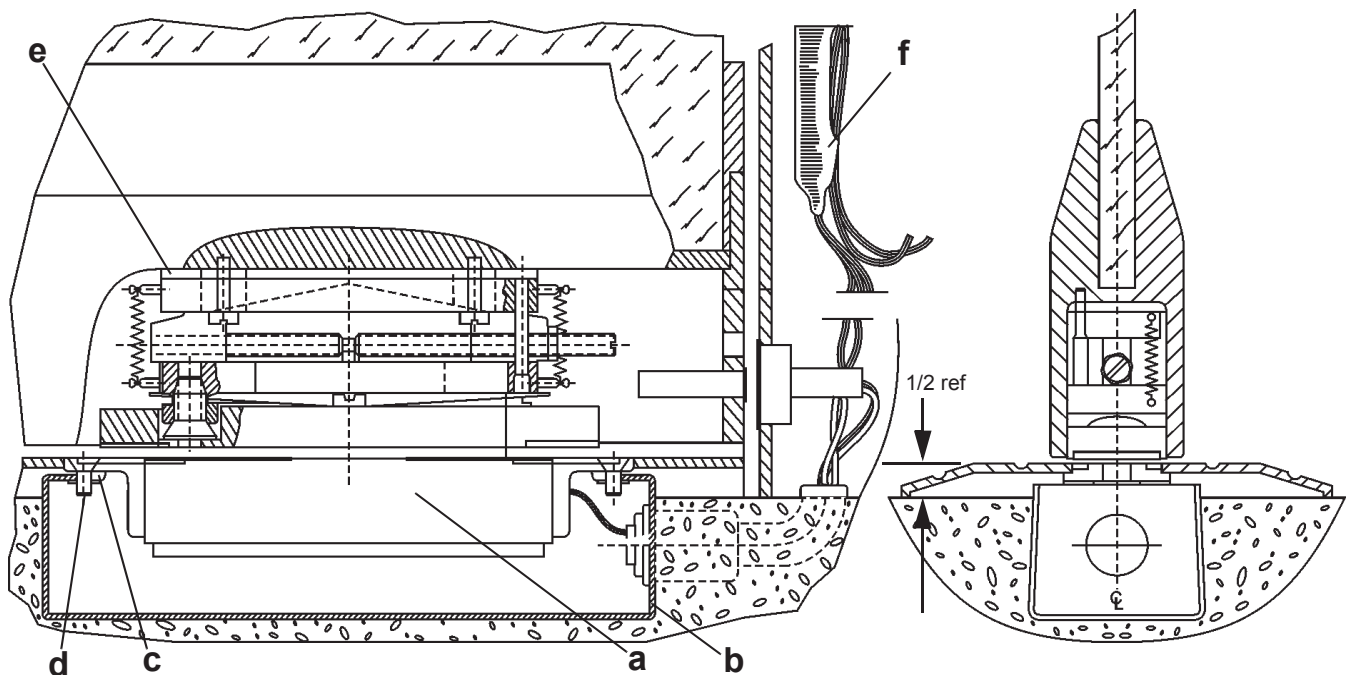
### 5) Mounting the GF3000BRD Magnet Into the Threshold Box:

- Mount magnet (a) to box (b) by placing two speed nuts (c) per slot, side by side in flanges of box.
- Line up magnet over speed nuts. Insert #10-24 x 1/2" flat head screws (d) into magnet brackets and through speed nuts. Align magnet, making sure centerlines of armature are on the centerlines of magnet. Tighten screws.
- If needed, add shims under magnet to bring magnet flush with top of threshold.

**NOTE: Top surface of magnet must not protrude above top surface of threshold.**

- Replace door on hinges.
- Adjust armature, using adjusting screw located in access hole so that the clearance gap of approx. 1/16" between magnet face and armature is achieved. It may be necessary to slightly re-adjust the gap to achieve proper locking action and spring return action when the magnet is de-energized.
- If door's bottom raildepth is greater than 1-3/4", spacers (e) may be needed (one, 1/8" thick spacer is supplied).
- Install door status switch into frame and actuating magnet into door (see **Door Status Monitor (DSM) - GF3000BRD on page 23.**).
- After all magnet adjustments have been completed, it is strongly recommended to fill the magnet box with a spray urethane foam insulation (available from most building supply companies) to keep water out.
- Make final wiring connections (see **Wiring Diagram: on page 22**

**NOTE: Mount Control Module (f) in a remote and dry location, and no more than 15 feet away from lock.**



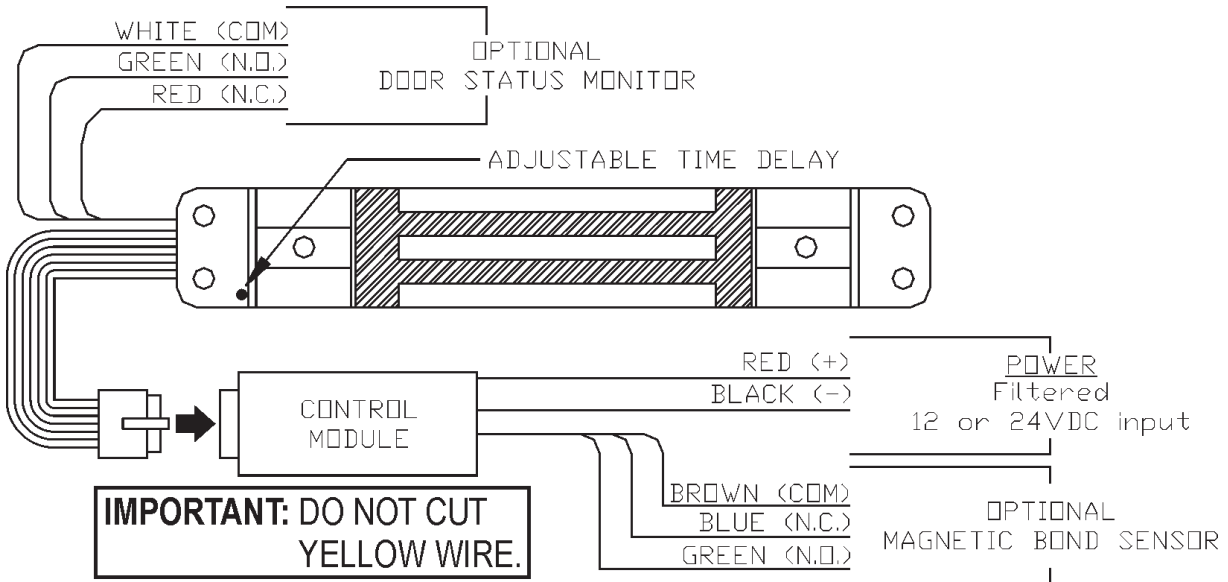


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Wiring the Lock-Standard, TRD, TJ, SM

#### 1) Wiring Diagram:



#### 2) Standard Features:

##### Operating Voltage

The GF3000 will operate only on filtered and regulated 12 or 24 volts DC. Automatic voltage selection circuitry is standard, eliminating the need for a voltage selection switch.

##### Automatic Relock Switch (ARS)

A built-in relock switch requires the door to be in the closed position before the magnet can be energized.

##### Adjustable Time Delay (ATD)

The ATD provides a time delay to relock that is adjustable from 2 to 30 seconds. The unit has been preset at the factory for a 3 second relock delay.

#### 3) To Adjust Relock Time Delay:

- 1) Refer to the wiring diagram above and note location of ATD arrow.
- 2) With door open, apply power.
- 3) Remove 5/64" hex head screw to allow access to recessed momentary pushbutton switch.
- 4) Using the hex wrench provided, depress and release the recessed switch one time for each second of delay required (max. =30 seconds/min.=2 seconds).

Example To set ATD to 5 seconds, depress the recessed switch 5 times.

**NOTE: If a mistake is made, wait 10 seconds, then repeat Step #4.**

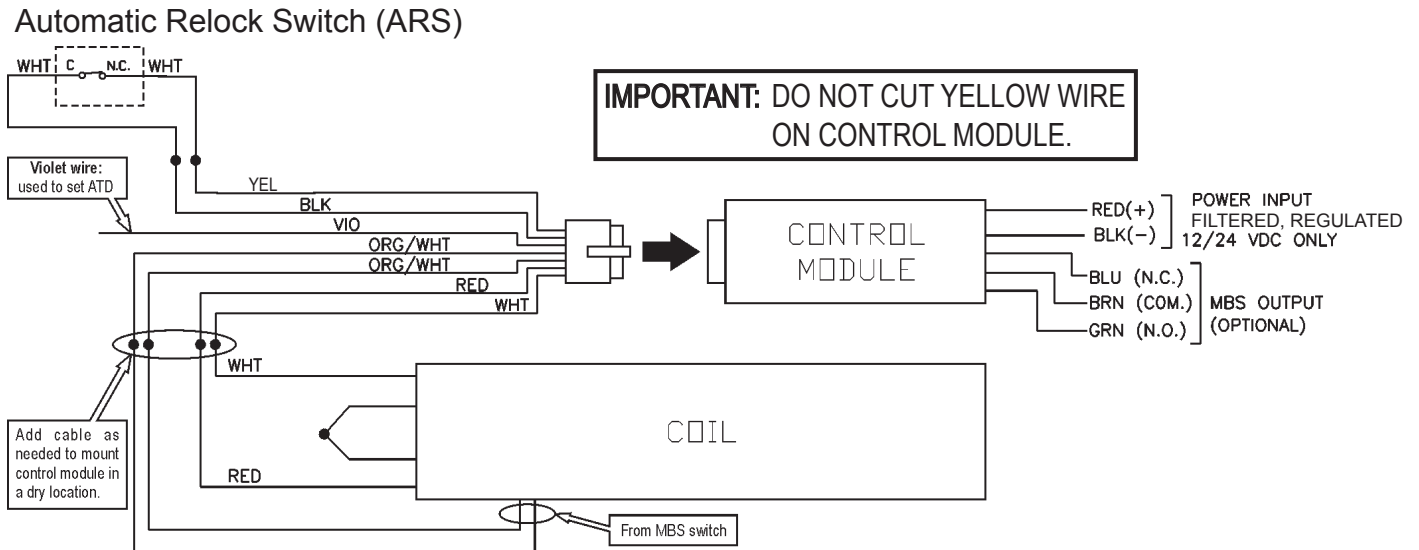
- 5) Reinstall hex head screw, after setting desired relock time delay.
- 6) Close door and verify delay.

# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Wiring the Lock - BRD

#### 1) Wiring Diagram:



#### 2) Standard Features:

##### Operating Voltage

The GF3000BRD will operate only on filtered and regulated 12 or 24 volts DC. Automatic voltage selection circuitry is standard, eliminating the need for a voltage selection switch.

##### Automatic Relock Switch (ARS)

A built-in relock switch requires the door to be in the closed position before the magnet can be energized.

##### Adjustable Time Delay (ATD)

The ATD provides a time delay to relock that is adjustable from 2 to 30 seconds. The unit has been preset at the factory for a 3 second relock delay.

#### 3) To Adjust Relock Time Delay:

- 1) Verify that the exposed yellow wire on the ARS is not shorting against anything.

**IMPORTANT: Do not cut yellow wire.**

- 2) With door open, apply power.
- 3) Touch the violet wire to the black ARS wire one time for each second of delay required (maximum = 30 seconds, minimum = 2 seconds).

Example To set ATD to 5 seconds, touch the violet wire to the black ARS wire 5 times.

**NOTE: If a mistake is made, wait 10 seconds, then repeat Step #4.**

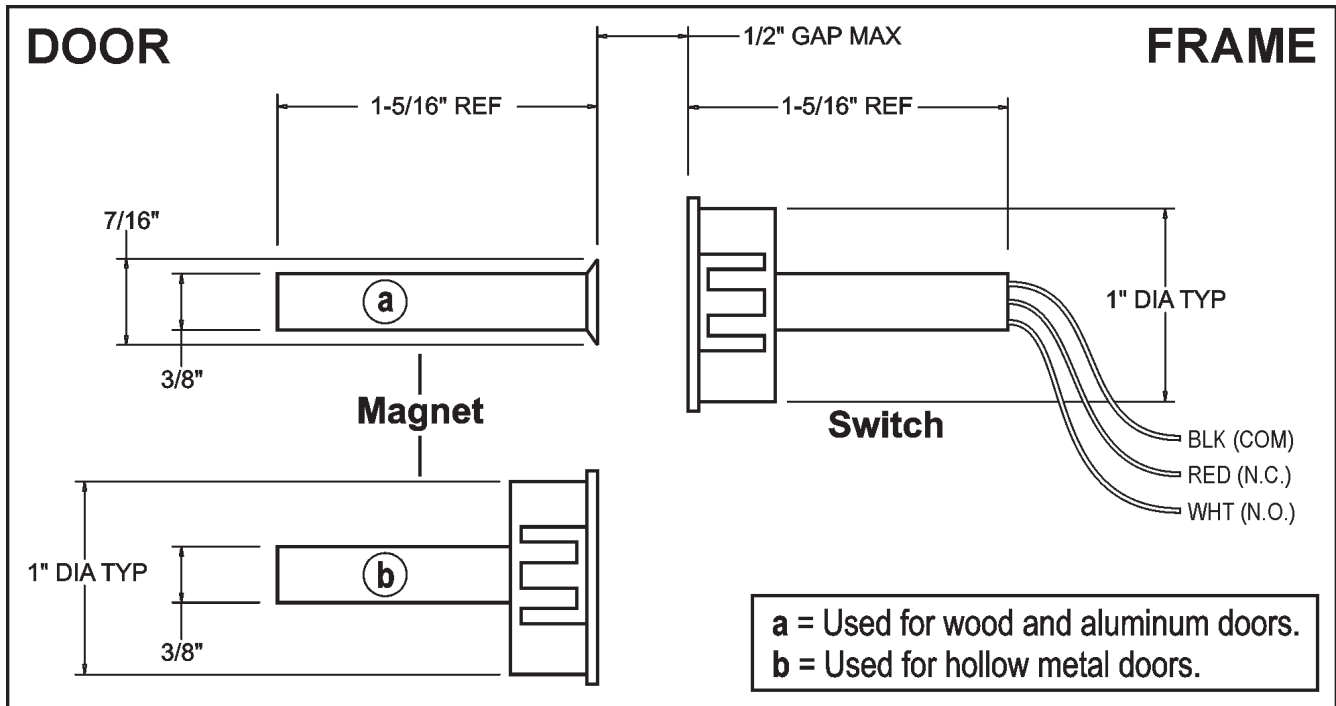
**NOTE: A pushbutton switch may be used if desired.**

- 4) Properly insulate the violet wire after setting desired relock time delay.
- 5) Close door and verify delay.
- 6) If OK, permanently connect and insulate the yellow wire on the ARS.

# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Door Status Monitor (DSM) - GF3000BRD



- Hole for switch: 1" diameter in frame.
- Hole for magnet:
  - > (a) Wood or Aluminum doors - 3/8" diameter
  - > (b) Hollow metal doors - 1" diameter
- Installation of magnet and switch must be concentric (common centerline).
- Switch insertion: snap-in fit.
- Magnet insertion:
  - > Wood or aluminum doors - press-in fit
  - > Hollow metal doors - snap-in fit
- If necessary, use epoxy.
- Contact Type: Single Pole/Double Throw (SPDT)
- Contact Rating: 28VDC @ 300 mA (max)
- With door closed, no more than 1/2" air gap is allowed between switch and magnet.

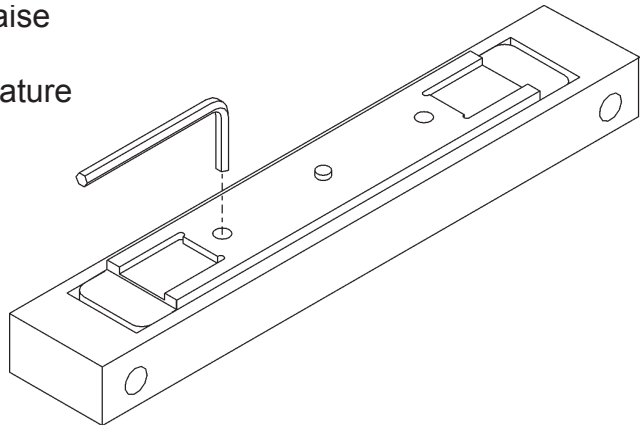
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Air Gap Adjustment

#### 1) Set Armature Height:

- Using the provided 7/32 hex wrench, raise or lower the armature as needed.
  - > Clearance between magnet and armature is recommended to be 1/8", and must be less than 1/4".

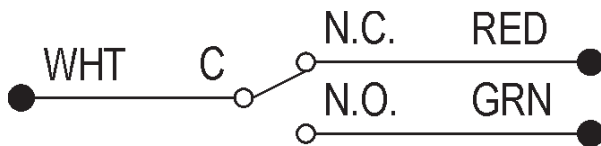


### Options

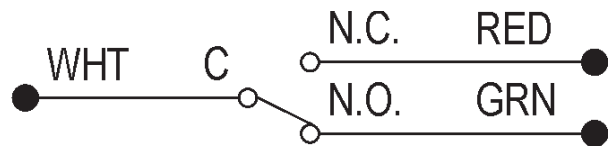
#### 1) Optional Monitoring Outputs:

##### Door Status Monitor (DSM)

The optional DSM provides a dry set of contacts for monitoring “door open” or “door closed” conditions.



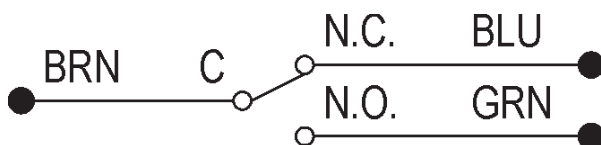
Door Open



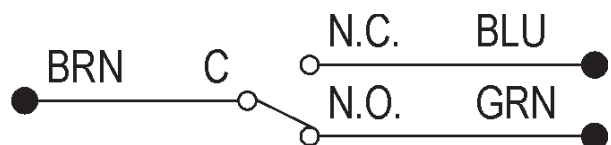
Door Closed

##### Magnetic Bond Sensor (MBS)

The optional MBS provides a dry set of contacts for monitoring “door locked” or “door unlocked” conditions. The MBS measures the magnetic holding force between the armature and the magnetic coil. Poor magnetic bond is the result of low voltage, foreign material between the surfaces of the magnetic coil and armature, or improper alignment of magnet and armature.



Poor Magnetic Bond



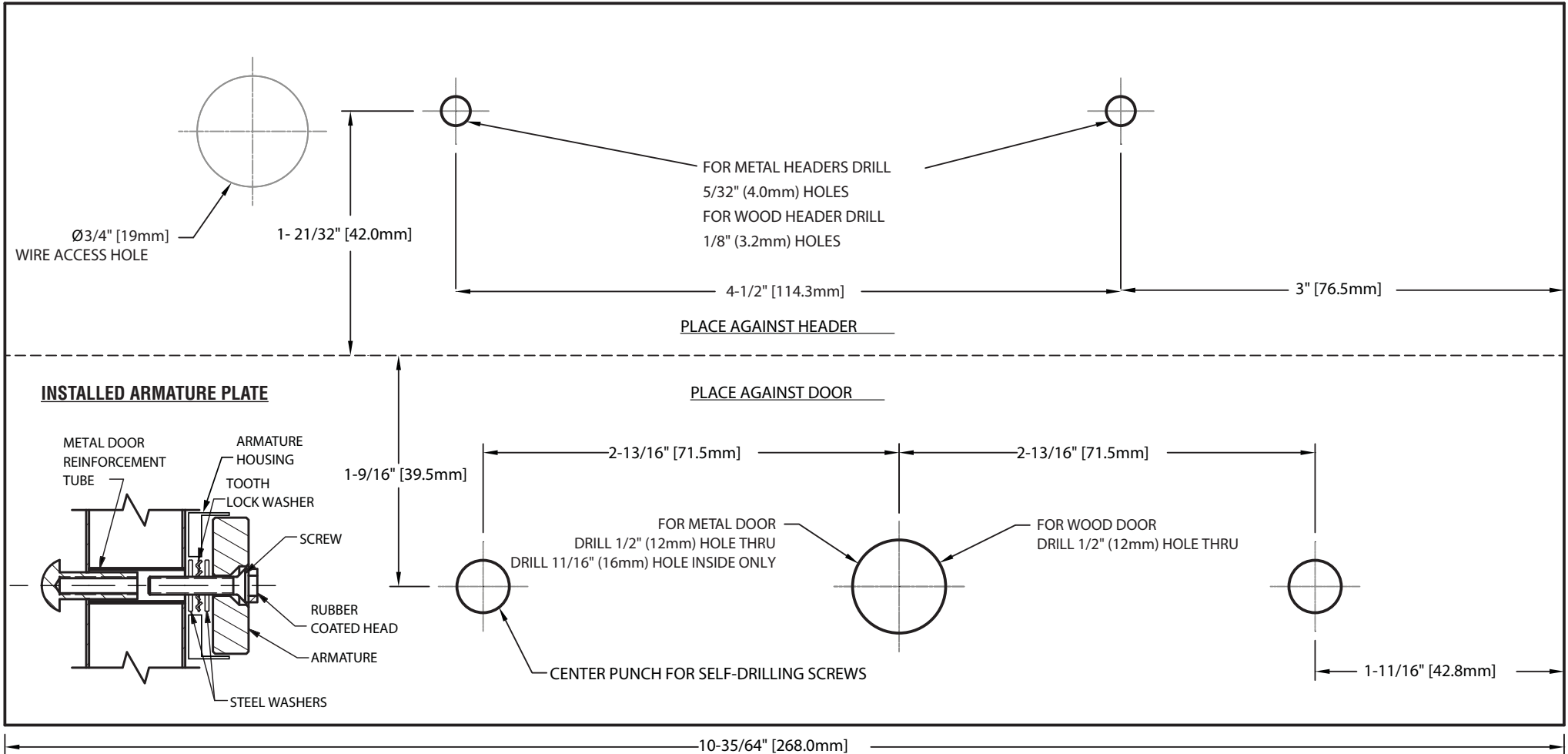
Good Magnetic Bond



24229445



# M390RFK ELECTROMAGNETIC LOCK INSTALLATION TEMPLATE



**WARNING:** Improper installation, maintenance, inspection or usage of the product or any related accessories or parts may cause the electromagnetic lock, armature plate and associated hardware to disengage and fall, causing serious bodily injury and property damage. Schlage will not be liable to the installer, purchaser, end user or anyone else for damage or injury to person or property due to improper installation, care, storage, handling, maintenance, inspection, abuse, misuse or act of God or nature involving this product or any related accessories or parts.





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# M400 Series Electromagnetic Locks





Retrofit Template Overlays

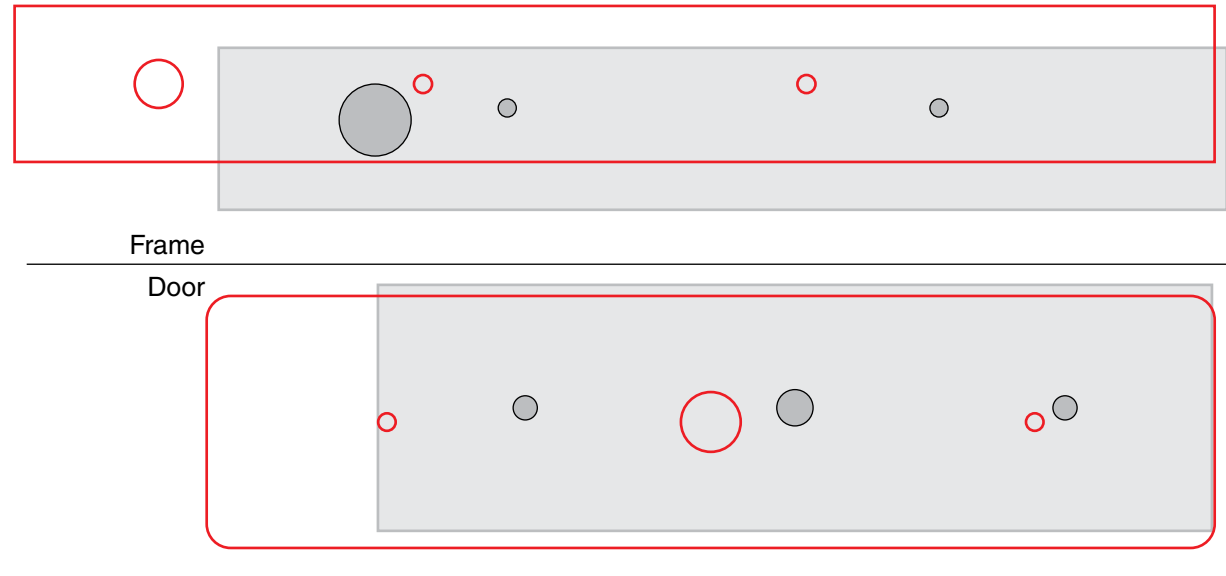
## Contents

- 2 390 Single to M490 Single
- 3 350 Single to M450 Single
- 4 320 Single to M420 Single
- 5 392 Double to M492 Double
- 6 352 Double to M452 Double
- 7 322 Double to M422 Double
- 8 390DEL to M490DEL
- 9 390TJ Single to M490TJ Single
- 10 350TJ Single to M450TJ Single
- 11 320TJ Single to M420TJ Single
- 12 392TJ Double to M492TJ Double
- 13 352TJ Double to M452TJ Double
- 14 322TJ Double to M422TJ Double
- 15 390G to M490G

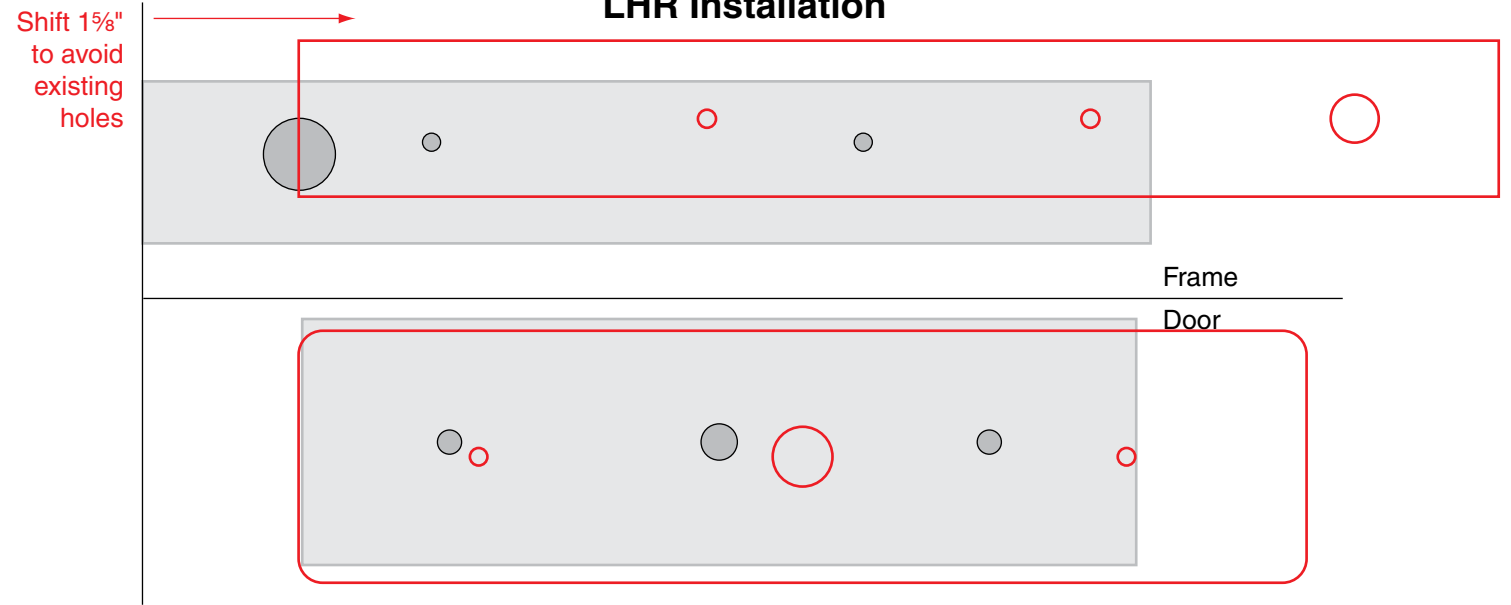
# 390 Single to M490 Single

	<b>Retrofitting From:</b> 390 Single
	<b>To New Lock:</b> M490 Single



## RHR Installation



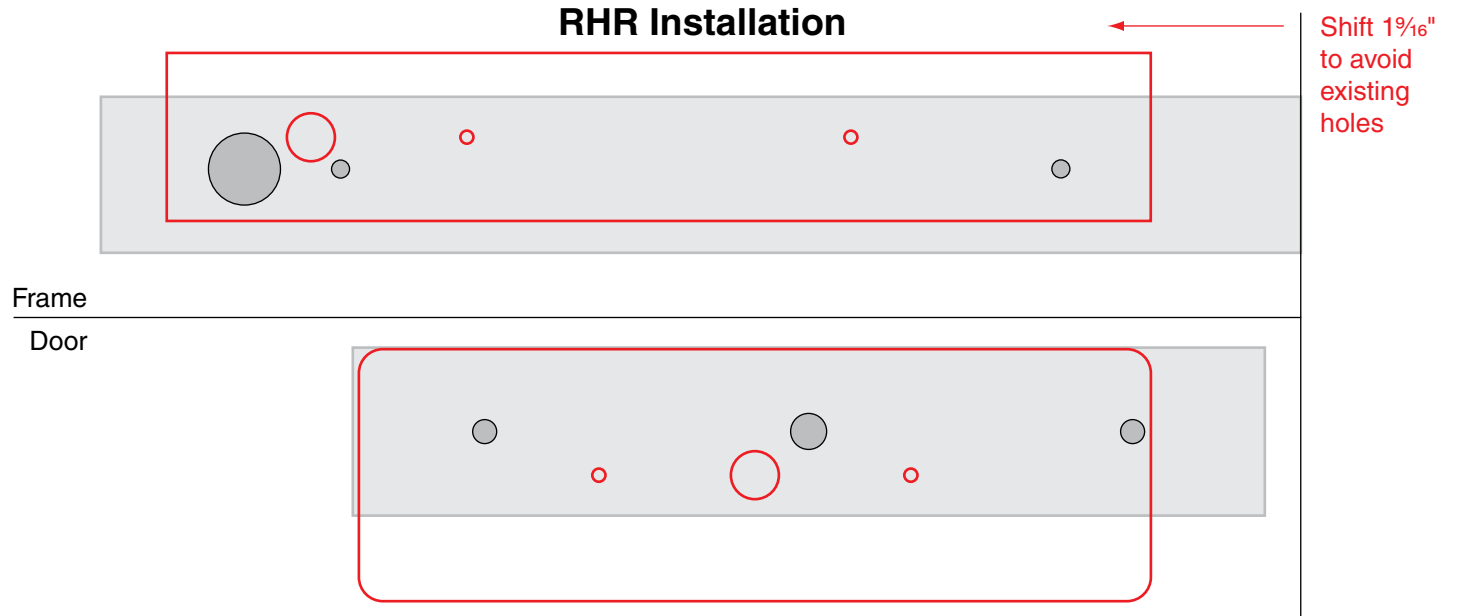
## LHR Installation



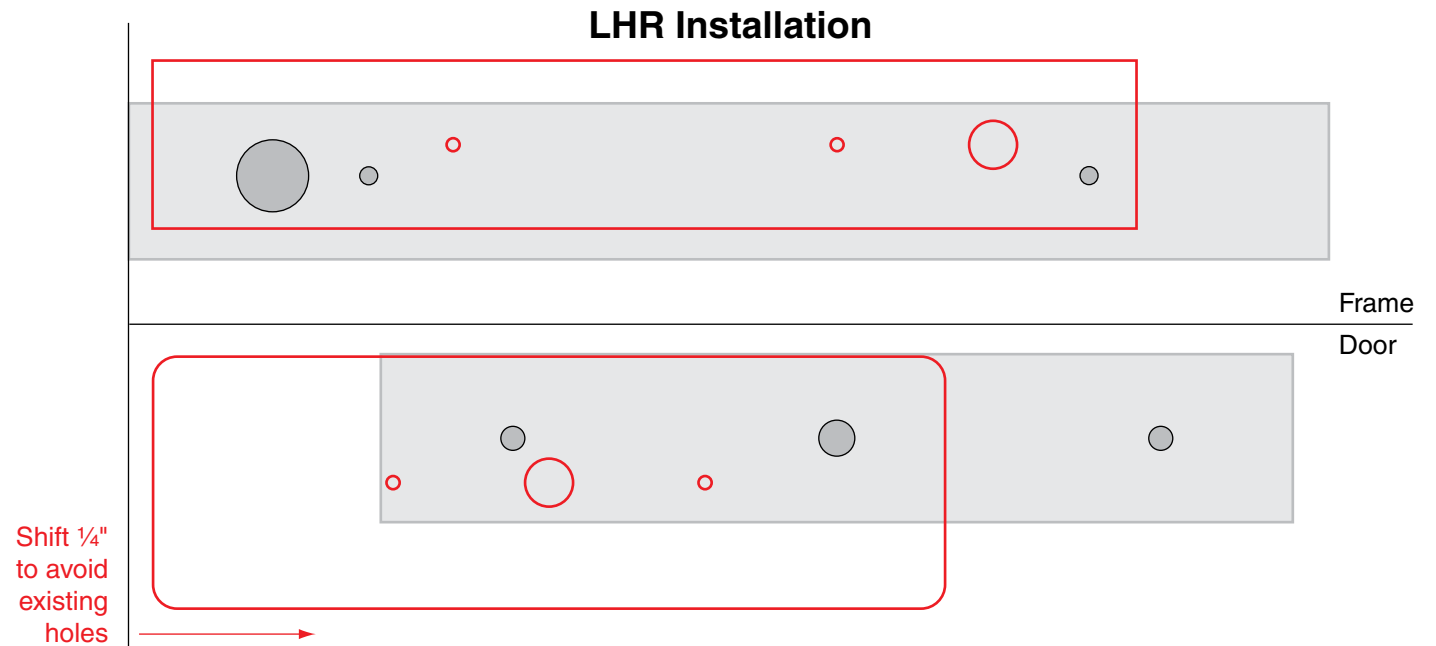
# 350 Single to M450 Single

	<b>Retrofitting From:</b> 350 Single
	<b>To New Lock:</b> M450 Single

## RHR Installation





## LHR Installation





# 320 Single to M420 Single

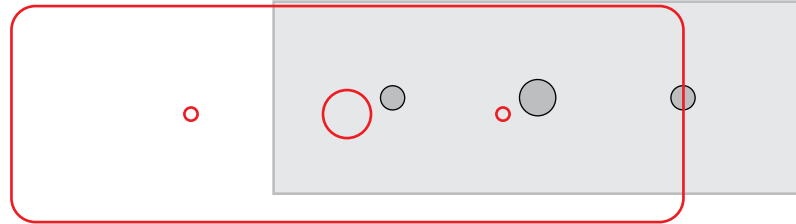
	<b>Retrofitting From:</b> 320 Single
	<b>To New Lock:</b> M420 Single

## RHR Installation



Frame

Door



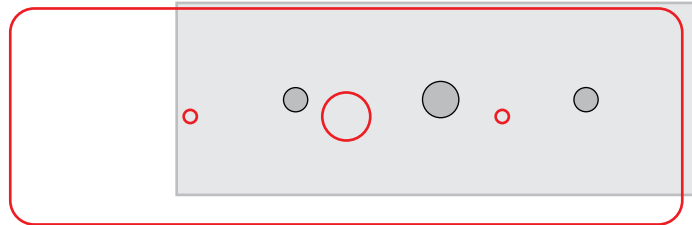
## LHR Installation

Shift 1" to avoid existing holes





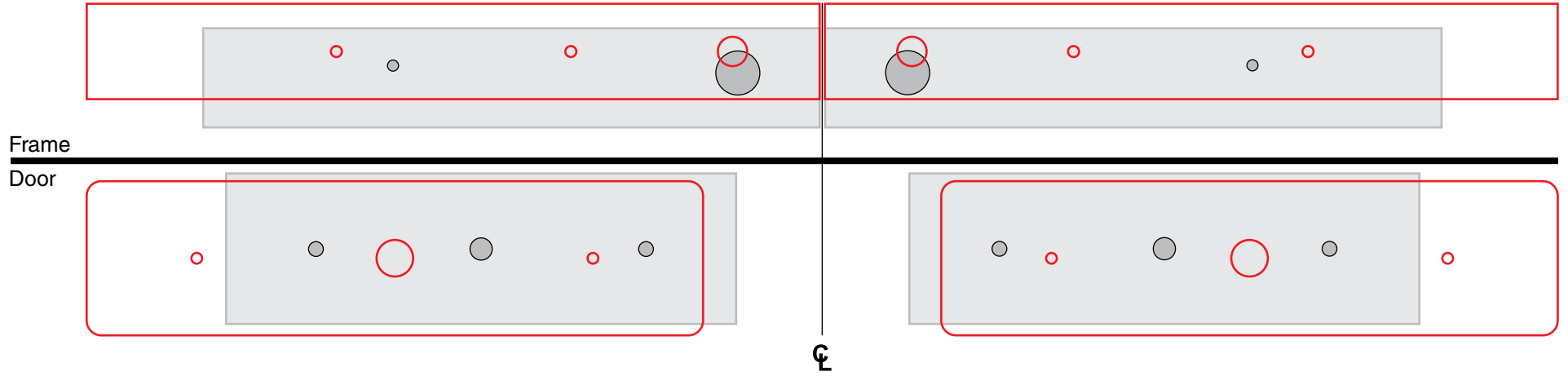
Frame

Door





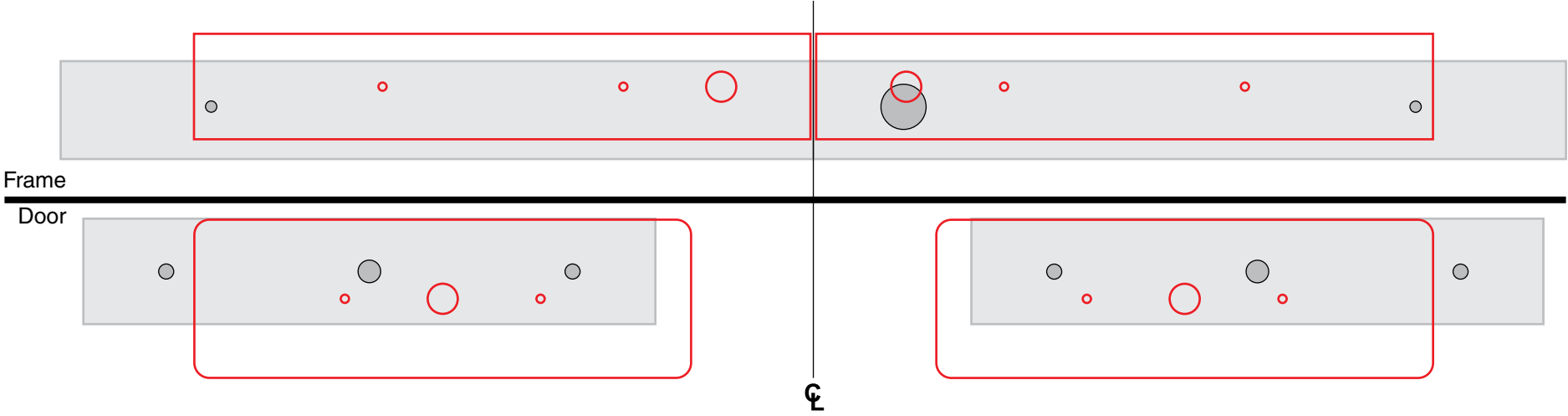
# 392 Double to M492 Double

	<b>Retrofitting From:</b> 392 Double
	<b>To New Lock:</b> M492 Double





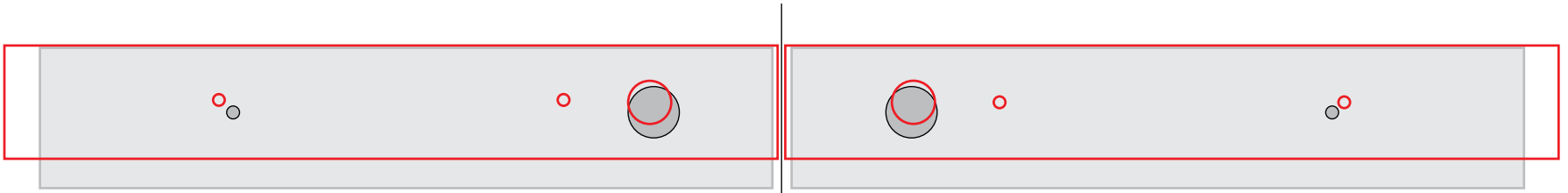
352 Double to M452 Double

	<b>Retrofitting From:</b> 352 Double
	<b>To New Lock:</b> M452 Double



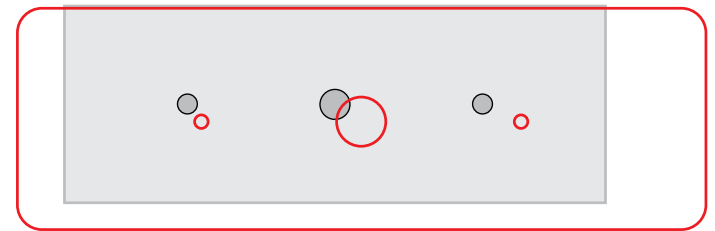
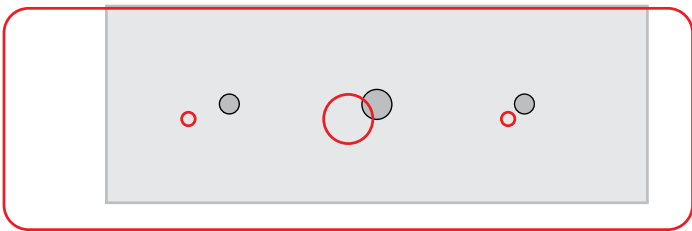
# 322 Double to M422 Double

	<b>Retrofitting From:</b> 322 Double
	<b>To New Lock:</b> M422 Double





Frame

Door



£

	<b>Retrofitting From:</b> 390DEL
	<b>To New Lock:</b> M490DEL

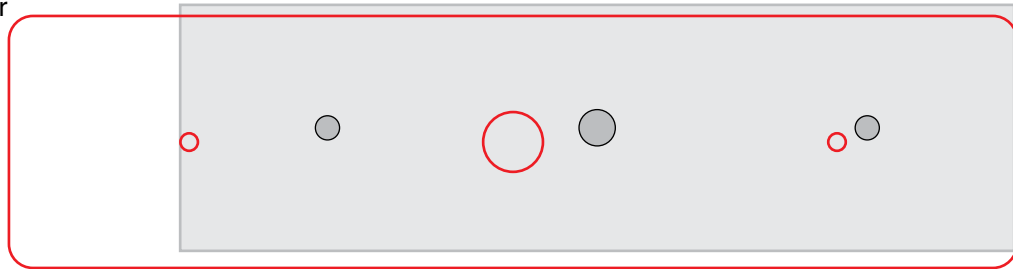
### RHR Installation



Shift 1/8" to avoid existing holes

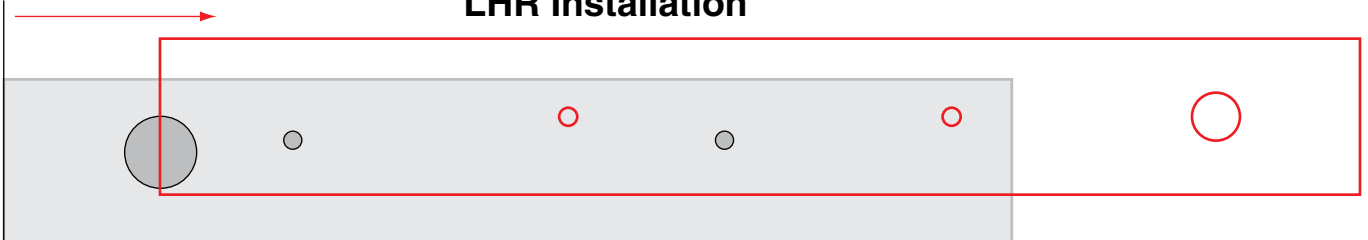
Frame

Door



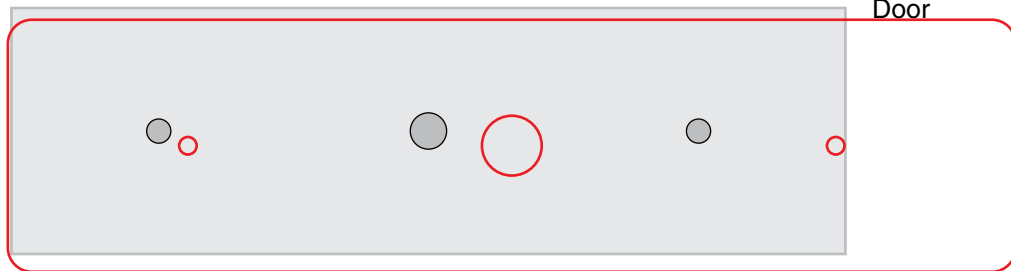
### LHR Installation

Shift 1 5/8" to avoid existing holes





Frame

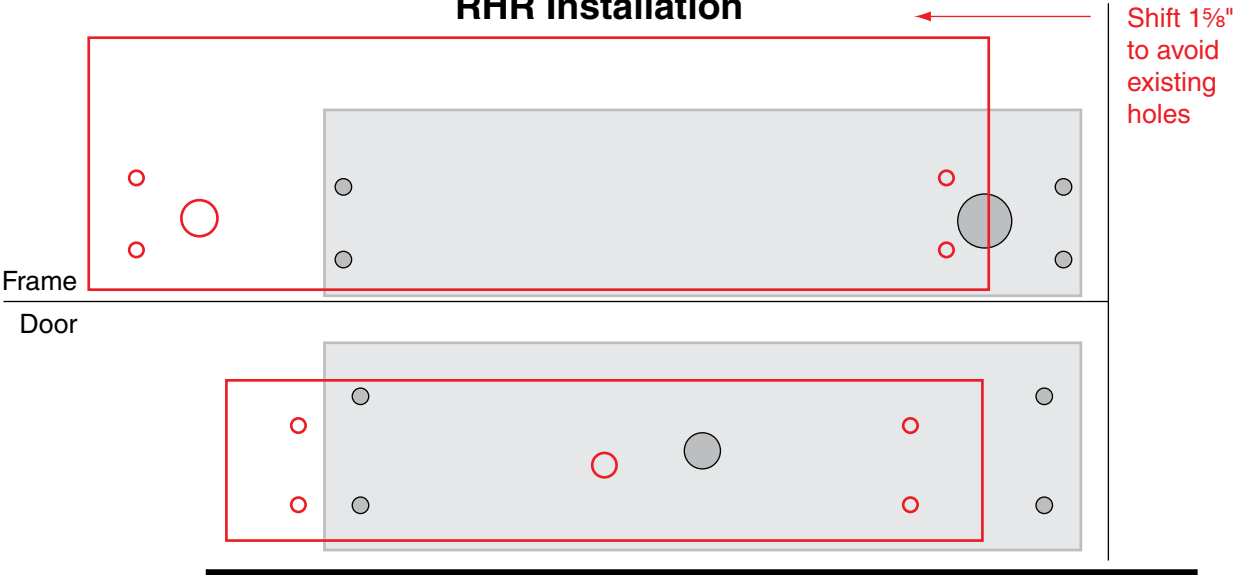
Door



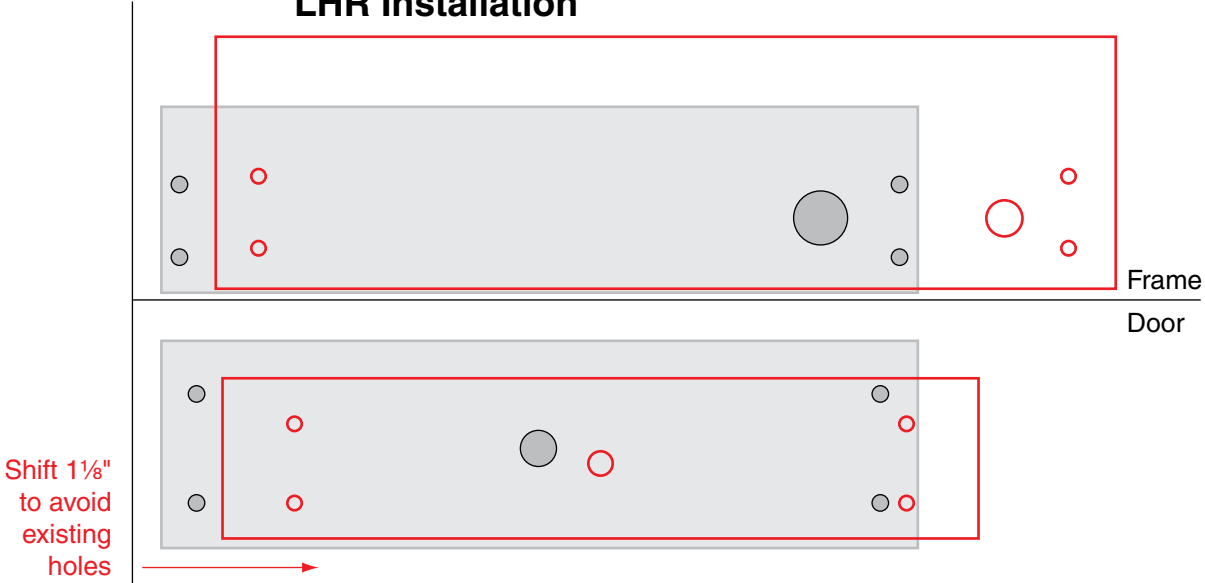
390TJ Single to M490TJ Single

	<b>Retrofitting From:</b> 390TJ Single
	<b>To New Lock:</b> M490TJ Single



**RHR Installation**



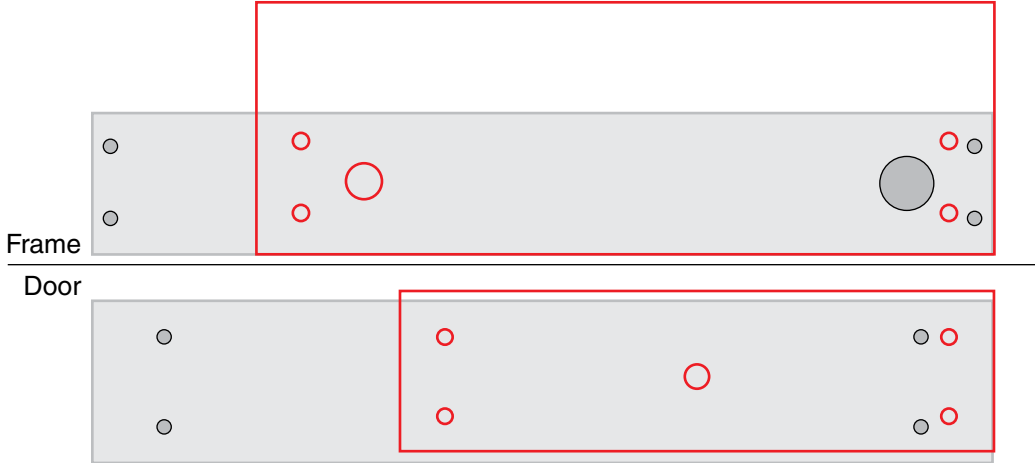
**LHR Installation**



350TJ Single to M450TJ Single

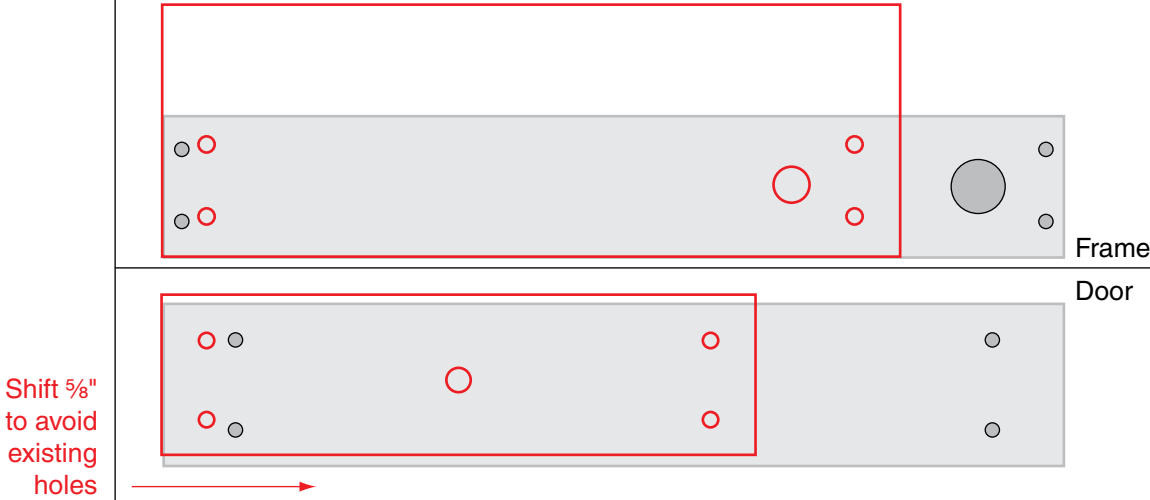
	<b>Retrofitting From:</b> 350TJ Single
	<b>To New Lock:</b> M450TJ Single

**RHR Installation**





Shift 5/8" to avoid existing holes

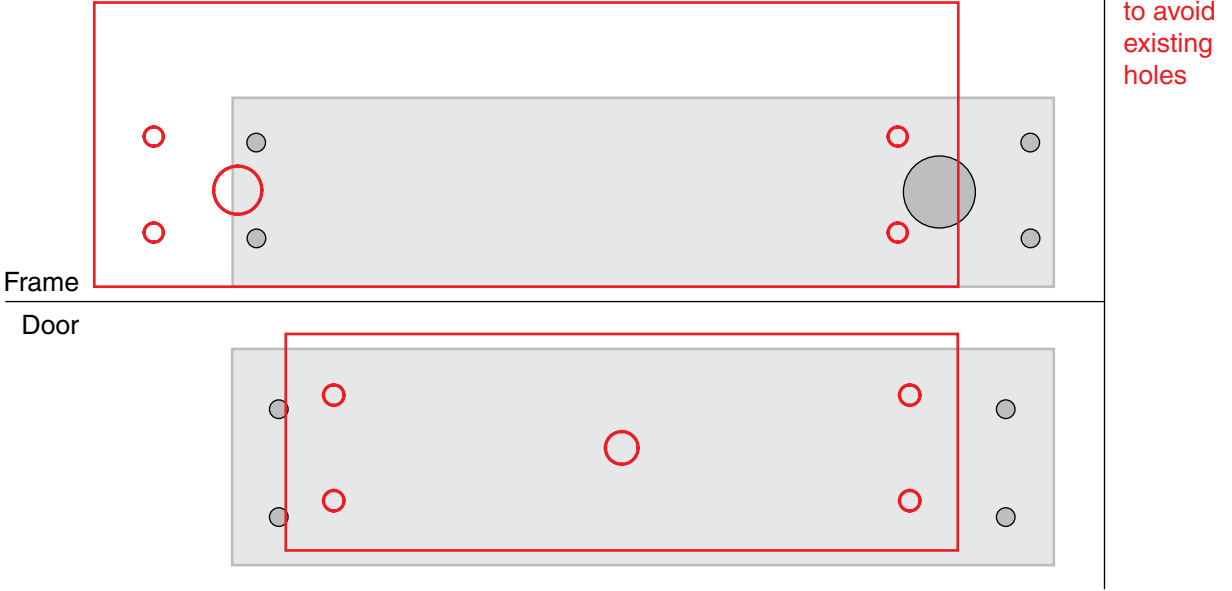
**LHR Installation**



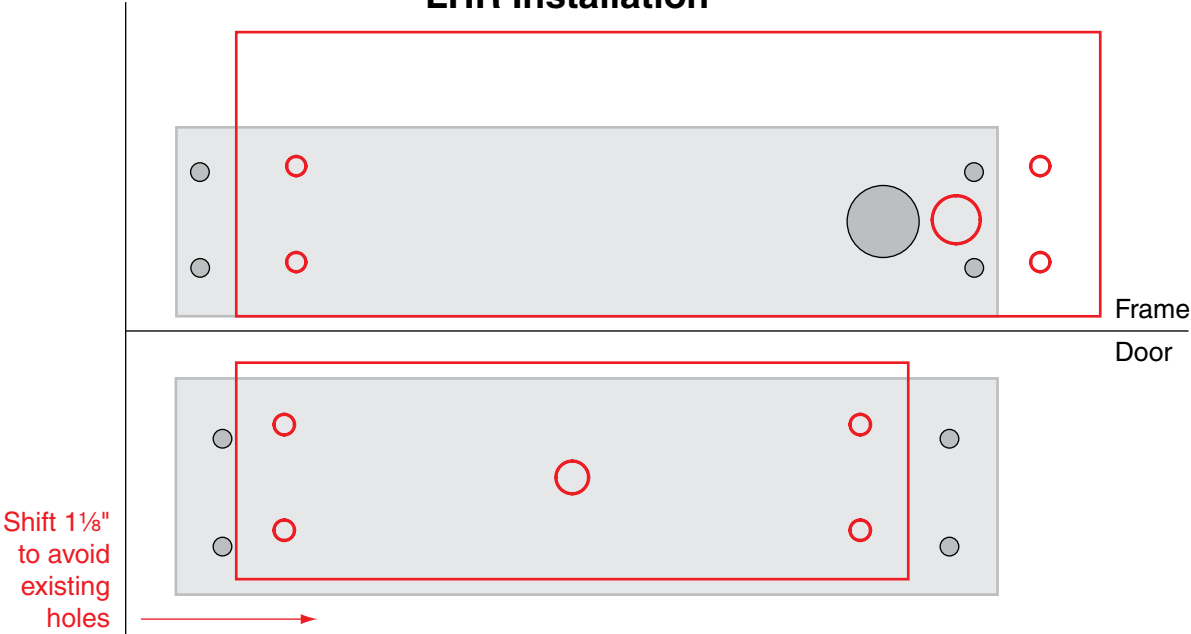
Shift 5/8" to avoid existing holes

	<b>Retrofitting From:</b> 320TJ Single
	<b>To New Lock:</b> M420TJ Single

### RHR Installation





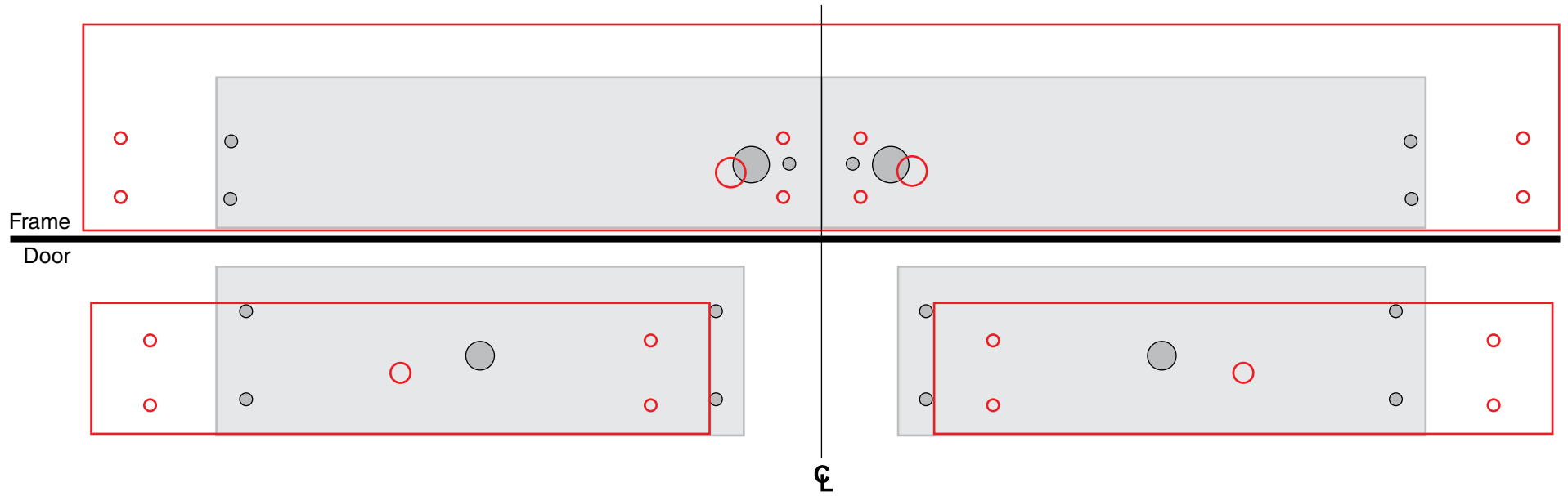
### LHR Installation







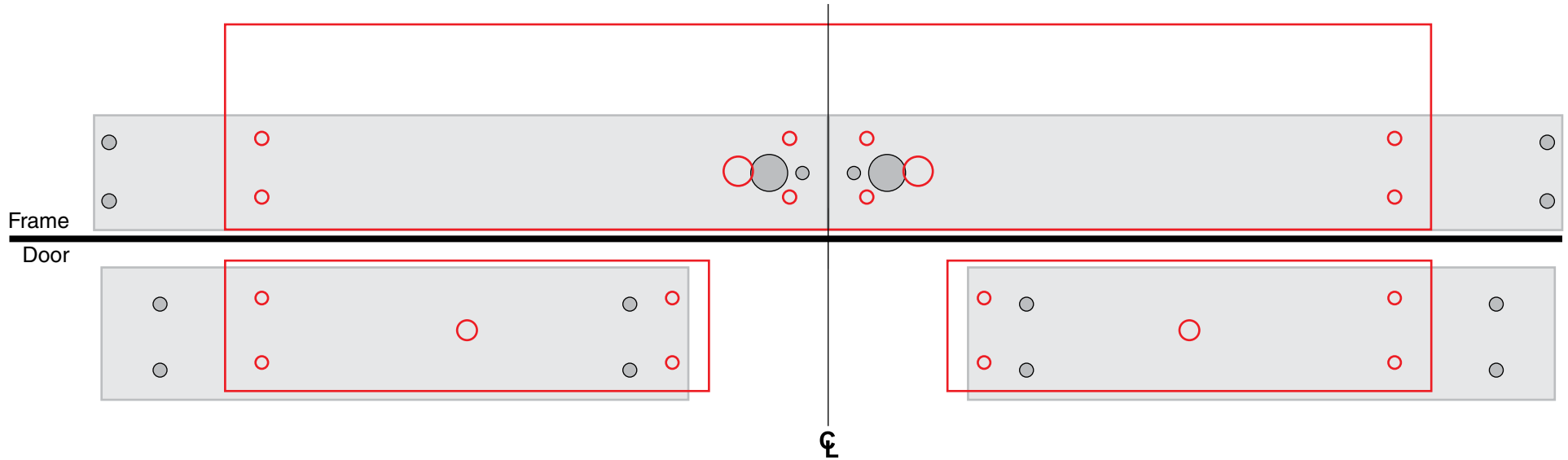
# 392TJ Double to M492TJ Double

	<b>Retrofitting From:</b> 392TJ Double
	<b>To New Lock:</b> M492TJ Double





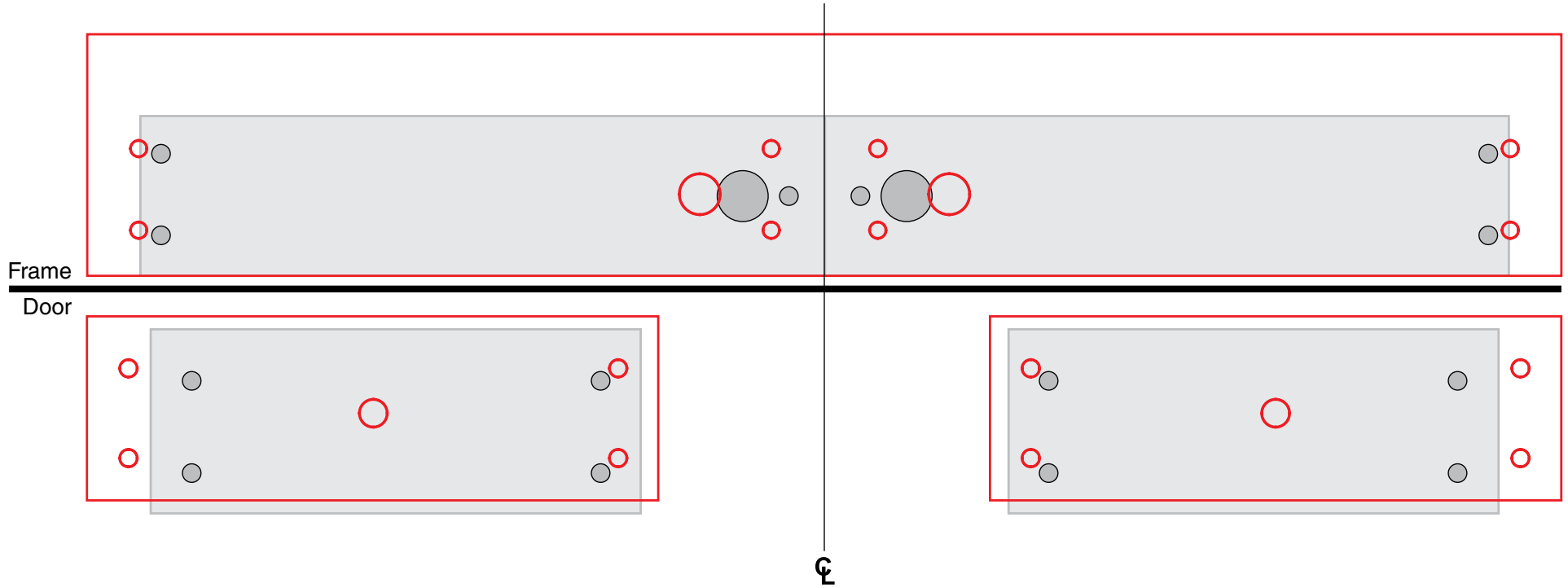
# 352TJ Double to M452TJ Double

	<b>Retrofitting From:</b> 352TJ Double
	<b>To New Lock:</b> M452TJ Double





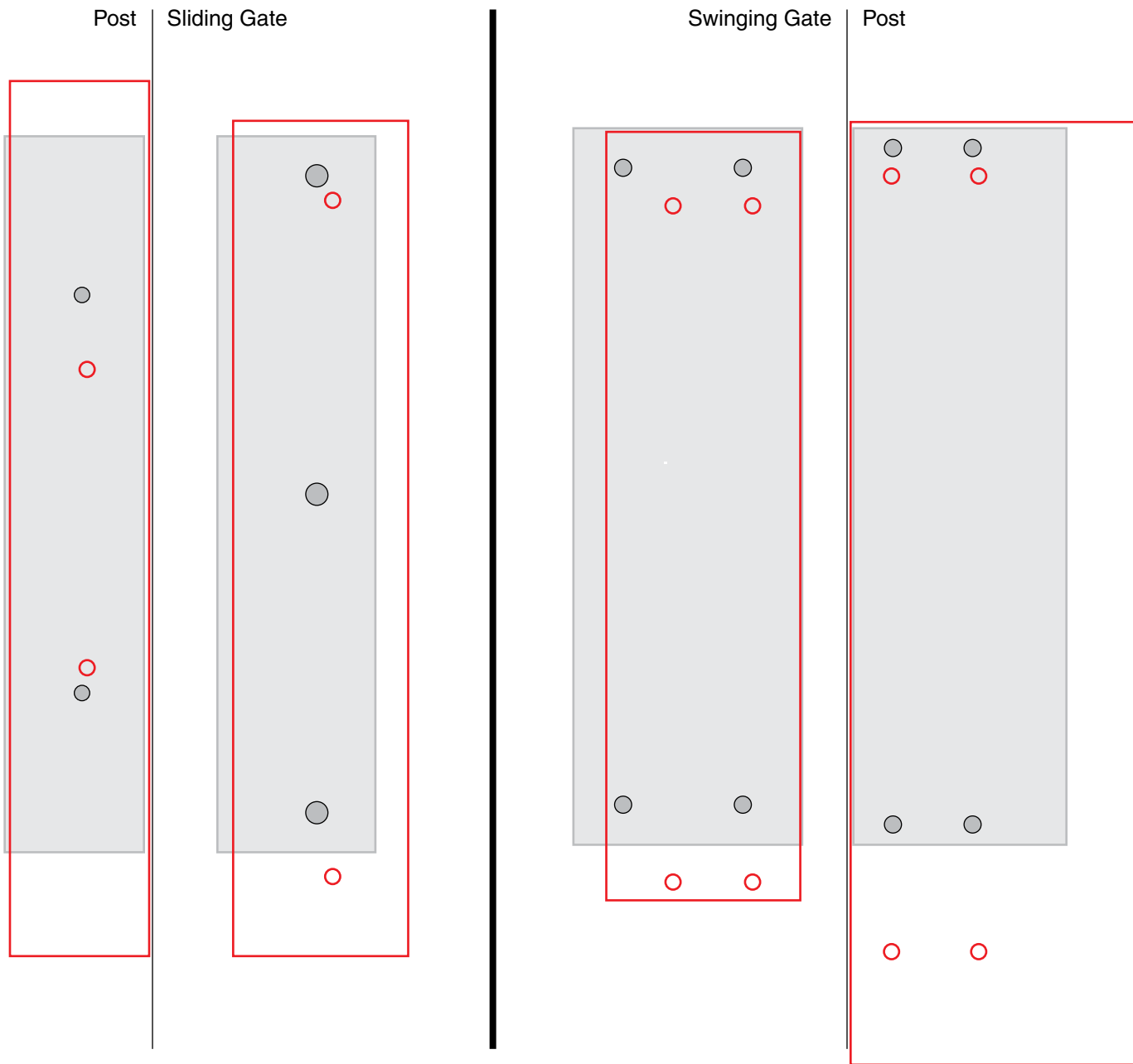
# 322TJ Double to M422TJ Double

	<b>Retrofitting From:</b> 322TJ Double
	<b>To New Lock:</b> M422TJ Double



390G to M490G

	<b>Retrofitting From:</b> 390G
	<b>To New Lock:</b> M490G





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# M400 Series Electromagnetic Locks

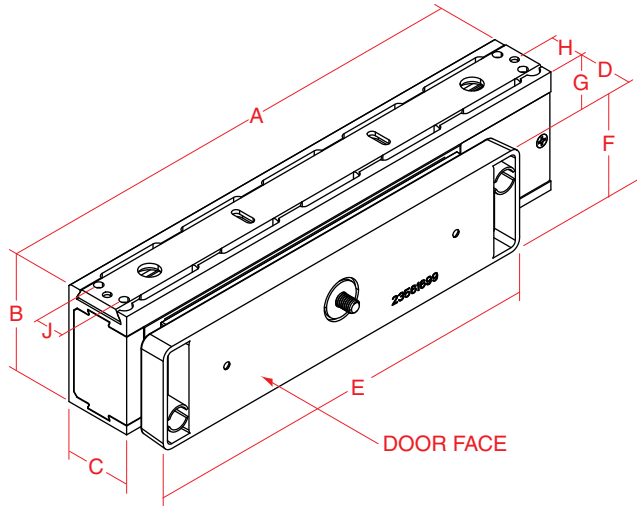


General Product Dimensions

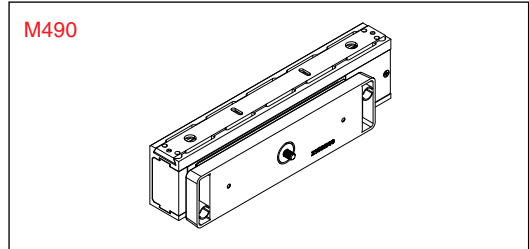
## Contents

- 1 Single and Double Locks
- 2 TJ Bracket (for inswinging doors)
- 3 HDB Bracket (for glass doors)
- 4 M490G (swinging and sliding gate)

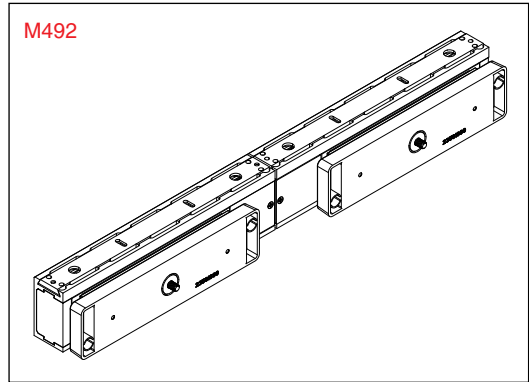
## Single and Double Locks



M490



M492



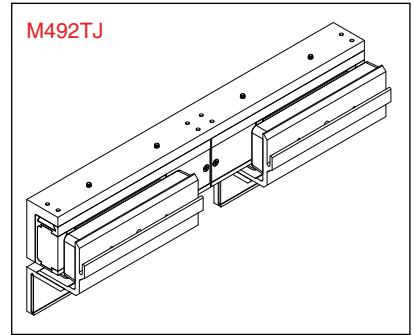
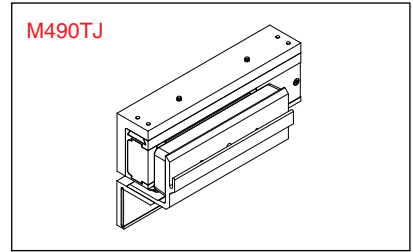
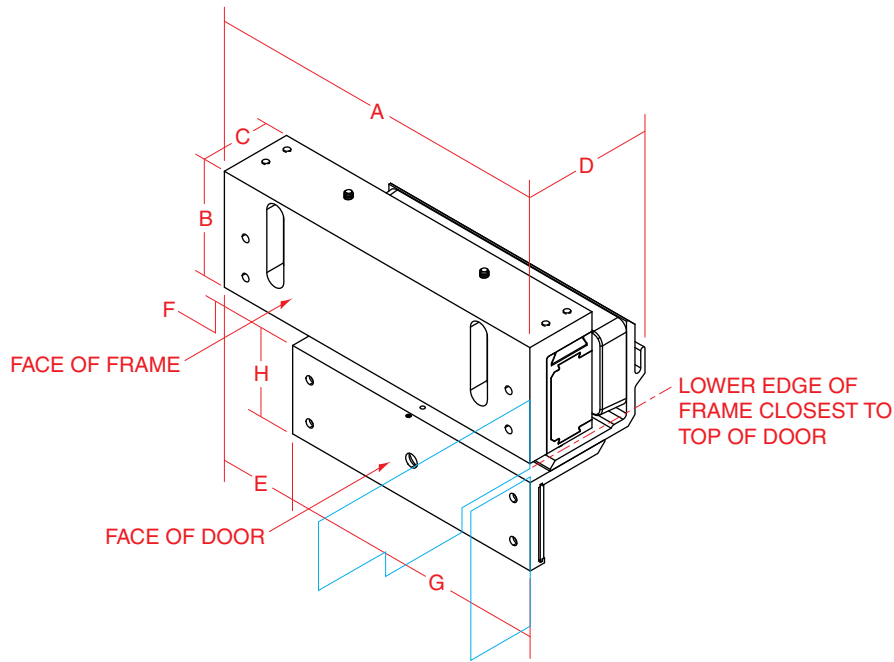
### Single Door Applications

DIM	M490	M450	M420
A	12-1/2	10-1/4	9
B	3	3	2-1/2
C	1-3/4	1-3/4	1-3/8
D	1-1/16	1-1/16	1-1/16
E	10-1/2	8-1/4	7
F	2-5/8	2-5/8	2-3/16
G	7/16	7/16	1/4
H	7/8	7/8	11/16
J	3/4	3/4	5/8

### Double Door Applications

DIM	M492	M452	M422
A	25-1/16	20-9/16	18-1/16
B	3	3	2-1/2
C	1-3/4	1-3/4	1-3/8
D	1-1/16	1-1/16	1-1/16
E	10-1/2	8-1/4	7
F	2-5/8	2-5/8	2-3/16
G	7/16	7/16	1/4
H	7/8	7/8	11/16
J	3/4	3/4	5/8

## TJ Bracket (for inswinging doors)

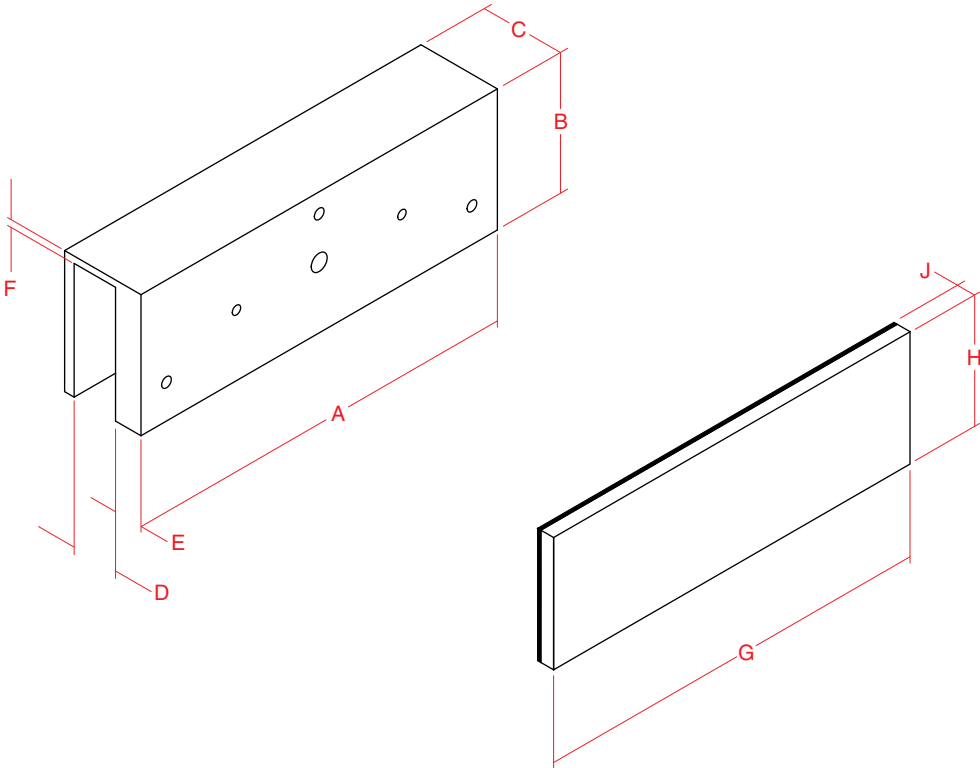


Single Door Applications			
DIM	M490TJ	M450TJ	M420TJ
A	12-1/2	10-1/4	9
B	3-1/2	3-1/2	2-15/16
C	2-3/16	2-3/16	1-13/16
D	3-13/16	3-13/16	3-3/8
E	2	2	2
F	1/2	1/2	1/2
G	10-1/2	8-1/4	7
H	2-1/4	2-1/4	2-1/4

Single Door Applications			
DIM	M490TJ	M450TJ	M420TJ
A	12-1/2	10-1/4	9
B	3-1/2	3-1/2	2-15/16
C	2-3/16	2-3/16	1-13/16
D	3-13/16	3-13/16	3-3/8
E	2	2	2
F	1/2	1/2	1/2
G	10-1/2	8-1/4	7
H	2-1/4	2-1/4	2-1/4

① **Note:** Magnet mounting bracket thickness on all models is 1/2".

# HDB Bracket (for glass doors)

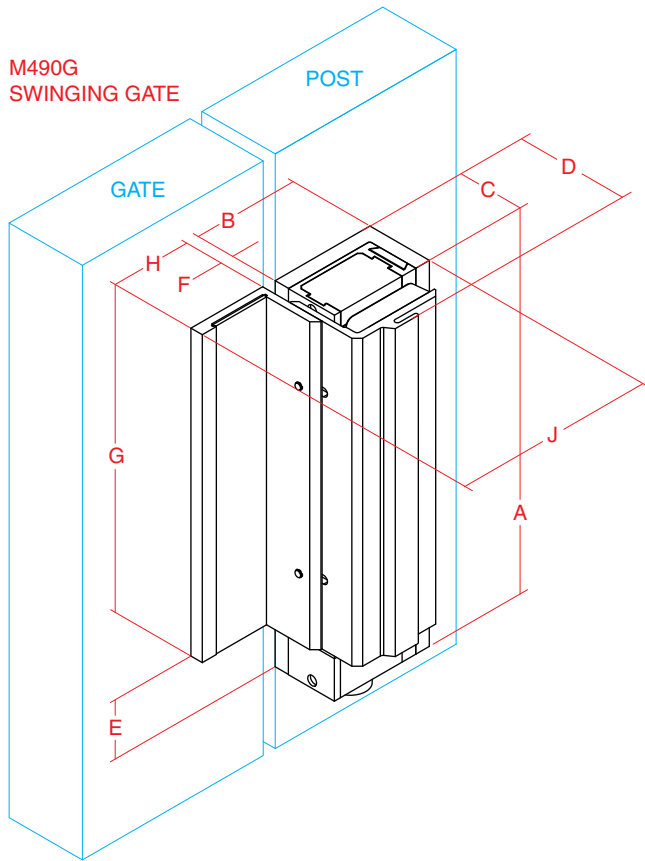


DIM	M490HDB	M450HDB	M420HDB
A	10-1/2	2-1/4	7
B	2-13/16	2-13/16	2-3/8
C	1-1/2	1-1/2	1-1/2
D	13/16	13/16	13/16
E	1/2	1/2	1/2
F	1/8	1/8	1/8
G	8-1/4	8-1/4	7
H	2-11/16	2-11/16	2-1/4
J1*	1/4	1/4	1/4
J2*	1/16	1/16	1/16

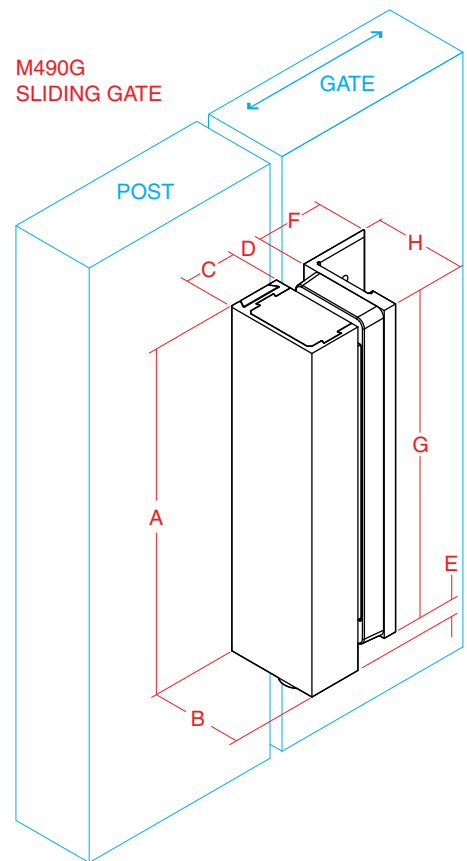
\* Two shims provided for varying glass thicknesses

- ① “J” dimensions include thickness of gaskets
- ① Note: Thickness of mounting bracket opposite the magnet side is 3/16”

# M490G (swinging and sliding gate)



Swinging Gate Application	
DIM	M490G
A	11
B	3-1/2
C	2-3/16
D	3-13/16
E	1/2
F	1/2
G	10-1/2
H	2-1/4

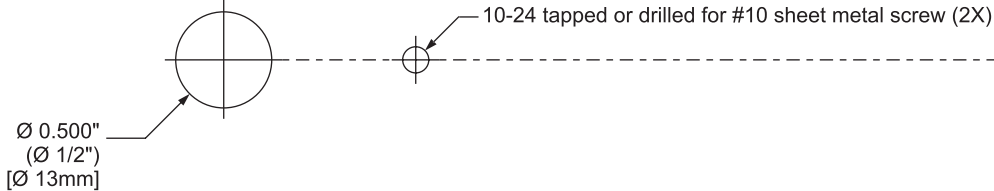
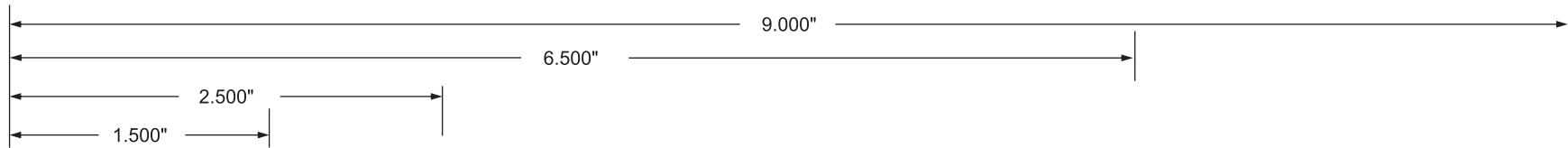


Sliding Gate Application	
DIM	M490G
A	11
B	3
C	1-11/16
D	11/16
E	1/2
F	2-3/16
G	10-1/2
H	3

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PLACE AGAINST HEADER

# M420 - Standard Application

## SIDE A

**THIS PAGE IS FOR DIMENSIONAL VERIFICATION ONLY  
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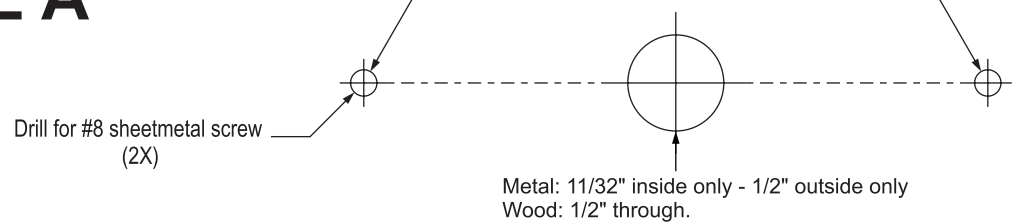
TEMPLATE TO BE PERFORATED ALONG DASHED LINE



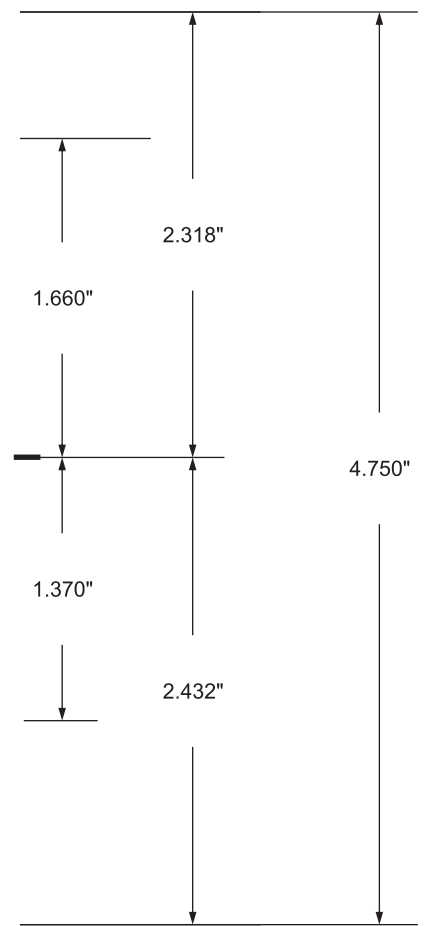
PLACE AGAINST INSIDE OF DOOR

## SIDE A

**DO NOT DRILL THRU DOOR**

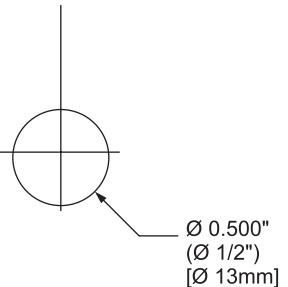
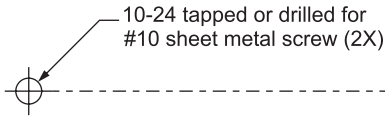
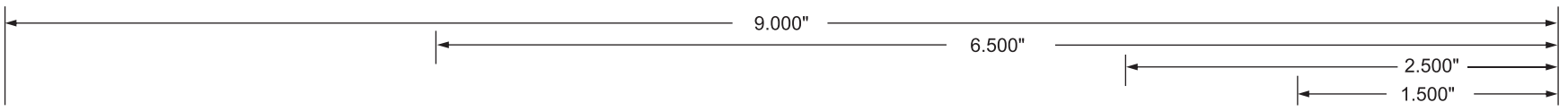


RHR installation:  
Place template against this door stop, opposite hinges.



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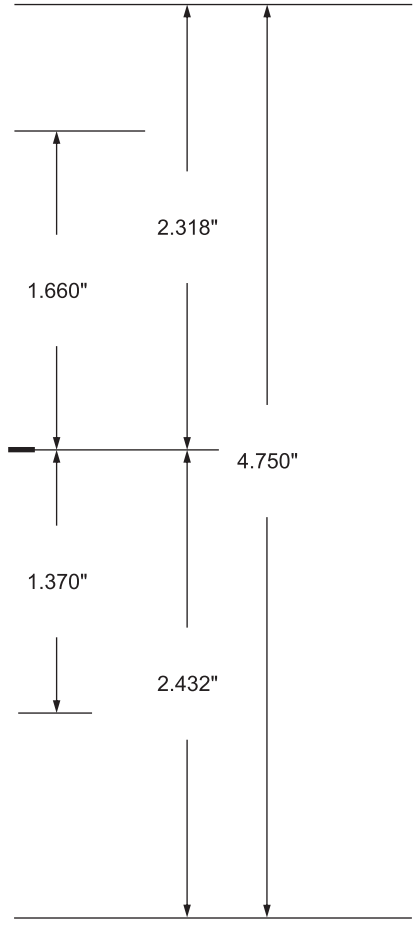


PLACE AGAINST HEADER

# M420 - Standard Application

## SIDE B

**THIS PAGE IS FOR DIMENSIONAL VERIFICATION ONLY  
NOT TO BE USED FOR TEMPLATE PRINTING BY SUPPLIER**

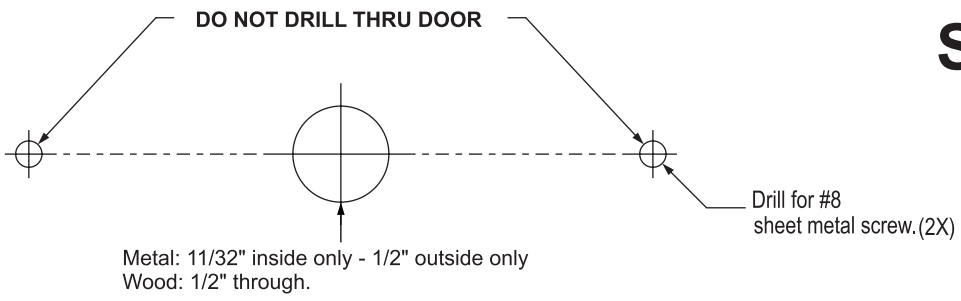


TEMPLATE TO BE PERFORATED ALONG DASHED LINE

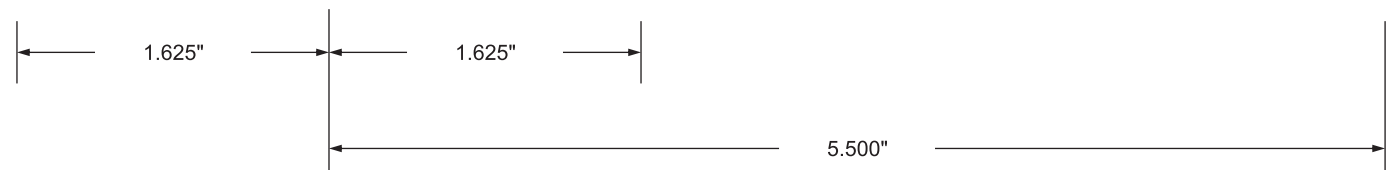
LHR installation:  
Place template against this door stop, opposite hinges.

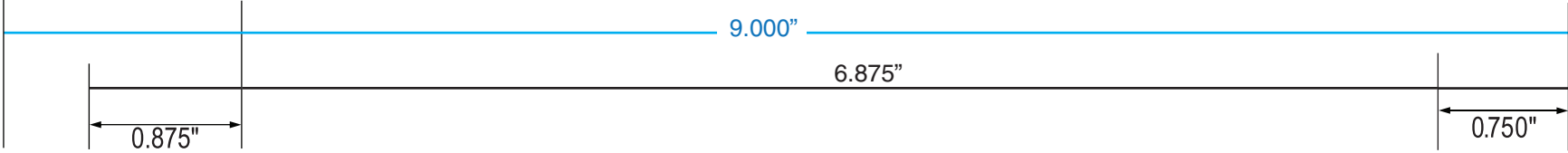
PLACE AGAINST INSIDE OF DOOR

## SIDE B

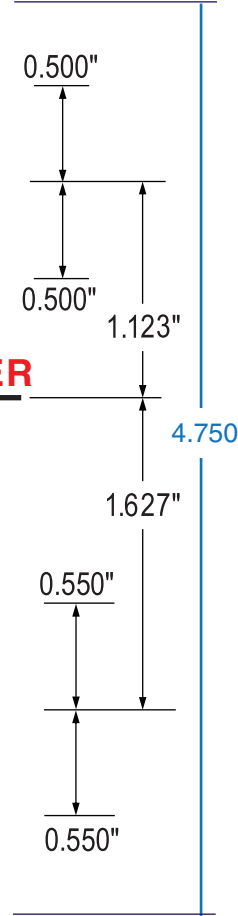


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# SIDE A

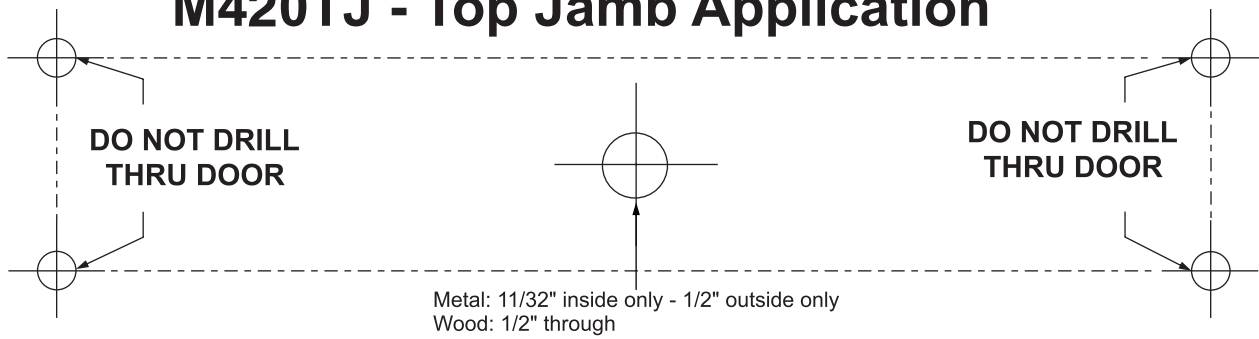


# SIDE A

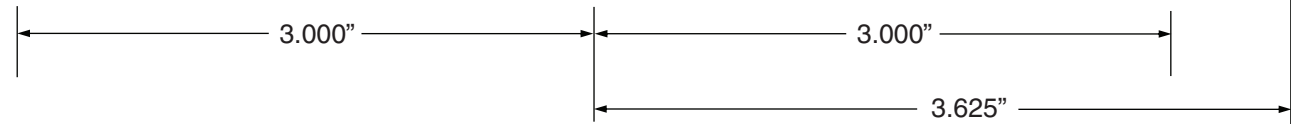
Place this line along bottom edge of frame face.

RH installation: Place this edge of template along inner frame edge, opposite hinges.

## M420TJ - Top Jamb Application



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9.000"

0.750"

6.875"

0.875"

0.750" To edge of template

# SIDE B

**SCHLAGE**

PLACE AGAINST INSIDE DOOR AND FRAME

Ø 0.500"  
(Ø 1/2")  
[Ø 13mm]

Drill for #10 sheet metal or #10-24 machine screw.  
(8X)

**THIS PAGE IS FOR DIMENSIONAL VERIFICATION ONLY  
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0.500"

0.500"

1.123"

4.750"

LH installation: Place this edge of template along inner frame edge, opposite hinges.

Place this line along bottom edge of frame face

# SIDE B

## M420TJ - Top Jamb Application

DO NOT DRILL THRU DOOR

DO NOT DRILL THRU DOOR

Customer Service

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Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through

1.627"

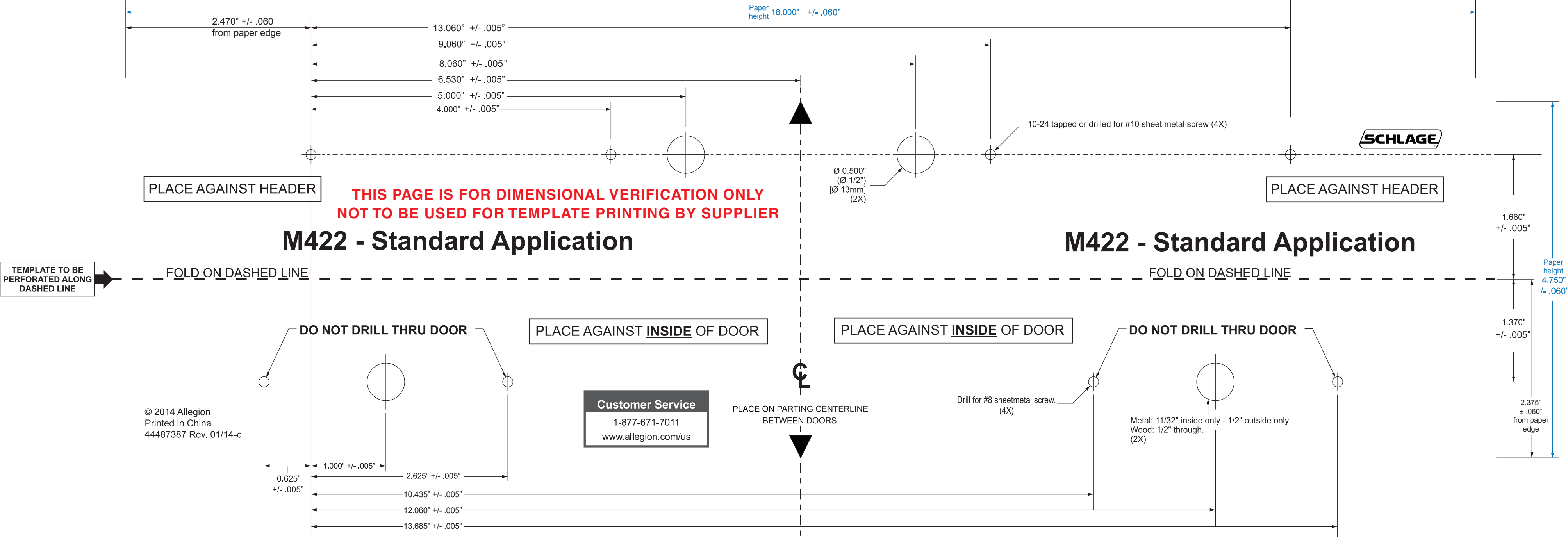
0.550"

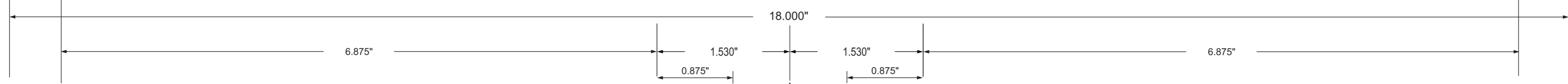
0.550"

3.000"

3.000"

3.625"





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Drill for #10 sheet metal or #10-24 machine screw.  
(16X)



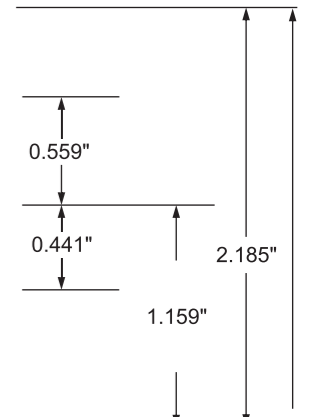
PLACE AGAINST INSIDE DOOR AND FRAME.

PLACE AGAINST INSIDE DOOR AND FRAME.

## M422TJ - Top Jamb Application

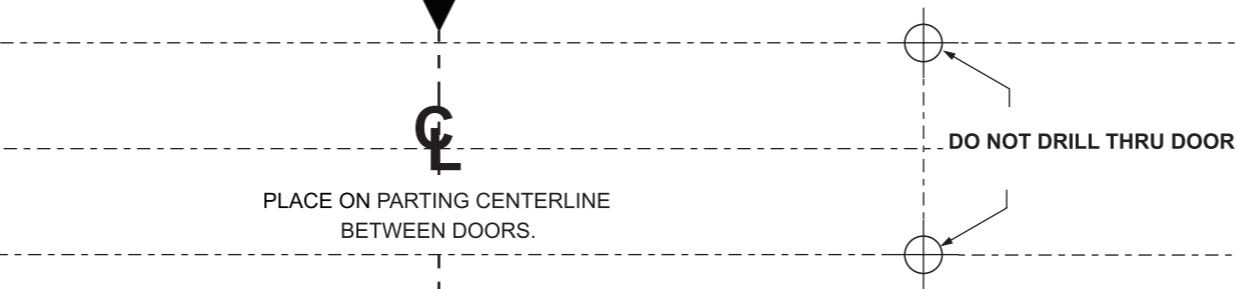
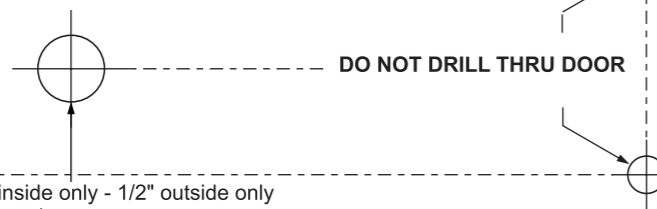
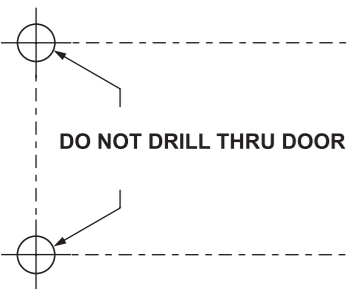
Ø 0.500"  
(Ø 1/2")  
[Ø 13mm]  
(2X)

## M422TJ - Top Jamb Application



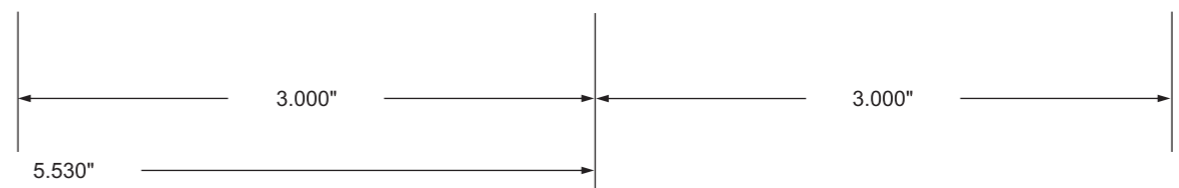
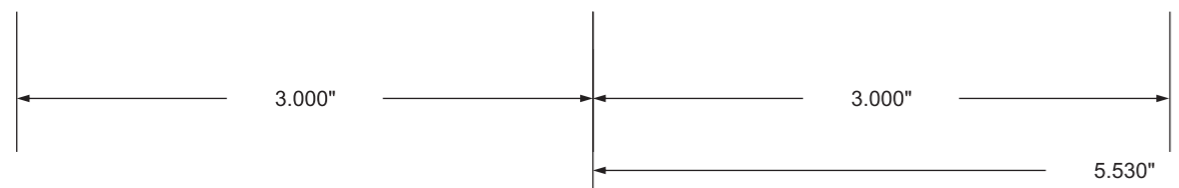
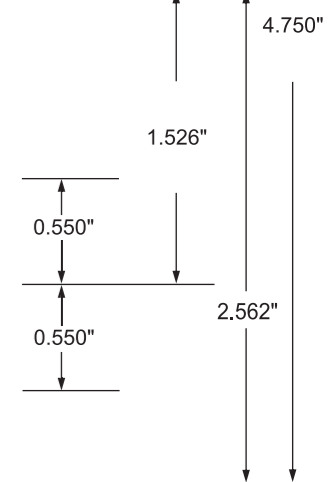
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Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through.  
(2X)

PLACE ON PARTING CENTERLINE  
BETWEEN DOORS.

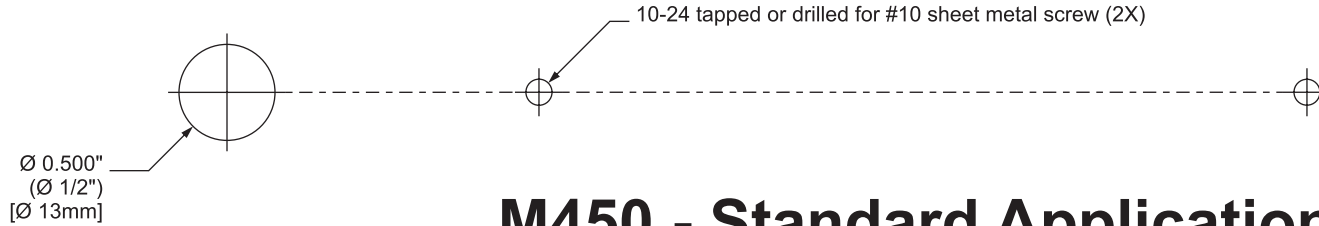




**THIS PAGE IS FOR DIMENSIONAL VERIFICATION ONLY  
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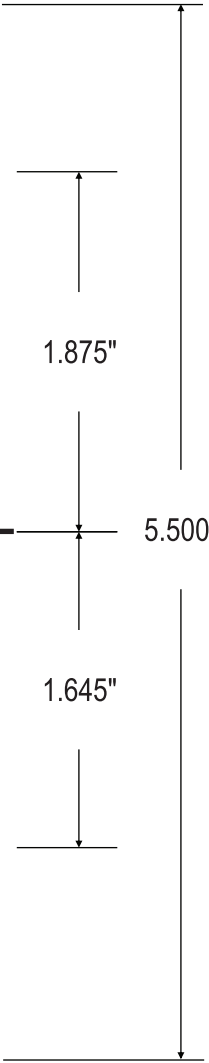


**SIDE A**



**M450 - Standard Application**

PLACE AGAINST HEADER



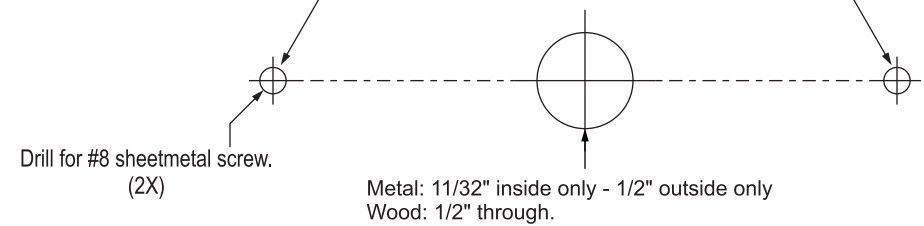
FOLD ON DASHED LINE

PLACE AGAINST **INSIDE** OF DOOR

RHR installation:  
Place template against this door stop, opposite hinges.

**SIDE A**

DO NOT DRILL THRU DOOR

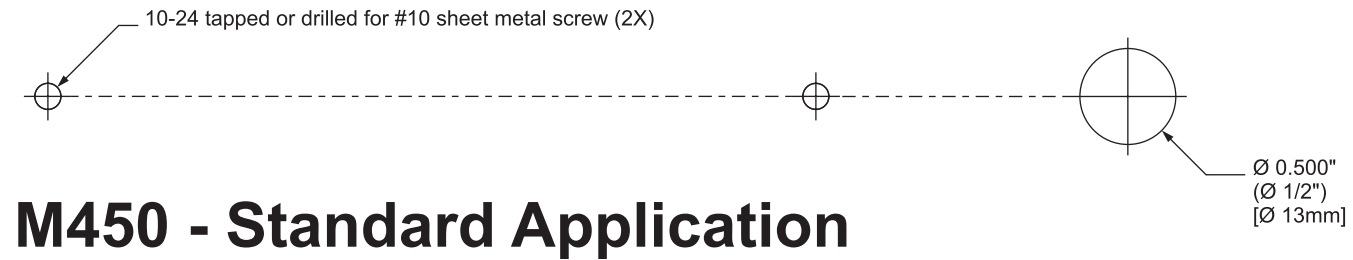


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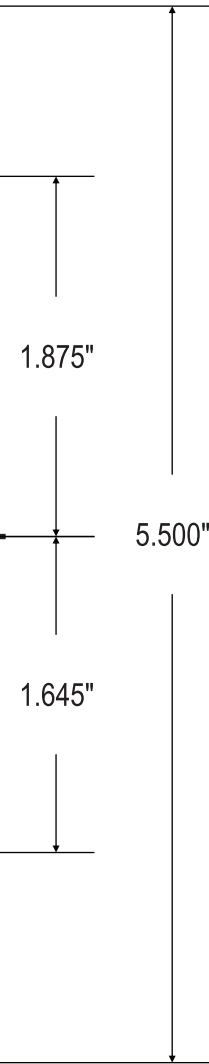


**SIDE B**



**M450 - Standard Application**

PLACE AGAINST HEADER

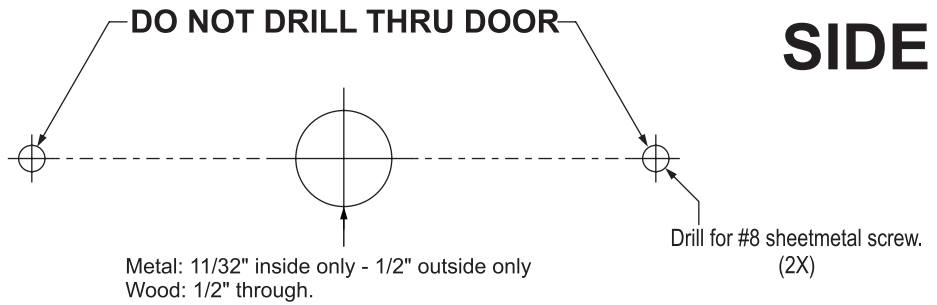


TEMPLATE TO BE PERFORATED ALONG DASHED LINE



LHR installation:  
Place template against this door stop, opposite hinges.

PLACE AGAINST INSIDE OF DOOR



**SIDE B**

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10.250"

8.125"

0.875"

0.750"

**SIDE A**



To edge of template

0.750"

PLACE AGAINST INSIDE DOOR AND FRAME

Ø 0.500"  
(Ø 1/2")  
[Ø 13mm]

Drill for #10 sheet metal or #10-24 machine screw.  
(8X)

0.500"

0.500"

1.123"

1.627"

5.500"

**SIDE A**

Place this line along bottom edge of frame face.

RH installation: Place this edge of template along inner frame edge, opposite hinges.

### M450TJ - Top Jamb Application

DO NOT DRILL THRU DOOR

DO NOT DRILL THRU DOOR

Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through

0.550"

0.550"



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3.500"

3.500"

4.250"

10.250"

0.750"

8.125"

0.875"

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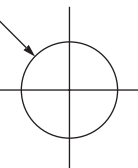
0.750" To edge of template



**SIDE B**

PLACE AGAINST INSIDE DOOR AND FRAME

Ø 0.500"  
(Ø 1/2")  
[Ø 13mm]



Drill for #10 sheet metal or #10-24 machine screw.  
(8X)

0.500"

0.500"

1.123"

5.500"

LH installation: Place this edge of template  
along inner frame edge, opposite hinges.

Place this line along bottom edge of frame face

**SIDE B**

### M450TJ - Top Jamb Application

**DO NOT DRILL  
THRU DOOR**

**DO NOT DRILL  
THRU DOOR**

Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through

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[www.allegion.com/us](http://www.allegion.com/us)

1.627"

0.550"

0.550"

3.500"

3.500"

4.250"

Paper width 20.500" ± .060"

3.095" ± .060"  
from paper edge

14.310" ± .005"  
10.310" ± .005"  
8.685" ± .005"  
7.155" ± .005"  
5.625" ± .005"  
4.000" ± .005"



10-24 tapped or drilled for #10 sheet metal screw (4X)

Ø 0.500"  
(Ø 1/2")  
[Ø 13mm]

Ø 0.500"  
(Ø 1/2")  
[Ø 13mm]

PLACE AGAINST HEADER

# M452 - Standard Application

# M452 - Standard Application

PLACE AGAINST HEADER

1.875"  
± .005"

Paper height  
5.500"  
± .060"

1.645"  
± .005"

2.750"  
± .060"  
to paper edge

TEMPLATE TO BE PERFORATED ALONG DASHED LINE

FOLD ON DASHED LINE

FOLD ON DASHED LINE

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DO NOT DRILL THRU DOOR

PLACE AGAINST INSIDE OF DOOR

PLACE AGAINST INSIDE OF DOOR

DO NOT DRILL THRU DOOR

PLACE ON PARTING CENTERLINE BETWEEN DOORS

**Customer Service**  
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www.allegion.com/us

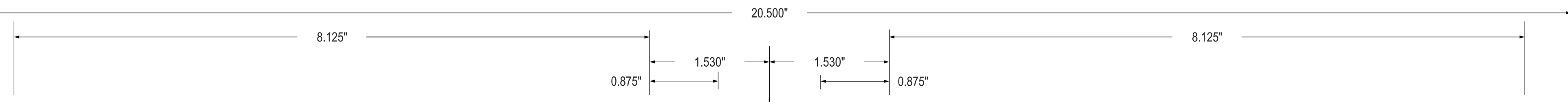
Metal: 11/32" inside only -  
1/2" outside only  
Wood: 1/2" through.  
(2X)

Drill for #8 sheetmetal screw.  
(4X)

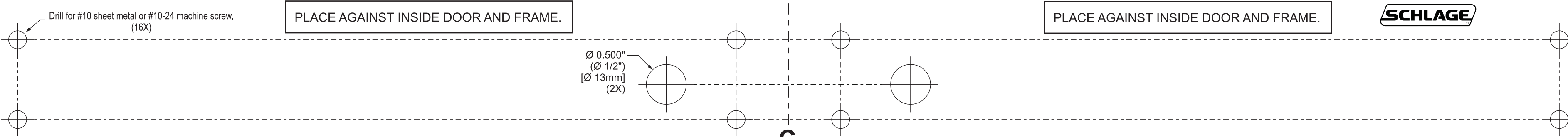
1.000" ± .005"  
0.625" ± .005"  
2.625" ± .005"  
11.684" ± .005"  
13.310" ± .005"  
14.935" ± .005"



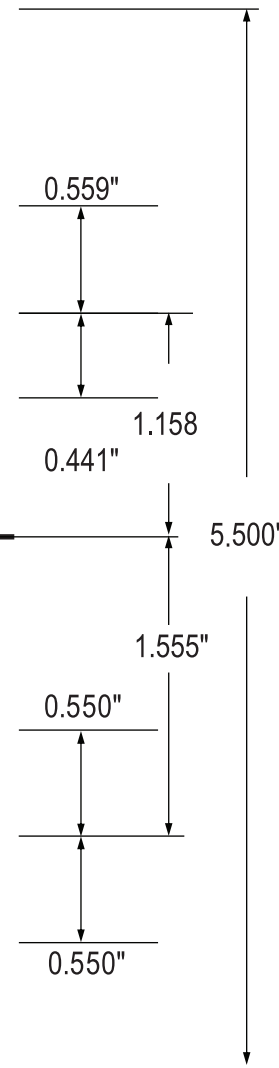
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**M452TJ - Top Jamb Application**

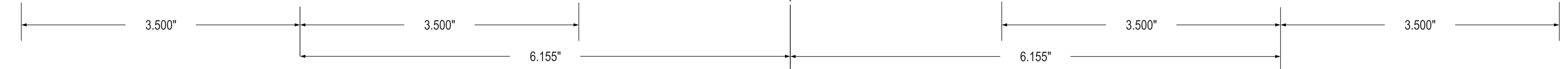
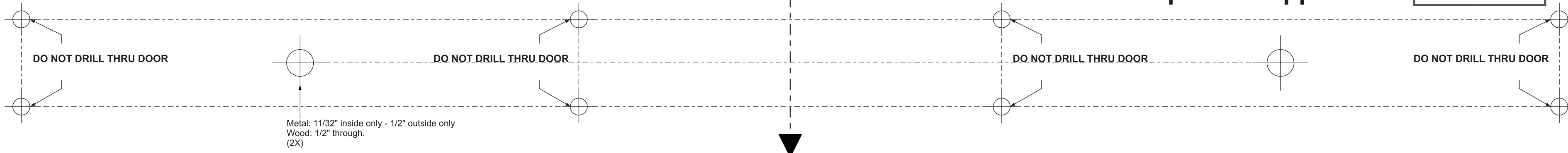


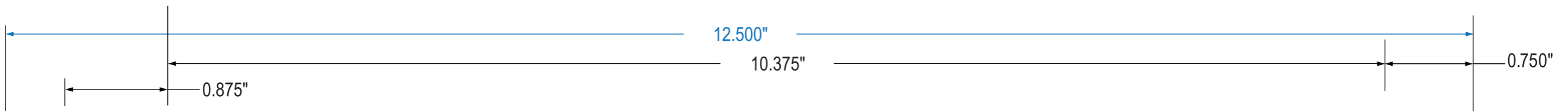
PLACE ON PARTING CENTERLINE BETWEEN DOORS

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**M452TJ - Top Jamb Application**





PLACE AGAINST INSIDE DOOR AND FRAME

**SIDE A**

To edge of template

0.750"

Drill for #10 sheet metal or #10-24 machine screw.  
(8X)

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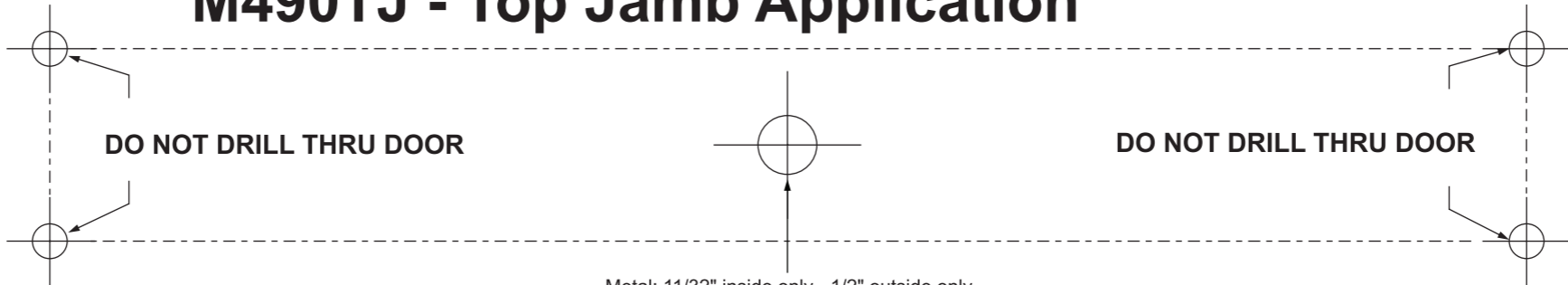


Place this line along bottom edge of frame face.

RH installation: Place this edge of template along inner frame edge, opposite hinges.

**SIDE A**

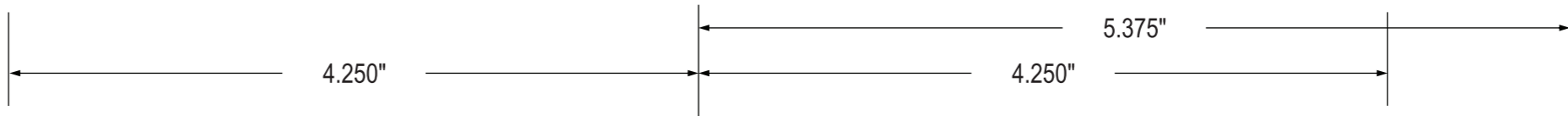
**M490TJ - Top Jamb Application**

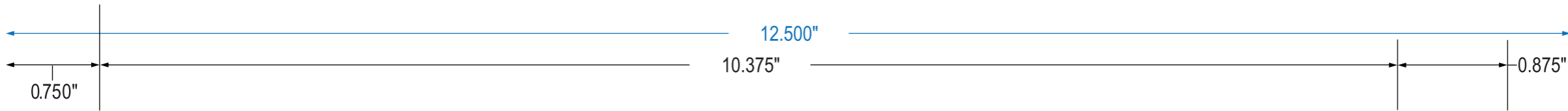


Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through.



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## SIDE B

PLACE AGAINST INSIDE DOOR AND FRAME



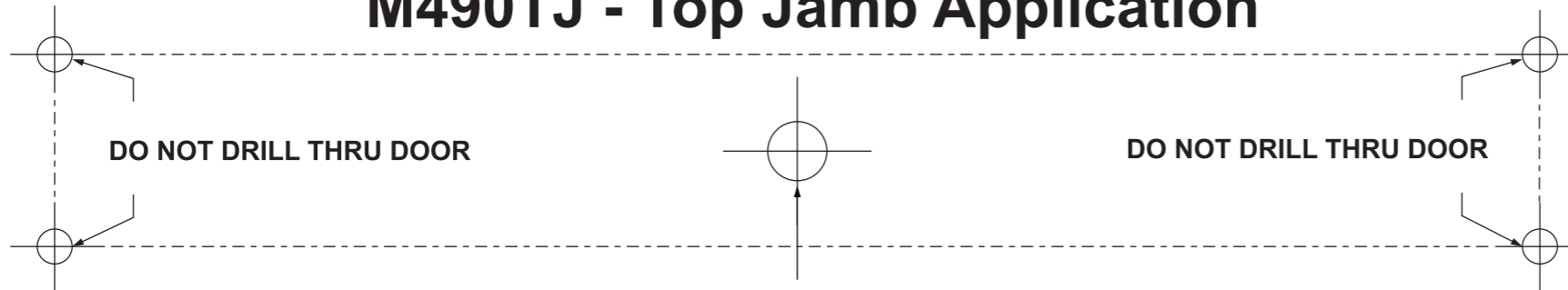
**THIS PAGE IS FOR DIMENSIONAL VERIFICATION ONLY  
NOT TO BE USED FOR TEMPLATE PRINTING BY SUPPLIER**

LH installation: Place this edge of template along inner frame edge, opposite hinges.

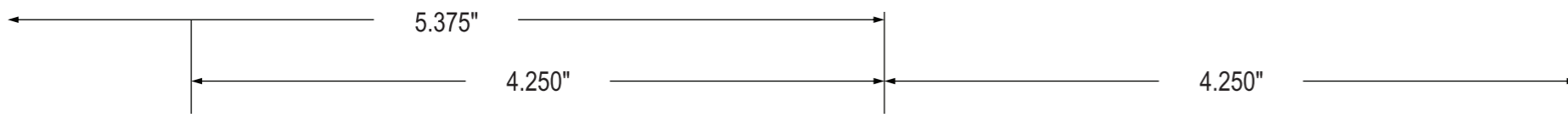
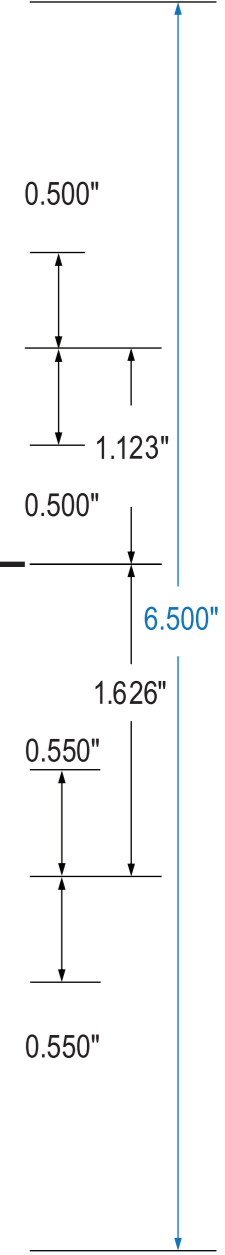
Place this line along bottom edge of frame face.

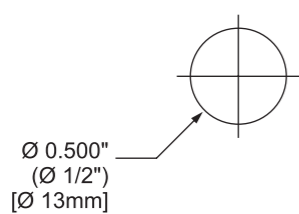
## M490TJ - Top Jamb Application

## SIDE B

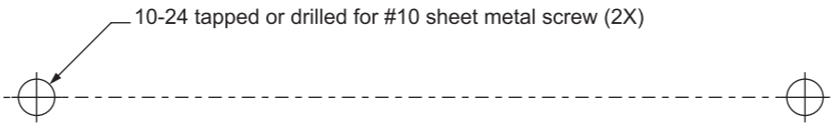


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**SIDE A**



PLACE AGAINST HEADER

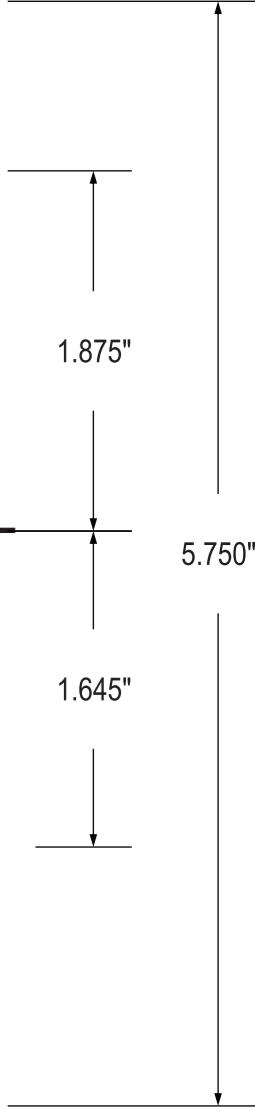
**M490 - Standard Application**  
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FOLD ON DASHED LINE

TEMPLATE TO BE PERFORATED ALONG DASHED LINE

PLACE AGAINST INSIDE OF DOOR

RHR installation:  
Place template against this door stop, opposite hinges.



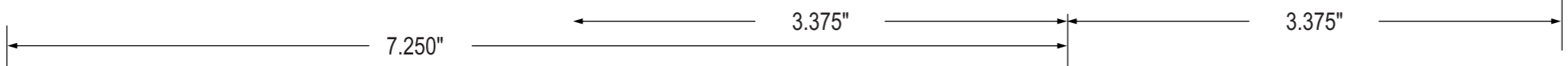
DO NOT DRILL THRU DOOR



Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through.

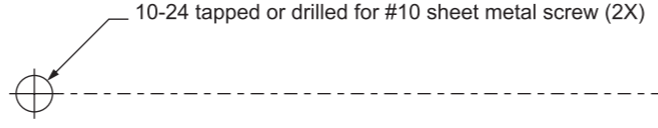
**SIDE A**

© 2014 Allegion  
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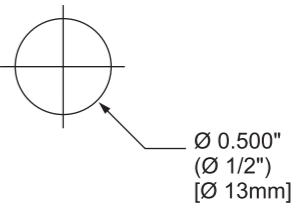




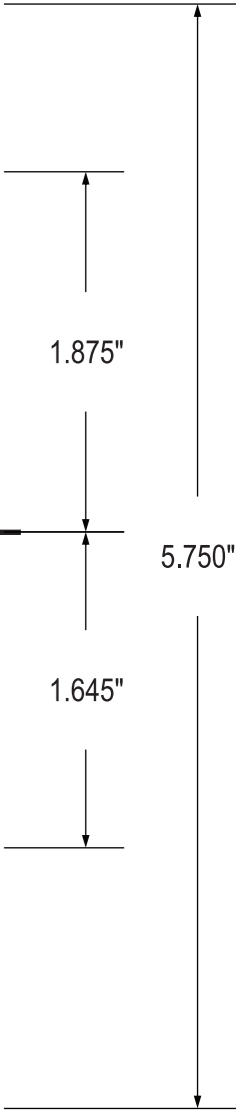
PLACE AGAINST HEADER



**SIDE B**



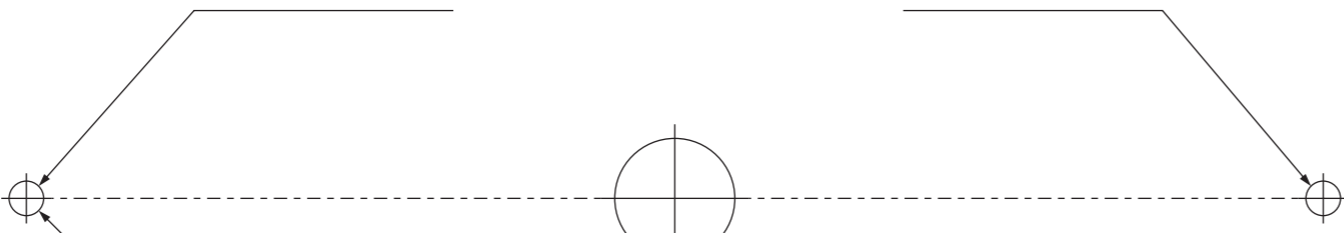
**M490 - Standard Application**  
**THIS PAGE IS FOR DIMENSIONAL VERIFICATION ONLY**  
**NOT TO BE USED FOR TEMPLATE PRINTING BY SUPPLIER**



TEMPLATE TO BE PERFORATED ALONG DASHED LINE

LHR installation:  
Place template against this door stop, opposite hinges.

**DO NOT DRILL THRU DOOR**

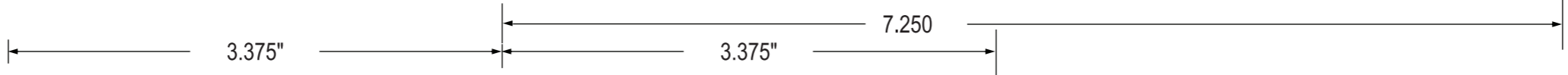


Drill for #8 sheetmetal screw. (2X)

Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through.

**SIDE B**

**Customer Service**  
1-877-671-7011  
[www.allegion.com/us](http://www.allegion.com/us)





Paper Width **25.000"** +/- .060"

4.220" +/- 0.060" from paper edge

16.560" +/- .005"

12.560" +/- .005"

9.810" +/- .005"

8.280" +/- .005"

6.750" +/- .005"

4.000" +/- .005"

# M492 - Standard Application

**THIS PAGE IS FOR DIMENSIONAL VERIFICATION ONLY  
NOT TO BE USED FOR TEMPLATE PRINTING BY SUPPLIER**

PLACE AGAINST HEADER

PLACE AGAINST HEADER

FOLD ON DASHED LINE

FOLD ON DASHED LINE

1.875" +/- .005"

Paper Height **5.750"** +/- .060"

1.645" +/- .005"

**2.875"** +/- 0.060" from paper edge

10-24 tapped or drilled for #10 sheet metal screw (4X)



Ø 0.500" (Ø 1/2") [Ø 13mm] (2X)

TEMPLATE TO BE PERFORMED ALONG DASHED LINE

DO NOT DRILL THRU DOOR

DO NOT DRILL THRU DOOR

PLACE AGAINST INSIDE OF DOOR

PLACE AGAINST INSIDE OF DOOR

**Customer Service**  
1-877-671-7011  
www.allegion.com/us

PLACE ON PARTING CENTERLINE BETWEEN DOORS.

Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through. (2X)

Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through. (2X)

2.375" +/- .005"

1.000" +/- .005"

4.375" +/- .005"

12.185" +/- .005"

15.560" +/- .005"

18.935" +/- .005"

# M492 - Standard Application



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25.000"

10.375"

1.530"

1.530"

10.375"

0.875"

0.875"

PLACE AGAINST INSIDE DOOR AND FRAME.

PLACE AGAINST INSIDE DOOR AND FRAME.



Drill for #10 sheet metal or #10-24 machine screw. (16X)

# M492TJ - Top Jamb Application

Ø 0.500"  
(Ø 1/2")  
[Ø 13mm]  
(2X)

**THIS PAGE IS FOR DIMENSIONAL VERIFICATION ONLY  
NOT TO BE USED FOR TEMPLATE PRINTING BY SUPPLIER**

0.559"

0.441"

1.158"

6.500"

Place this line along bottom edge of frame face.

PLACE ON PARTING CENTERLINE BETWEEN DOORS.

Place this line along bottom edge of frame face.

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# M492TJ - Top Jamb Application

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44487437 Rev. 01/14-c

DO NOT DRILL THRU DOOR

DO NOT DRILL THRU DOOR

DO NOT DRILL THRU DOOR

DO NOT DRILL THRU DOOR

Metal: 11/32" inside only - 1/2" outside only  
Wood: 1/2" through.  
(2X)

0.550"

0.550"

2.272"

4.250"

4.250"

7.155"

4.250"

4.250"

7.155"

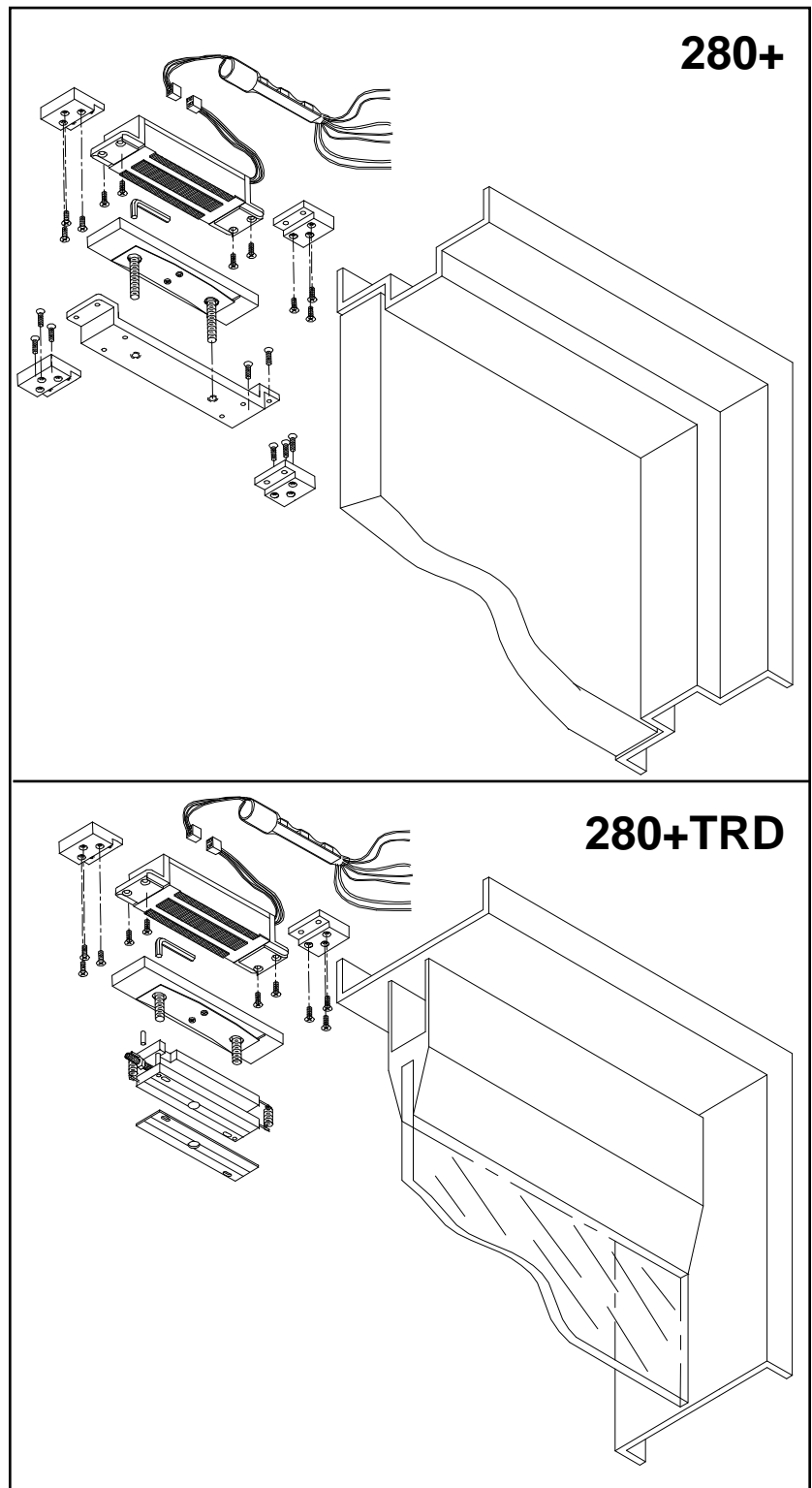


# 280+ SHEARLOCK INSTALLATION AND WIRING

MODELS: 280+ and 280+TRD

**280+** Standard model is a concealed electromagnetic shear lock designed to fit standard hollow metal doors and frames. In cases where the top of the door is accessible for adjustment, this lock can be used on top rail type doors. The gap between the armature (in the door) and the magnet (in the frame) is adjusted from the armature with a hex wrench. It can be mounted either horizontally (typical) or vertically for certain applications. Reversible mounting tabs (included) allow for a variety of metal door and frame thickness.

**280+ TRD** model is a concealed electromagnetic shear lock designed to fit a Aluminum top rail glass doors and open channel hollow metal doors and hollow metal or aluminum frames. It is generally used in cases where the top of the door is not accessible for adjustment. The gap between the armature (in the door) and the magnet (in the frame) is adjusted from the edge of the top rail, through an access hole, with a nut driver or standard screwdriver.



Schlage Lock Company  
575 Birch Street  
Forestville, CT 06010  
technical support: 866-322-1237  
email: SESsupport@irco.com  
web: www.irsupport.net





**HOW THE 280+ SHEARLOCK WORKS:**

A shearlock is designed to rely on the sheer strength of steel for holding force. When energized, the magnet attracts the armature, which moves toward it, overcoming an air gap which allows the door to open without interference. The parts, once engaged, interlock mechanically because of their shape. This gives the system tremendous holding force (in excess of 2700 pounds). Because of the design, door and frame preparation must be done very accurately. It is important that centerlines of the magnet and armature line up to form a vertical axis. (See diagram at top of page 4.) It is also critical that the air gap be adjusted to be as close as possible without interfering with door operation. This will ensure the best possible reliability. The electronic module is designed to have a very strong initial magnetic field, a minimum of 2 seconds after power is reapplied. This will allow the armature to reliably overcome the air gap and ensure positive engagement.

**Specifications**

Electrical

Input Voltage	<b><i>Filtered, Regulated 12 to 24 VDC</i></b> (automatic voltage selection)
Input Current	0.65 Amps Nominal @ 12VDC (Inrush: 2.0 Amps @ 12VDC) 0.20 Amps Nominal @ 24VDC (Inrush: 1.5 Amps @ 24VDC)
Adjustable Time Delay (ATD)	Adjustable from 2 to 30 seconds. Factory default: 3 seconds
Automatic Relock Switch (ARS)	External magnetic reed switch (required for proper operation)
Optional Monitoring Output MBS	Contact rating - 1 Amp maximum at 30VDC

Mechanical

Mounting Type	Mortise mounted horizontal or vertical. Non-handed
Shear Holding Force	2700 lbs.
Door Thickness	1 3/4 " Minimum (except for HD models)
Plating	Magnetic face and armature; nickel plated to resist corrosion

Warranty

Magnetic coil: Lifetime      Electronics: 1 year limited

Certifications/Compliance

UL# R12092; MEA# 222-96-E; CSFM# 3774-0544:107

Shipping Weight

280+ - 6 Pounds; 280+TRD/BRD - 8 Pounds

**DOOR AND FRAME CENTERLINE IDENTIFICATION:**

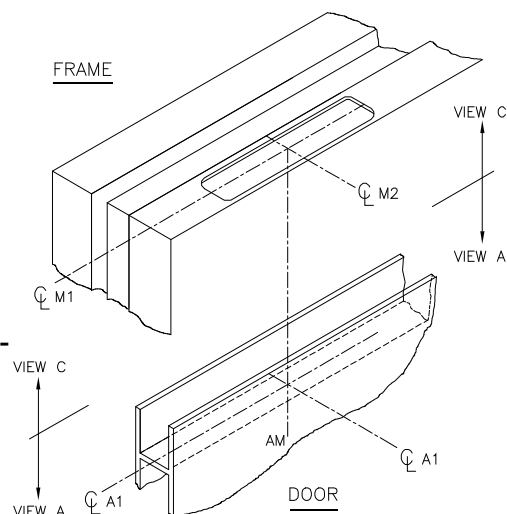
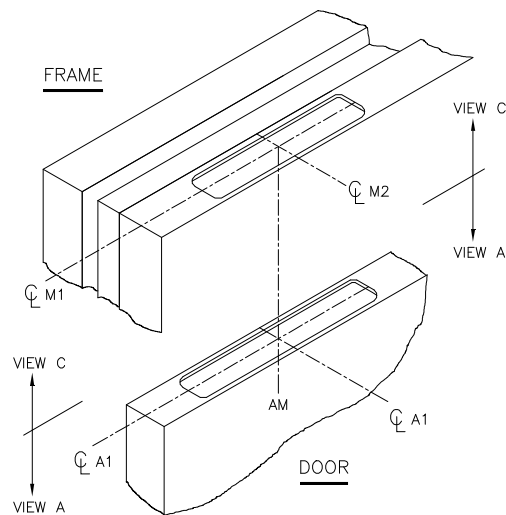
♦ For proper operation, it is critical that the centerlines of the magnet and armature assembly line up to form a vertical axis. The figure at right shows the centerline scheme for a standard 280+. Note that the centerlines of the magnet (M1 and M2) are directly above the centerlines of the armature assembly (A1 and A2) so that they form a vertical axis (AM).

- ♦ The location of the magnet and armature relative to the latch side is not critical but a minimum of 7 inches from the edge of the door is recommended.
- ♦ The standard model 280+ can be installed in a horizontal or vertical configuration.

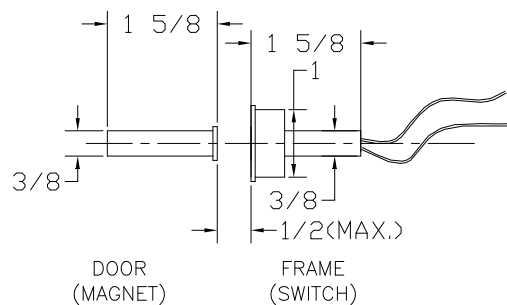
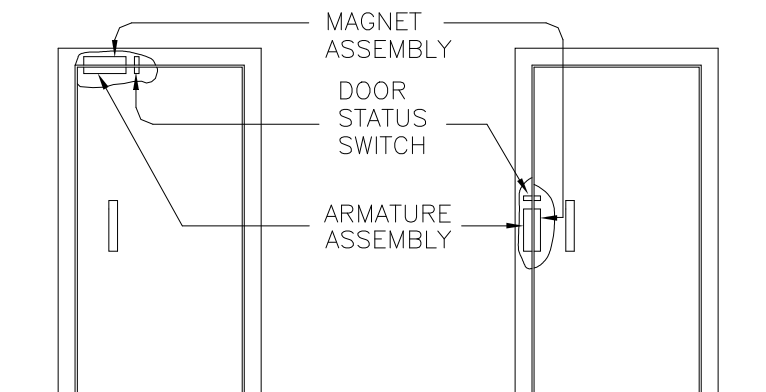
♦ To achieve maximum resistance to forced entry, position as follows:

- *Horizontal configuration* - position unit close to the latch side of door jamb.
- *Vertical configuration* - position unit close to the strike plate.

♦ In some applications the door and frame may require reinforcement.



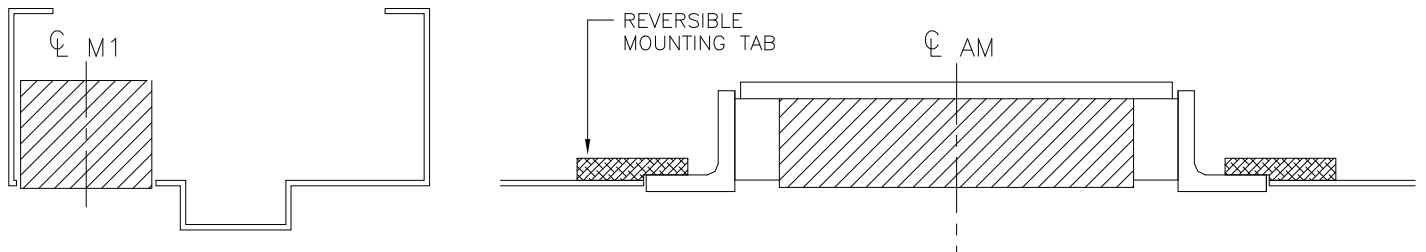
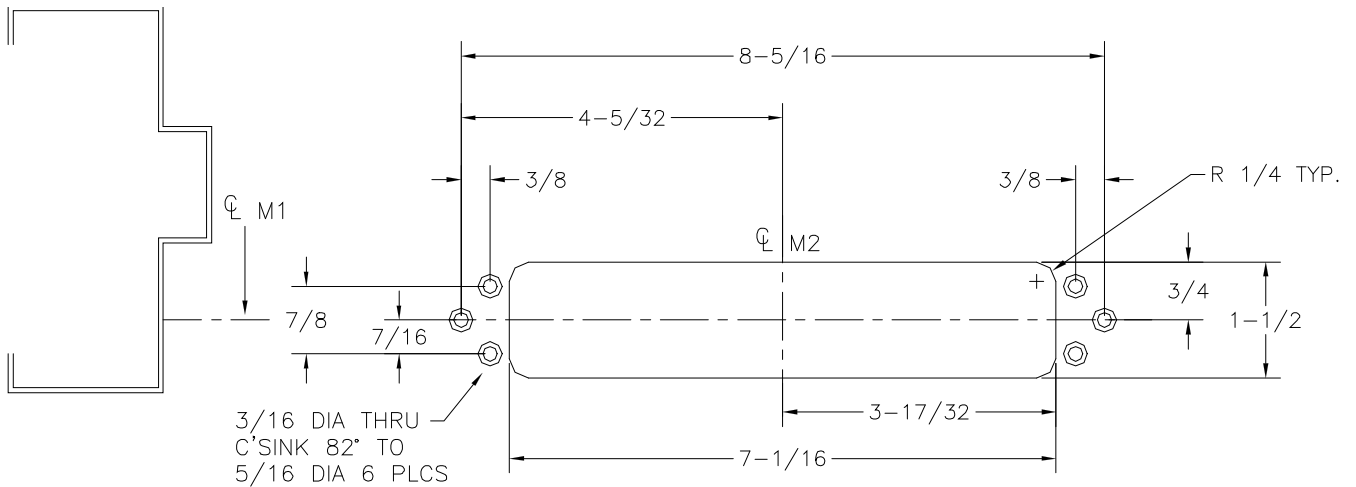
**DOOR STATUS SWITCH:** This MUST be installed for proper operation. It is best installed as close to the latch side (opposite the hinge side) as possible. The switch indicates to the module that the door is in the closed position so it can lock and engage properly.



**FRAME PREP:**

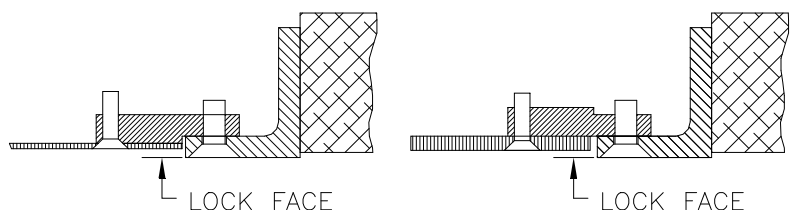
The tabs used for metal frame mounting can be inverted to accommodate different gages of metal. It is very important that the centerlines of the door and frame prep line up to form a vertical axis. The standard paper template (included) is useful in laying out the door and frame prep.

**HOLLOW METAL OR ALUMINUM FRAME PREP**

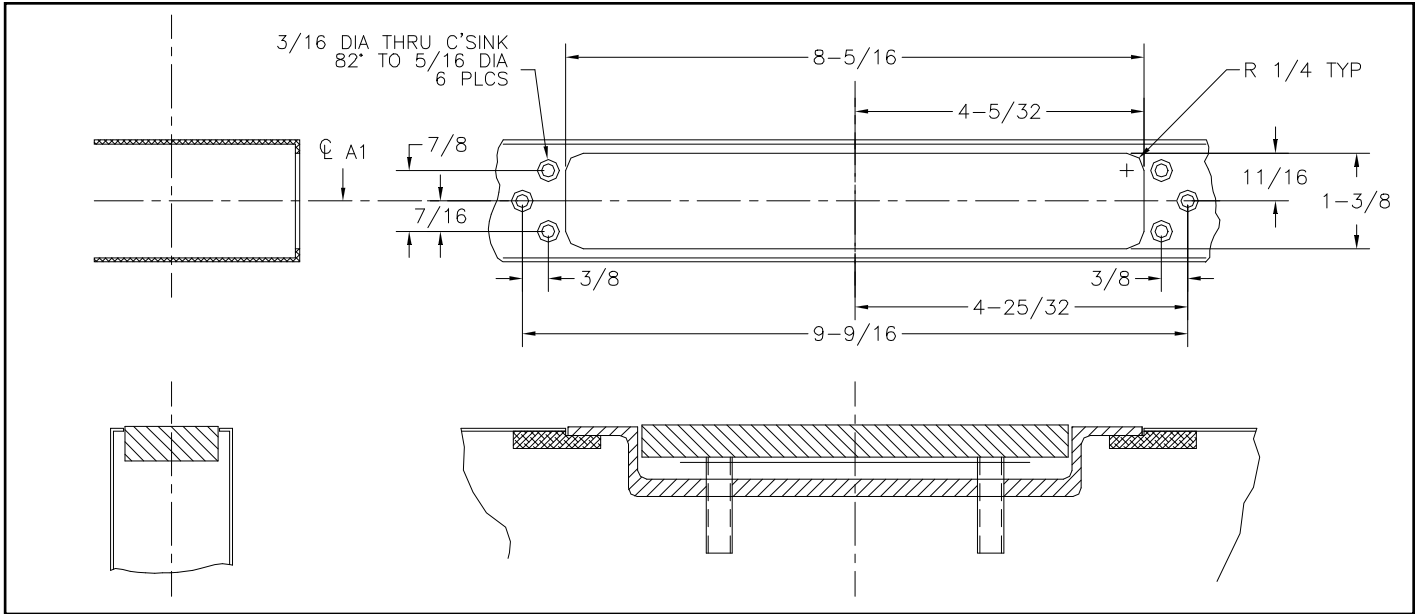


**Mounting Tabs**

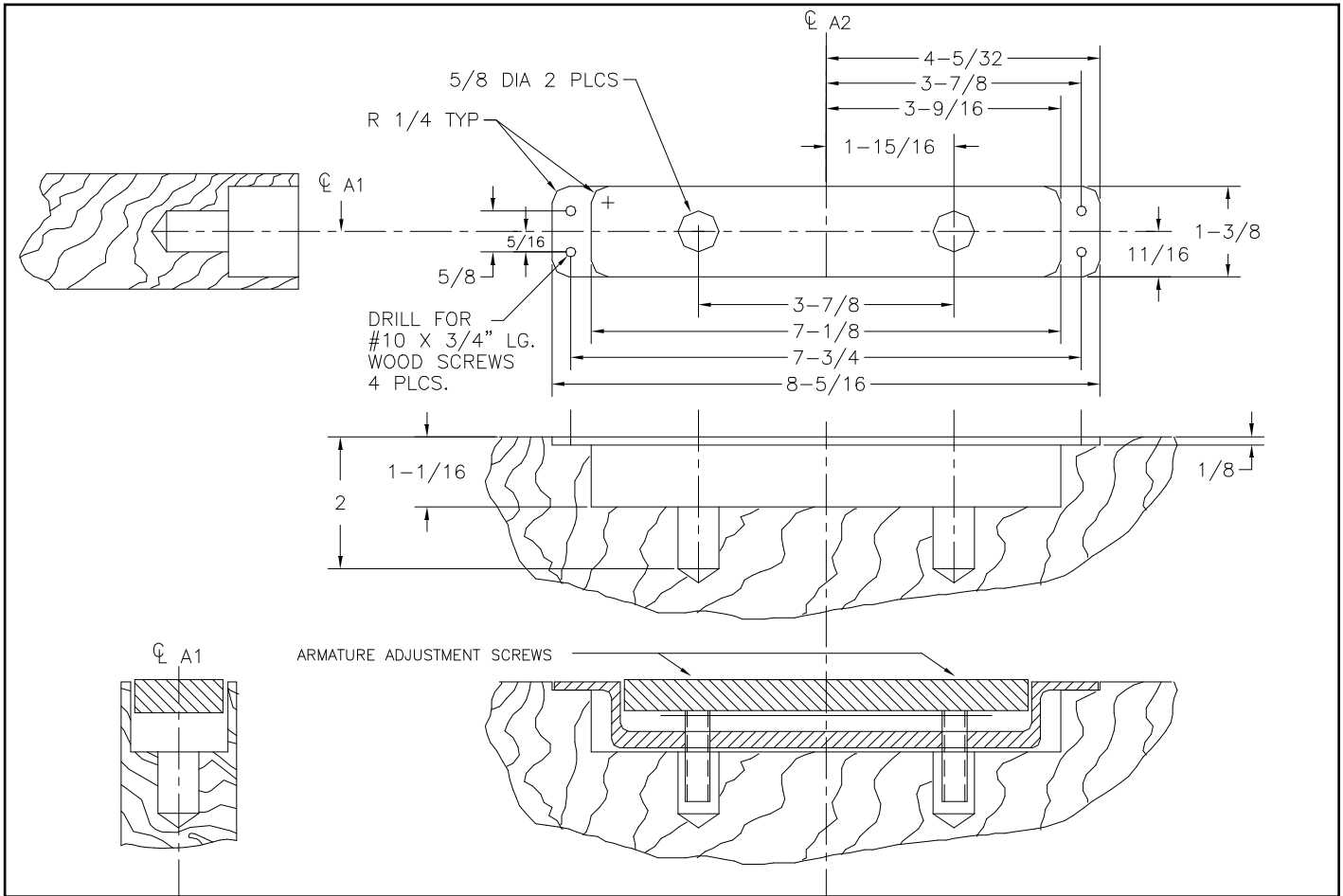
Mounting tabs are reversible so that they may be used with 16 gage hollow metal or 1/8" thick aluminum frames. Observe the correct orientation of reversible tabs as shown.



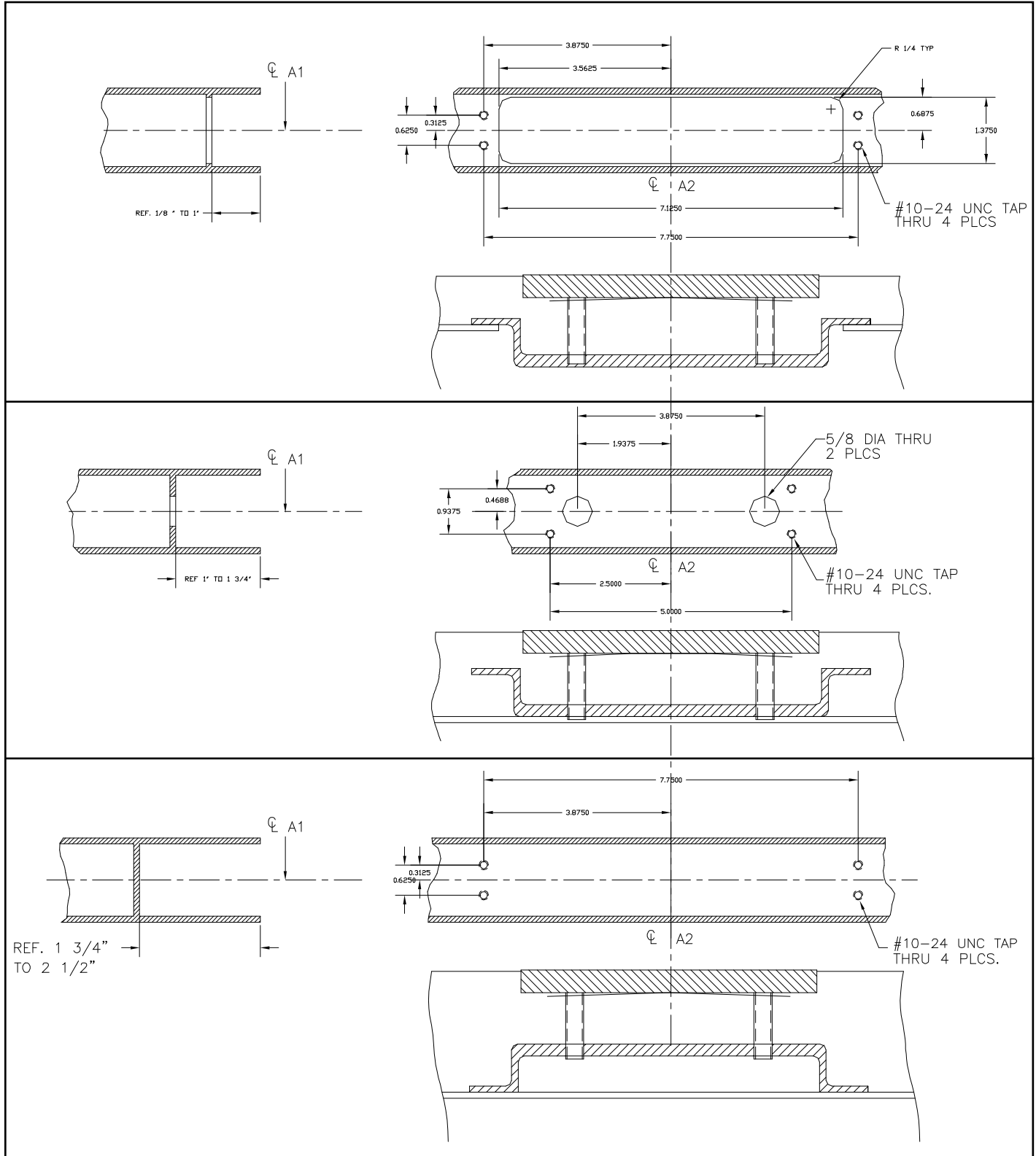
HOLLOW METAL DOOR, CLOSED CHANNEL CONSTRUCTION TEMPLATE INFORMATION:



SOLID CORE DOOR TEMPLATE INFORMATION:

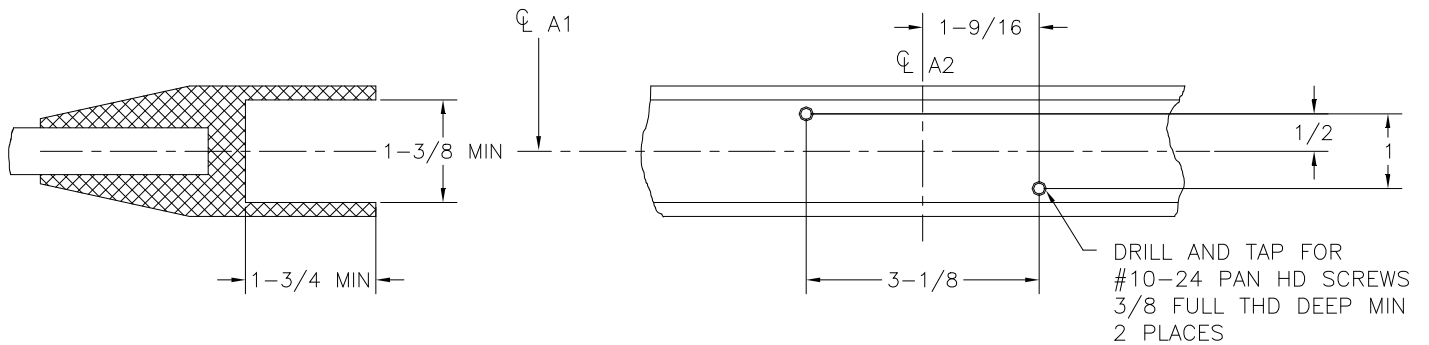


**HOLLOW METAL DOOR, OPEN CHANNEL CONSTRUCTION OR TOP RAIL DOOR USING  
STANDARD MODEL LOCK TEMPLATE INFORMATION:**

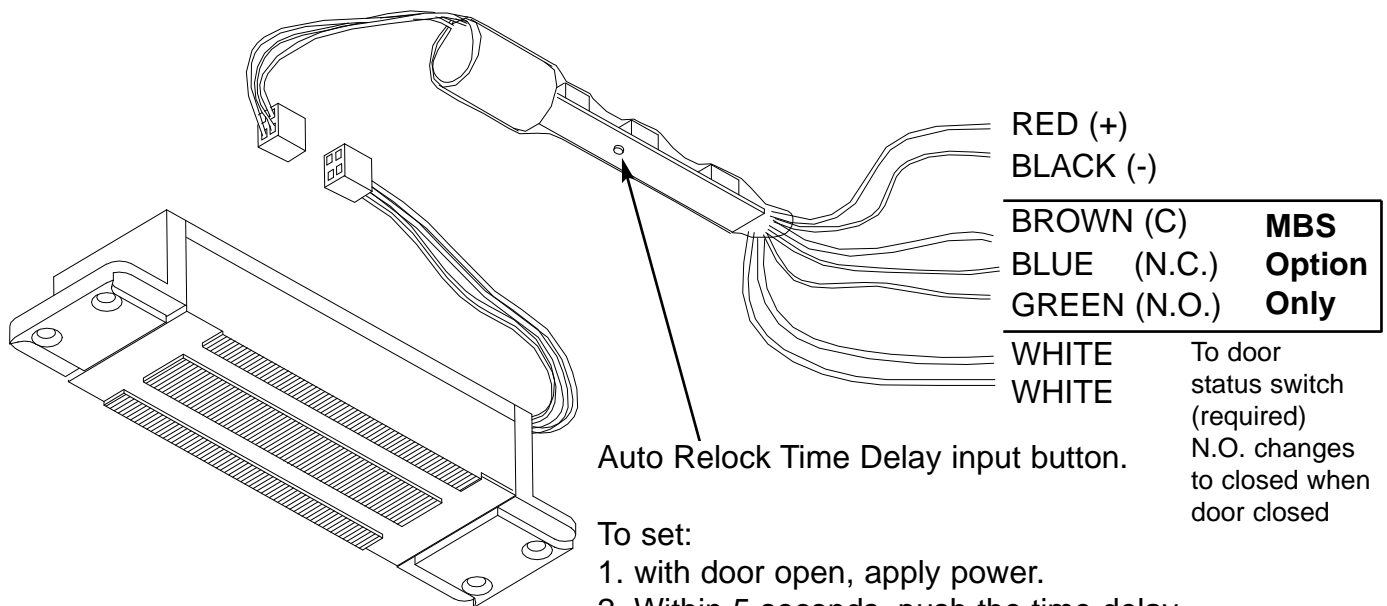




TOP RAIL DOOR (TRD) MODEL TEMPLATE INFORMATION:



WIRING AND TIME DELAY SETTING:



Auto Relock Time Delay input button.

To set:

1. with door open, apply power.
2. Within 5 seconds, push the time delay pushbutton once for each second of time delay desired. (Up to 30).
3. Close the door and verify the delay; minimum delay achievable is 2 seconds due to nature of module.

Note: the set delay is stored at the door closing and will repeat itself at the subsequent applications of power.



## NOTES



**NOT  
TO  
SCALE**

# Door & Header Prep 320+ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

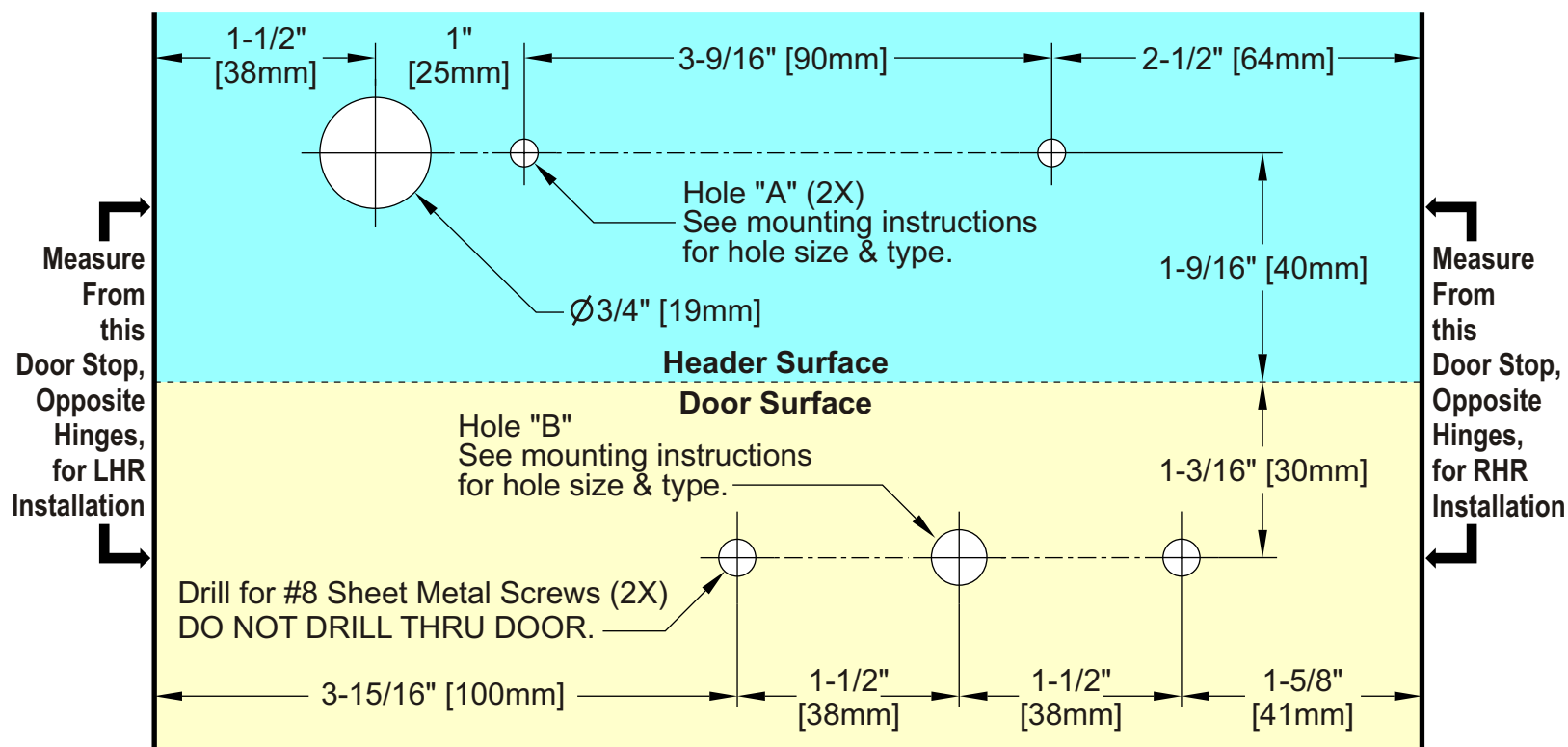


FORM NUMBER: 32001

REVISION: A

DATE: 1-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!  
USE THE PAPER DRILLING TEMPLATE THAT WAS INCLUDED WITH LOCK.**



**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.



**NOT  
TO  
SCALE**

# Door & Header Prep 320+ TJ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

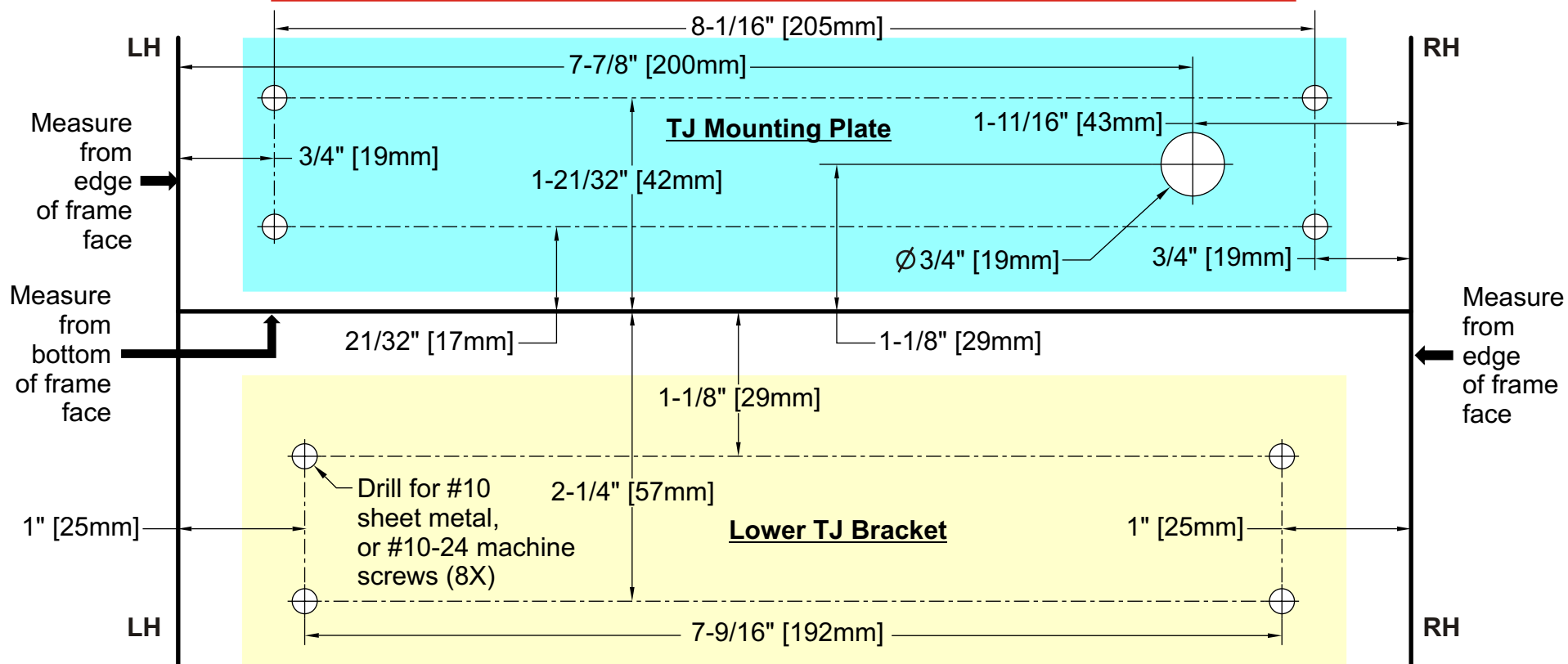


FORM NUMBER: 32002

REVISION: A

DATE: 7-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!**



**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.

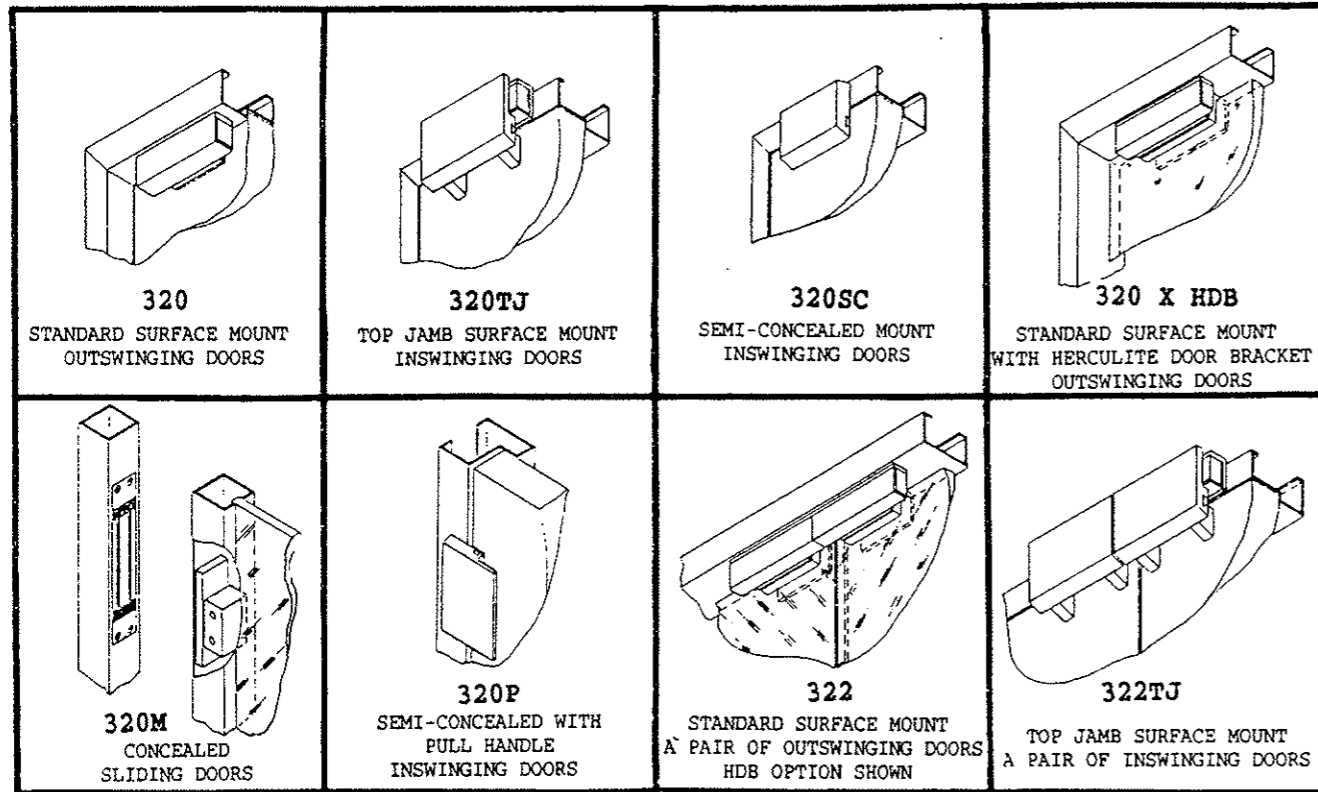


# 320 AND 322 SERIES LOCKS



# 320 AND 322 SERIES LOCKS

## GENERAL INFORMATION



THE 320 AND 322 SERIES LOCKS ARE MEDIUM SECURITY, HIGH PERFORMANCE LOCKING DEVICES, WHEN PROPERLY MOUNTED ON A QUALITY DOOR AND FRAME WILL WITHSTAND UP TO 650 LBS OF DIRECT FORCE. ANY OTHER CONDITIONS (IE: WEAK HEADER) MAY REQUIRE REINFORCEMENT.

**HOLDING FORCE:**

320 SERIES: 500 LBS @ 12V, 650 LBS @ 24V  
 322 SERIES: 500 LBS PER DOOR @ 12V  
 650 LBS PER DOOR @ 24V

**INDEX**

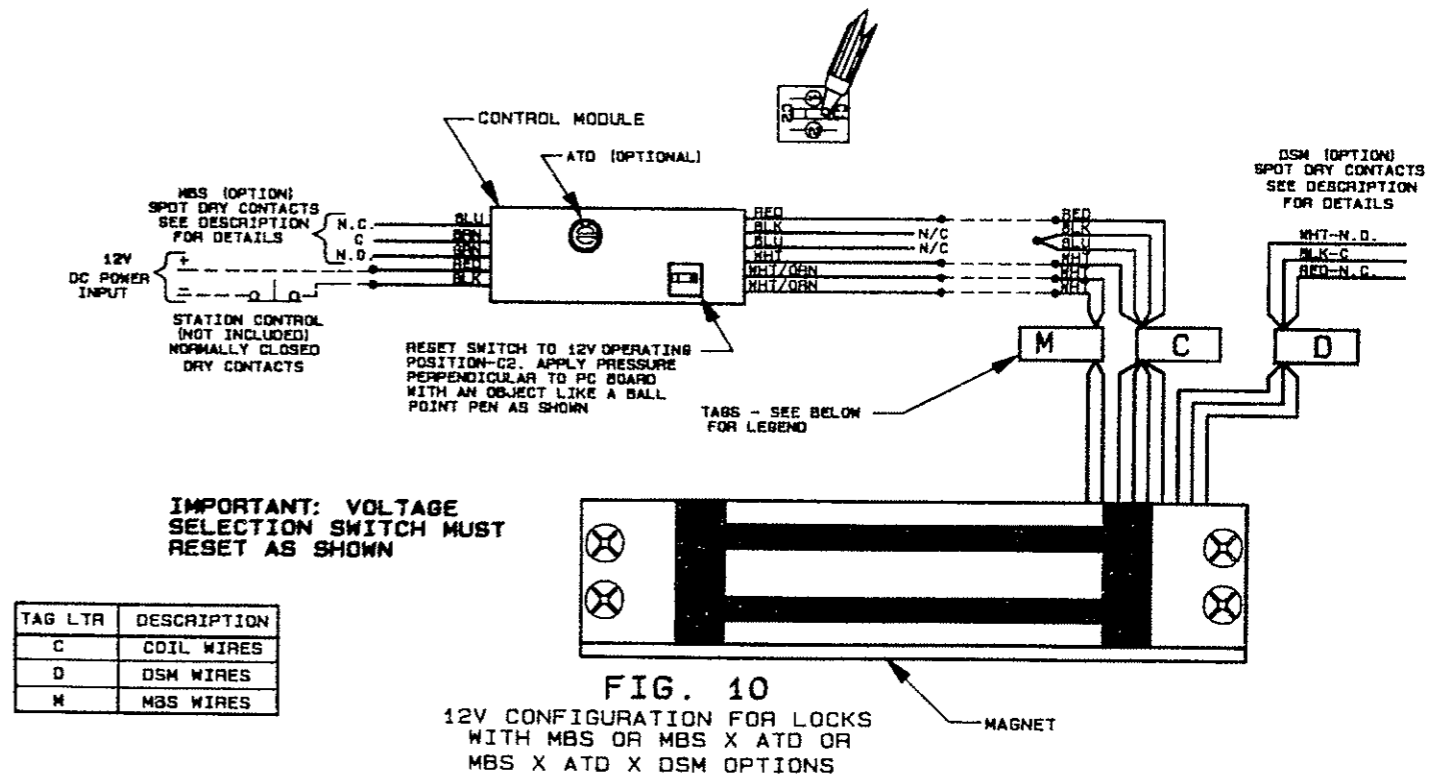
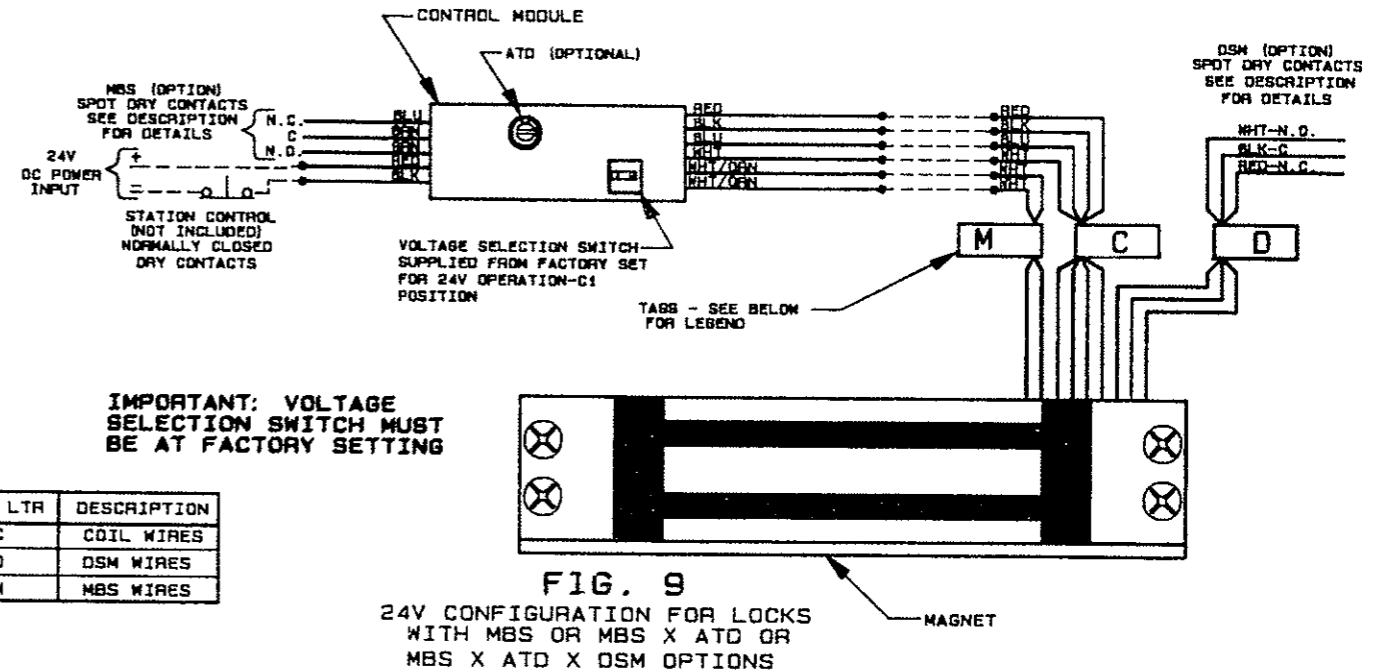
General Information-----Page 1  
 Installation Instructions---Page 2  
 Parts Identification:  
   Model 320 Series-----Page 4  
   Model 320T-----Page 5  
   Model 320SC-----Page 6  
   Model 320M-----Page 7  
   Model 320P-----Page 8  
   Model 322 Series-----Page 9  
   Model 322TJ-----Page 10  
 Parts List-----Page 11  
 Template Drawings-----Page 12  
 Wiring Instructions-----Page 15



# 320 SERIES LOCKS

## WIRING DETAILS

### ALL MODELS





# 320 SERIES LOCKS

## WIRING DETAILS

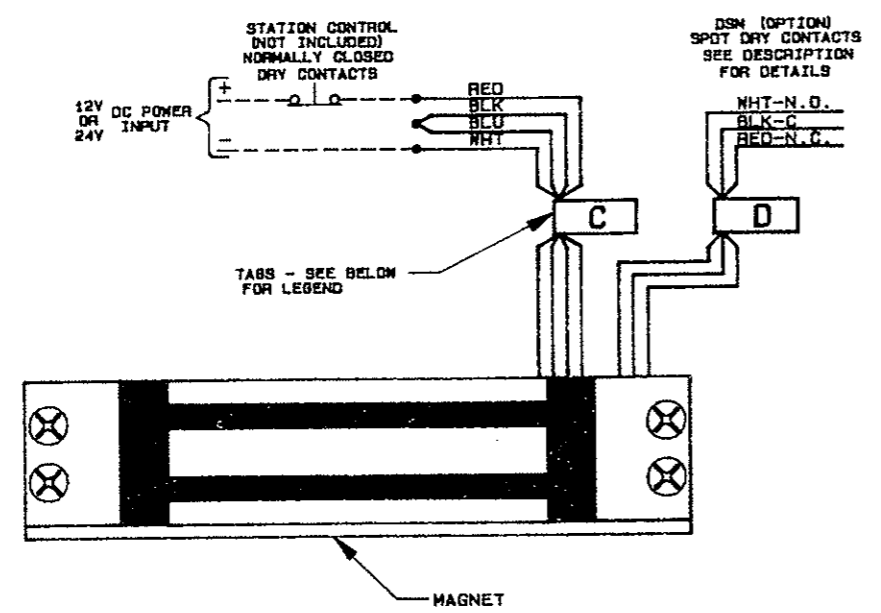
### ALL MODELS



# 320 AND 322 SERIES LOCKS

## INSTALLATION INSTRUCTIONS

**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK**



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES

**FIG. 7**  
12V OR 24V CONFIGURATION FOR LOCKS WITHOUT OPTIONS OR LOCKS WITH DSM OPTION

**GENERAL INFORMATION:**

- \* Handle the equipment carefully. Damaging the mating surfaces of the electromagnet or the armature may reduce locking efficiency.
- \* The electromagnet mounts rigidly to the door frame header. The armature mounts to the door and is designed to pivot about its center compensating for door misalignment.
- \* When installing an electromagnetic lock with the DSM option, care must be used to be certain that the end of the armature holding the permanent magnet will be directly opposite the DSM magnetic switch in the magnet assembly.

**CAUTION:**

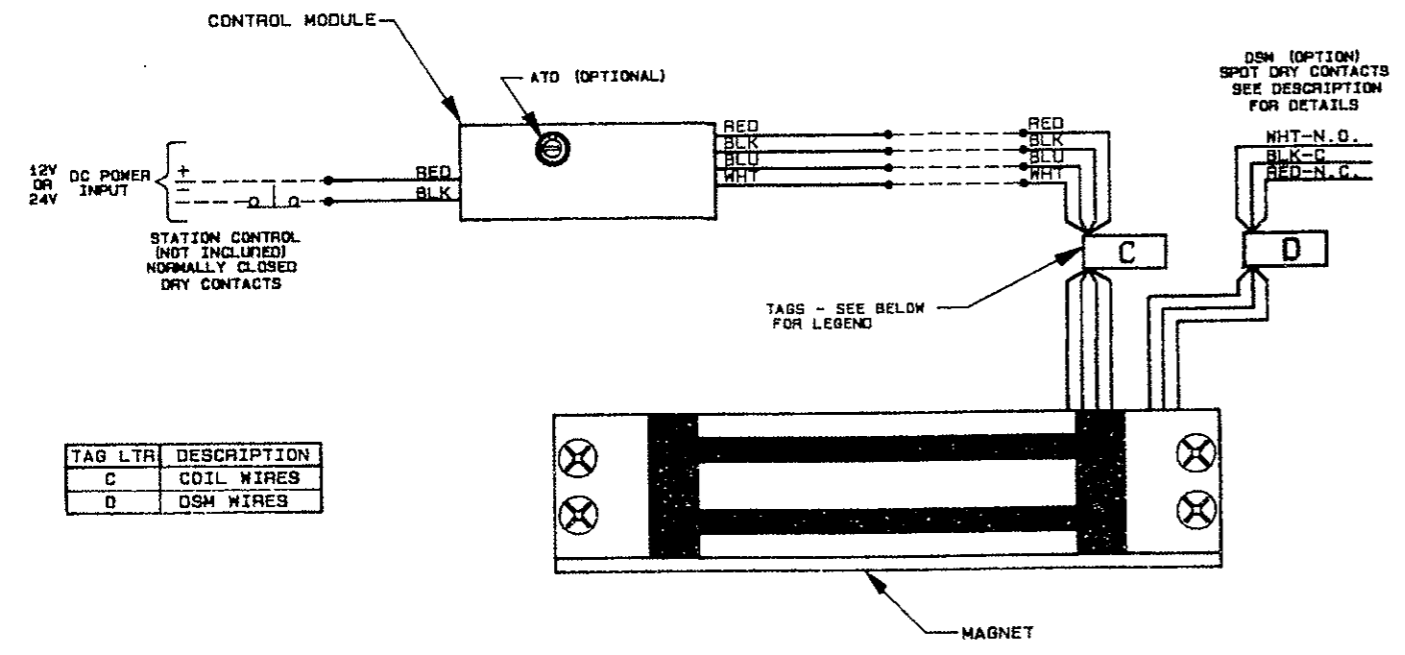
FAILURE TO SECURE THE ARMATURE TO THE DOOR MAY RESULT IN SERIOUS INJURY TO DOOR USER. FOR PROPER OPERATION, SAFETY AND SECURITY, SEX NUT/BOLT ASSEMBLY, WASHERS AND SPACERS MUST BE ASSEMBLED IN THE ORDER ILLUSTRATED AND SECURELY TIGHTENED 1/8 TO 1/4 TURN PAST HAND TIGHT.

**MAINTENANCE:**

- \* The electromagnet and armature are plated for corrosion resistance and require little maintenance. For maximum performance, occasional cleaning and an application of a protective coating to the electromagnet and the armature is recommended.

The following service should be done to both the armature and the electromagnet as required:

1. Clean the functional surfaces of the electromagnet and the armature by applying a light coating of silicon lubricant and wipe with a clean dry cloth.



TAG LTR	DESCRIPTION
C	COIL WIRES
D	DSM WIRES

**FIG. 8**  
12V OR 24V CONFIGURATION FOR LOCKS WITH ATD AND ATD X DSM OPTIONS

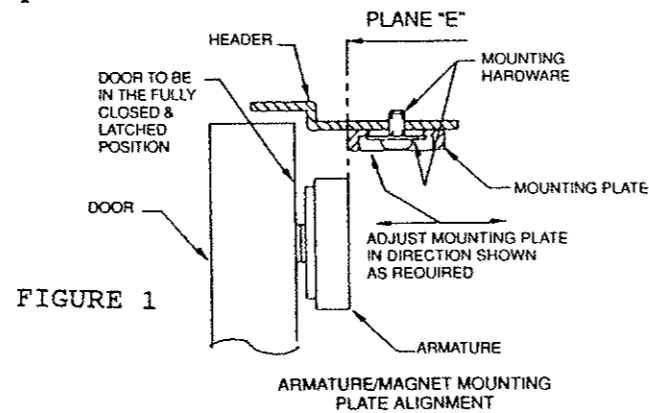


# 320 AND 322 SERIES LOCKS INSTALLATION INSTRUCTIONS

MODELS: 320, 320 X HDB, 322 AND 322 X HDB ONLY

NOTE: Hardware provided is for 1-3/4" door. If door thickness exceeds 1-3/4", an alternate sex nut is required.  
Order P/N - 399025 for 2" doors  
- 399026 for 2-1/4" doors  
or if additional information is required, consult factory.

- 1.0 Prep door and frame according to the appropriate template drawing. When using paper template, follow instructions on the template.
- 1.1 Install armature(s). Refer to Figures 2, 3 and 4 on page 12 and exploded views on pages 4, and 9 for parts identification.
- 1.2 Install the adjustable mounting plate onto frame, placing screws through the slots and into the holes "A" prepped for #10 screws.
- 1.3 With the door fully closed and latched, check the alignment of the magnet mounting plate with the armature as shown in Figure 1, below. When the magnet mounting plate and the armature are in the correct alignment, firmly tighten the screws. Using the mounting plate as a template, drill the remaining mounting holes "C".  
**WARNING: INSTALLATION OF THE REMAINING HARDWARE IS NECESSARY TO MAINTAIN ALIGNMENT.**
- 1.4 Refer to exploded views on pages 4 and 9 to complete mechanical installation.
- 1.5 Go to All Models, paragraph 3.0.



MODELS: 320TJ, 320M, 320P AND 322TJ ONLY

- 2.0 Prep door and frame according to the appropriate template drawing. When using paper template, follow instructions on the template.
- 2.1 Refer to exploded views on pages 5, 6, 7, 8 and 10 to complete mechanical installation.

### ALL MODELS

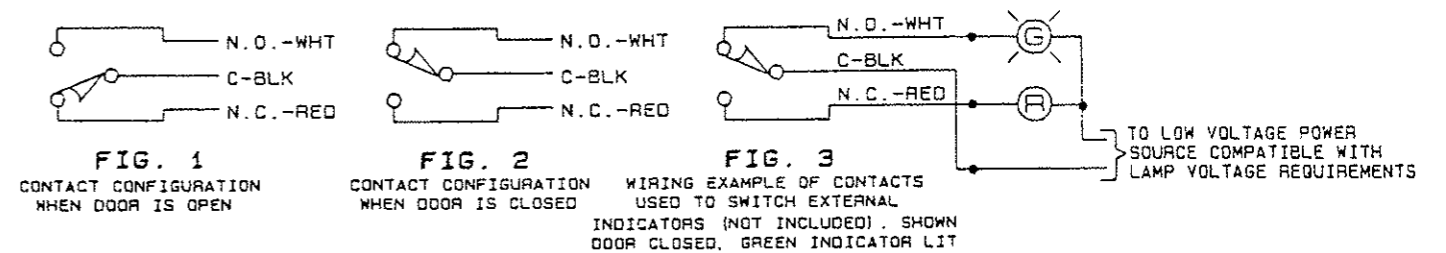
- 3.0 See wiring instructions on pages 15, 16, 17 and 18 and other applicable instructions to complete full installation.



# 320 SERIES LOCKS SPECIFICATION AND ELECTRICAL OPTIONS ALL MODELS

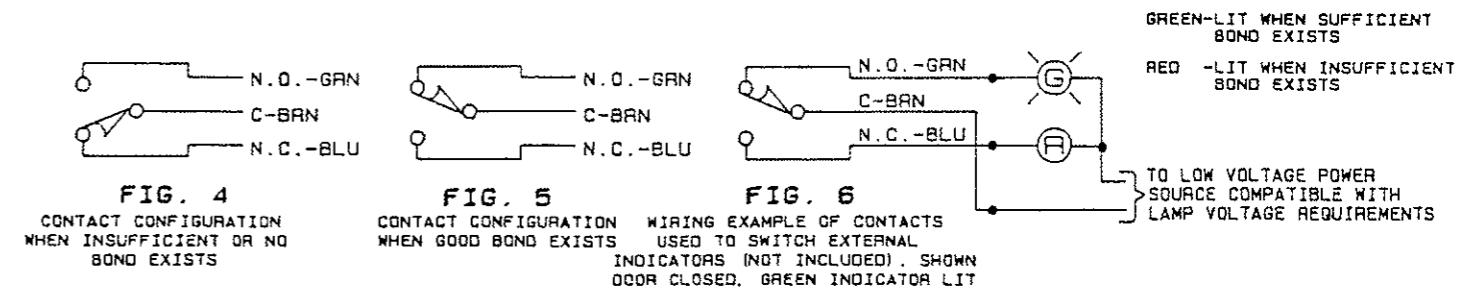
### DOOR STATUS SWITCH (DSM) OPTION:

The DSM provides a signal to indicate whether the door is open or closed. The lock mounting instructions should be followed closely to ensure reliable performance of this option. The DSM provides a signal via a set of form "C" dry contacts rated 100mA resistive at 24VDC. These contacts are accessed by the red, black and white wires. The contacts are labeled in the door opened condition which are: white-N.O. (normally open), black-C (common) and red-N.C. (normally closed). Closing the door causes the contacts across the black and white wires to close and the black and red wires to open. See Figures 1, 2 and 3 below.



### MAGNETIC BOND SENSOR (MBS) OPTION:

The MBS senses whether sufficient magnetic holding force exists to ensure adequate locking. It will respond to low line voltage, foreign materials in the magnetic gap, damage or dirty surfaces of the lock and/or armature. The MBS option provides a signal via a set of form "C" dry contacts rated 1 amp at 30VDC resistive load maximum. The dry contacts are accessed by three (3) wires which are green, blue and brown. They are labeled in a deenergized/no bond condition which are green-N.O. (normally open) and blue-N.C. (normally closed) and brown-C (common). Once the lock is energized and the magnet and armature are properly bonded, the contacts will switch, at which time the common (brown wire lead) and the normally open (green wire lead) will be closed contacts. See Figures 4, 5 and 6 below.







# 320 SERIES LOCKS

## SPECIFICATION AND ELECTRICAL OPTIONS

### ALL MODELS

**SPECIFICATIONS:**

VOLTAGE: 12V OR 24V FIELD SELECTABLE

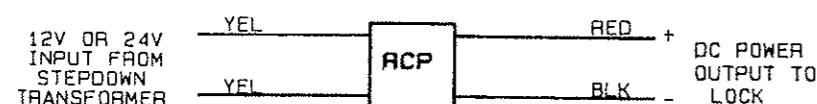
CURRENT: .225 AMP @ 12V  
.450 AMP @ 24V

RATED HOLDING FORCE;  
500 lbs @ 12v  
650 lbs @ 24v

**ELECTRICAL OPTIONS:**

**RECTIFIER (RCP) OPTION:**

The RCP option allows operation of a direct current (DC) lock from a low voltage alternating current (AC) supply, such as a 12 or 24 volt transformer. The RCP Module converts the AC voltage to DC voltage supplied to the lock. One (1) RC Module should be used for each lock. The RCP Module has four (4) leads. The two yellow wires are the low voltage AC input. The are connected to the low voltage side of the transformer. The red lead is the positive (+) DC output. It is connected to the positive (+) lock input. The black lead is the negative (-) DC output. It is connected to the negative (-) lock input.



**ADJUSTABLE TIME DELAY (ATD) OPTION:**

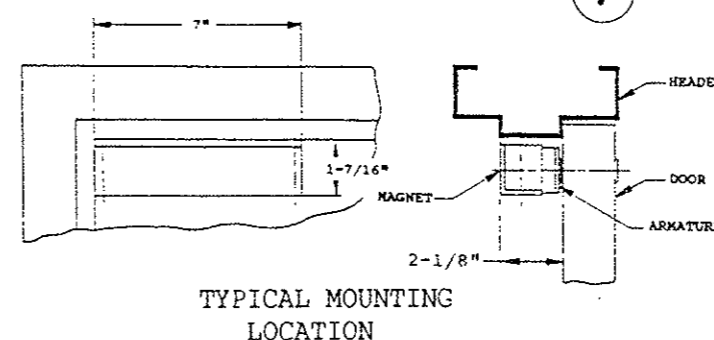
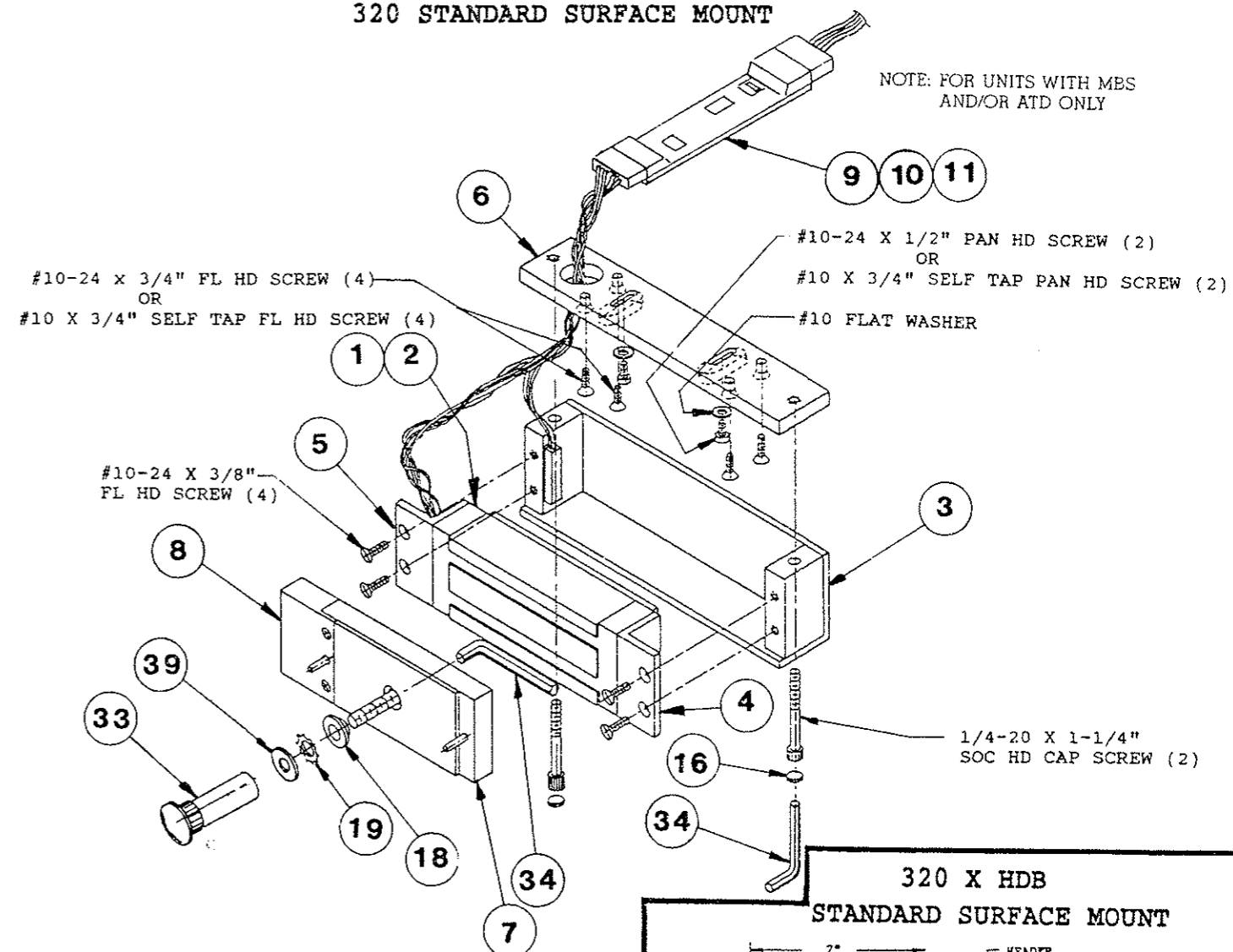
The ATD can be set to delay the relock from 0 to 30 seconds. To increase time, turn adjustment potentiometer clockwise. To decrease time, turn potentiometer counter-clockwise. The ATD will operate whenever input power is interrupted and then reapplied. For location of potentiometer, see Figures 8, 9 and 10.



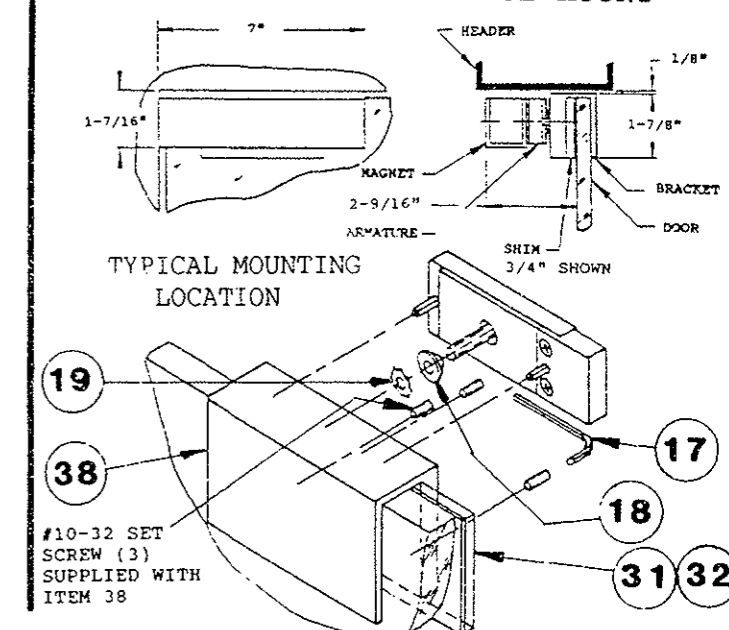
# 320 AND 322 SERIES LOCKS

## EXPLODED VIEW

**320 STANDARD SURFACE MOUNT**



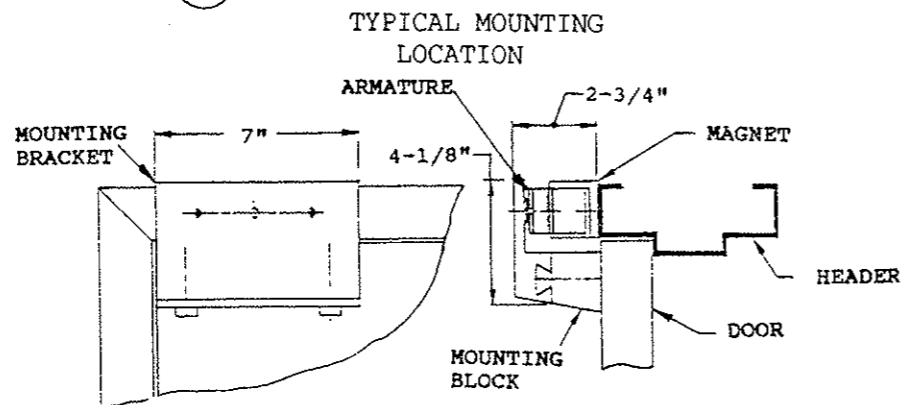
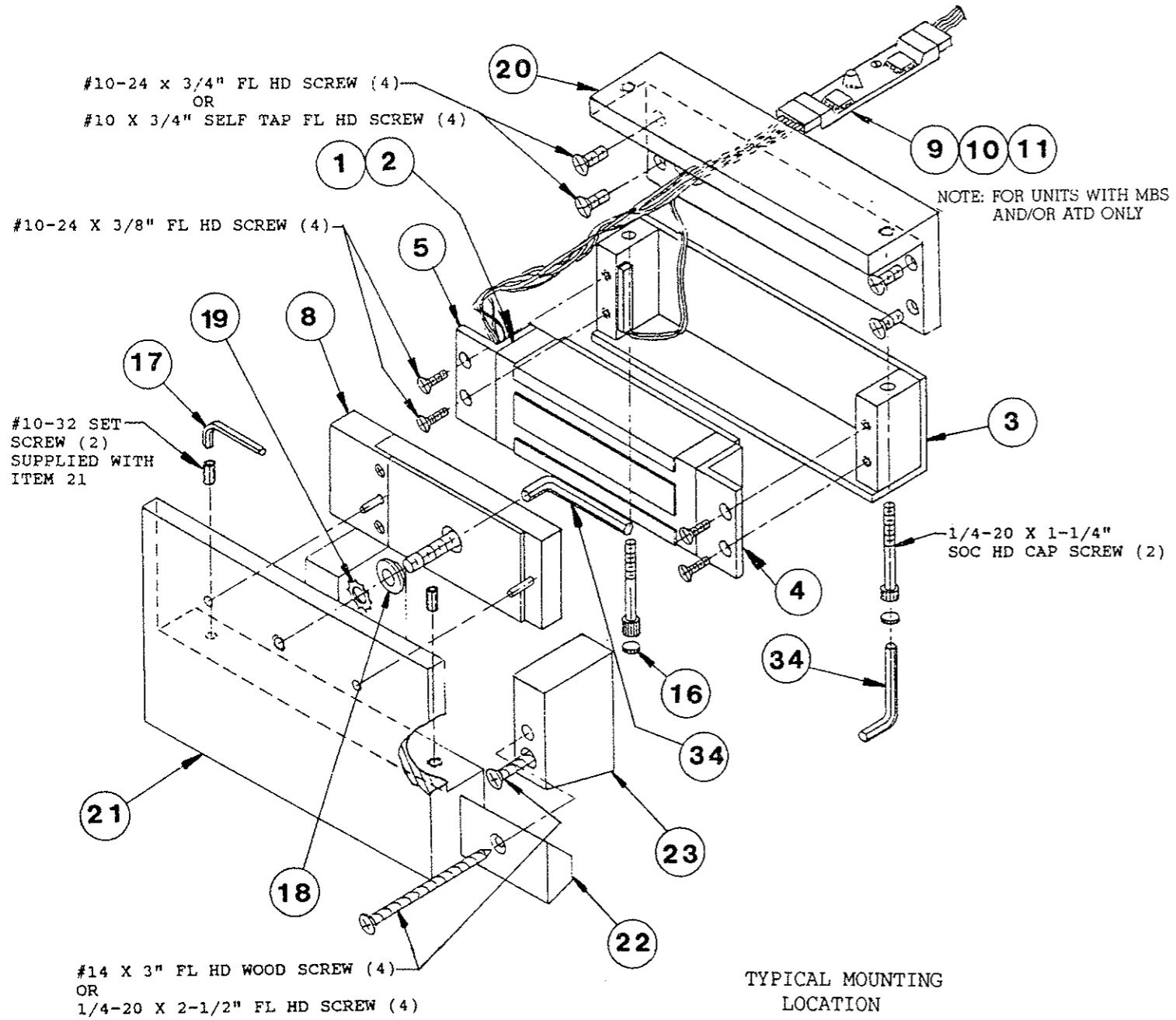
**320 X HDB STANDARD SURFACE MOUNT**





# 320 AND 322 SERIES LOCKS EXPLODED VIEW

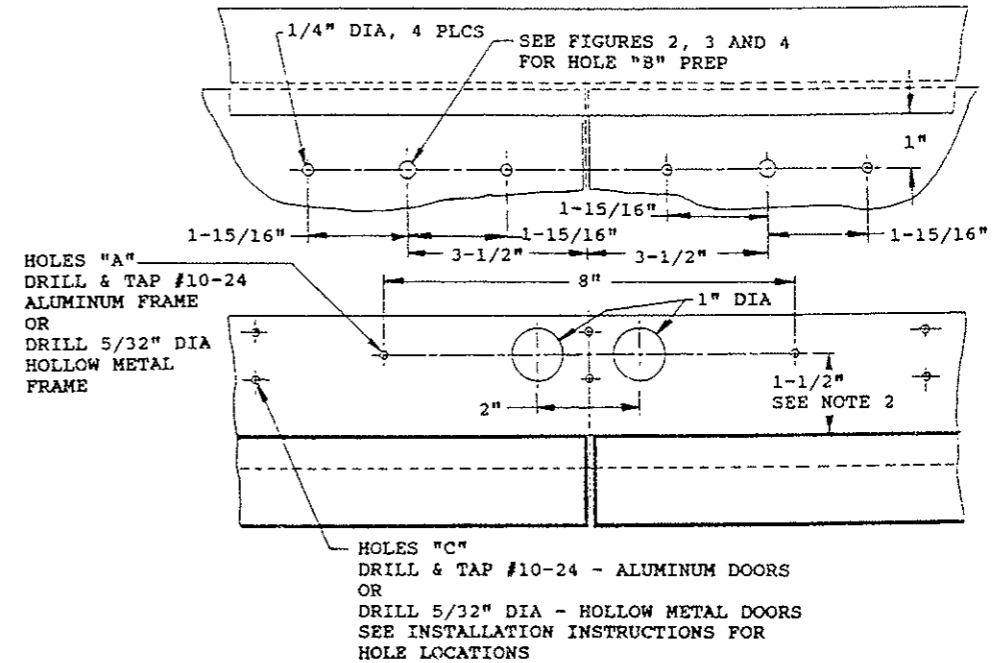
## 320TJ SERIES



# 320 AND 322 SERIES LOCKS

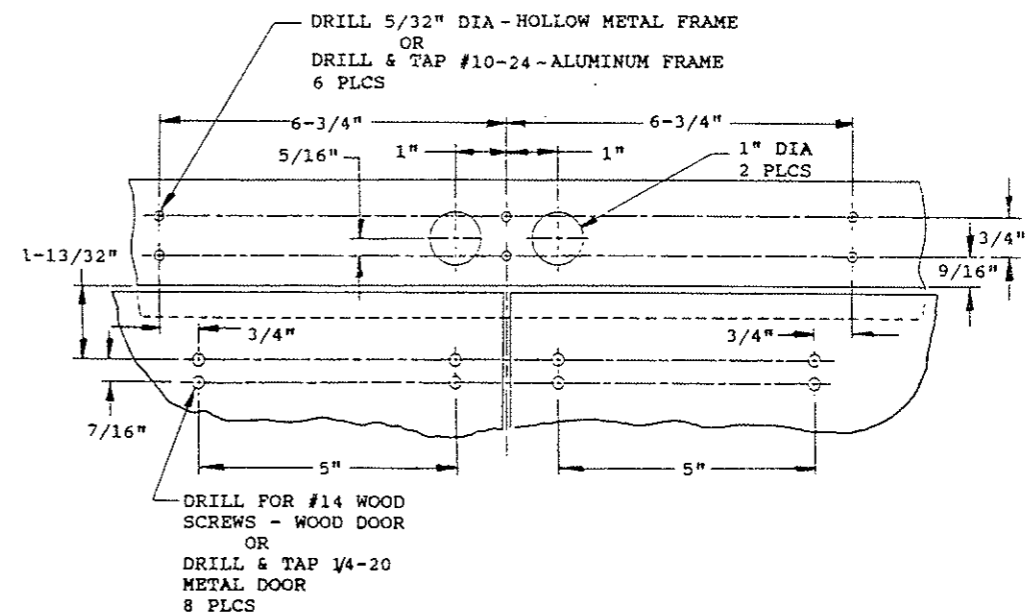
## TEMPLATE DRAWING

### 322 AND 322 X HDB TEMPLATE DRAWING



- NOTES:
1. MODEL 322 X HDB REQUIRES FRAME PREP ONLY
  2. FOR MODEL 322 X HDB 1-1/2" DIMENSION IS FROM ARMATURE BRACKET

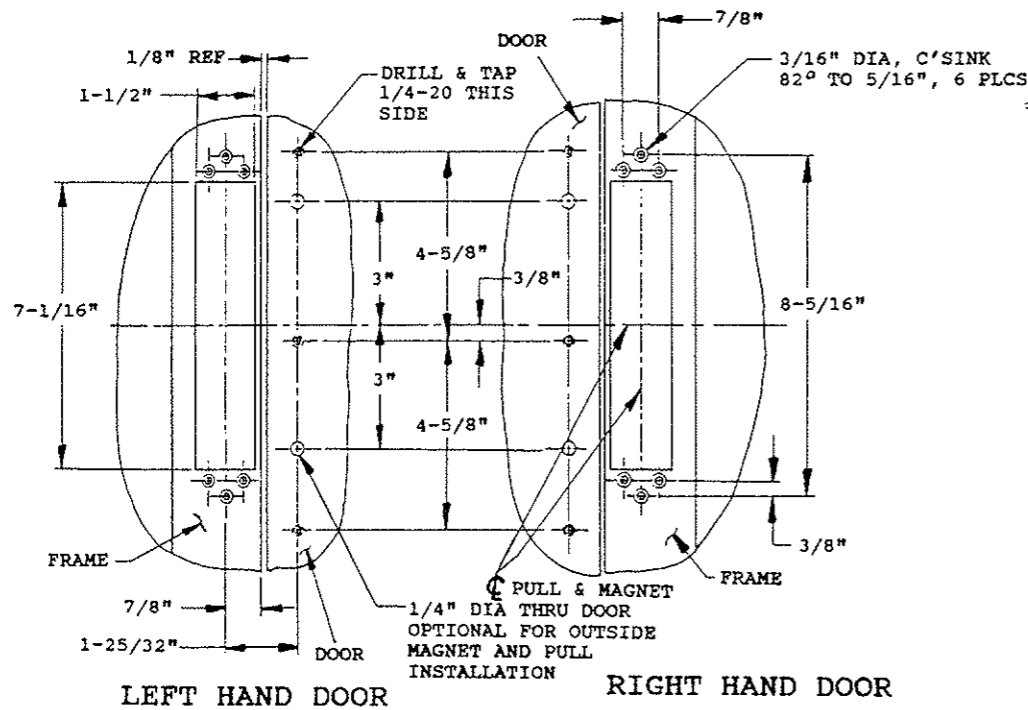
### 322TJ TEMPLATE DRAWING



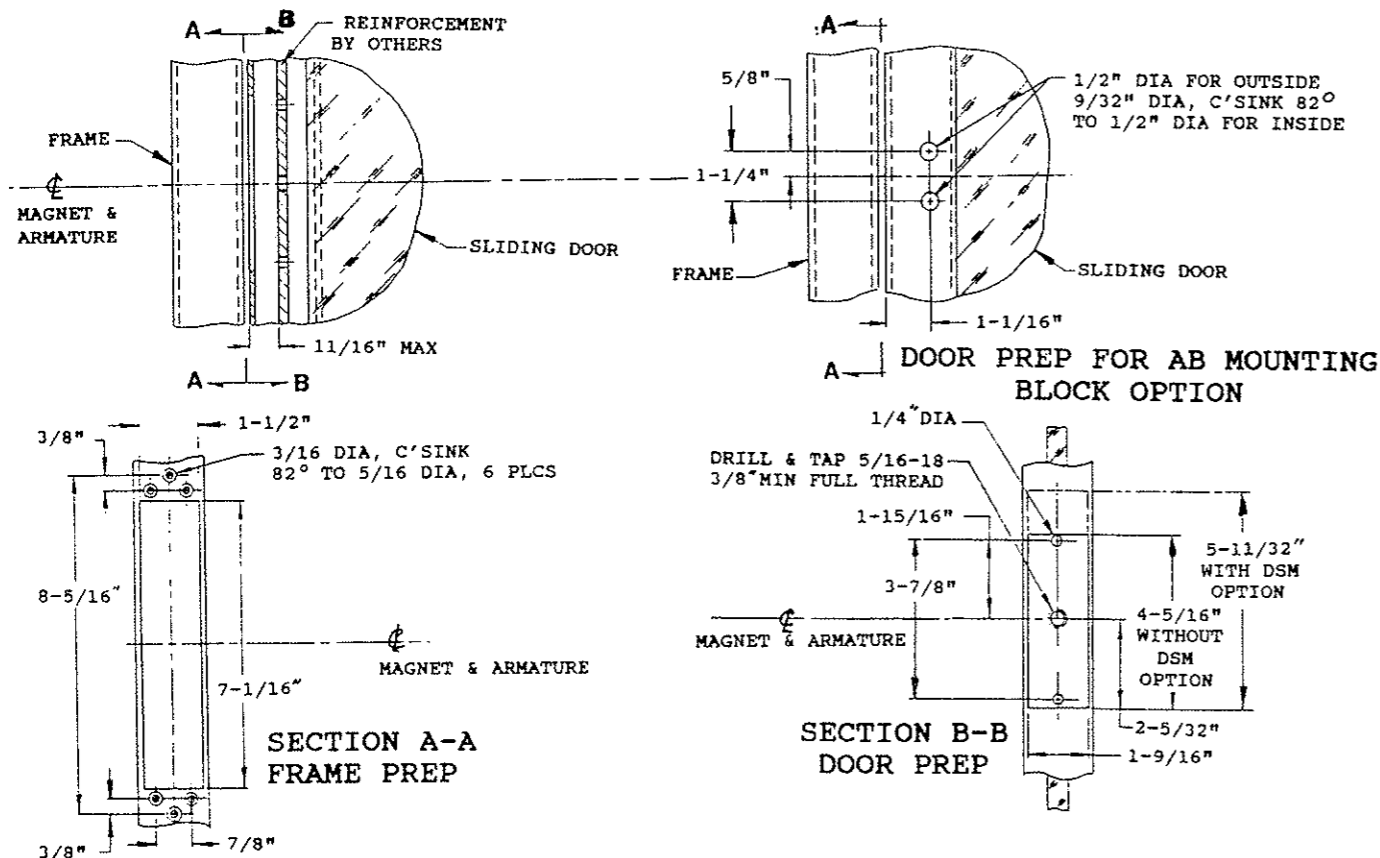


# 320 AND 322 SERIES LOCKS TEMPLATE DRAWING

320P  
TEMPLATE DRAWING

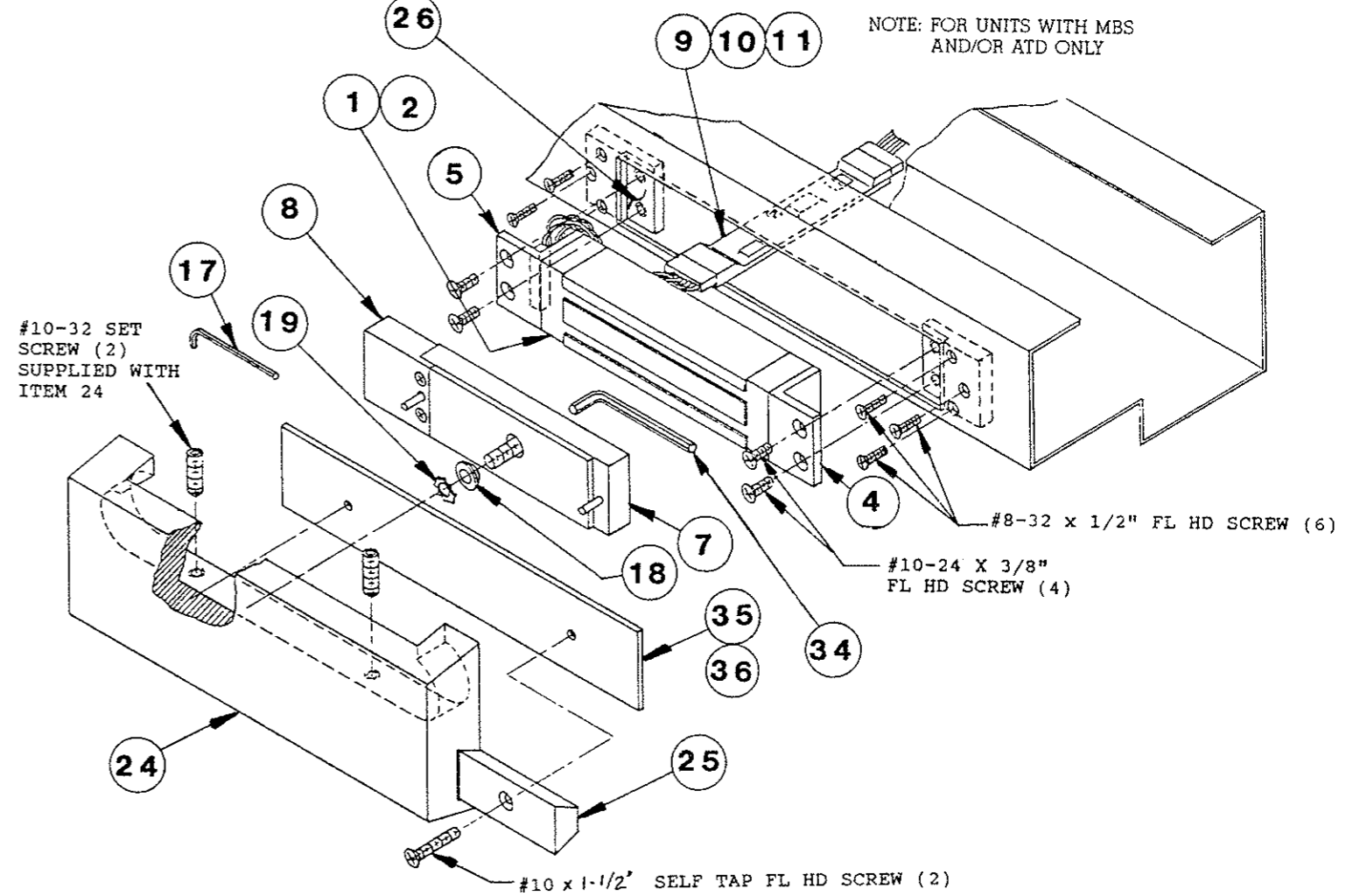


320M  
TEMPLATE DRAWING

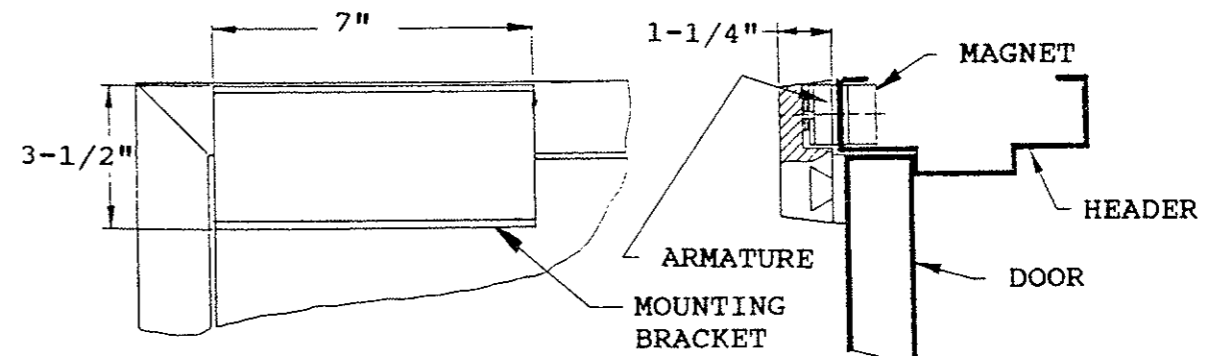


# 320 AND 322 SERIES LOCKS EXPLODED VIEW

320SC SERIES



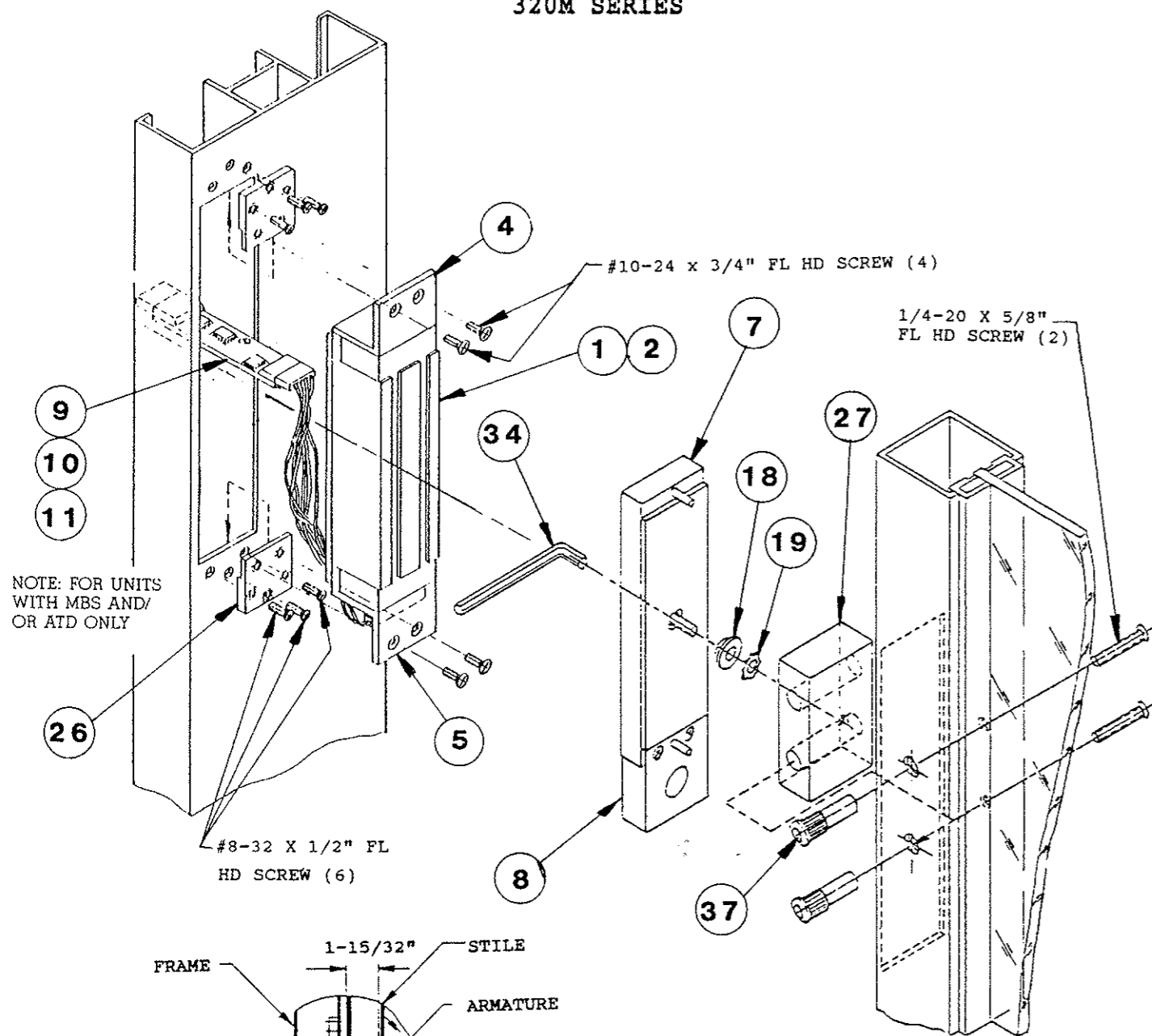
TYPICAL MOUNTING  
LOCATION





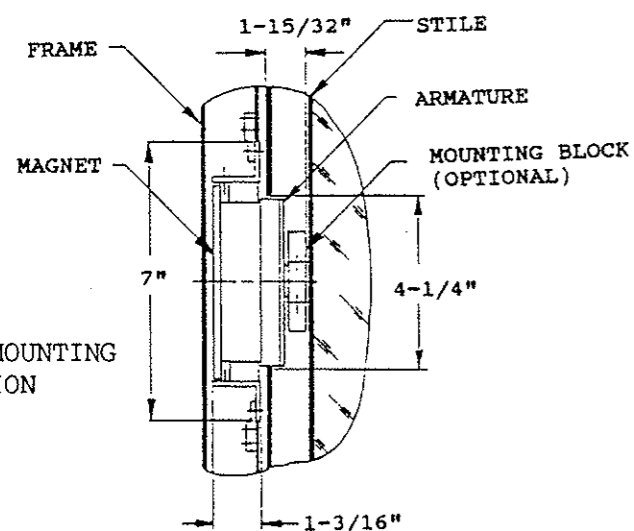
# 320 AND 322 SERIES LOCKS EXPLODED VIEW

## 320M SERIES



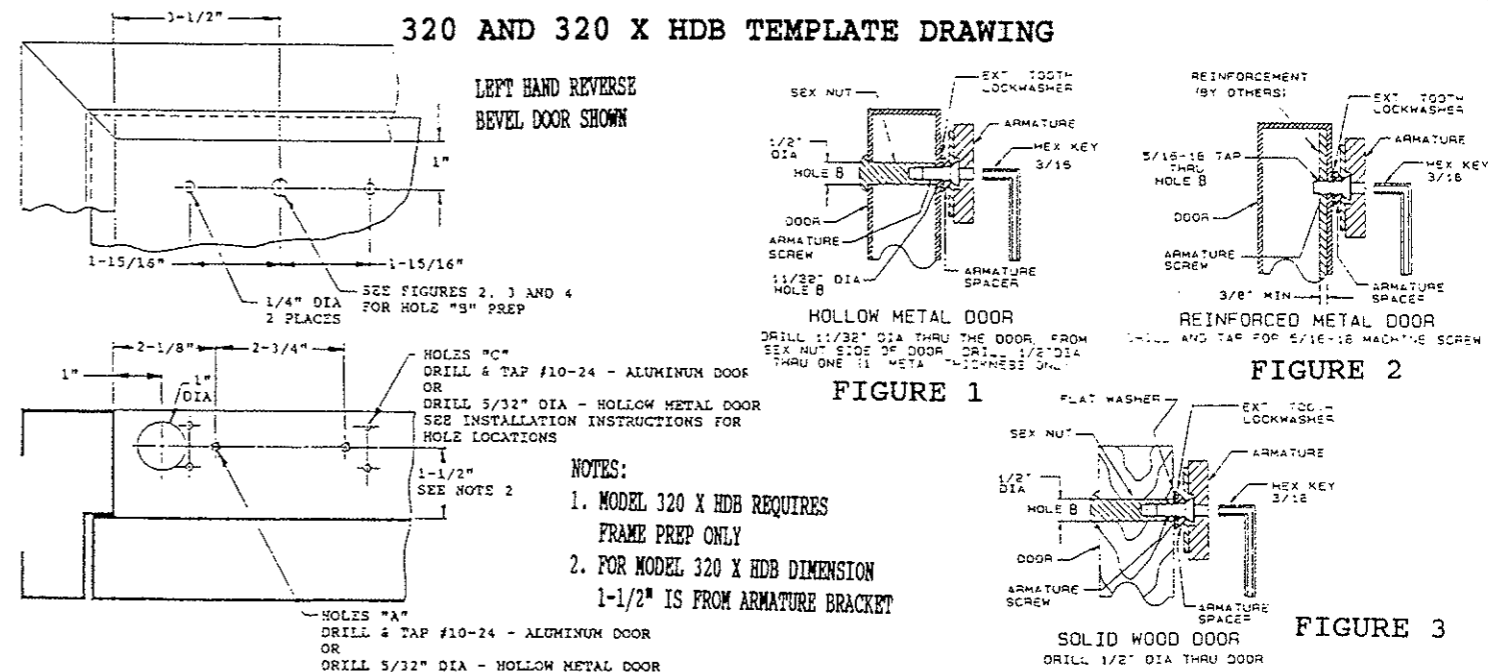
NOTE: FOR UNITS WITH MBS AND/OR ATD ONLY

TYPICAL MOUNTING LOCATION



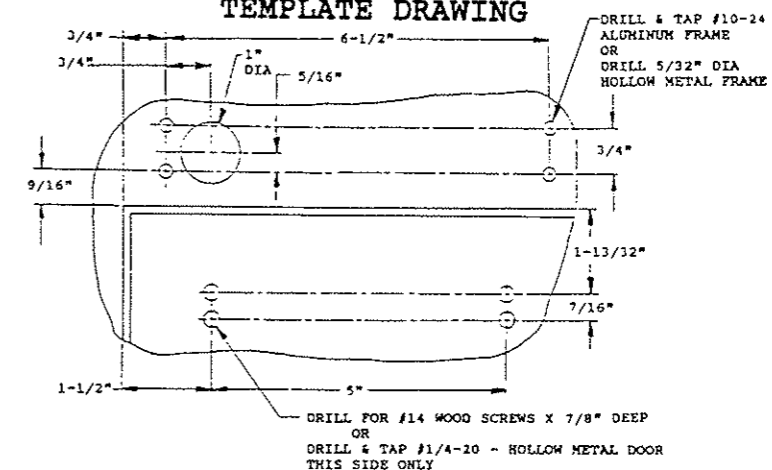
# 320 AND 322 SERIES LOCKS TEMPLATE DRAWING

## 320 AND 320 X HDB TEMPLATE DRAWING



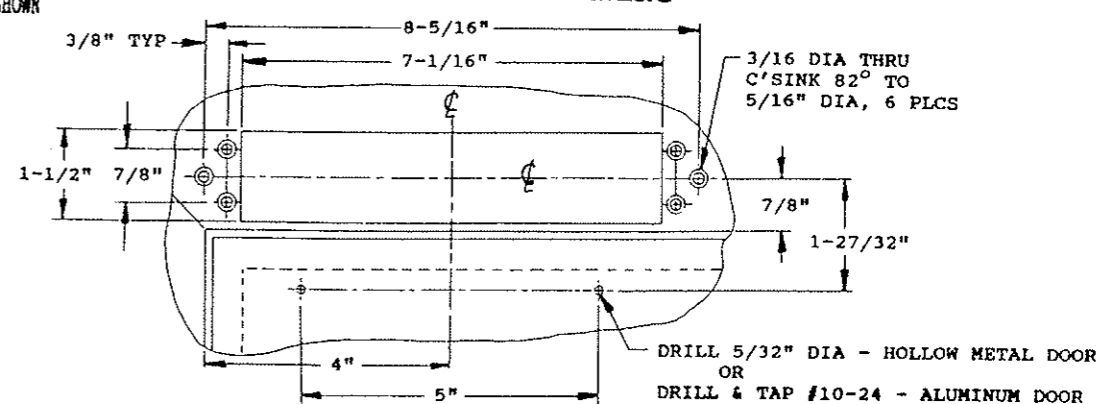
## 320TJ TEMPLATE DRAWING

LEFT HAND DOOR SHOWN



## 320SC TEMPLATE DRAWING

LEFT HAND DOOR SHOWN



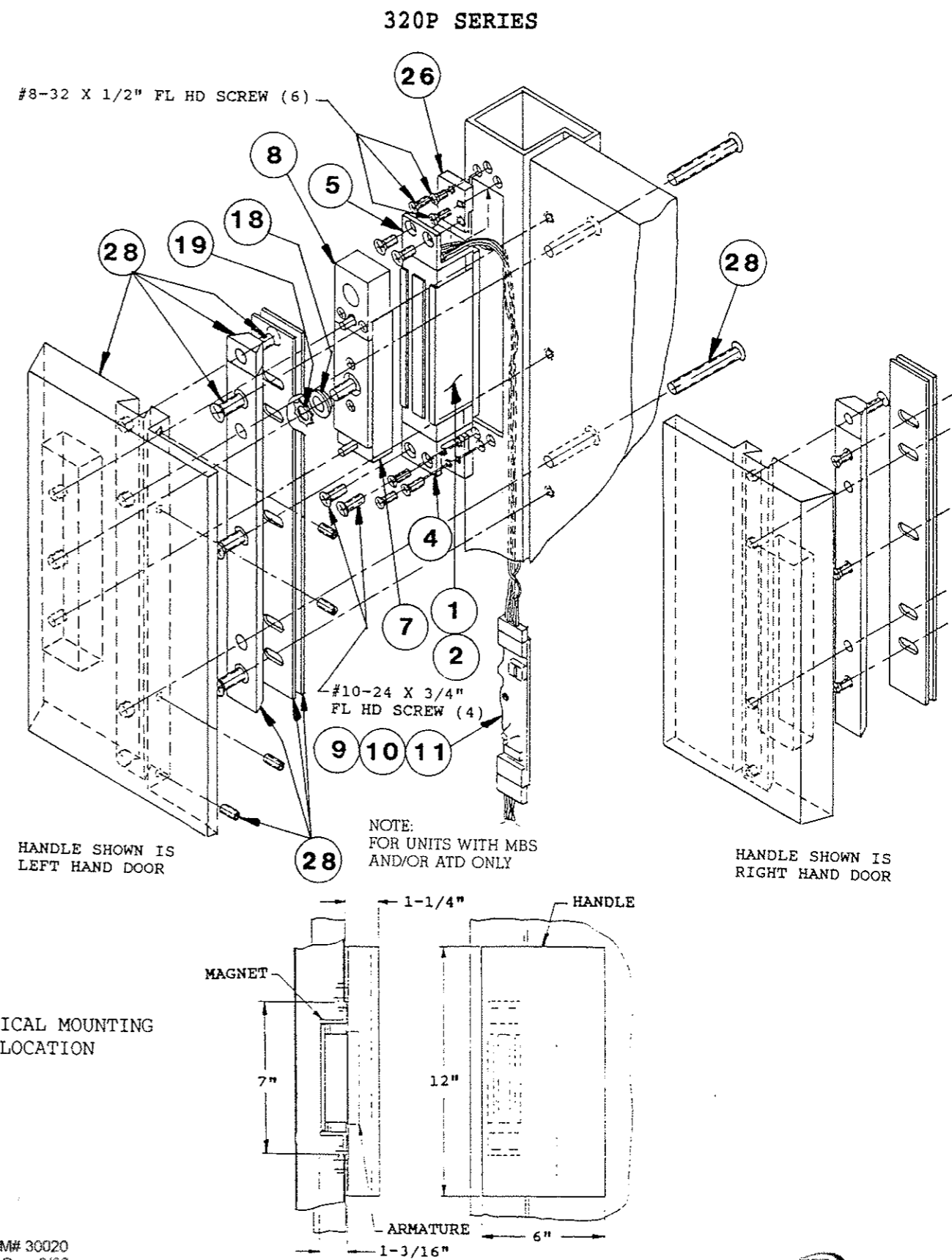


# 320 AND 322 SERIES LOCKS PARTS LIST

ITEM	PART NO.	DESCRIPTION	MODEL											
			320	320 HDB	320 TJ	320 SC	320 M	320 P	322	322 HDB	322 TJ			
1	320096	ELECTROMAGNET ASSY NO MBS	1	1	1	1	1	1	2	2	2			
2	320118	ELECTROMAGNET ASSY MBS	1	1	1	1	1	1	2	2	2			
3	CONSULT FACTORY	HOUSING-MAGNET	1	1	1	-	-	-	2	2	2			
4	320106	BRACKET-MOUNTING MAGNET	1	1	1	1	1	1	2	2	2			
5	320105	BRACKET-MOUNTING MAGNET	1	1	1	1	1	1	2	2	2			
6	320107	PLATE-MOUNTING	1	1	-	-	-	-	-	-	-			
7	320109	ARMATURE ASSY	1	1	1	1	1	1	2	2	2			
8	320115	BLOCK-DSM, ARMATURE	1	1	1	1	1	1	2	2	2			
9	320208	CONTROL MODULE MBS	1	1	1	1	1	1	2	2	2			
10	320209	CONTROL MODULE ATD	1	1	1	1	1	1	2	2	2			
11	320210	CONTROL MODULE ATD X MBS	1	1	1	1	1	1	2	2	2			
12														
13														
14														
15														
16	390022	ANTI-TAMPER PLUG	2	2	2	-	-	-	4	4	4			
17	270076	HEX WRENCH-3/32	1	1	1	1	-	-	1	1	1			
18	390255	SPACER-ARMATURE	1	1	1	1	1	1	2	2	2			
19	990185	LOCKWASHER-EXT TH	1	1	1	1	1	1	2	2	2			
20	320128	BRACKET-MTG, TJ MAGNET	-	-	1	-	-	-	-	-	-			
21	320130	BRACKET-MTG, TJ ARMATURE	-	-	1	-	-	-	-	-	2			
22	320170	DOVETAIL-TJ ARMATURE	-	-	1	-	-	-	-	-	2			
23	320172	BLOCK-MTG, TJ ARMATURE	-	-	2	-	-	-	-	-	4			
24	320168	BRACKET-MTG, SC ARMATURE	-	-	-	1	-	-	-	-	-			
25	320171	DOVETAIL-SC ARMATURE	-	-	-	1	-	-	-	-	-			
26	280006	MOUNTING TAB	-	-	-	2	2	2	-	-	-			
27	320177	MTG BLOCK, ARMATURE	-	-	-	-	1	-	-	-	-			
28	320191	HANDLE-PULL KIT	-	-	-	-	-	1	-	-	-			
29	320108	PLATE-MOUNTING	-	-	-	-	-	-	1	-	-			
30	320129	BRACKET-MTG, TJ MAGNET	-	-	-	-	-	-	-	-	1			
31	320145	SHIM ASSY-3/4 D00R	-	1	-	-	-	-	-	-	2			
32	320129	SHIM ASSY-1/2 D00R	-	1	-	-	-	-	-	-	2			
33	390498	SEX NUT, 1-3/4 D00R	1	-	-	-	-	-	2	-	-			
34	270078	HEX WRENCH-3/16	1	1	1	1	1	1	1	1	1			
35	320174	SHIM-MTG, .187 THK	-	-	-	1	-	-	-	-	-			
36	320173	SHIM-MTG, .093 THK	-	-	-	1	-	-	-	-	-			
37	290014	SEX NUT, 1-3/4 D00R	-	-	-	-	2	-	-	-	-			
38	320147	HDB ASSY	-	1	-	-	-	-	-	-	2			
39	990183	FLAT WASHER-5/16	1	-	-	-	-	-	2	-	-			



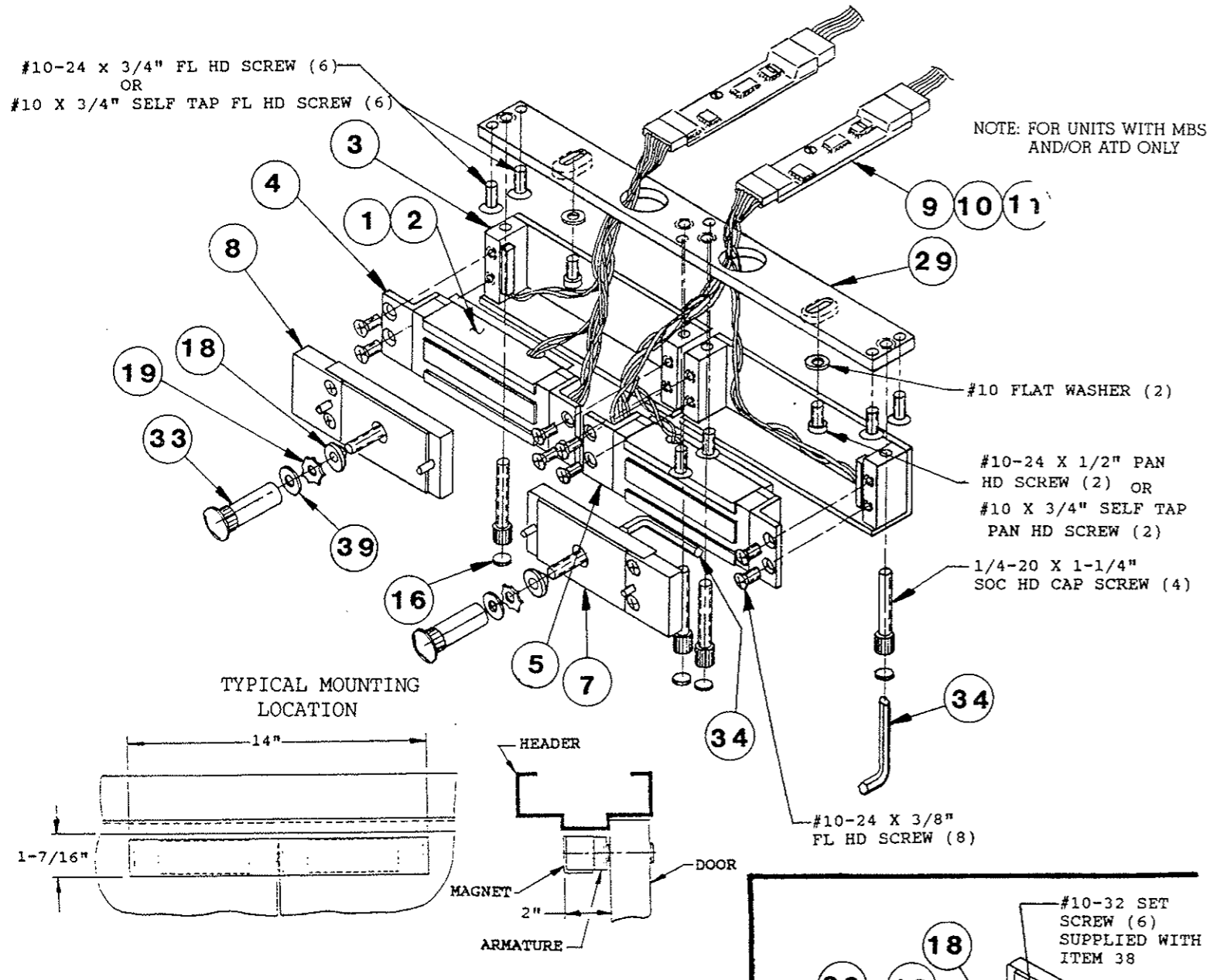
# 320 AND 322 SERIES LOCKS EXPLODED VIEW



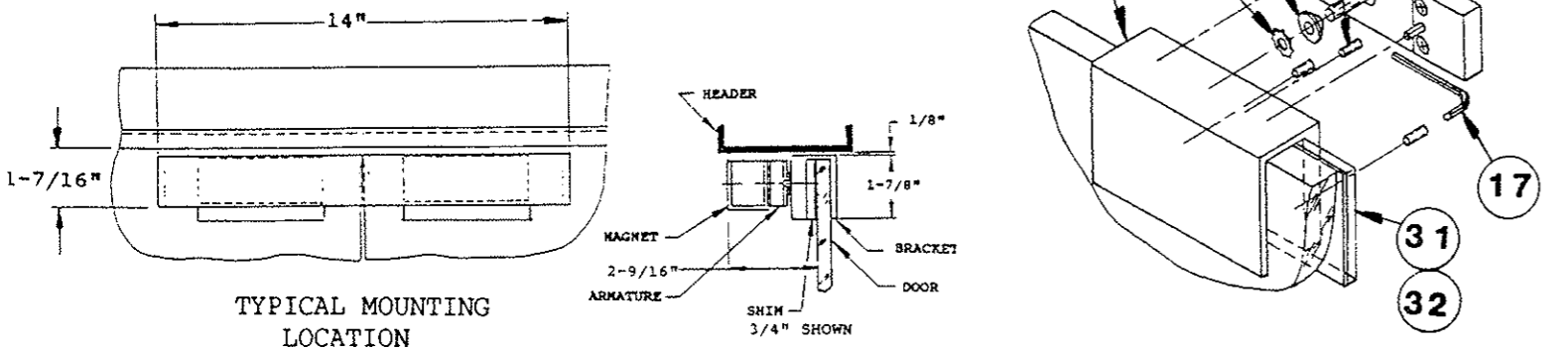


# 320 AND 322 SERIES LOCKS EXPLODED VIEW

## 322 STANDARD SURFACE MOUNT



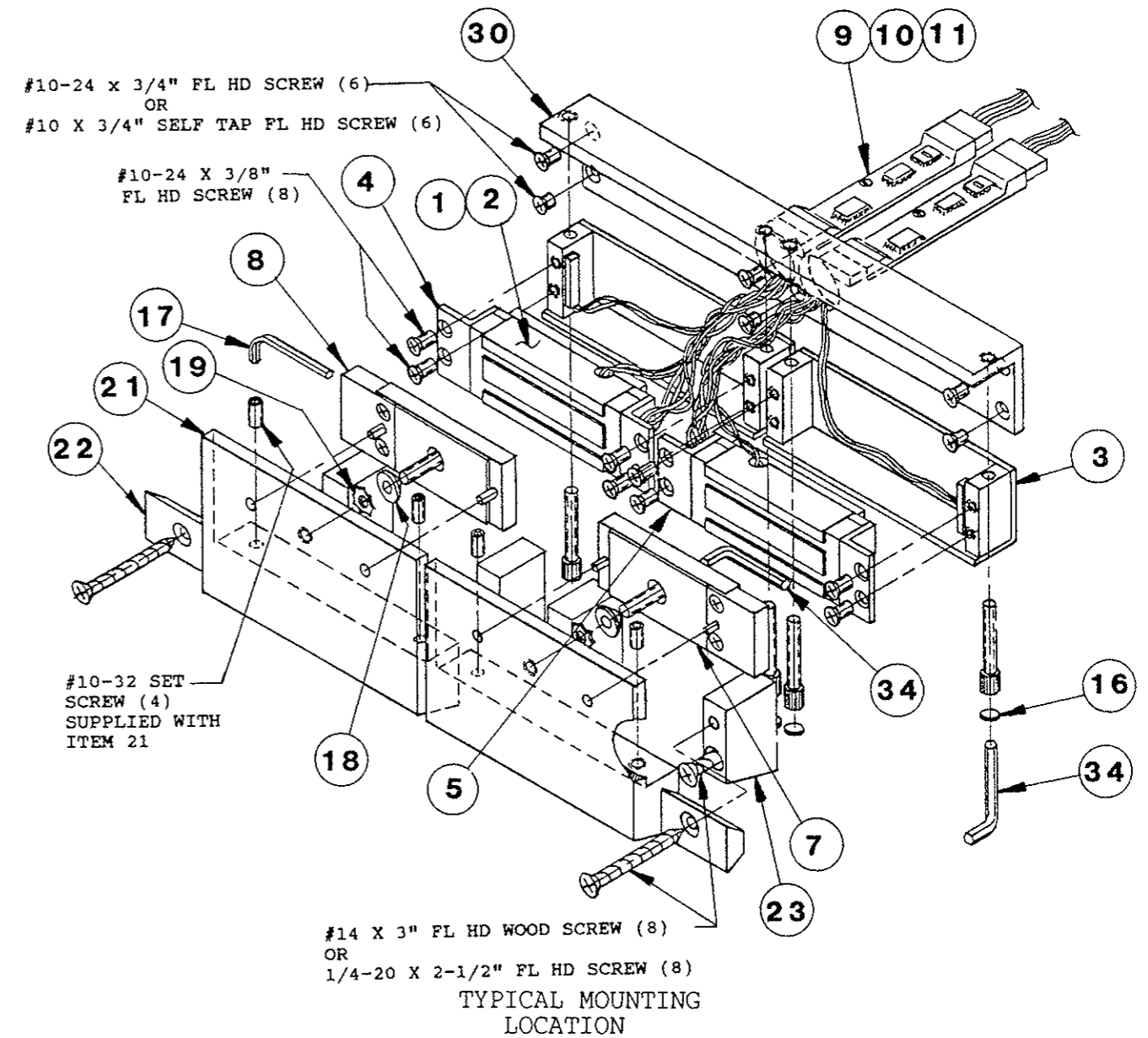
## 322 X HDB STANDARD SURFACE MOUNT



# 320 AND 322 SERIES LOCKS EXPLODED VIEW

## 322TJ SERIES

NOTE: FOR UNITS WITH MBS  
AND/OR ATD ONLY





**NOT  
TO  
SCALE**

# Door & Header Prep 322+ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

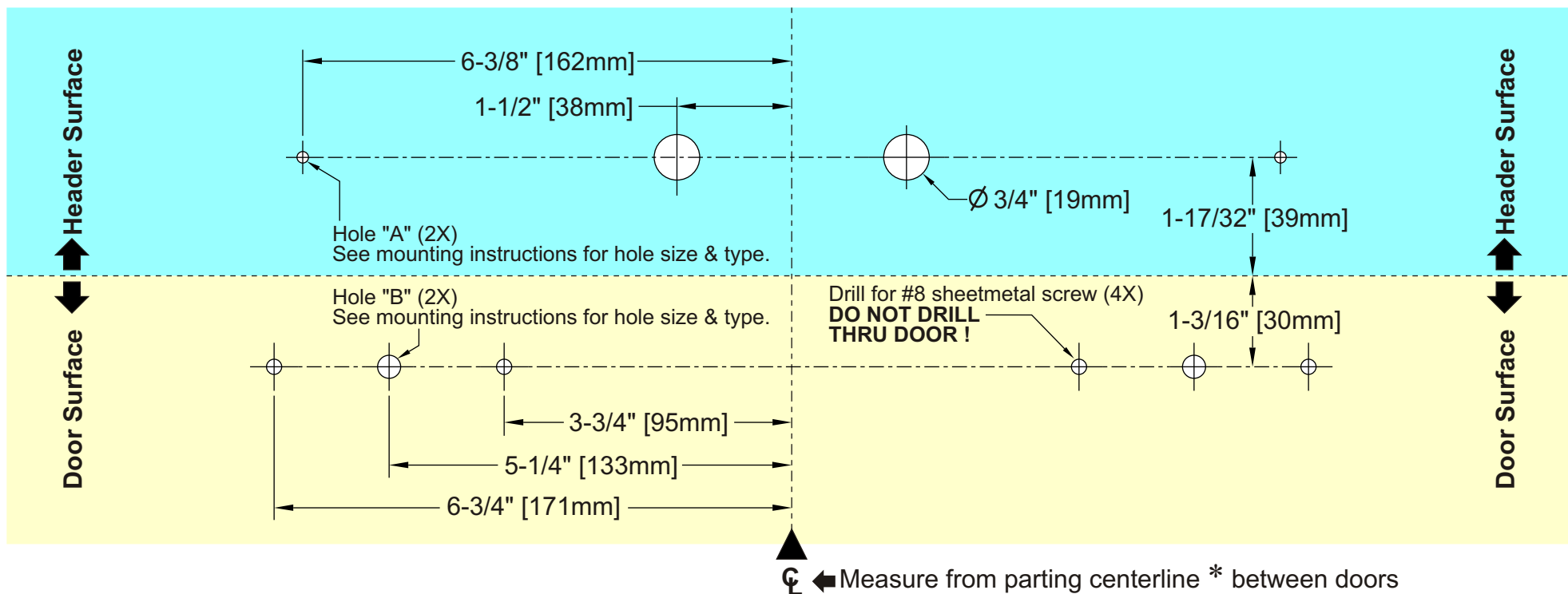


FORM NUMBER: 32201

REVISION: A

DATE: 7-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!  
USE THE PAPER DRILLING TEMPLATE THAT WAS INCLUDED WITH LOCK.**



**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.

\* All holes symmetrical about the centerline.



**NOT  
TO  
SCALE**

# Door & Header Prep 322+ TJ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

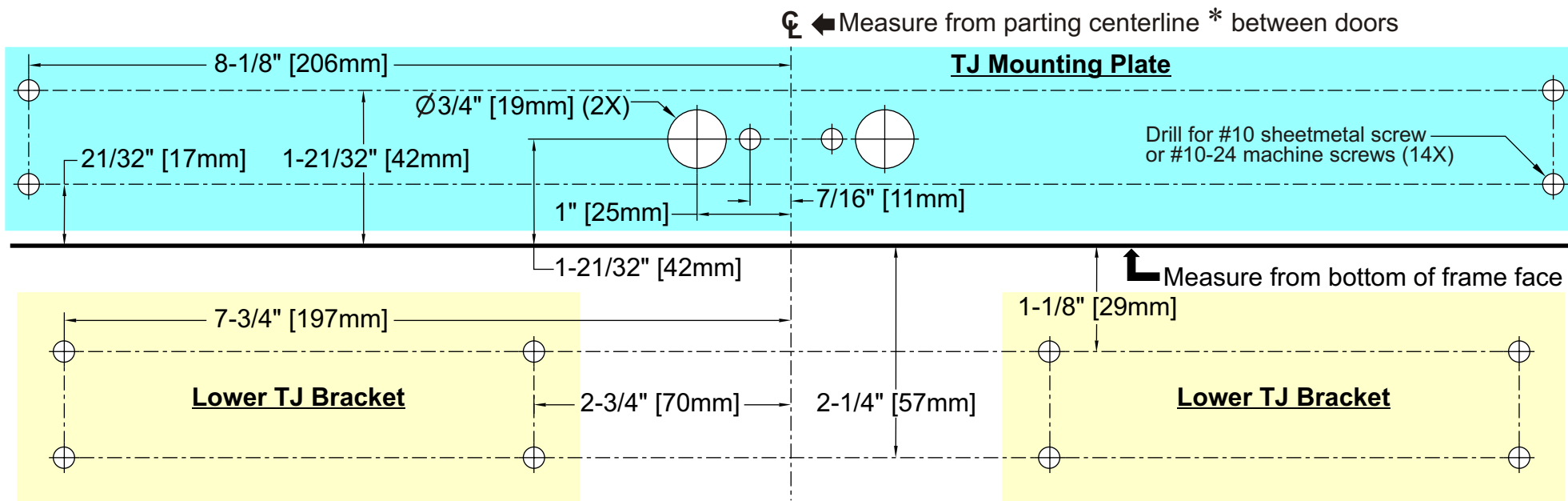


FORM NUMBER: 32202

REVISION: A

DATE: 7-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!**



**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.

\* All holes symmetrical about the centerline.





**NOT  
TO  
SCALE**

# Door & Header Prep 350+ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

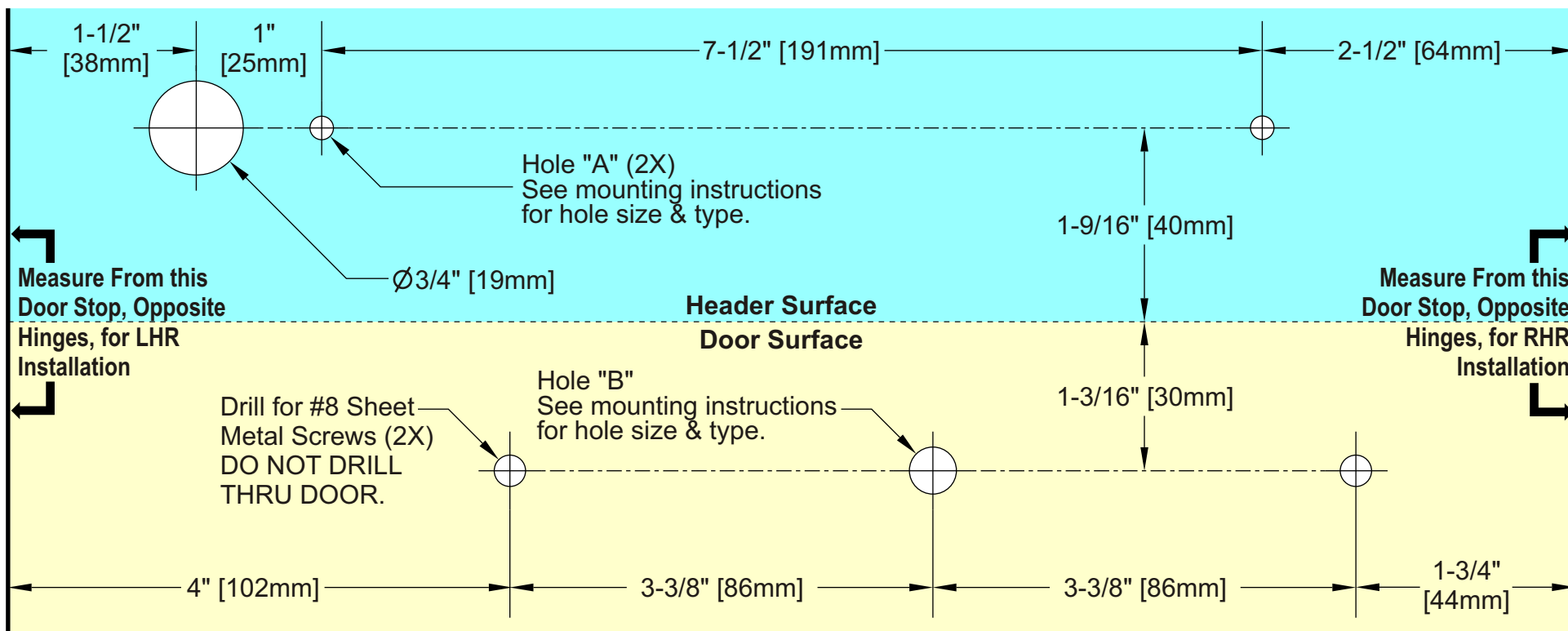


FORM NUMBER: 35001

REVISION: A

DATE: 1-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!  
USE THE PAPER DRILLING TEMPLATE THAT WAS INCLUDED WITH LOCK.**



**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.



**NOT  
TO  
SCALE**

# Door & Header Prep 350+ TJ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

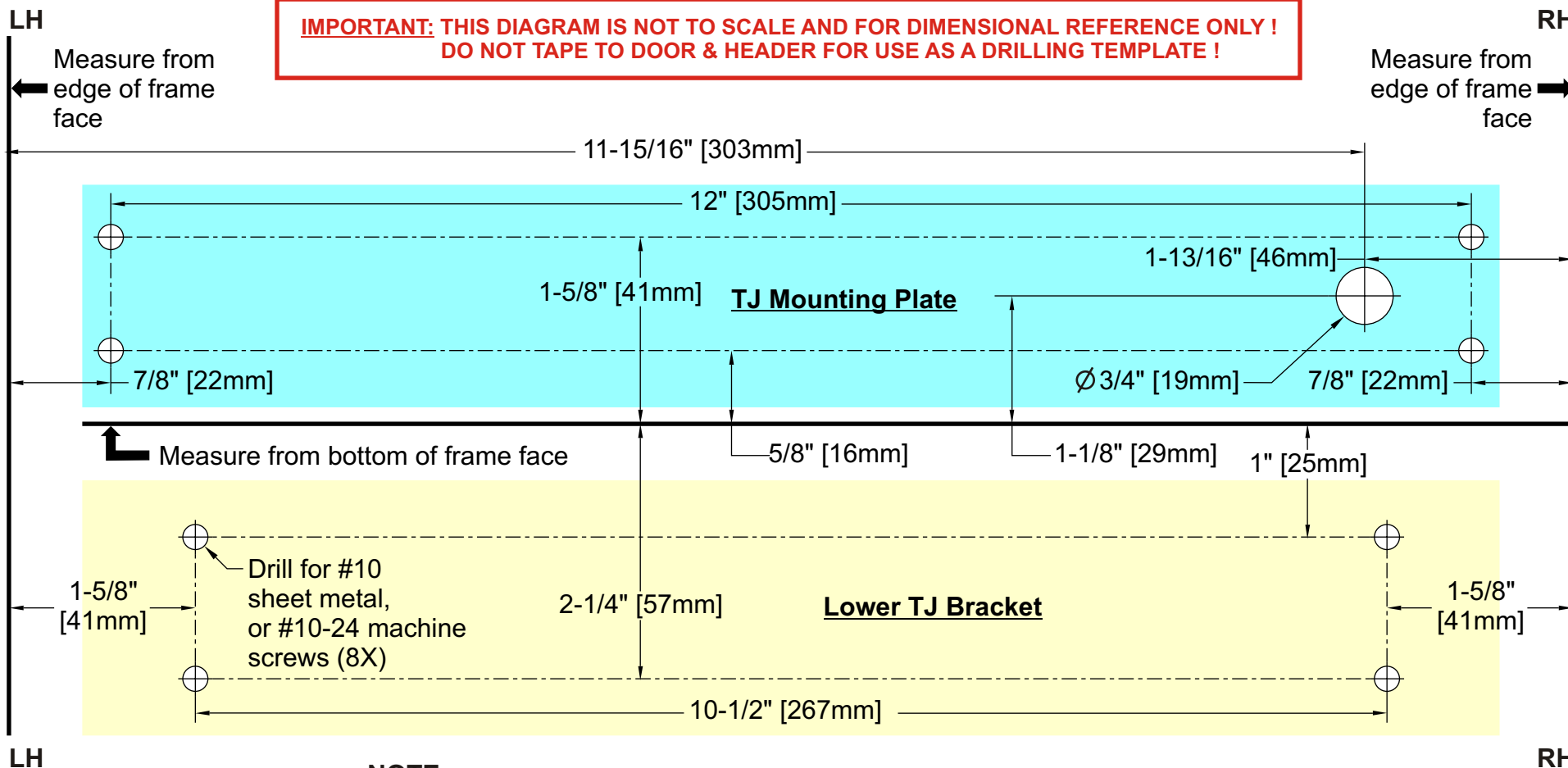


FORM NUMBER: 35002

REVISION: A

DATE: 7-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!**



**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.



**NOT  
TO  
SCALE**

# Door & Header Prep 351+ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

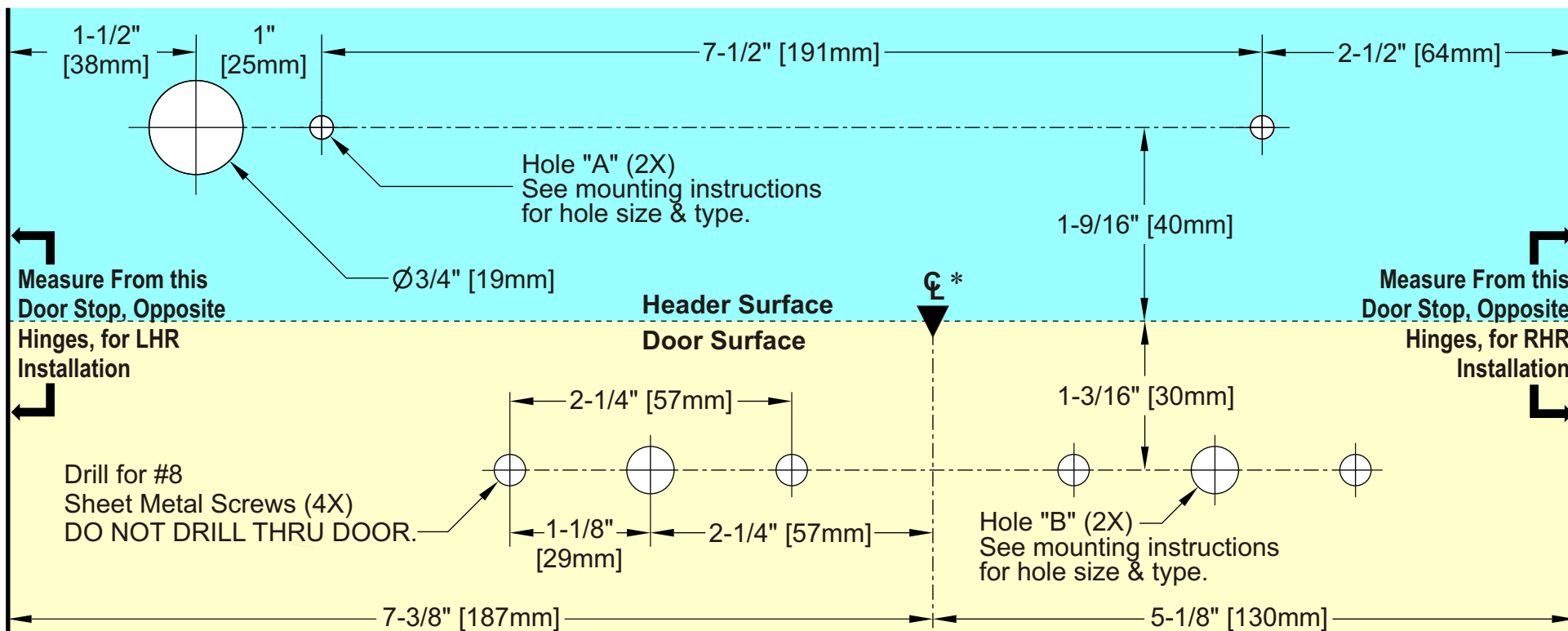


FORM NUMBER: 35101

REVISION: A

DATE: 7-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!  
USE THE PAPER DRILLING TEMPLATE THAT WAS INCLUDED WITH LOCK.**



\* The 6 holes on the door surface are symmetrical about the centerline.

**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.



**NOT  
TO  
SCALE**

# Door & Header Prep 351+ TJ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

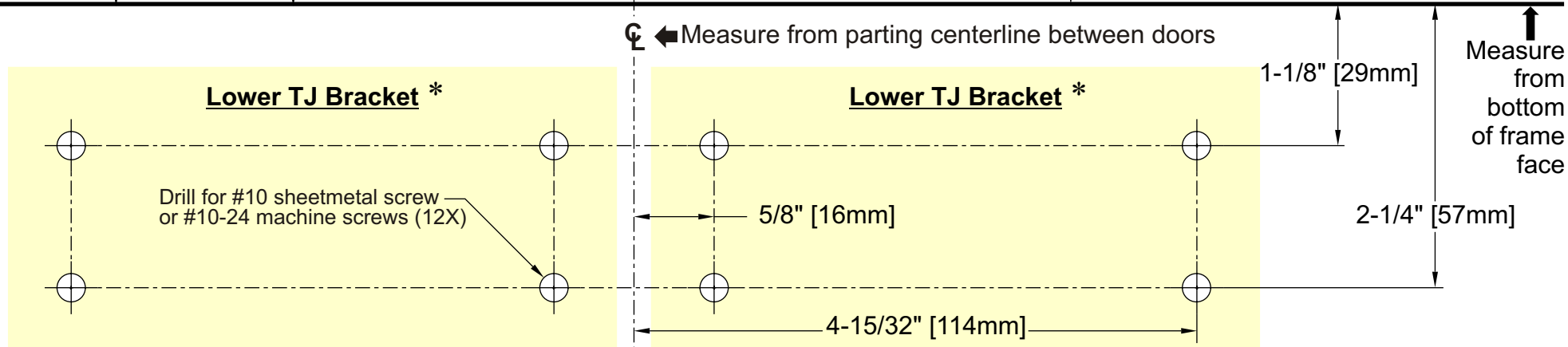
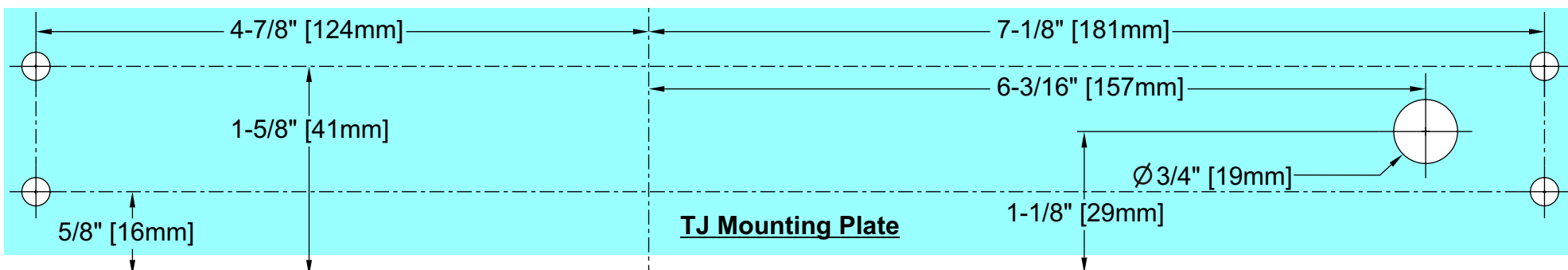


FORM NUMBER: 35102

REVISION: A

DATE: 7-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!**



**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.

**\* Both Lower TJ Brackets  
symmetrical about the centerline.**



**NOT  
TO  
SCALE**

# Door & Header Prep 352+ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136

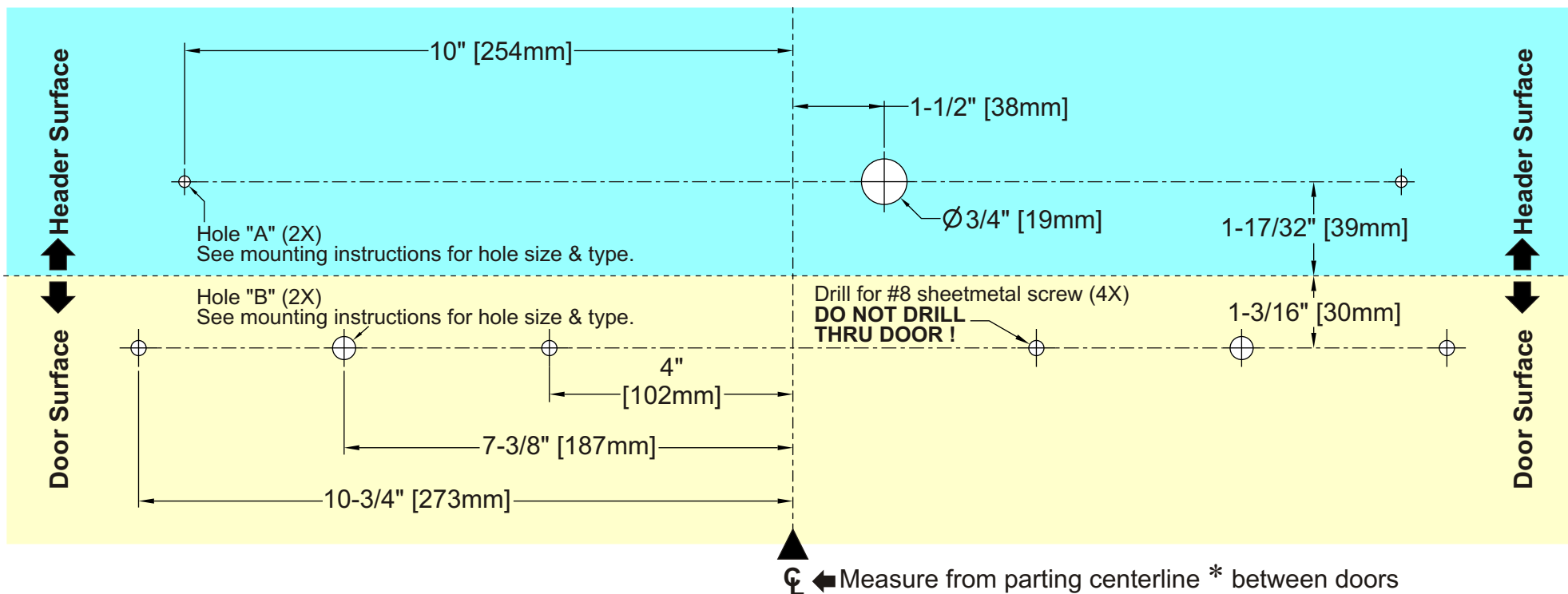


FORM NUMBER: 35201

REVISION: A

DATE: 1-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!  
USE THE PAPER DRILLING TEMPLATE THAT WAS INCLUDED WITH LOCK.**



\* All holes, except the single 3/4" diameter hole, are symmetrical about the centerline.

**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.



**NOT  
TO  
SCALE**

# Door & Header Prep 352+ TJ MagForce

**NOT  
TO  
SCALE**

Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
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FAX: (860) 584-2136

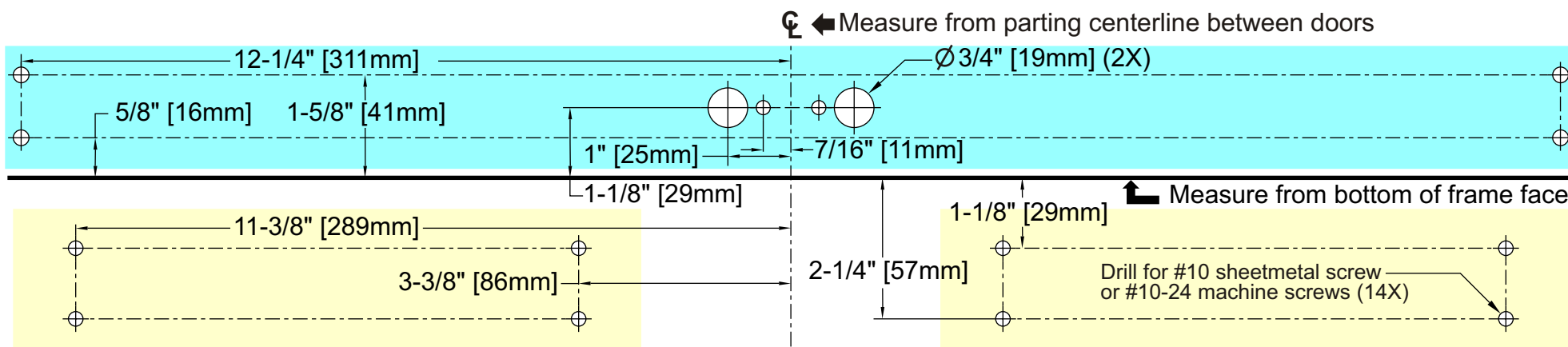


FORM NUMBER: 35202

REVISION: A

DATE: 7-2008

**IMPORTANT: THIS DIAGRAM IS NOT TO SCALE AND FOR DIMENSIONAL REFERENCE ONLY!  
DO NOT TAPE TO DOOR & HEADER FOR USE AS A DRILLING TEMPLATE!**



**NOTE:**

A variety of #10 fasteners are included in the hardware pack.

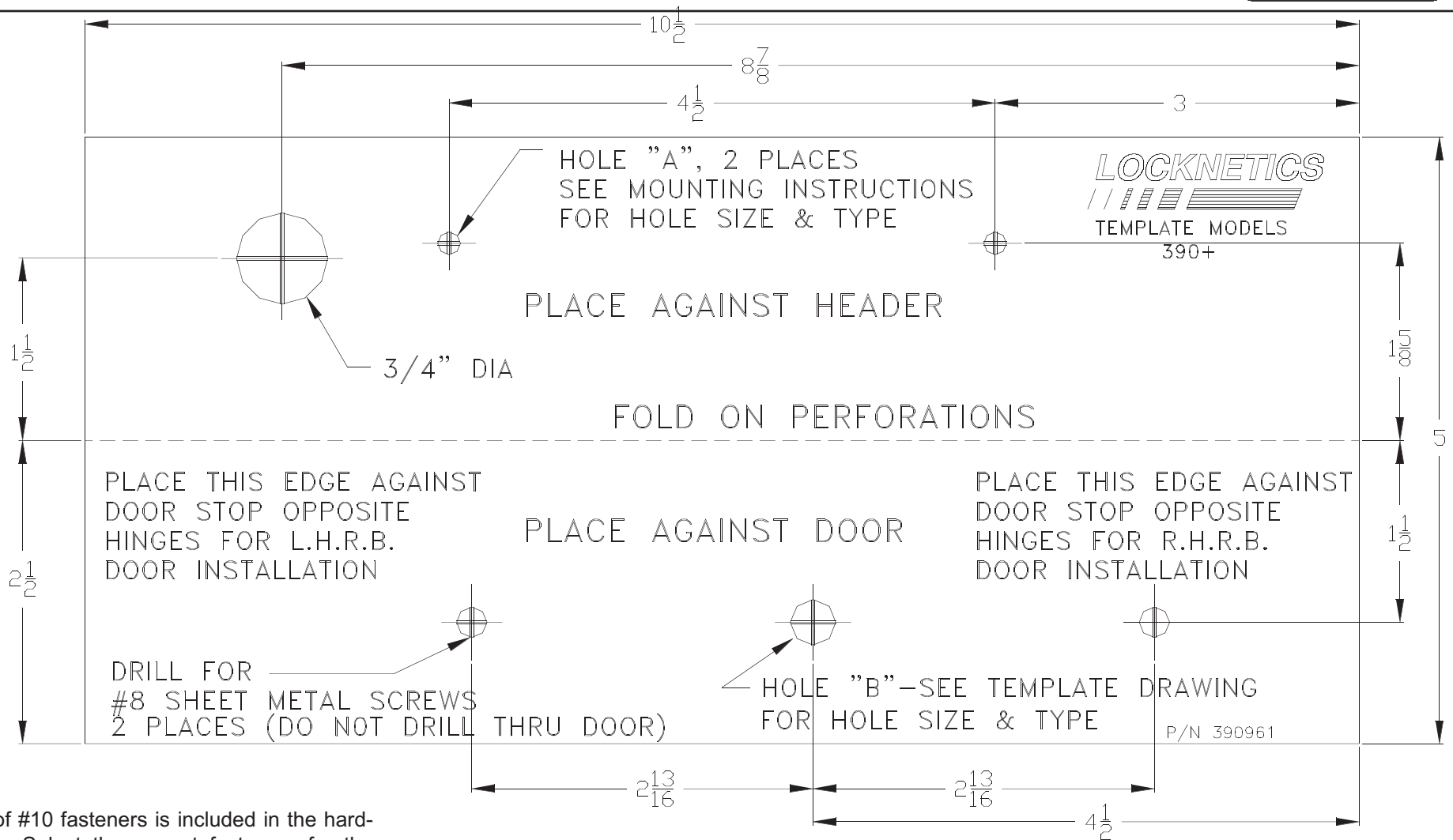
Select the correct fasteners for the door and header materials involved:

- > For wood or hollow metal doors and headers, use self-tapping sheet metal screws.
- > For reinforced or heavy-gauge metal doors and headers, use machine screws.

**\* All holes symmetrical about the centerline.**

# TEMPLATE INFORMATION

**390+**

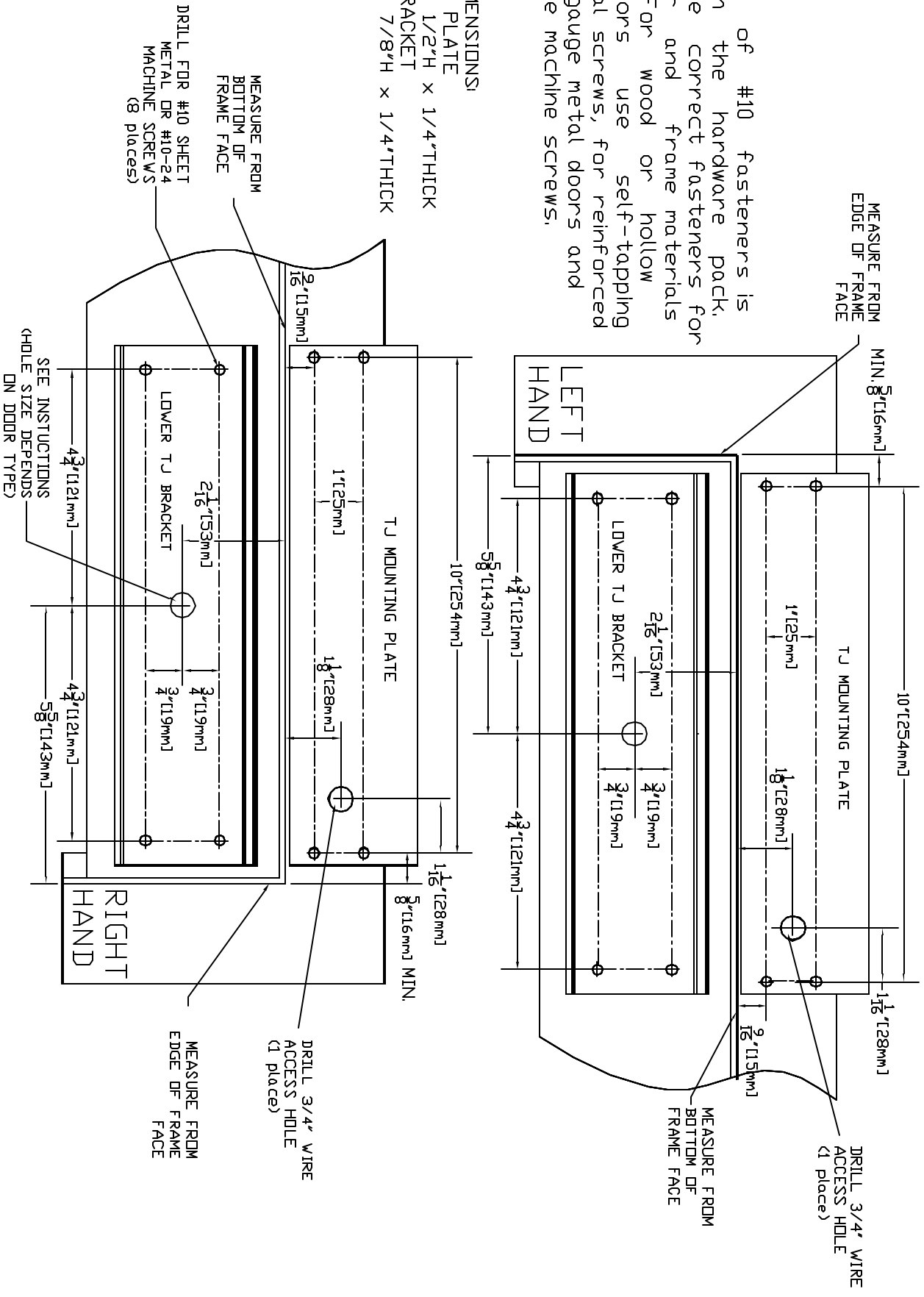


**NOTE:**

A variety of #10 fasteners is included in the hardware pack. Select the correct fasteners for the door and frame materials involved. For wood or hollow metal doors used self-tapping sheet metal screws; for reinforced or heavy-gauge metal doors and frames, use machine screws.

NOTE:  
 A variety of #10 fasteners is included in the hardware pack. Select the correct fasteners for the door and frame materials involved. For wood or hollow metal doors use self-tapping sheet metal screws, for reinforced or heavy gauge metal doors and frames, use machine screws.

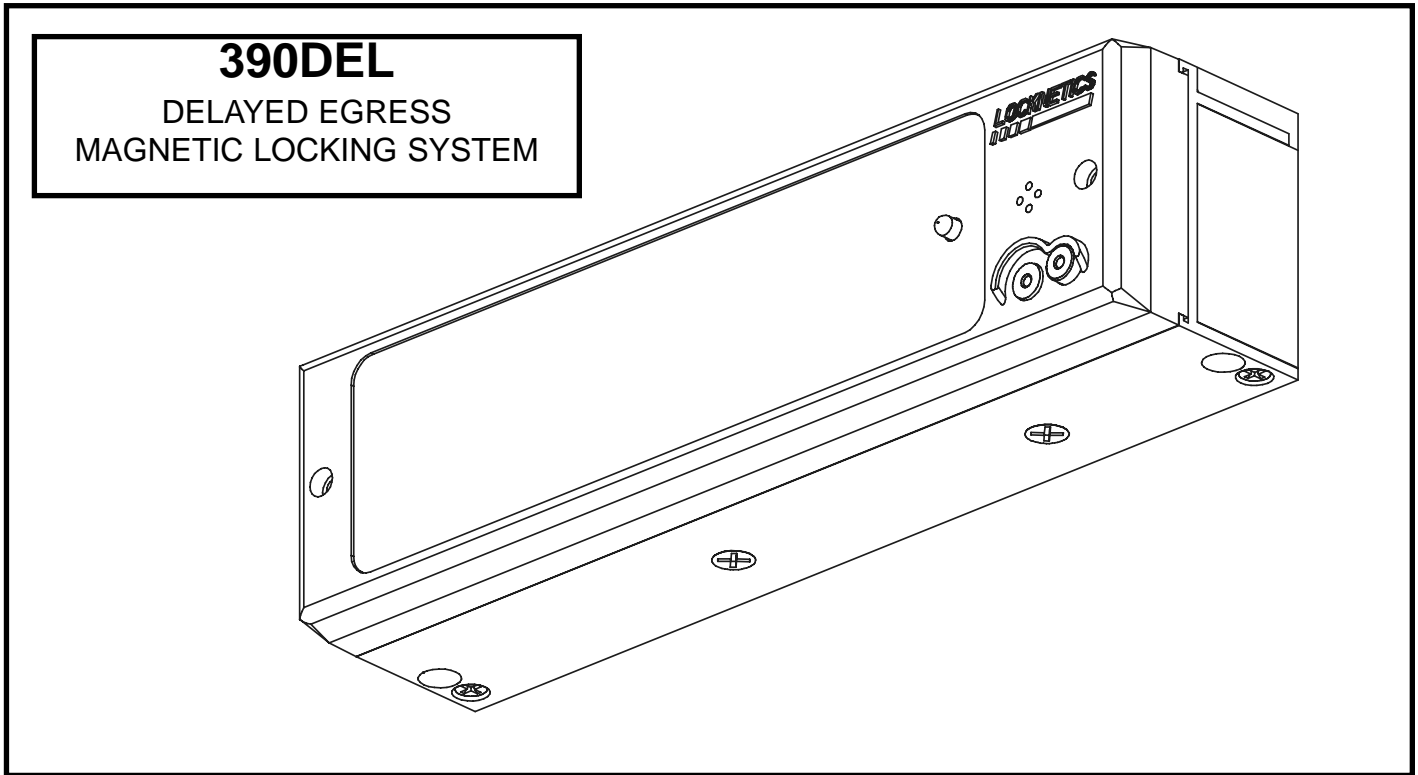
OVERALL DIMENSIONS:  
 TJ MOUNTING PLATE  
 10 1/2"L x 2 1/2"H x 1/4"THICK  
 LOWER TJ BRACKET  
 10 1/2"L x 2 7/8"H x 1/4"THICK



DRAWN BY: TG	DATE: 04-01	TITLE: 390+TJ90 DOOR AND FRAME PREP	FORM NO.: 390+TJ_TMP	REV.: B
CHKD BY:				
APP'D BY:				







General Description.....	2	Erasing Memory.....	13
Technical Specifications.....	2	Time Delay Settings.....	14
Pre Installation Considerations.....	3	Automatic Relock Time Delay.....	14
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100CAB/TR80/TR81 Hook-up.....	9	iButton Manual Programming.....	18
390-2 (Double Unit) Wiring Information.....	10	TEP1 Initialization.....	18
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“System 7” iButton Programming.....	13	Overall Dimensions.....	22

**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK.**

HANDLE THE EQUIPMENT CAREFULLY, DAMAGING THE MATING SURFACES OF THE ELECTROMAGNET OR THE ARMATURE MAY REDUCE LOCKING EFFICIENCY.

**IMPORTANT!** This manual is intended to be kept for programming, maintenance, and trouble shooting purposes. *Do not dispose of after installation.* Please present this manual to facility manager upon completion of installation.

**GENERAL DESCRIPTION:** The electromagnet mounts rigidly to the door frame header. The armature mounts to the door. The armature is designed to pivot about its center compensating for door misalignment. When the door is closed the energized magnet will bond with the armature, providing auxiliary locking force. If the opening is fire rated, the door must be secured positively with a mechanical latching device, in addition to the magnetic lock, in accordance with local authority having jurisdiction. Locknetics manufactures fire rated mechanical latching devices. The electronically controlled 390 DEL and 390-2 DEL series magnetic locks described in this manual share the same access control circuitry. With optional access control input devices (Locknetics keypads or iButton readers) the locks can hold up to 150 codes or iButtons standard for access, toggle, lockout, or special functions. Dry contact inputs allow for fire alarm tie in and remote release/reset capabilities. This manual covers the mechanical installation, wiring, and manual programming aspects of the locks. For computer programming, see information provided with the software package you will be using.

### **THIS MANUAL COVERS THE 390 DEL AND 390-2 DEL, DELAYED EGRESS MAGNETS:**

Delayed egress is initiated by a "plunger" switch which is actuated by a spring-loaded armature plate. By setting dip-switches, an auxiliary switch, such as an exit device or pushbutton, can be used as well. (See dipswitch/terminal layout on page 9.) The nuisance delay can be set from 0-3 seconds in the standard unit (fixed at 1 second in the BOCA unit). The delay time is generally fixed at 15 seconds, but, with approval of the local authority having jurisdiction, can be set to 30 seconds in the standard unit.

### **DESCRIPTION OF OPTIONS:**

**DSM:** Door Status Monitor will provide status of door with or without power applied.

**MBS:** Magnetic Bond Sensor will provide status of lock (locked or unlocked) with or without power applied.

**SEC:** Security Alarm will close alarm relay contacts if the door is forced open or after it is propped open for a selectable time period. (See page 12.) Anti tailgate is also in effect: the door will relock as soon as it closes, even if the relock time delay has not yet transpired.

**BOCA:** Some areas adhere to this life safety code for delayed egress. The nuisance delay is fixed at one second and the delayed egress time at 15 seconds. After delayed egress has been initiated and the door opened, the alarm will automatically reset after 30 seconds and the door will relock. If the door is opened within the 30 seconds the timer will begin again.

**ATR:** Audit Trail Retrieval uses computer programming and interrogation of the lock to store and retrieve the past 100 events such as access, alarm, and reset functions and the time that they occur.

### **TECHNICAL SPECIFICATIONS:**

**Dual Voltage:** 12 or 24 volts AC or DC (Automatic Voltage Selection)

**Max. Current:** 0.8 Amps @ 12 Volts (DC) 1.5 Amps @ 12Volts (AC)  
0.5 Amps @ 24 Volts (DC) 1.0 Amps @ 24Volts (AC)

**Outputs:**

<b>Alarm: (standard)</b>	N.O.	1.0 Amp resistive load at 30V
<b>DSM: (optional)</b>	SPDT	200 mA @ 12V, 100mA @ 24V
<b>MBS: (optional)</b>	SPDT	1.0 Amp resistive load at 30V

**Audible:** 91 dB @ 2 feet

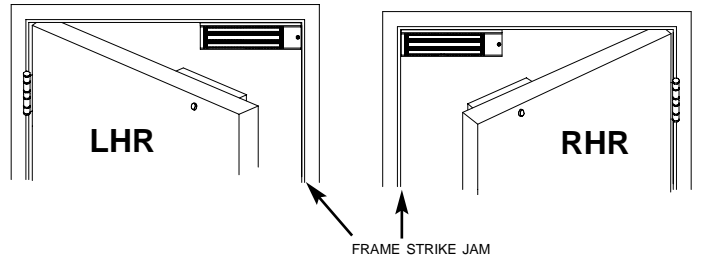
**Mechanical Holding Force:** 1650 pounds  
1500 pounds

**UL listings:**

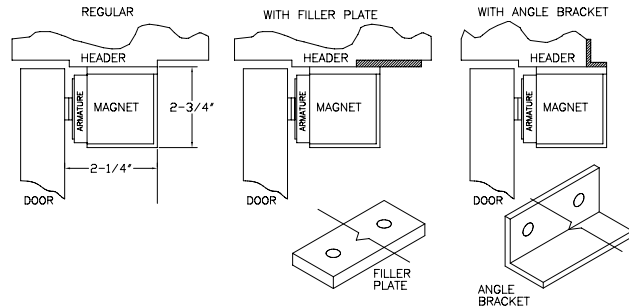
SA8954 Special Locking Arrangements  
R12092 Auxiliary Locks

### PRE-INSTALLATION CONSIDERATIONS

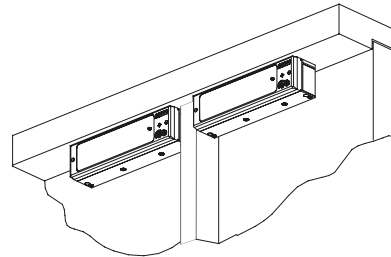
The electromagnet should be mounted as near to the frame strike jamb as possible to provide maximum holding force. Visually check the mounting location to assure that the unit will mount without interference.



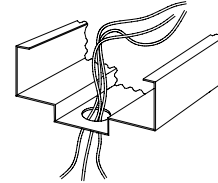
Frame conditions may require the use of filler plates and/or angle brackets. These items are available from Locknetics.



When mounting two locks on one opening with or without a mullion, treat each installation separately. Use the template for each leaf. If the installation involves a 390-2 (master/slave magnet set) see important wiring information on pages 10 and 11.



Wiring for the electromagnet must enter the top of the unit through the wire access hole drilled in the frame header (see template). Be certain provisions can be made to bring the wire through the header into the top of the unit.

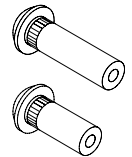


Use proper mounting screws for your door frame. For light-gauge metal door frames, self tapping screws may be used. If the door frame is heavy-gauge metal, machine screws may be necessary and the holes will have to be tapped.  
*Caution: It is very important to make sure that magnet is secured to the structure of the opening.*

	PAN HEAD	FLAT HEAD
MACHINE SCREWS		
SELF-TAPPING SCREWS		

Armature mounting hardware is for door thickness of 1-3/4 inches. For doors thicker than 1-3/4" consult your Locknetics distributor for availability of sex nuts.

FOR SEX NUTS FOR USE ON DOORS OTHER THAN 1-3/4" CONSULT DISTRIBUTOR.

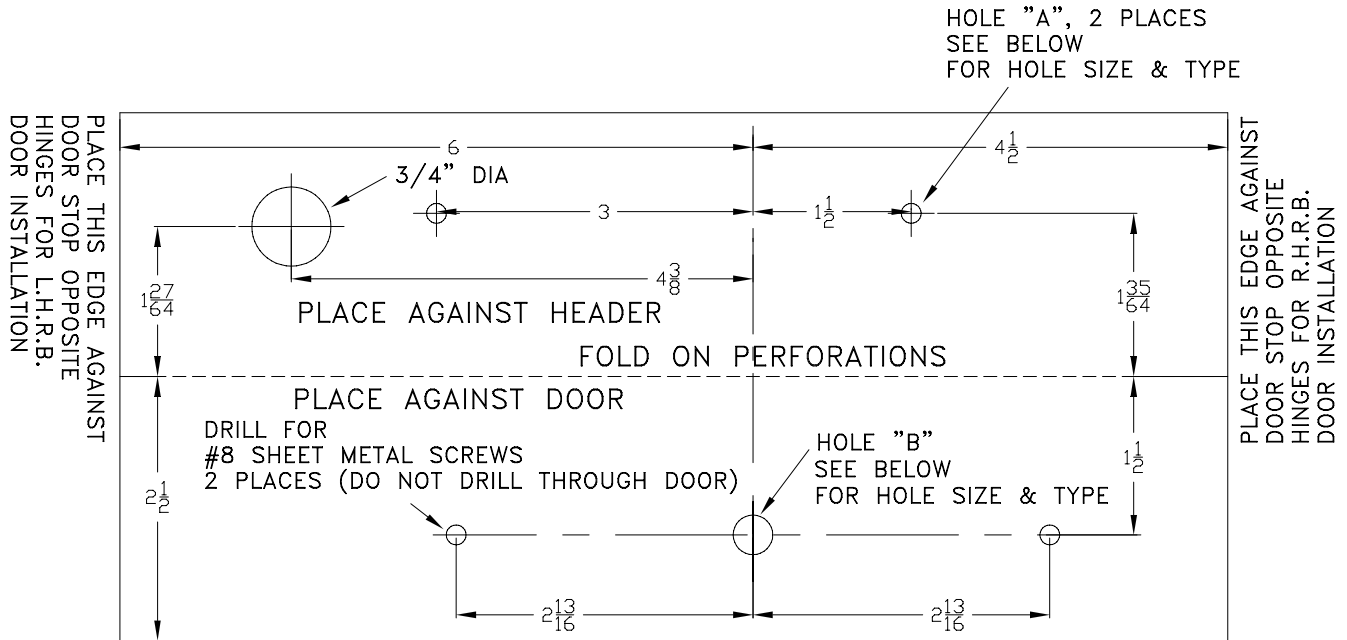


**DELAYED EGRESS LOCKS:** Local codes generally require the signage, provided with the product, to be posted on or near the door. Consult local authority having jurisdiction prior to any installation involving the use of delayed egress products to ensure life safety compliance.

### INSTALLATION PROCEDURE

#### 1. PREP DOOR AND FRAME:

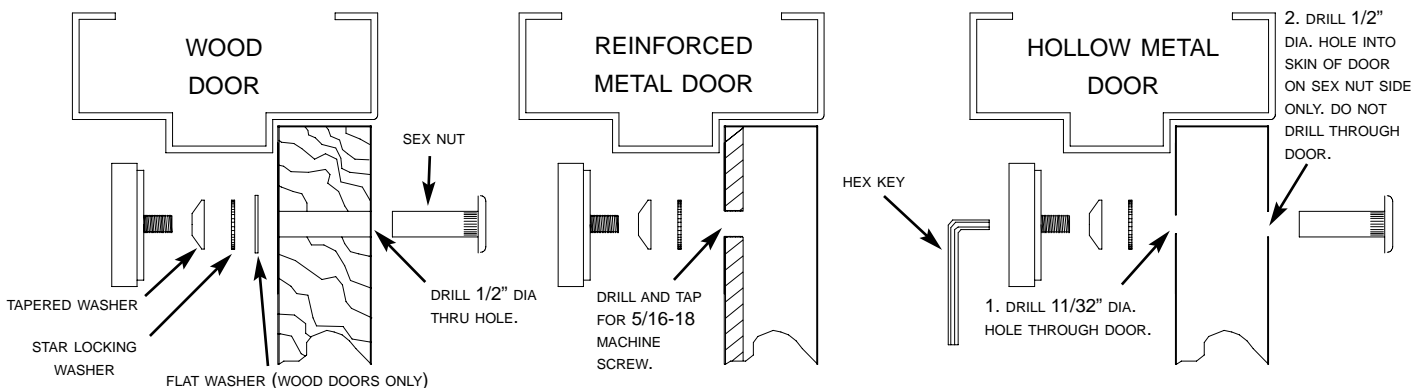
The paper template is the preferable way to prepare the door and frame. If for any reason it is not available, use the dimensions shown below to mark the centerlines of the holes. *Note that the layout is not symmetrical with respect to the centerline of the armature.*



**A.** The door should be closed and latched. You should be at the "push" side. Locate the paper template and fold it along the perforated line with the printed sides facing each other. Place the template against the frame stop and the door. Tape template in place.

**B.** On the frame stop mark the location of holes "A" from the template. For heavy gauge or reinforced frames, drill and tap for #10-24 thread. For standard frames, drill 5/32" dia. for #10 self tapping screws. Locate and drill the 3/4" dia. wire hole. (The 3/4" dia. hole is oversized to the 5/8" dia. mounting plate hole to allow the full range of adjustability.)

**C.** On the doors, mark the locations of all holes. Drill (2) 1/4" dia. holes per template for armature holder mounting screws. Armature mounting hole "B" is determined by the door type (see below).

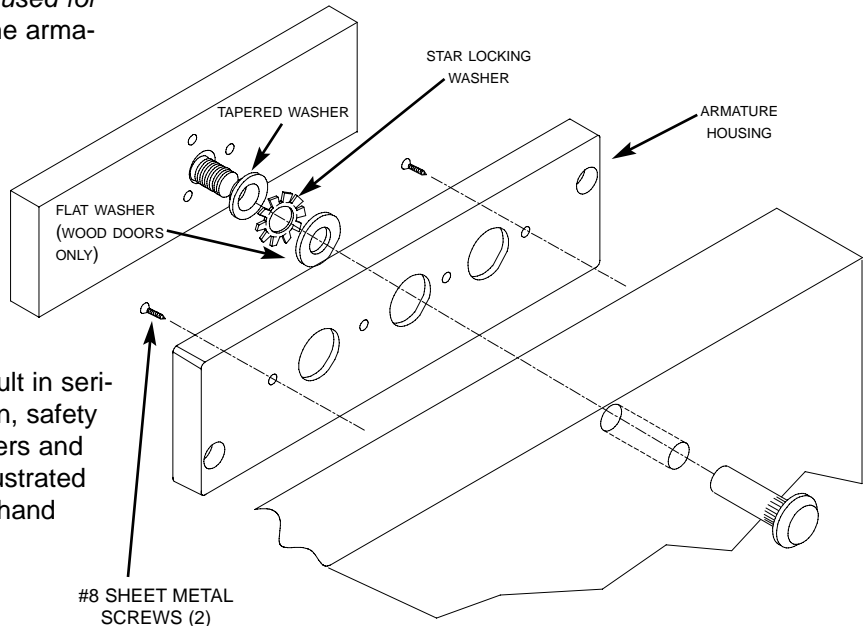


### 2. MOUNT ARMATURE TO DOOR

Assemble using hardware provided in the order shown. All hardware shown must be used except where noted. *Note that the tapered washer must be placed with the pointed side facing away from the door and toward the armature.* It **MUST** be used for proper operation. Use hex key to tighten the armature mounting bolt. For solid core and hollow metal doors, gently tap sex nut into position with a rubber mallet before mounting armature assembly. *Proper use of hardware will allow armature to pivot slightly after securely tightening the mounting screw. This is normal, and necessary to allow armature to mate properly with magnet.*

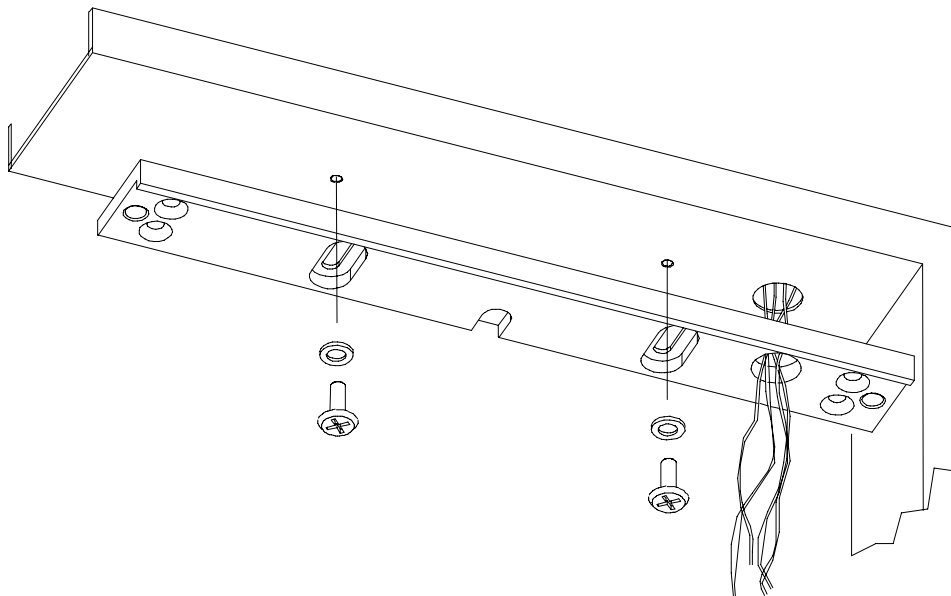
#### CAUTION:

Failure to secure armature to door may result in serious injury to door user. For proper operation, safety and security, sex nut / bolt assembly, washers and spacers must be assembled in the order illustrated and securely tightened 1/8 to 1/4 turn past hand tight.



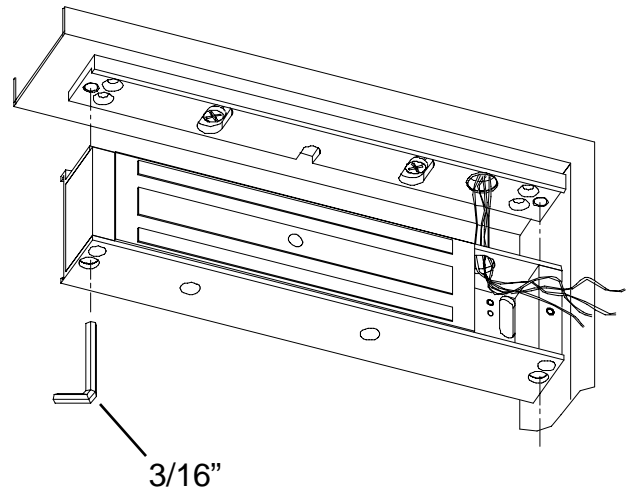
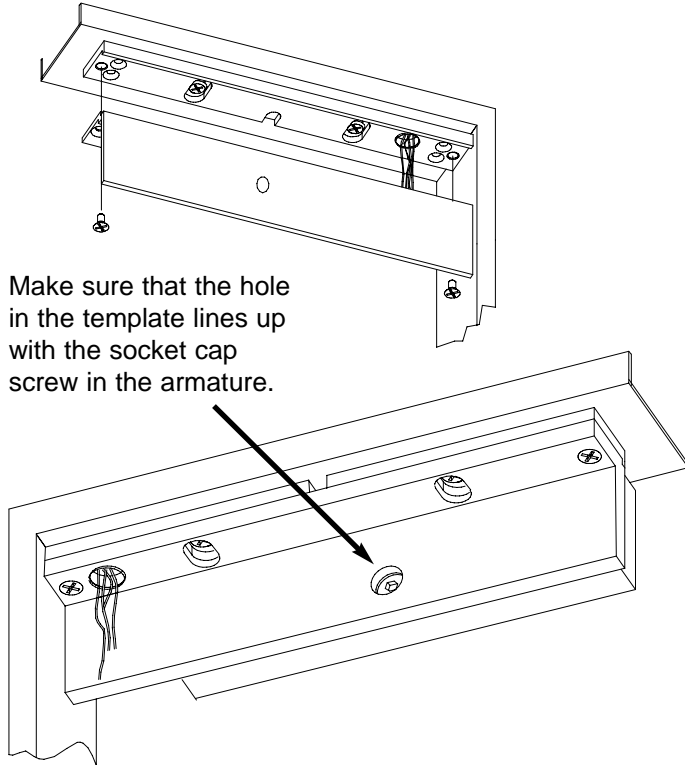
### 3. TEMPORARILY ATTACH MOUNTING PLATE TO HEADER

Slotted holes and counterbore should face downward. Mount to the frame using (2) #10-24 x 1/2" pan head machine screws, or (2) #10 x 3/4" pan head self-tapping screws, and #10 flat washers. Tighten screws just tight enough to allow shifting the plate during adjustment.



### 4. TEMPORARILY MOUNT TEMPLATE OR MAGNET TO MOUNTING PLATE

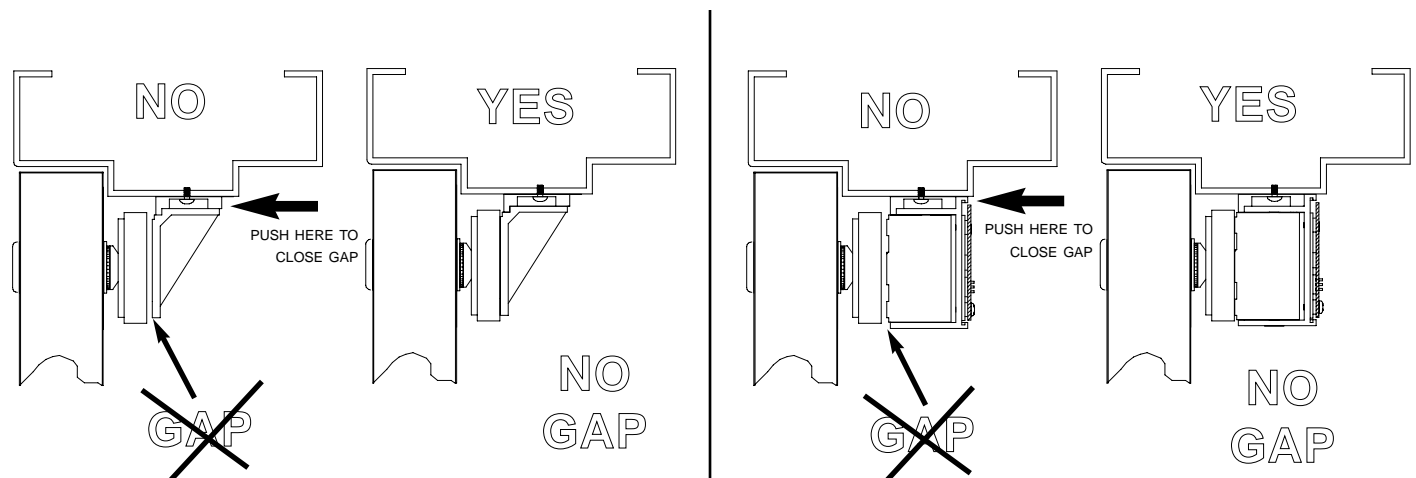
Using 1/4-20 flat head screws, temporarily secure the plastic or metal template to the mounting plate, carefully passing the wiring through the hole in the template.



### 5. ALIGN MAGNET WITH ARMATURE

With door closed and latched push magnet assembly (or template) toward the armature by applying pressure on each end of the magnet until fully mated together, as shown below. Mark the position of the mounting plate. Remove magnet from the mounting plate without moving the mounting plate. (If using template, tighten two pan head screws through holes in template before removing it.) Tighten the slotted hole screws without moving the mounting plate to assure proper alignment.

**CAUTION:** Do not press on the PC board while moving the magnet. This could cause damage.



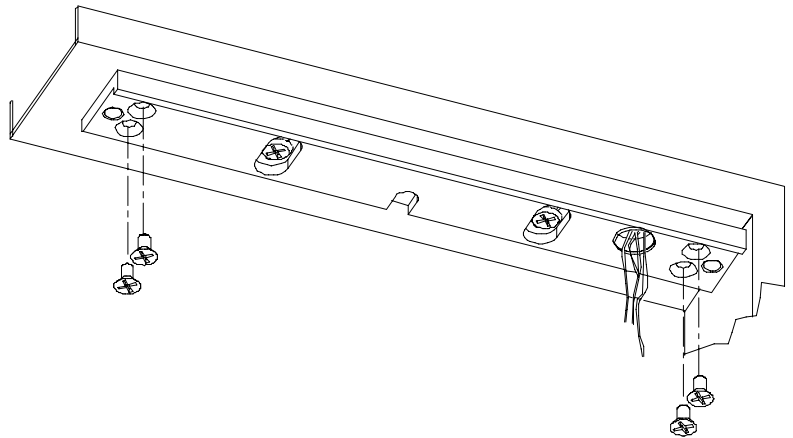
### 6. SECURE MOUNTING PLATE

Using the Mounting Plate as a template, drill the four remaining mounting holes.  
Tighten two 10-24 self tapping pan head screws

If using #10 self-tapping, flat-head screws drill 5/32" dia. holes and drive four screws tight.

If using #10-24 flat head machine screws, drill and tap for #10-24 threads and tighten four screws.

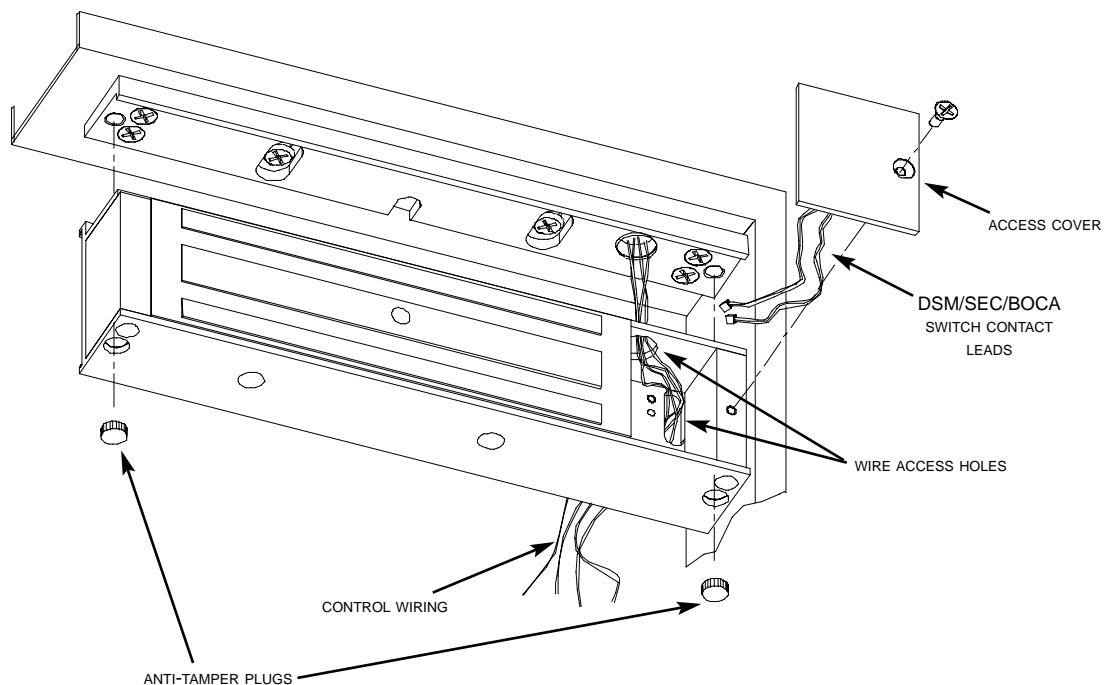
**CAUTION:** It is critical that the screws used secure the mounting plate to the *structure* of the frame.



### 7. SECURE MAGNET TO MOUNTING PLATE

Install the electromagnet to the mounting plate by tightening the captured 1/4-20 x 2" socket head cap screws with a 3/16" hex key. Firmly tighten the screws. Pass wiring through hole in top of magnet and through access hole on circuit board side of magnet as shown below. If the unit has DSM and/or SEC and/or BOCA there will be up to two switch contacts with plug-in leads mounted on the access cover. Pass these leads through the access hole on circuit board side of magnet. Secure access cover. Drive in anti-tamper plugs using a rubber mallet.

**NOTE:** Double units with SEC2 or BOCA2: Do not switch covers between units. The wiring on each cover is different and doing so will cause improper operation.

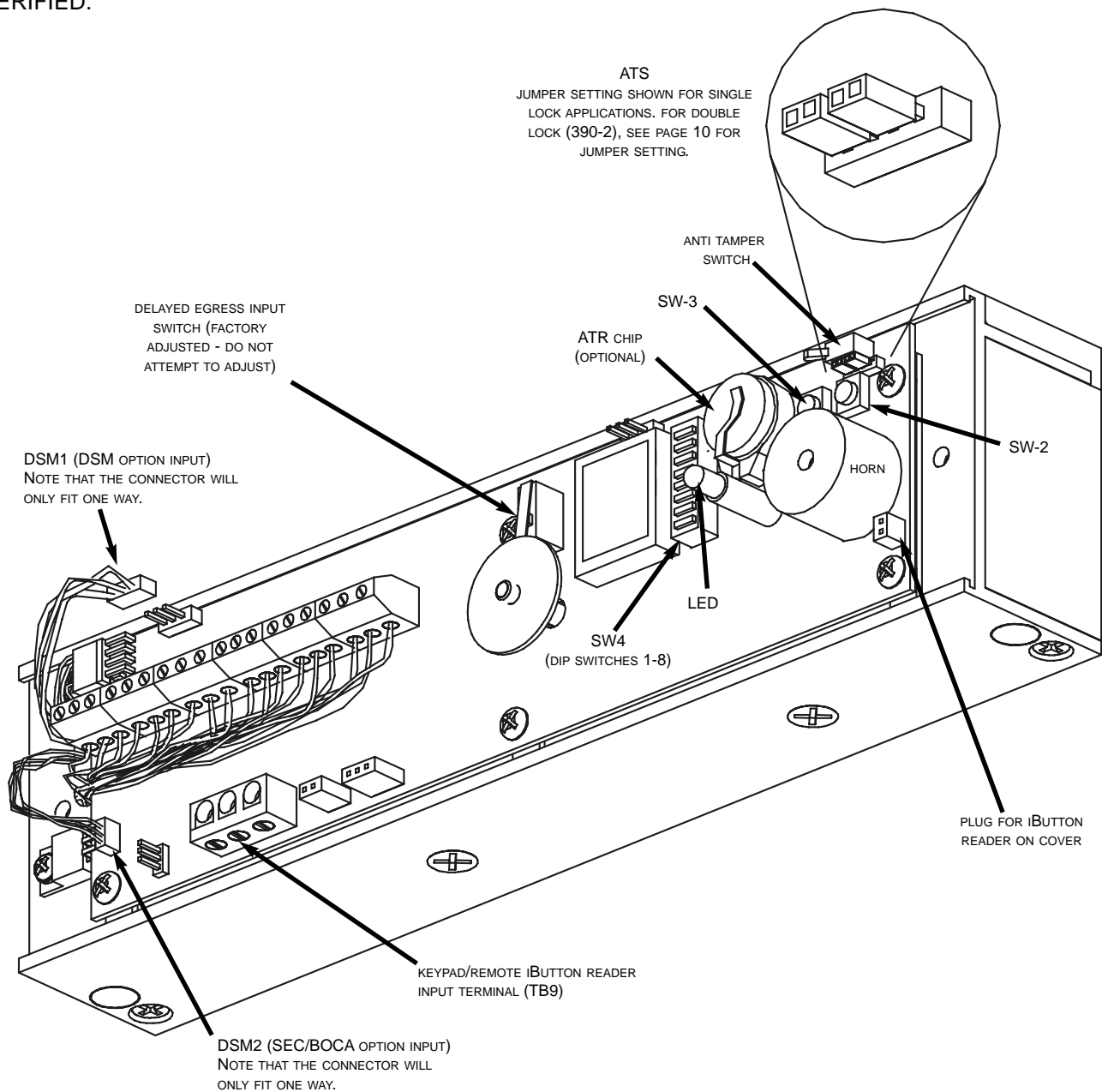


### 8. MAKE WIRING CONNECTIONS AND SET DIPSWITCHES

Connect wiring to main terminal strip. If furnished, connect DSM1 and DSM2 to board as shown. Note that if the unit has only the DSM option, connect the plug into the DSM1 jack. If the unit has only the SEC and/or BOCA option, connect the plug into the DSM2 jack. If the unit is to be used with a keypad (and the required 100CAB adapter cable) or a TR80 or TR81 see the programming information starting on page 10. After wiring, time delay setting, initialization and programming have been completed, secure the cover onto the lock, making sure to connect the iButton reader (DEL models). See illustration on page 15.

See next page (9) for terminal layouts and dipswitch settings. Not all terminals will be used in all cases. Note that to get the correct outputs, the correct options must have been ordered and the dipswitches set properly.

**IMPORTANT: DO NOT APPLY POWER UNTIL ALL CONNECTIONS HAVE BEEN MADE AND DIPSWITCHES SET AND VERIFIED.**





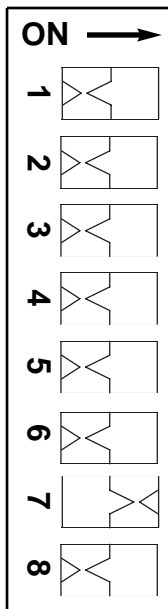
### TERMINAL LAYOUT TB1:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

<b>POWER INPUT</b> 12/24 VOLTS AC OR DC (AUTOMATIC SELECTION)  <b>DO NOT APPLY 120 VAC</b>	<b>FIRE ALARM INPUT</b>  APPLY A NORMALLY CLOSED DRY CONTACT OR A JUMPER IF NOT CONNECTED TO FIRE ALARM	<b>AUXILIARY INPUT</b>  (SEE DIPSWITCH SETTINGS BELOW)	<b>C NO</b> <b>ALARM OUTPUT</b> (STANDARD) CONTACTS CHANGE STATE DURING ALARM CONDITION	<b>NO C NC</b> <b>DSM OUTPUT (OPTIONAL)</b> CONTACTS CHANGE STATE WHEN DOOR IS CLOSED.	<b>C NC NO</b> <b>MBS OUTPUT (OPTIONAL)</b> CONTACTS CHANGE STATE WHEN MAGNET IS PROPERLY BONDED TO ITS ARMATURE. POOR BOND CAN BE CAUSED BY LOW VOLTAGE, MISALIGN- MENT OR DAMAGED MATING SURFACES.	<b>RELEASE INPUT</b>  DRY CONTACT CLOSURE WILL RELEASE LOCK FOR THE TIME DELAY PERIOD (SEE PAGE 14)	<b>RESET INPUT</b> DRY CONTACT CLOSURE RESETS LOCK IN ALARM CONDITION.
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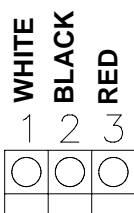
### DIPSWITCH SW-4 SETTINGS:

Set the dipswitches as required for your system. **SW-4**



### TERMINAL LAYOUT TB9:

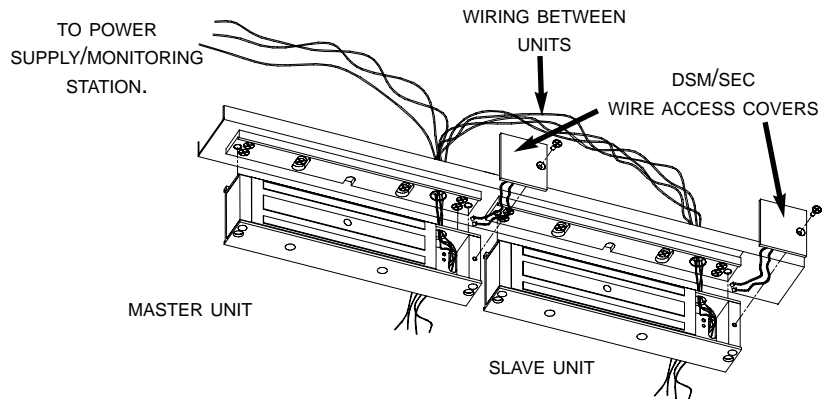
IF YOUR SYSTEM USES A KEYPAD/READER WITH A 100CAB ADAPTER CABLE OR A TR80 OR TR81, CONNECT THE WIRES AS SHOWN. KEYPADS WILL NEED TO BE INITIALIZED. SEE KEYPAD OR iBUTTON PROGRAMMING FOR FURTHER INFORMATION.



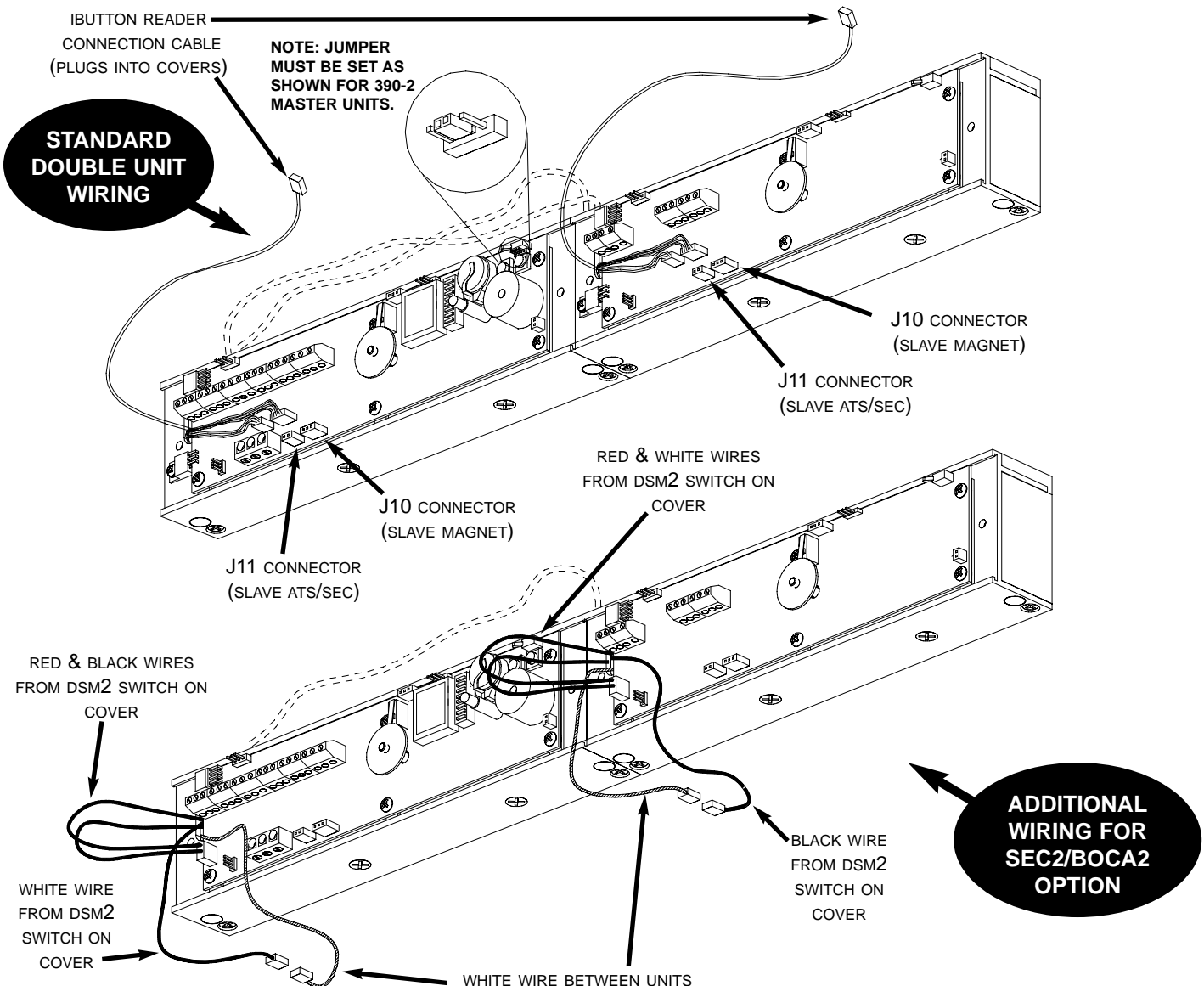
<b>SW4-1: DELAYED EGRESS TIME:</b> 15 SECONDS      30 SECONDS 			
<b>DELAYED EGRESS INITIATION:</b>			
<b>SW4-2:</b> 			
<b>SW4-3:</b> 			
DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH ONLY.	DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH OR AUX. INPUT.	DELAYED EGRESS TRIGGERED BY PLUNGER SWITCH AND AUX. INPUT.	DELAYED EGRESS DISABLED.
<b>SW4-4: ANTI-TAILGATE (SEC REQUIRED)</b> DOOR WILL RELOCK AS SOON AS IT CLOSES - EVEN IF THE RELOCK TIME DELAY HAS NOT ENDED.			
<b>SW4-5: UNLOCK ALERT (HORN SOUNDS WHENEVER DOOR IS UNLOCKED)</b> POWER MUST STILL BE APPLIED TO TERMINALS 1&2. CODE/iButton, PIR, OR LEGAL RELEASE INPUT MUST BE TRIGGERED. AVAILABLE ON ALL MODELS.			
<b>SW4-6: DOOR FORCED/PROPPED ALARM (SEC REQUIRED)</b> <b>FORCED:</b> ALARM SOUNDS UNTIL RESET BY CODE/iButton OR RESET INPUT ON TERM. 17&18. <b>PROPPED:</b> AFTER PRE-SET TIME (SEE PG. 14 ) ALARM SOUNDS UNTIL DOOR CLOSES AGAIN.			
<b>SW4-7: AUTOMATIC RELOCK ON POWER-UP/FIRE ALARM RESET</b> WHEN ENABLED, LOCK WILL ENERGIZE UPON REGAINING POWER OR AFTER A FIRE ALARM CONDITION CLEARS.			
<b>SW4-8: NUISANCE ALERT</b> HORN SOUNDS DURING NUISANCE ALERT.			

### 390-2 (DOUBLE UNIT) INSTALLATION AND WIRING INFORMATION

The electronic 390 series has the capability of operating two locks with the "brain" of one. The lock with the central processing unit is referred to as the "master" unit while the dependent one is referred to as the "slave" unit. The system can be run on 12 or 24 volts AC or DC. It does not matter which lock is on the left or right of an opening.

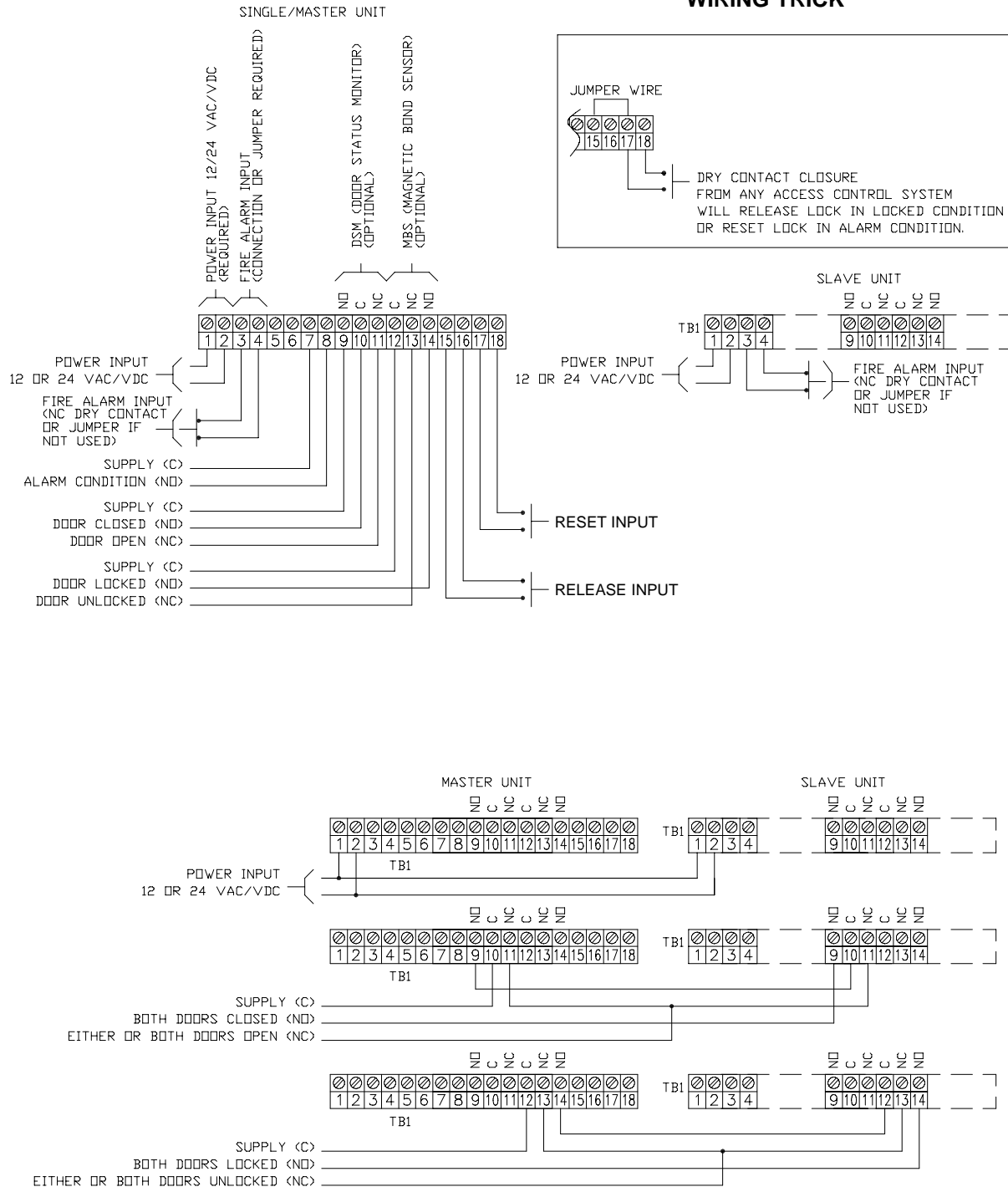


There are three, 36 inch cables furnished standard with a double unit and one which comes with the SEC or BOCA options which are intended to connect the locks, using plug-in connectors, to each other. They may be extended if necessary. If the units have SEC2 or BOCA2 options there will be a fourth cable which connects to the DSM2 cables as shown.



### MONITORING AND CONTROL SYSTEM WIRING INFORMATION AND EXAMPLES

Shown below are basic wiring examples for supplying power, monitoring lock, door and alarm status as well as fire alarm, auxiliary, release/reset and timer inputs. Note that most national codes require that magnetic locks become unlocked whenever a fire alarm condition exists. Consult authority having jurisdiction prior to installation to assure compliance with all local and national codes.



### PROGRAMMING: GENERAL INFORMATION

Programming the electronic 390 model electromagnetic locking systems can be done either by computer programming or manually, using the keypad, or TEP1 programmer. The standard unit can have up to 150 codes and/or iButtons. Their functions can be chosen using software or by manually adding the code/iButton and function (see "DEFINITION OF CODE/IBUTTON FUNCTIONS AND FACTORY DEFAULTS" below). When manual programming, it is critical to keep a record of the people and codes/iButtons which are issued to them along with their functions and PIN numbers (for iButtons). This will enable the ability to manage the access system properly. The units come from the factory with preset factory default code (described below). When the lock is reset (memory erased) it will return to factory default codes and any keypad (using the 100CAB) or TEP1 will need to be initialized again. Initializing a master iButton, TEP1, or changing the master code, or computer programming, will erase the factory default codes.

When programming with a computer, it is possible to enable or disable manual programming. If manual programming is enabled, and a code is entered manually, the Audit Trail Report will be corrupted. The time delay functions can be entered using computer programming or by buttons located on the PC board. The manual setting of time delays will still be possible even if manual programming of codes and/or iButtons is disabled via the computer.

Additional codes and iButtons can only be programming in with a computer. They cannot be manually programmed in. The exception to this is "System 7" programming in which up to 7 iButtons can be added. With System 7 programming, the unit must have or be attached to an iButton reader, or a Locknetics keypad that has an iButton reader. The iButtons can be entered into the reader on the cover (See page 13).

### DEFINITION OF CODE/iButton FUNCTIONS AND FACTORY DEFAULTS:

	FACTORY DEFAULT	
<i>MASTER</i>	97531	Allows access to programming functions. Will not release lock.
<i>NORMAL ACCESS</i>	13579	Unlocks lock for relock time delay. Will reset lock in alarm condition.
<i>TOGGLE</i>	135135	Unlocks the lock until same or another Toggle Code is entered.
<i>LOCKOUT</i>	9115	"Freezes" the lock in its present condition, either locked or unlocked, until the same or another Lockout Code/iButton is entered.
<i>ONE-TIME ACCESS</i>		No factory default. This type of code/iButton will allow access only once. It will then become deleted from memory.
<i>SUPERVISED ACCESS</i>		No factory default. This type of code/iButton allows access only when used with another Supervised Access Code/iButton. The second code/iButton must be entered within five seconds of the first one. The order that they are entered does not matter.

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### TO CREATE MASTER iButton (FOR USE WITH COMPUTER PROGRAMMING)

The master iButton is used to initialize programming (like a password to access programming mode).

- A. Set SW4 dipswitch #1 to ON (if it is off).
- B. Press and hold SW3 until two beeps are heard.
- C. Touch a iButton key to the reader within ten seconds. The lock will indicate acceptance with two beeps. This will be the Master iButton.
- D. Return SW4, #1 to its original position.

#### NOTES:

1. Refer to instructions included with the programmer/software that you will use to program for more information regarding programming.
2. The Master iButton is used for initiating programming. It will not unlock the door.

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### KEYPAD/100CAB INITIALIZATION (REQUIRED TO ENABLE KEYPAD TO FUNCTION)

It is necessary to initialize the keypad/100CAB any time that the memory is erased.

- A. Set SW4 dipswitch #1 to ON.
- B. Press and hold switch SW3 for two quick beeps of the audible..
- C. Push each button in order, starting with the 1-2 button, and including the \*.  
\* Wait for LEDs to stop flashing before pushing next button.  
\* Waiting for longer than 7 seconds will terminate initialization.
- D. After the last button is pressed, the audible will beep three times and the LEDs will flash indicating that programming has ended.
- E. Return SW4 dipswitch #1 to its original position.

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### “SYSTEM 7” PROGRAMMING:

This procedure will allow up to seven iButtons to be programmed into a lock equipped with an iButton reader or Locknetics keypad with an iButton reader. iButtons will be of the Normal Access type and will unlock the unit for the relock time delay. The iButtons will also reset the lock if it is in an alarm condition.

- A. Set SW4-1 to OFF (if it is on)
- B. Press and hold SW3 until you hear two beeps. Release SW3.
- C. Touch each of the iButtons to the reader. Two quick beeps will sound each time a key has been accepted.
- D. After entering up to seven iButtons wait 10 seconds for programming to end. One quick beep will indicate that programming has ended.
- E. Return SW4-1 to its original position, if required.

**NOTE:** Whenever new “System 7” iButtons are entered, the old ones are erased. Also, whenever computer programming is done, or memory is erased, all “System 7” iButtons are erased.

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### ERASE MEMORY

Memory may be erased to conveniently return to default time delay settings or if an error was made.

- A. Press and hold SW2 until a single beep is heard. Release SW2.
- B. Quickly press SW2 three times, three beeps will sound.
- C. Another 3 beeps will sound in about 10 seconds indicating the memory is erased.

#### NOTES:

1. All programmed codes and iButtons will be erased. Factory default codes and time settings will be restored.
2. Keypads w/100CAB will need to be initialized again.

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### SETTING TIME DELAYS MANUALLY:

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#### **AUTOMATIC RELOCK DELAY** (factory default: 8 seconds)

The amount of time the lock is de-energized after release.

Programmable 1-30 seconds.

- A. Set SW4 dipswitch #6 to OFF (if it is on).
- B. Press and release SW2. The LED will begin flashing GREEN .
- C. Thereafter, press SW3 once for each second of relock delay desired.  
(ex. 3 presses equals 3 seconds-15 presses equals 15 seconds-Up to 30 seconds)  
Each SW3 activation will cause the LED to flash RED and the horn to beep .
- D. Press SW2 and the relock delay will be stored in non-volatile memory.
- E. Return SW4 dipswitch #6 to its original position.

- NOTES:**
1. Not pressing SW3 between pressing SW2 will set the relock time delay to zero seconds. This will cause the lock not to unlock with a momentary contact closure or valid code or iButton.
  2. Models with the SEC option include the anti-tailgate feature. If SW4-4 is on, the lock will relock immediately when the door closes even if the time delay has not yet expired.

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#### **NUISANCE DELAY** (factory default: 3 second)

The amount of time the door must be pushed before triggering the *DELAYED EGRESS CYCLE*

Programmable 0 - 3 seconds. (BOCA Units are fixed at 1 second.)

- A. Press and release SW3, the LED will begin flashing RED.
- B. Thereafter, press SW2 once for each second of nuisance delay desired, up to 3 seconds maximum.  
Each SW2 activation will cause the LED to flash GREEN and the horn to beep .
- C. Press SW3 and the nuisance delay will be stored in non-volatile memory.

- NOTES:**
1. To program nuisance delay to zero, eliminate Step B.
  2. Setting nuisance delay to zero will allow the lock to go into delayed egress the instant that it is pushed upon. This may prove inconvenient in some applications.

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#### **DOOR PROPPED DELAY** (Units with SEC option only) (factory default: 60 second)

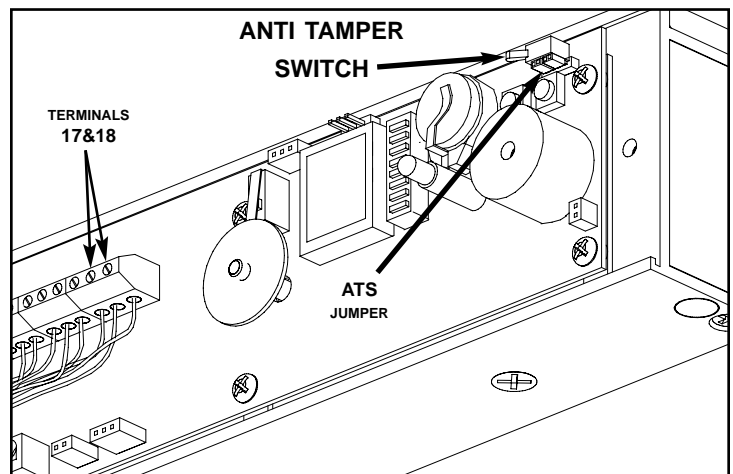
The amount of time the door must be propped open (after normal release time delay has ended) before triggering the alarm. The alarm will clear as soon as the door closes again. Programmable 0 - 120 seconds.

- A. Set SW4-6 to ON (if it is off).
- B. Press and release SW2, the LED will begin flashing YELLOW.
- C. Thereafter, press SW3 once for each second of propped delay desired, up to 120 seconds maximum.  
Each SW3 activation will cause the RED LED to flash and the horn to beep .
- D. Press SW2 and the door prop delay will be stored in non-volatile memory.
- E. Leave SW4-6 ON to enable door propped alarm.

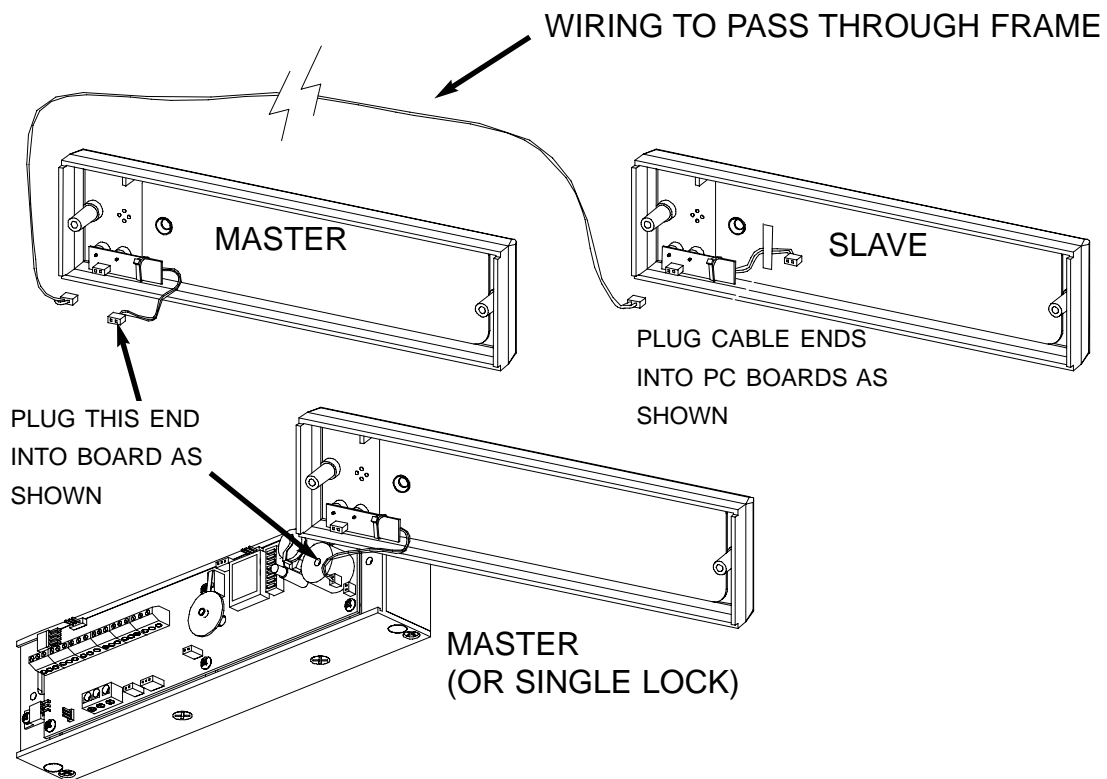
- NOTES:**
1. To program door propped delay to zero, eliminate Step B.
  2. Setting the door propped delay to zero will cause the lock to go into alarm the instant that the normal time delay has ended, if the door is still open.

### ANTI TAMPER SWITCH - IMPORTANT NOTE:

The electronic 390 models come standard with the ATS (Anti Tamper Switch). When the cover is removed, the alarm will sound. It can be reset either by momentarily shorting terminals 17 and 18, which is the reset input, or by entering a valid keypad code or iButton. If power is applied while the cover is off, the alarm will not sound. Putting the cover on or depressing the ATS switch will arm it. If the ATS switch is not working properly, check the setting of the jumper (see pages 8 & 10).



### PLUGTOUCH READER INTO PC BOARD AND SECURE LOCK COVER



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### MANUAL PROGRAMMING - KEYPAD

When using a keypad to manually program a 390DEL, the keypad must first be initialized. It is recommended that the factory default Master Code be changed. Doing so will delete all factory default codes and ensure the security of the system. After entering the Master code the LEDs on the keypad will flash. They will also flash each time that \* is entered. Wait for the LED to stop flashing before entering the next sequence.

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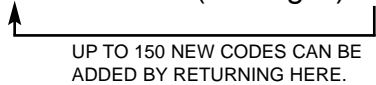
#### TO CHANGE MASTER CODE

Master Code \*...7 \*...New Master Code (5-8 digits)\*...New Master Code \*

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#### TO ADD NORMAL ACCESS CODES - Will unlock door for relock time delay period. Will also reset lock after an alarm condition.

Master Code \*...3 \*...New Code (3-8 digits) \*...\* (to end)



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#### TO DELETE CODES

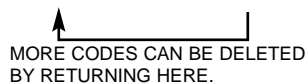
Master Code \*...5 \*...Old Code \*...\* (to end)



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**TO DELETE CODES WITH ALARM/ATR NOTICE:** Codes will not be allowed to function but will remain in memory. When the code is used, the lock will go into alarm, the alarm relay will close, the audible will sound and the LED will illuminate red. The door will not unlock. It will stay in alarm until a valid user code, iButton or reset input will silence the alarm. If the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master Code \*...55 \*...Old Code \*...\* (to end)





TO ADD FUNCTION CODES (Note that a three digit function code sets the function of the user code)

UP TO 150 NEW CODES CAN BE ADDED BY RETURNING HERE.

Master Code \*...33\*...111\*...New Access Code (3-8 digits) \*...\* (to end)

OR

191\*...New Toggle Code

OR

115\*...New Lockout Code

OR

113\*...New One-Time Access Code

OR

117\*...New Supervised Access Code

TO CHANGE FUNCTION/CODES

Master Code \*...11\*...Old Code \*... **X Y Z** \*...New(or same) Code (3-8 digits) \*...\* (to end)

New or Same  
3-digit function  
code. See above.

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### MANUAL PROGRAMMING - iButtons

When manually programming the 390-2 DEL for iButtons, a TEP1 programmer must first be initialized. Only one programmer can be initialized to a particular lock. A Master iButton must also be initialized at the same time as the programmer and will be used to enter the programming mode. See steps below. After entering the Master iButton, the green LED on the iButton reader will flash. It will also flash each time that \* is entered. Wait for the LED to stop flashing before entering the next sequence. The TEP1 programmer is intended to simulate a keypad.

### PROGRAMMER INITIALIZATION TEP1

- A. Set SW4 dipswitch #1 to ON.
- B. Press and hold switch SW2 for two quick beeps of the audible..
- C. Touch a iButton key up to the reader. (This iButton will be initialized as a MASTER iButton.)
- D. Touch each iButton of the TEP1 to the reader in the following order(two beeps of the audible will sound indicating acceptance of each key.)
  - \* Wait for LEDs to stop flashing before touching next key or pushing next button.
  - \* Waiting for longer than 7 seconds will terminate initialization.
- E. After the last button is entered, the audible will beep three times and the LEDs will flash indicating that programming has ended.
- F. Return SW4 dipswitch #1 to its original position.

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TO ADD NORMAL ACCESS iButtons - Will unlock door for relock time delay period. Will also reset lock after an alarm condition.

Master iButton...3 \* ...New PIN(3-8 digits)\* ...New Access iButton...\* (to complete)

UP TO 150 NEW iButtons CAN BE  
ADDED BY RETURNING HERE.

---

### TO DELETE iButtons

Master iButton...5 \* ...Old PIN\*...\* (to end)

MORE iButtons CAN BE DELETED  
BY RETURNING HERE.

---

TO DELETE iButtons (and with alarm/ATR notice): iButtons will not be allowed to function, but will remain in memory. When the iButton is used, the lock will go into alarm, the alarm relay will close, the audible will sound and the LED will illuminate red. The door will not unlock. It will stay in alarm until a valid user code, iButton or reset input silences the alarm. When the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master iButton...55 \* ...Old PIN\*...\* (to complete)

MORE iButtons CAN BE DELETED  
BY RETURNING HERE.

---

TO ADD FUNCTION iButtons (Note that a three digit function code sets the function of the user iButton)

UP TO 150 NEW iButtons CAN BE ADDED BY RETURNING HERE.

Master iButton ...33\*...111\*...New PIN(3-8 digits)\*...New Access iButton ...\* (to end)

OR

191\*...New *Toggle* iButton

OR

115\*...New *Lockout* iButton

OR

113\*...New *One-Time Access* iButton

OR

117\*...New *Supervised Access* iButton

---

TO CHANGE FUNCTION AND/OR PIN

Master iButton ...11\*...Old PIN\*... XYZ\*...New(or same) PIN (3-8 digits)\*...\* (to end)

New or Same  
3-digit function  
code. See above.

The table below is intended to provide all possible indications and states which can be encountered under normal operation. Note that some conditions or features are only available on certain models or when certain options are included.

<b>DESCRIPTION OF INDICATORS</b>			
<b>CONDITION</b>	<b>LED INDICATOR</b>	<b>AUDIBLE</b>	<b>ALARM RELAY STATE (TERM.7&amp;8)</b>
<b>STANDARD FEATURES</b>			
LOCK SECURE	OFF	OFF	OPEN
LEGAL RELEASE INPUT	STEADY GREEN	OFF	OPEN
LOW INPUT VOLTAGE	OFF	SLOW BEEP	OPEN
DURING NUISANCE DELAY	STEADY YELLOW	OFF(DEFAULT) (SET BY SW4-8)	OPEN
DURING DELAYED EGRESS	FLASHING RED	BEEPING	CLOSED
AFTER DELAYED EGRESS	STEADY GREEN	STEADY TONE	CLOSED
ANTI-TAMPER ALARM IF LOCK COVER IS REMOVED	STEADY RED	STEADY TONE	CLOSED
<b>SWITCH SELECTABLE FEATURES</b>			
SW4-5 "ON" =UNLOCK ALARM WHENEVER LOCK IS UNLOCKED	STEADY GREEN	STEADY TONE	OPEN
SW4-8 "ON" = HORN WILL SOUND DURING NUISANCE ALERT	STEADY YELLOW	ON	OPEN
<b>OPTIONAL SWITCH SELECTABLE FEATURES SEC (SECURITY ALARM OPTION) REQUIRED</b>			
SW4-6 "ON" DOOR PROPPED OPEN ALARM DOOR IS HELD OPEN PAST RELOCK TIME	FLASHING GREEN	BEEPING	CLOSED
SW4-6 "ON" DOOR FORECED OPEN ALARM DOOR OPENED WITHOUT VALID RELEASE SIGNAL	FLASHING RED	BEEPING	CLOSED
<b>PROGRAMMING INDICATIONS</b>			
RELOCK DELAY PROGRAMMING ACTIVE	FLASHING GREEN	OFF	OPEN
DOOR PROPPED OPEN DELAY	FLASHING YELLOW	OFF	OPEN
WHILE PRESSING SW3 OR SW2 TO SET RELOCK AND DOOR PROPPED DELAYS	RED	CHIRP	OPEN
NUISANCE DELAY PROGRAMMING ACTIVE	FLASHING RED	OFF	OPEN
WHILE PRESSING SW2 TO SET NUISANCE DELAY	GREEN	CHIRP	OPEN

### ERROR CODES:

If an error is made while manually programming a lock, an error code indication will be indicated at the iButton reader or keypad. The LED(s) will flash several times. Count the number of flashes and refer to the chart below for diagnosis.

ERROR CODES			
NUMBER OF FLASHES	ERROR	NUMBER OF FLASHES	ERROR
2	Code entered too long. Code length cannot exceed 8 digits.	6	Invalid command.
3	Memory full – too many codes/iButtons entered	7	Code does not exist. (For "Delete With Alarm/ATR" only)
4	Master code cannot be deleted, only changed.	8	Code too short. Minimum master code 5 digits. Minimum user code 3 digits.
5	Second entry of master code does not match first. Master code not changed.	9	Not a unique code/iButton.
		10	Manual Programming disabled.

### TROUBLE SHOOTING:

Some common problems associated with the installation of the 390 series can be easily recognized and corrected:

#### Problem:

Lock has power but won't lock.  
LED (on lock) is Green.

Won't go into delayed egress.

Goes into delayed egress upon powerup.

Lock can be pushed open with minimal resistance.

Lock "hums" or vibrates noisily when energized.

Lock "beeps" every several seconds.

Won't accept iButtons.  
LED(s) flash once quickly.

Lock won't accept programmed codes/iButtons.  
LED(s) flash once quickly.

MBS doesn't change state when locked.

DSM/SEC option not working properly.

#### Possible Solution:

Fire alarm not connected or open connection. SW4-7 not ON (set switch, remove and re-apply power).

Check dipswitch settings (p.9). Armature washers not installed properly (p.5)  
Magnet not properly aligned with armature. (p.6)

Armature washers not installed properly (p.5)  
Improper gap between magnet and armature (p.6)

Magnet/Armature/washers not installed properly (p.5-6).

Magnet/Armature/washers not installed properly (p.5-6).

Low voltage alert. Check voltage at terminals 1&2. It must be 12.00 volts or 24.00 volts or slightly higher.

iButton reader on cover not plugged in to board. (p.15)  
Relock delay set to 0 sec.(p.14)

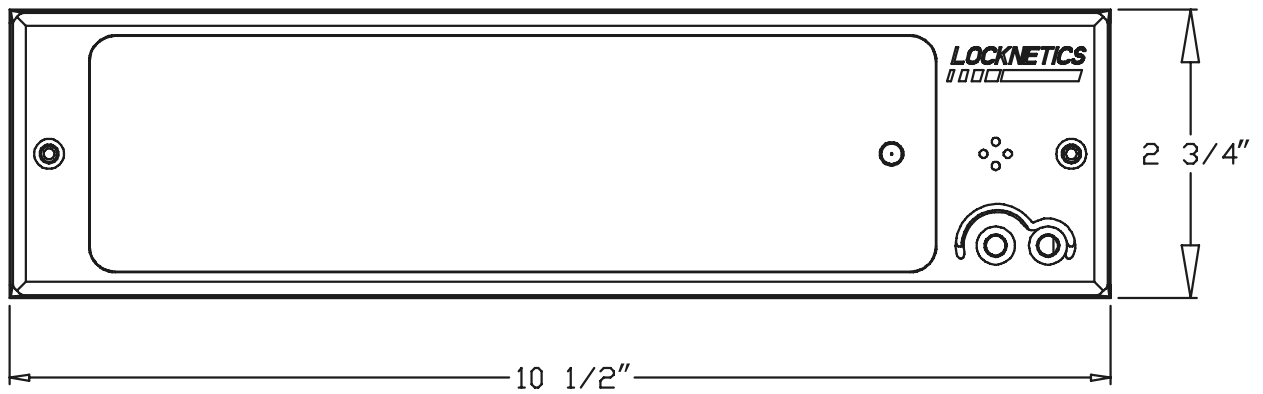
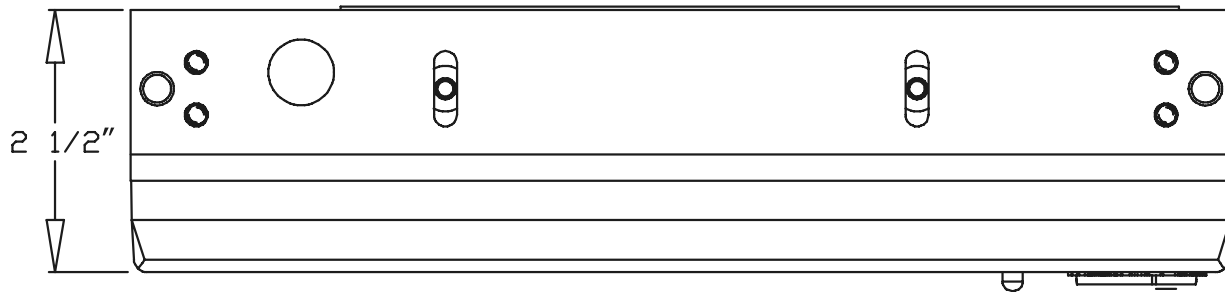
Relock time delay set to 0 sec. (p.14)  
Keypad not initialized (p.12).

Low voltage. Mechanical misalignment. Debris between lock and armature.  
Armature/magnet not installed properly (p.5-6).

Armature holder not aligned with DSM/SEC switch(s). Switch not plugged into correct jack (p.8)

### MAINTENANCE

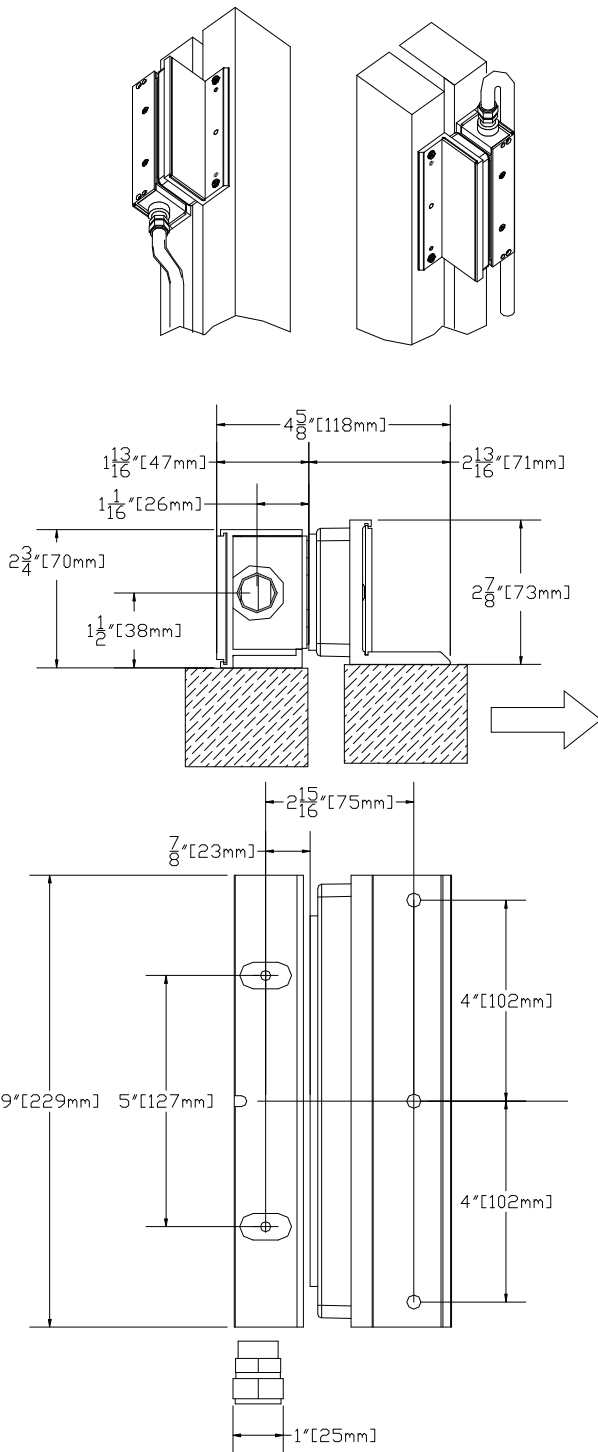
It is not recommended that the magnet be painted (unless ordered with in iridite primer). If the unit must be painted, it is important that the mating surfaces of the magnet and armature not be painted. The iButton reader and LED must not be painted either. The electromagnet and armature are plated for corrosion resistance and require little maintenance. For maximum performance the following service should be done to both the armature and electromagnet as required: Clean the mating surfaces of the electromagnet and armature with a non-abrasive cleaning pad, apply a light coating of silicon lubricant and wipe with a clean dry cloth.



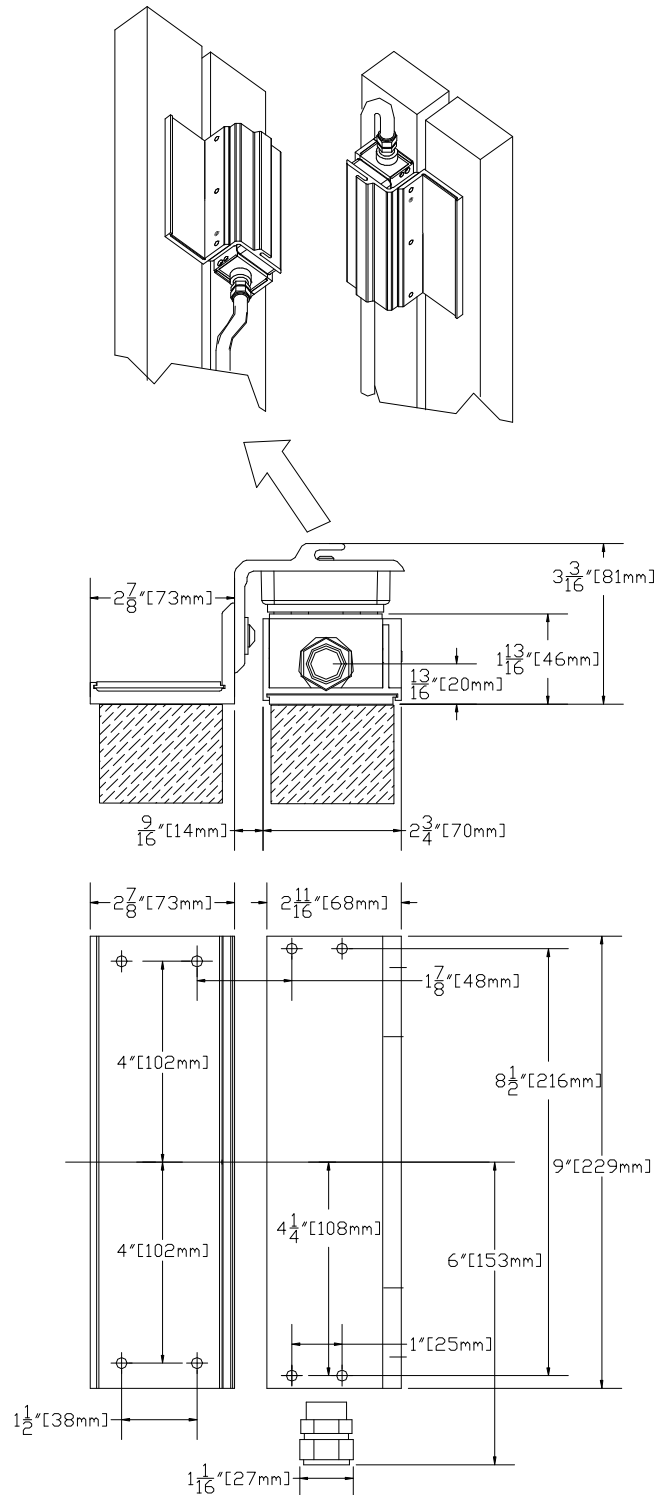
## INSTALLATION CONSIDERATIONS:

The 390G+ is an electromagnetic lock designed for use on exterior gate applications, though it can be used indoors under circumstances where conduit-enclosed wiring is desirable or unavoidable. These instructions cover two basic mounting situations: swinging and sliding. Other mounting situations may be encountered which may necessitate fabrication of custom brackets or reinforcements to accommodate the lock. Wiring should be protected by conduit. Wire leads provided are 24 inches long and provisions should be made for connections within that distance. You must determine which type of mounting screws provided will best suit your installation. For light-gauge metal frames, self tapping screws may be used. If the frame is heavy gauge metal, machine screws may be required to adapt the lock to a particular post or frame. Armature mounting hardware is provided for direct mounting. The sex nut (provided) can be used instead of the TJ brackets, if mounting the armature on a standard, 1-3/4" door. Other sex nuts, of different lengths, are available from Locknetics distributors. Refer to the last page for parts list with pictures.

### SLIDING GATE APPLICATION TEMPLATE:

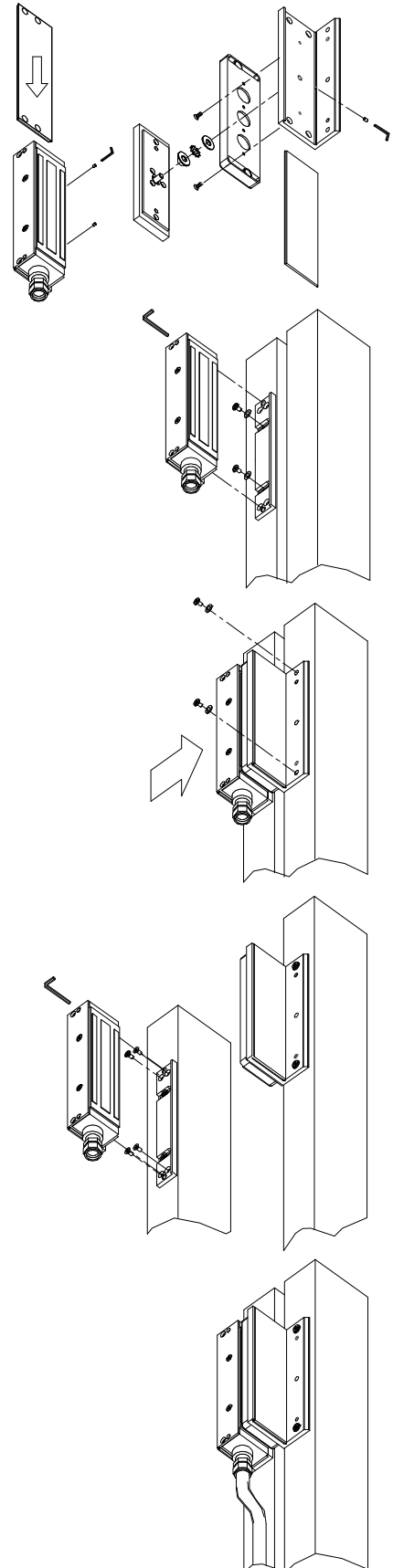


### SWINGING GATE APPLICATION TEMPLATE:



## SLIDING GATE INSTRUCTIONS:

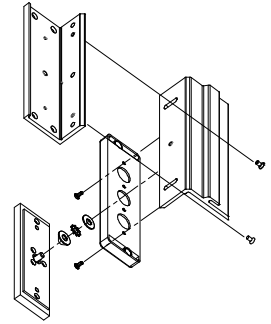
- 1.** Prep the gate and post according to the instructions or in accordance with the requirements of the situation. Note that some installations may require additional brackets, hardware, or reinforcement for a sound installation. Loosen the socket cap screws which secure the standard mounting bracket to the magnetic lock assembly and remove the bracket. (The socket head cap screws are captured in the magnetic lock assembly.) Slide the TJ mounting plate onto the magnetic lock assembly. Center it and secure with two #6-32 set screws. Install the armature housing to the lower TJ bracket using the two #6-32 flat head machine screws. Do not remove the foam rubber compression pads. Pre assemble the armature assembly to the lower TJ bracket as shown (left). Note that the tapered washer assemblies with the pointed side toward the armature, then the external tooth washer, followed by the flat washer. Next, slide the dress plate into the lower TJ bracket and secure in position with one of the #6-32 set screws.
- 2.** Mount the standard mounting plate onto the gate post using either the two #10 pan head self tapping screws and washers or the 10-24 pan head machine screws. Do not completely tighten them at this time because the position of the bracket must be adjustable in the next step. Fasten the magnetic lock assembly to the mounting plate using the 2/16 hex wrench provided.
- 3.** Mount armature/lower TJ bracket assembly to moving part of gate using two 1/4-20 button head socket cap screws and washers. (Alternate hardware may be substituted if necessary.) Close the gate and secure it (if such mechanical means exists). With the gate in its closed position, push the magnetic lock toward the armature so that it comes to rest completely engaged, with no air gap. (If a temporary power supply is available to power up the lock do so in order to ensure that the lock will properly engage.) Mark the position of the magnetic lock assembly. Remove the magnetic lock and tighten the two pan head screws.
- 4.** Open gate. Using the standard mounting bracket as a template, drill the four remaining holes for #10 self tapping or #10-24 machine screws as appropriate. Install screws, tightening completely. Install magnetic lock, tightening socket screws completely.
- 5.** Run conduit to lock and make wiring connections for the voltage being used. See page 1 for wiring and monitor switch information. If the lock is used in a particularly corrosive environment such as near salt water or in a climate where salt is applied on the roads apply a thin film of grease (supplied) to the mating surfaces of the magnet and the armature.



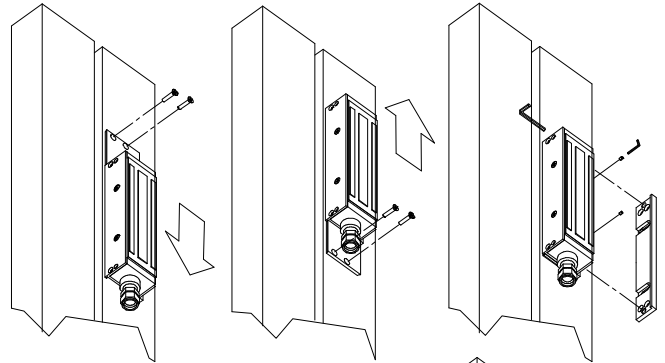


## SWINGING GATE INSTRUCTIONS:

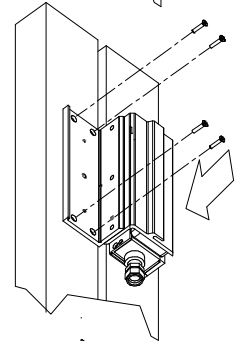
- 1.** Prep the gate and post according to the instructions or in accordance with the requirements of the situation. Note that some installations may require additional brackets, hardware, or reinforcement for a sound installation. Install the armature housing to the upper TJ bracket using the two #6-32 flat head machine screws. Do not remove the foam rubber compression pads. Install the armature to the upper TJ bracket using the tapered washer, external tooth washer and flat washer. Note that the tapered washer assembles with the pointed side toward the armature, then the external tooth washer, followed by the flat washer. Pre assemble the armature assembly to the upper TJ bracket as shown (right) using the 1/4-20 button head socket cap screws and washers. Do not completely tighten them at this time.



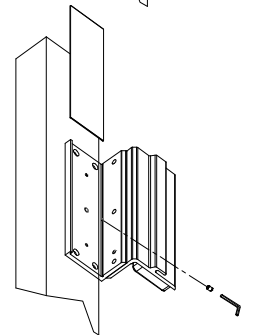
- 2.** Loosen the socket cap screws which secure the standard mounting bracket to the magnetic lock assembly and remove the bracket. (The socket head cap screws are captured in the magnetic lock assembly.) Slide the TJ mounting plate into the magnetic lock assembly, leaving the upper two holes exposed. Place magnet/bracket assembly onto gate post and secure using two of either #10 flat head self tapping screws or the 10-24 flat head machine screws. Slide the magnetic lock upward to expose the two lower holes. Fasten the assembly with the remaining two #10 screws. Center the assembly on the TJ mounting plate and lock into place using two 6-32 set screws. A rubber mallet may be used to adjust position if tight. Fasten the standard mounting plate to the magnetic lock using the 3/16 hex wrench provided.



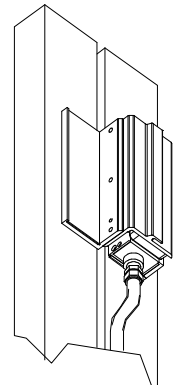
- 3.** Mount armature/TJ bracket assembly to moving part of gate using four of either #10 flat head self tapping screws or the 10-24 flat head machine screws. Close the gate and secure it (if such mechanical means exists). With the gate in its closed position, push the armature/upper TJ bracket assembly toward the armature so that it comes to rest completely engaged, with no air gap. (If a temporary power supply is available to power up the lock do so in order to ensure that the lock will properly engage.) Mark the position of the armature/upper TJ bracket assembly (relative to the lower TJ assembly.) Open the gate. Tighten the 1/4-20 button head socket cap screws completely. Secure the position with the remaining 1/4-20 set screw.



- 4.** Slide the dress plate into the lower TJ bracket. Center it and secure with a 6-32 set screw.



- 5.** Run conduit to lock and make wiring connections for the voltage being used. See page 1 for wiring and monitor switch information. If the lock is used in a particularly corrosive environment such as near salt water or in a climate where salt is applied on the roads apply a thin film of grease (supplied) to the mating surfaces of the magnet and the armature.



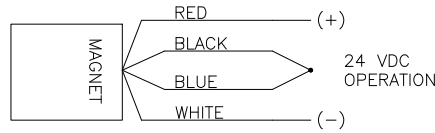
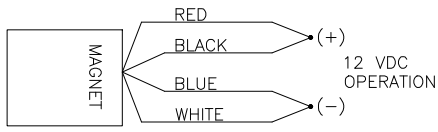
## WIRING INFORMATION:

### SPECIFICATIONS:

Amps(12V)  
0.670

Amps(24V)  
0.350

Holding Force: 1500lbs.



**NOTE:** POLARITY IN THIS CASE DOES NOT MATTER. IT IS SHOWN AS A SUGGESTION TO KEEP WIRING WITHIN A SYSTEM CONSISTENT.

### DSM:

(Door Status Monitor: changes state when gate is closed)

RED: N.C.

BLACK: C.

WHITE: N.O.

(RATING:0.250A@30VDC)

### MBS:

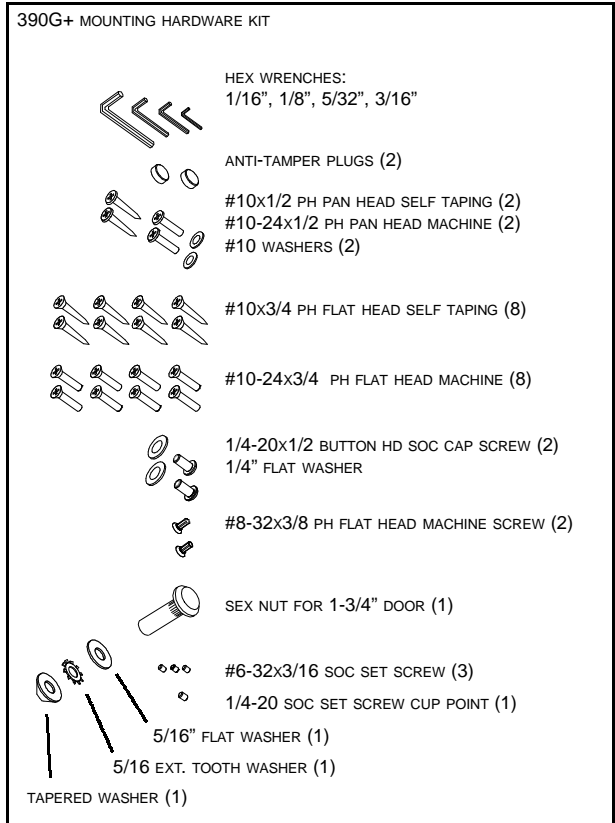
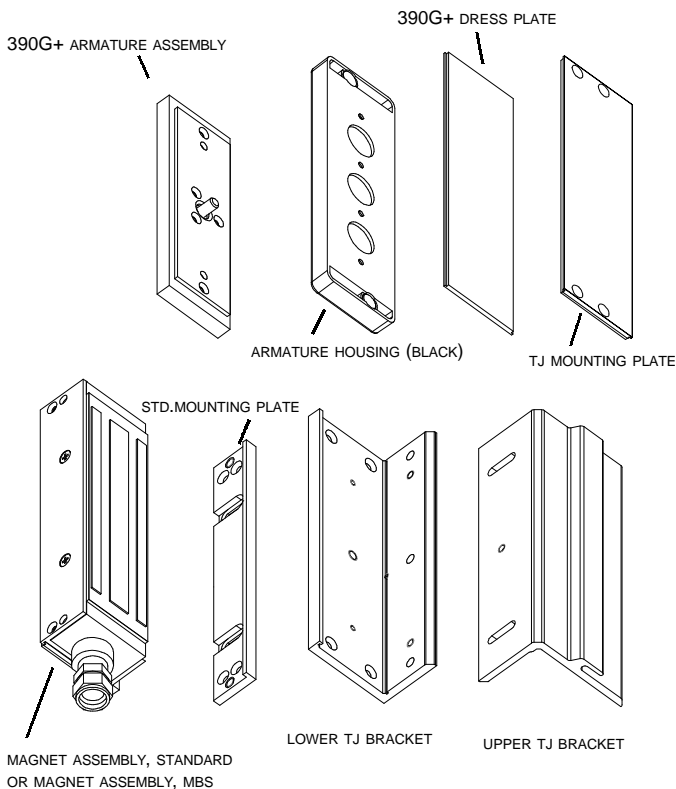
(Magnetic Bond Sensor - indicates lock status, shown unlocked: changes state when a good magnetic bond is indicated)

WHITE: C.

WHITE: N.O.

(RATING:0.250A@30VDC)

## PARTS LIST:



## TROUBLE SHOOTING:

### PROBLEM:

### POSSIBLE CAUSE:

### RESOLUTION:

Lock does not lock.

No power applied.  
AC voltage applied instead of DC.  
Lock not making contact with armature.

Check power at lock, then check wiring and power supply.  
Use rectifier on low voltage side. Use DC power supply.  
Adjust mechanical position. Check for proper installation of armature.

Lock does not have enough holding force.

Improper installation of armature hardware.  
Improper alignment of armature to lock.

Correct sequence (tapered washer points toward armature-required.)  
Adjust position to correct.

MBS not changing state.

Low voltage.  
Debris between magnet and armature.  
Poor alignment.

Check voltage at lock. It should be above 12 or above 24 VDC. If not correct condition. (Possibly the wire gauge is too small for the length and load.) Power supply inadequate.  
Check and clean.  
Correct condition.

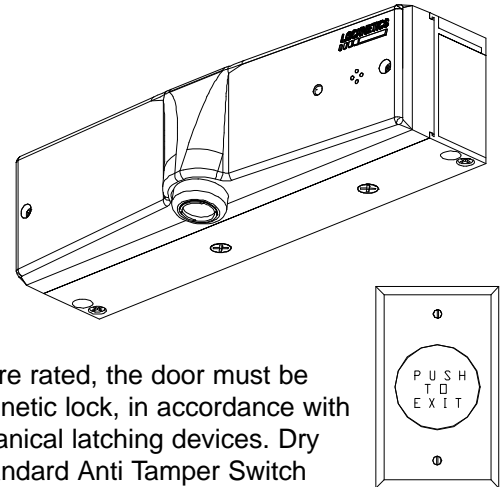
DSM not changing state when gate closed.

Poor alignment between magnet and armature.

Correct condition.  
Make sure there are small permanent magnets inside armature housing.

## 390PIR MAGNETIC LOCKING SYSTEM INSTALLATION AND WIRING

**GENERAL DESCRIPTION:** The 390PIR is an auxiliary magnetic lock with a built-in PIR (passive infrared) motion detector for the purpose of “hands-free” egress. Upon approaching the door from the inside (secured side) the magnet will unlock automatically. A ‘PEX’ (“Push to Exit”) button can be used where required. When installed according to this manual, the PEX button unlocks the magnet for a fixed, 30 second (minimum) period of time, independent of any other timer circuits. The electromagnet mounts rigidly to the door frame header. The armature mounts to the door. The armature is designed to pivot about its center compensating for door misalignment. When the door is closed the energized magnet will bond with the armature, providing auxiliary locking force. If the opening is fire rated, the door must be secured positively with a mechanical latching device, in addition to the magnetic lock, in accordance with local authority having jurisdiction. Locknetics manufactures fire rated mechanical latching devices. Dry contact inputs allow for fire alarm tie in and remote release capabilities. Standard Anti Tamper Switch (ATS) provides a normally open or normally closed dry contacts (field selectable) which change state if the cover is removed. Three independent timers are standard: release timer(3-30 sec), PIR timer(3-30 sec), and push to exit (PEX) timer (fixed at 30seconds (minimum)), for emergency egress in compliance with 1997 NFPA 101 section 5-2.1.6.2.) This manual covers the mechanical installation, wiring, and operational options. Consult local authority having jurisdiction to ensure compliance with local and national life safety and building codes.



### DESCRIPTION OF OPTIONS:

**DSM:** Door Status Monitor will provide status of door with or without power applied.

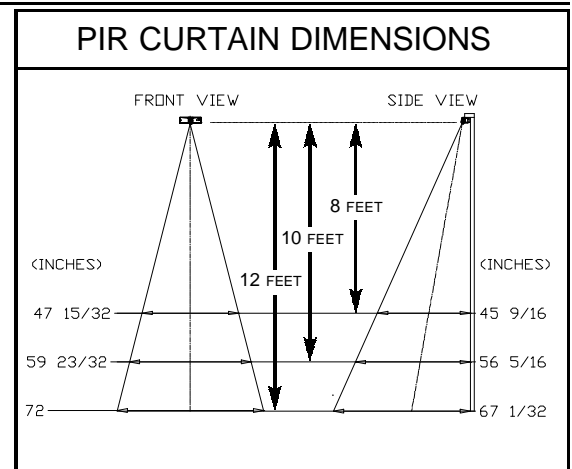
**MBS:** Magnetic Bond Sensor will provide status of lock (locked or unlocked) with or without power applied.

**REX100 output option:** Using a Locknetics REX100 module, this option provides a 1 second time delay to a set of Form C dry contacts to signal other equipment such as an automatic door operator when a pulse is received from the PIR or a contact closure from the release (REL) input is detected. Applications note: the pulse may be repeated several times as people pass through the field of the PIR.

**LPB:** “Less Push Button” - does not include PEX pushbutton.

### TECHNICAL SPECIFICATIONS:

<b>Dual Voltage:</b>	12 or 24 volts AC or DC (Selected by jumper setting on PC board)	
<b>Max. Current:</b>	0.7 Amps @ 12 Volts (DC) 1.0 Amps @ 12Volts (AC) 0.5 Amps @ 24 Volts (DC) 0.7 Amps @ 24Volts (AC)	
<b>Output Contact Ratings:</b>		
<b>ATS:</b>	<b>standard)</b>	SPST 100 mA resistive load @ 24V
<b>DSM:</b>	<b>(optional)</b>	SPDT 200 mA @ 12V, 100mA @ 24V
<b>MBS:</b>	<b>(optional)</b>	SPDT 1.0 Amp resistive load @ 30V
<b>REX100:</b>	<b>(optional)</b>	SPDT 1.0 Amp resistive load @ 30V
<b>Mechanical Holding Force:</b>	1650 pounds	
<b>PEX (Push to Exit Button - DP):</b>	SPST N.C. contacts rated 1amp @30VAC/DC Mounts in single gang box. (DP has two SPST N.C. contacts)	

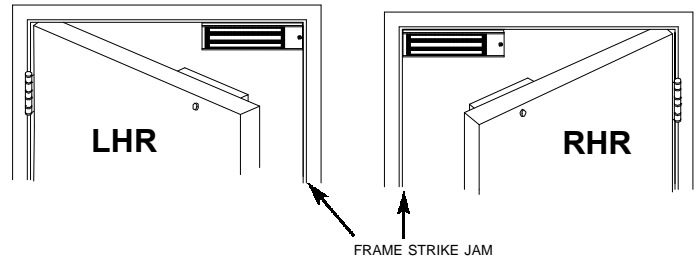


**PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE ELECTROMAGNETIC LOCK.**  
 HANDLE THE EQUIPMENT CAREFULLY, DAMAGING THE MATING SURFACES OF THE  
 ELECTROMAGNET OR THE ARMATURE MAY REDUCE LOCKING EFFICIENCY.

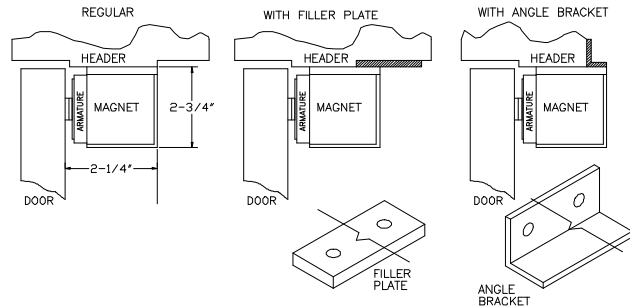
**IMPORTANT!** This manual is intended to be kept for operation, maintenance, and troubleshooting purposes. *Do not dispose of after installation.* Please present this manual to facility manager upon completion of installation.

**PRE-INSTALLATION CONSIDERATIONS**

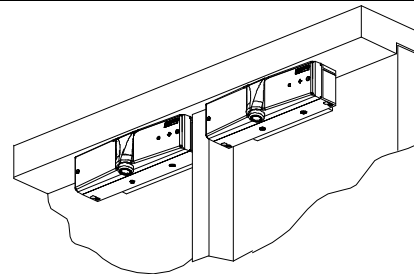
The electromagnet should be mounted as near to the frame strike jamb as possible to provide maximum holding force. Visually check the mounting location to assure that the unit will mount without interference.



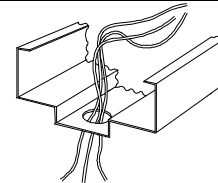
Frame conditions may require the use of filler plates and/or angle brackets. These items are available from Locknetics.



When mounting two locks on one opening with or without a mullion, treat each installation separately. Use the template for each leaf.



Wiring for the electromagnet must enter the top of the unit through the wire access hole drilled in the frame header (see template). Be certain provisions can be made to bring the wire through the header into the top of the unit.

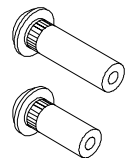


Use proper mounting screws for your door frame. For light-gauge metal door frames, self tapping screws may be used. If the door frame is heavy-gauge metal, machine screws may be necessary and the holes will have to be tapped. *Caution: It is very important to make sure that magnet is secured to the structure of the opening. Consult factory with with questions regarding the installation of a magnetic lock on a wooden frame. Be prepared to provide structural detail of opening.*

	PAN HEAD	FLAT HEAD
MACHINE SCREWS		
SELF-TAPPING SCREWS		

Armature mounting hardware is for door thickness of 1-3/4 inches. For doors thicker than 1-3/4" consult factory.

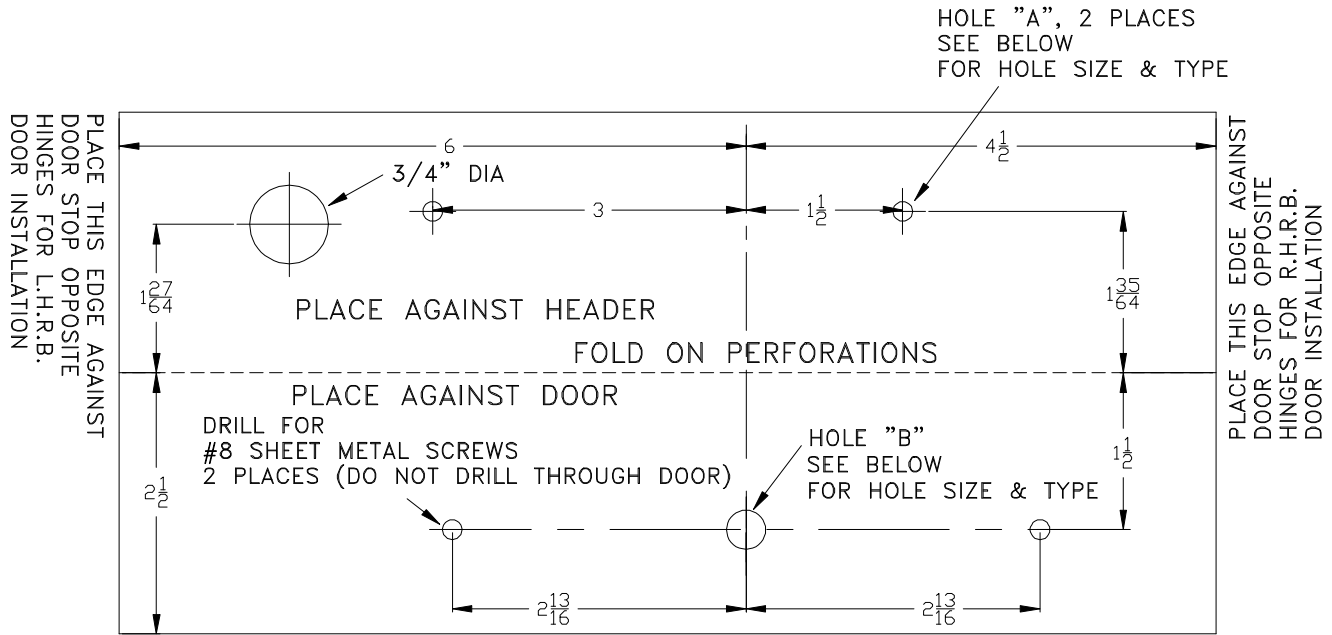
FOR SEX NUTS FOR USE ON DOORS OTHER THAN 1-3/4" CONSULT FACTORY.



**INSTALLATION PROCEDURE**

**1. PREP DOOR AND FRAME:**

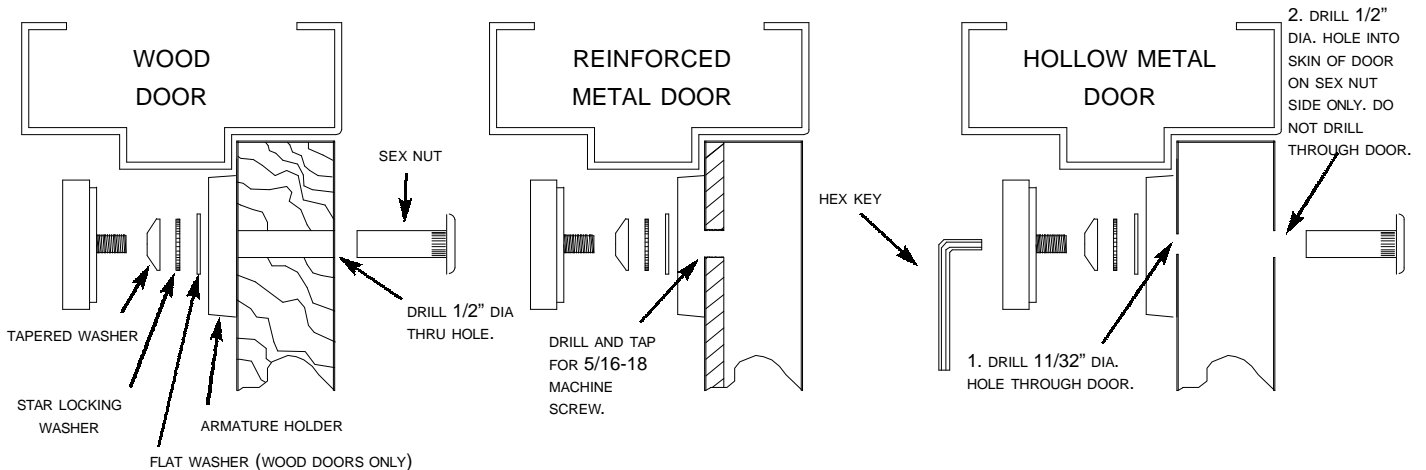
The paper template is the preferable way to prepare the door and frame. If for any reason it is not available, use the dimensions shown below to mark the centerlines of the holes. *Note that the layout is not symmetrical with respect to the centerline of the armature.*



**A.** The door should be closed and latched. You should be at the "push" side. Locate the paper template and fold it along the perforated line with the printed sides facing each other. Place the template against the frame stop and the door. Tape template in place.

**B.** On the frame stop mark the location of holes "A" from the template. For heavy gauge or reinforced frames, drill and tap for #10-24 thread. For standard frames, drill 5/32" dia. for #10 self tapping screws. Locate and drill the 3/4" dia. wire hole. (The 3/4" dia. hole is oversized to the 5/8" dia. mounting plate hole to allow the full range of adjustability.)

**C.** On the doors, mark the locations of all holes. Drill (2) holes per template for #8 self tapping or #8-32 machine screws. Armature mounting hole "B" is determined by the door type (see below).

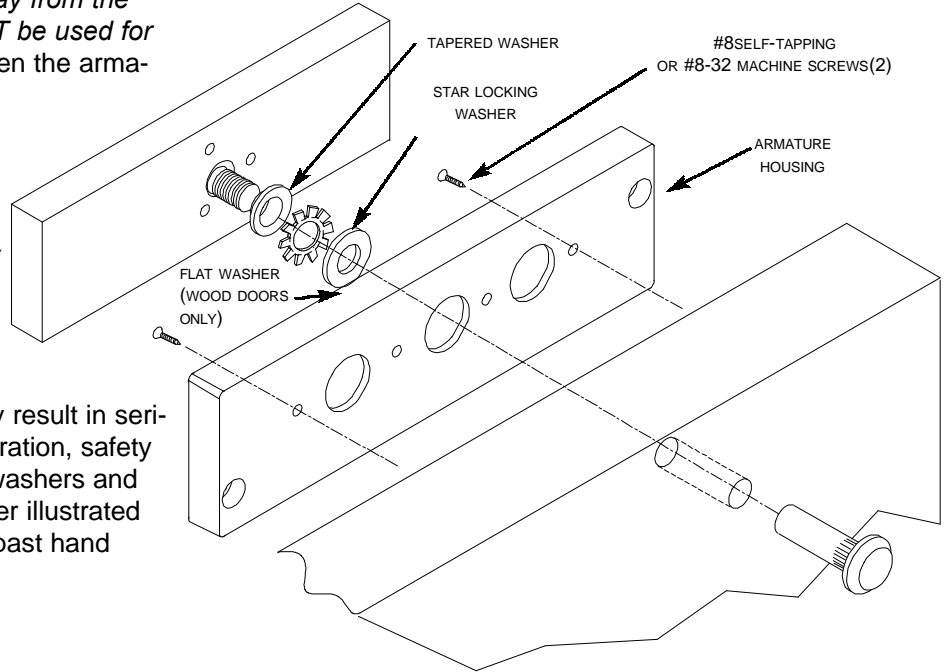


**2. MOUNT ARMATURE TO DOOR**

Assemble using hardware provided in the order shown. All hardware shown must be used except where noted. *Note that the tapered washer must be placed with the pointed side facing away from the door and toward the armature.* It **MUST** be used for proper operation. Use hex key to tighten the armature mounting bolt. For solid core and hollow metal doors, gently tap sex nut into position with a rubber mallet before mounting armature assembly. *Proper use of hardware will allow armature to pivot slightly after securely tightening the mounting screw. This is normal, and necessary to allow armature to mate properly with magnet.*

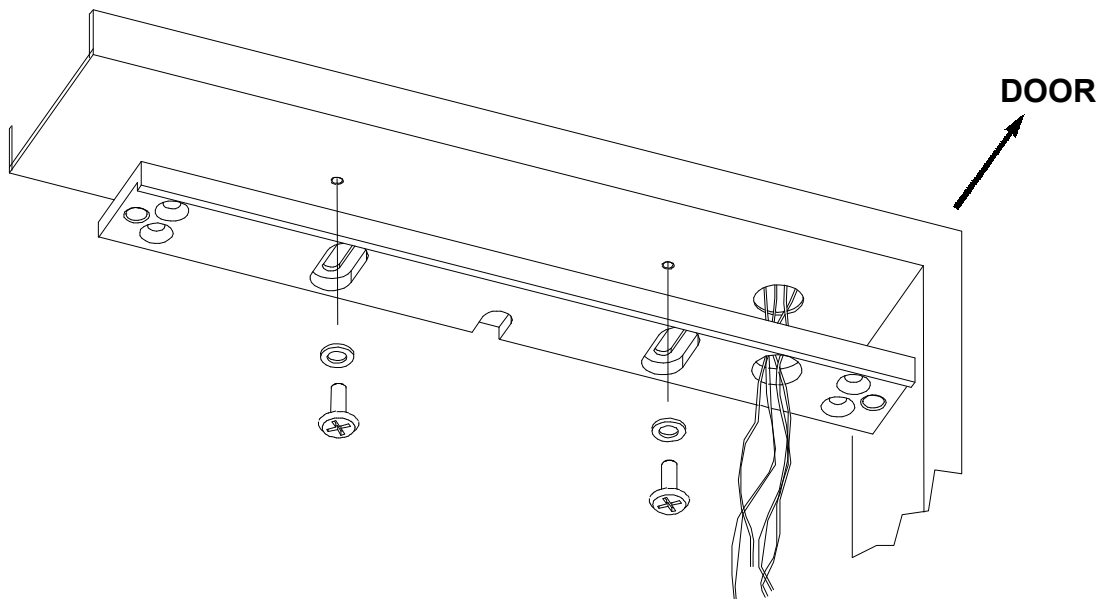
**CAUTION:**

Failure to secure armature to door may result in serious injury to door user. For proper operation, safety and security, sex nut / bolt assembly, washers and spacers must be assembled in the order illustrated and securely tightened 1/8 to 1/4 turn past hand tight.



**3. TEMPORARILY ATTACH MOUNTING PLATE TO HEADER**

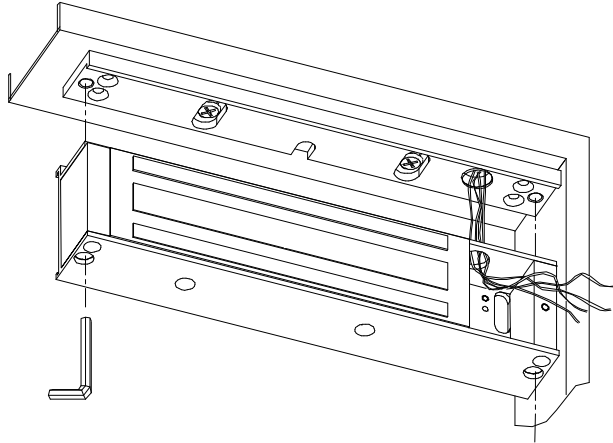
Slotted holes and counterbore should face downward. Mount to the frame using (2) #10-24 x 1/2" pan head machine screws, or (2) #10 x 3/4" pan head self-tapping screws, and #10 flat washers. Tighten screws just tight enough to allow shifting the plate during adjustment.



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#### 4. TEMPORARILY MOUNT TEMPLATE OR MAGNET TO MOUNTING PLATE

Using socket cap screws, mount the magnet to the mounting plate. Carefully pass wiring through wire access hole in top of magnet and allow it to hang out of wiring cavity. *Do not install anti-tamper plugs at this time.*

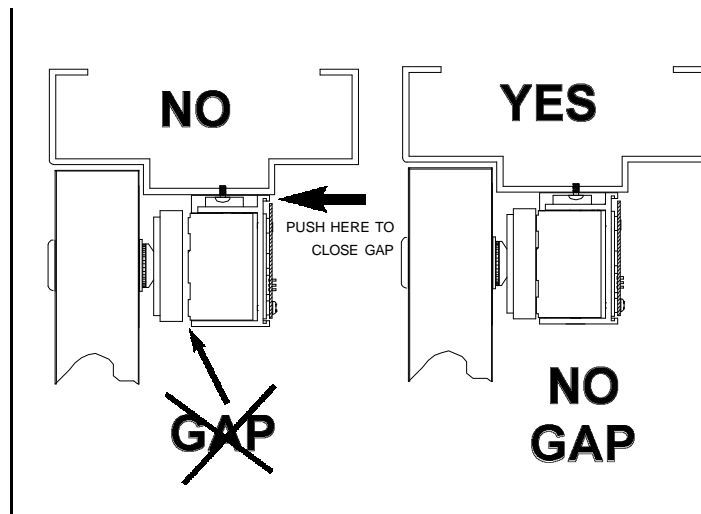


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#### 5. ALIGN MAGNET WITH ARMATURE

With door closed and latched push magnet assembly toward the armature by applying pressure on each end of the magnet until fully mated together, as shown below. Mark the position of the mounting plate. Remove magnet from the mounting plate without moving the mounting plate. (If using template, tighten two pan head screws through holes in template before removing it.) Tighten the slotted hole screws without moving the mounting plate to assure proper alignment.

**CAUTION:** Do not press on the PC board while moving the magnet. This could cause damage.



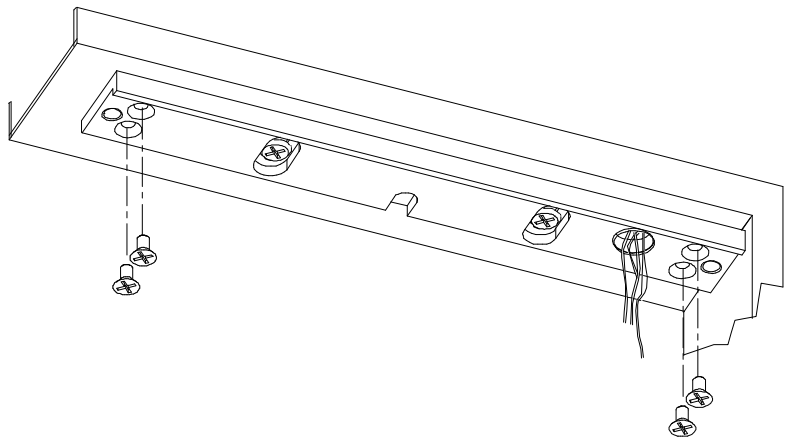
**6. SECURE MOUNTING PLATE**

Using the Mounting Plate as a template, drill the four remaining mounting holes. Tighten two 10-24 self tapping pan head screws

If using #10 self-tapping, flat-head screws drill 5/32" dia. holes and drive four screws tight.

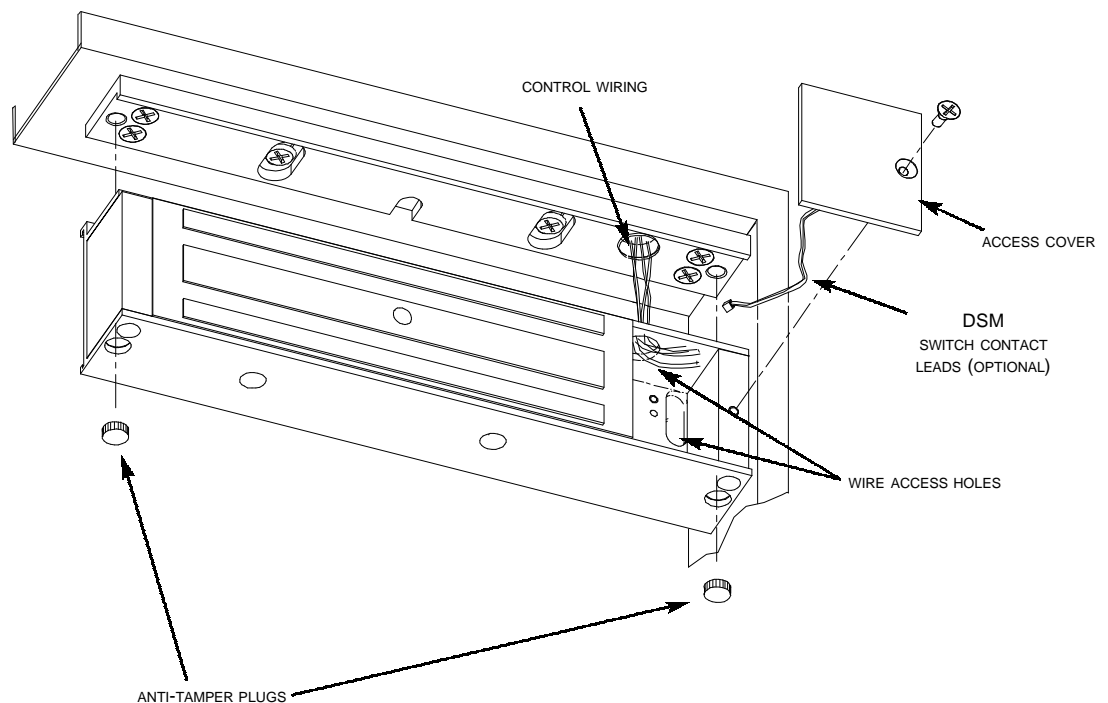
If using #10-24 flat head machine screws, drill and tap for #10-24 threads and tighten four screws.

**CAUTION:** If the frame is wood it is critical that the screws used secure the mounting plate to the *structure* of the frame. Consult factory with any questions regarding wood frame applications. Be prepared to provide structural detail of opening.



**7. SECURE MAGNET TO MOUNTING PLATE**

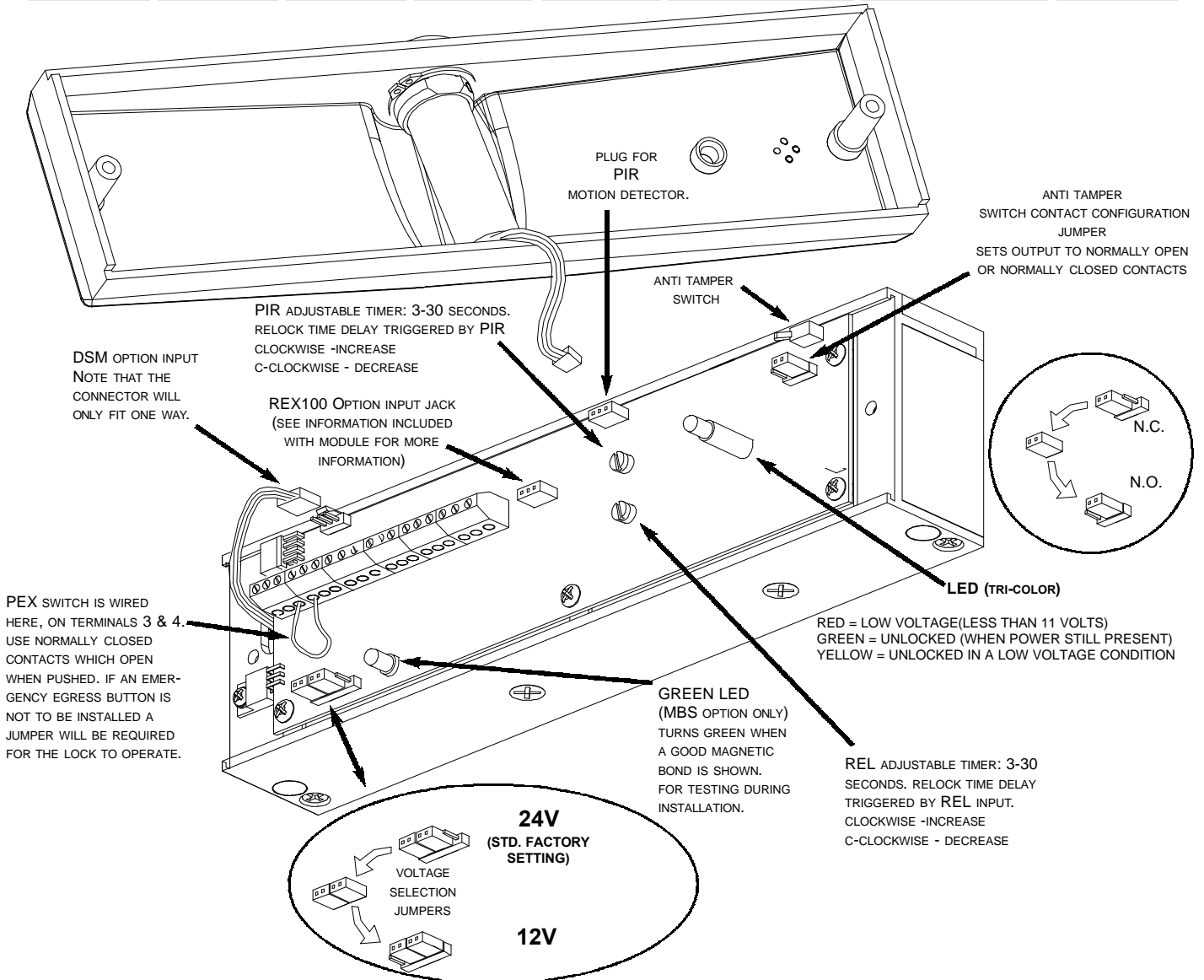
Install the electromagnet to the mounting plate by tightening the captured 1/4-20 x 2" socket head cap screws with a 3/16" hex key. Firmly tighten the screws. Pass wiring through hole in top of magnet and through access hole on circuit board side of magnet as shown below. If the unit has DSM and/or SEC and/or BOCA there will be up to two switch contacts with plug-in leads mounted on the access cover. Pass these leads through the access hole on circuit board side of magnet. Secure access cover. Drive in anti-tamper plugs using a rubber mallet.



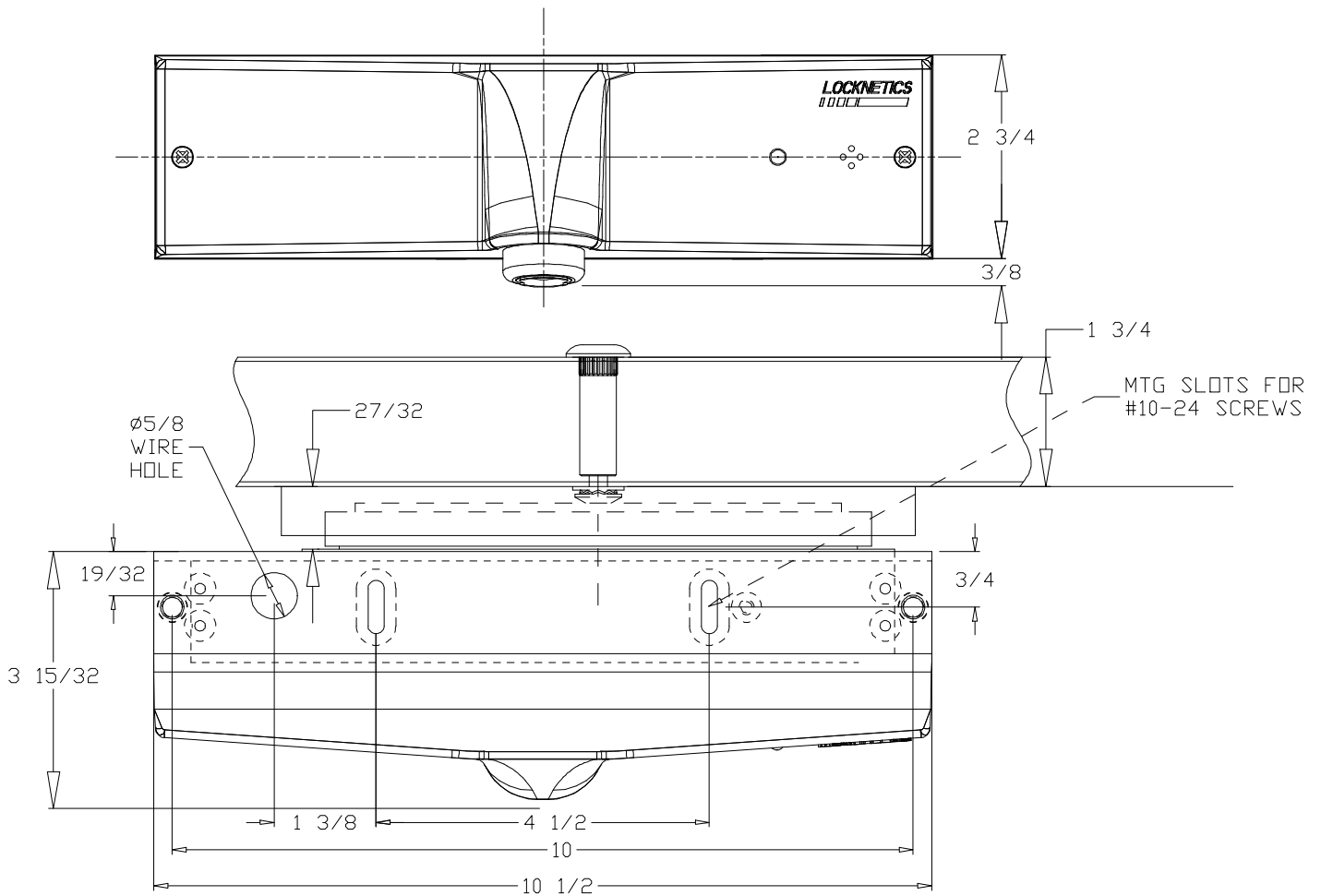


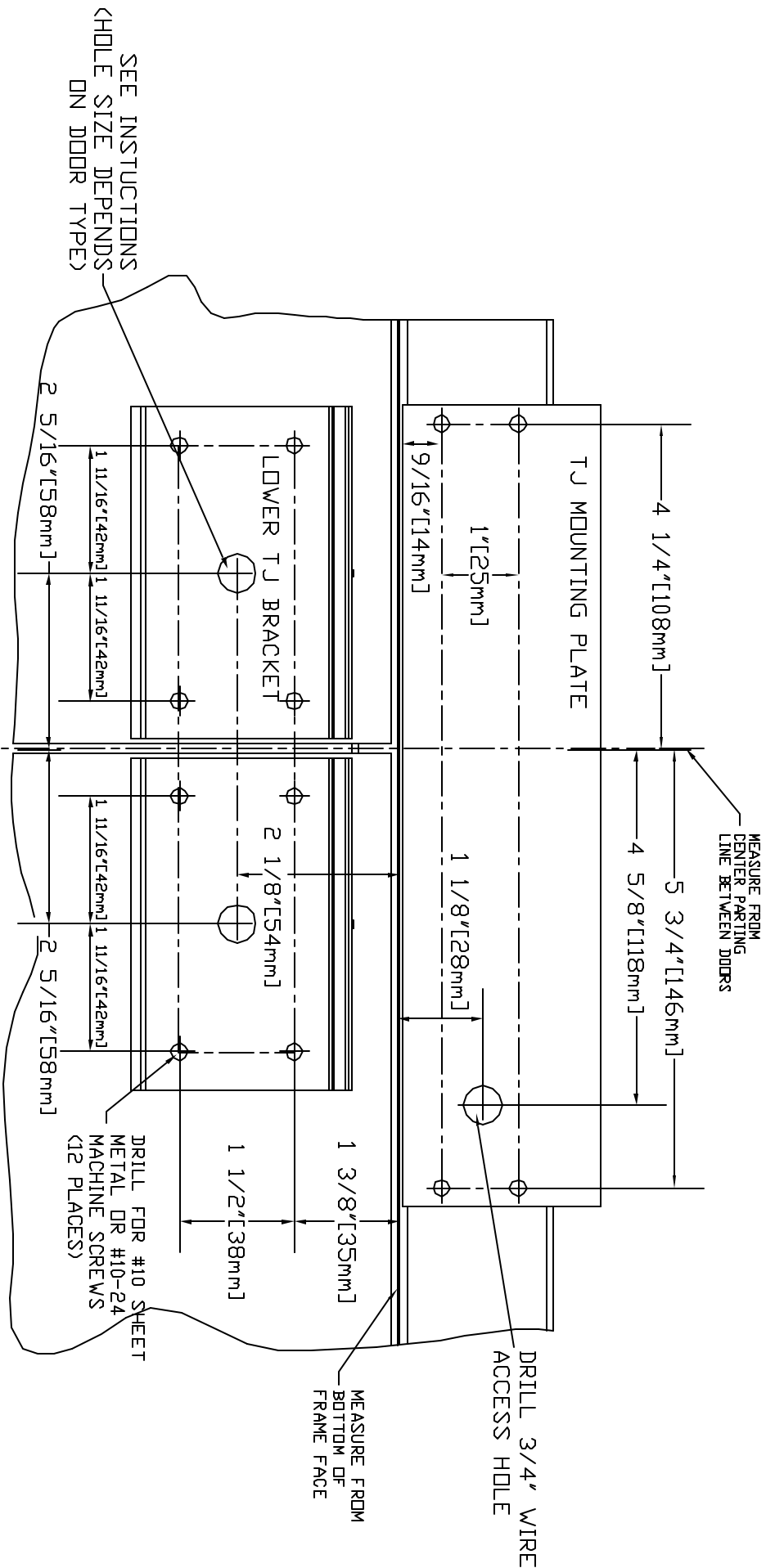
### TERMINAL LAYOUT TB1:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>POWER INPUT</b> 12/24 VOLTS AC OR DC (SELECTION JUMPER ON BOARD MUST BE SET - SEE BELOW)  <b>DO NOT APPLY 120 VAC</b>		<b>PEX INPUT</b> (N.C. DRY CONTACT)  A JUMPER IS REQUIRED IF NOT CONNECTED TO EMERGENCY EGRESS BUTTON		<b>FIRE ALARM INPUT</b> APPLY A NORMALLY CLOSED DRY CONTACT OR A JUMPER IF NOT CONNECTED TO FIRE ALARM		<b>RELEASE INPUT</b> DRY CONTACT CLOSURE WILL RELEASE LOCK FOR THE TIME DELAY PERIOD (SEE BELOW)		<b>DSBL INPUT</b> (DISABLE PIR) MAINTAINED DRY CONTACT CLOSURE WILL DISABLE PIR FOR AFTER HOURS SECURITY (RECOMMEND USE OF PEX)		<b>NO   C   NC</b> <b>DSM OUTPUT</b> (OPTIONAL) CONTACTS CHANGE STATE WHEN DOOR IS CLOSED.			<b>C   NC   NO</b> <b>MBS OUTPUT</b> (OPTIONAL) CONTACTS CHANGE STATE WHEN MAGNET IS PROPERLY BONDED TO ITS ARMATURE. POOR BOND CAN BE CAUSED BY LOW VOLTAGE, MISALIGN- MENT OR DAMAGED MATING SURFACES.			<b>C   NO/NC</b> <b>ANTI TAMPER SWITCH OUTPUT</b> CONTACTS CHANGE STATE WHEN COVER IS REMOVED	



**NOTE: There will be a time delay of approximately 30 seconds before magnet locks when power is applied.**





SEE INSTRUCTIONS  
<HOLE SIZE DEPENDS  
ON DOOR TYPE>

**NOTES:**

A variety of fasteners is included in the hardware pack. Select the correct fasteners for the door and frame materials involved. For wood or hollow metal doors use self-tapping sheet metal screws; for reinforced or heavy gauge metal doors and frames, use machine screws.

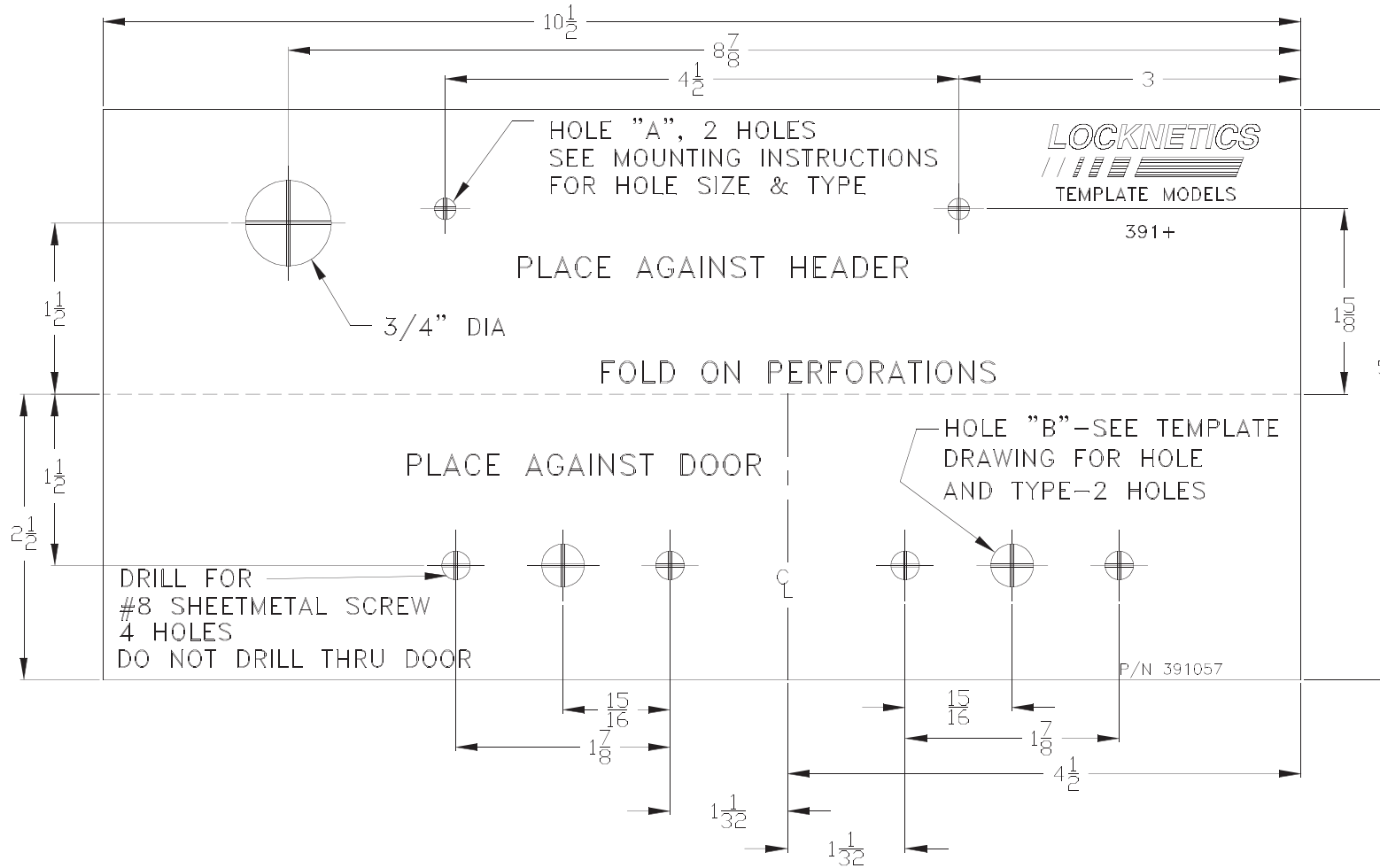
**OVERALL DIMENSIONS:**  
 TJ MOUNTING PLATE  
 10 1/2" L x 2 1/2" H x 1/4" THICK  
 LOWER TJ BRACKET  
 4 1/4" L x 2 3/4" W x 1/4" THICK

DRILL FOR #10 SHEET  
METAL OR #10-24  
MACHINE SCREWS  
(12 PLACES)

DRAWN BY: TG	DATE 04-01	TITLE	391+TJ91 DOOR AND FRAME PREP	LOCKNETICS	FIRM NO.	391+TJ_TMP	REV.
CHKD BY:				Security Engineering			B
APP'D BY:							04-01

# TEMPLATE INFORMATION

**391+**

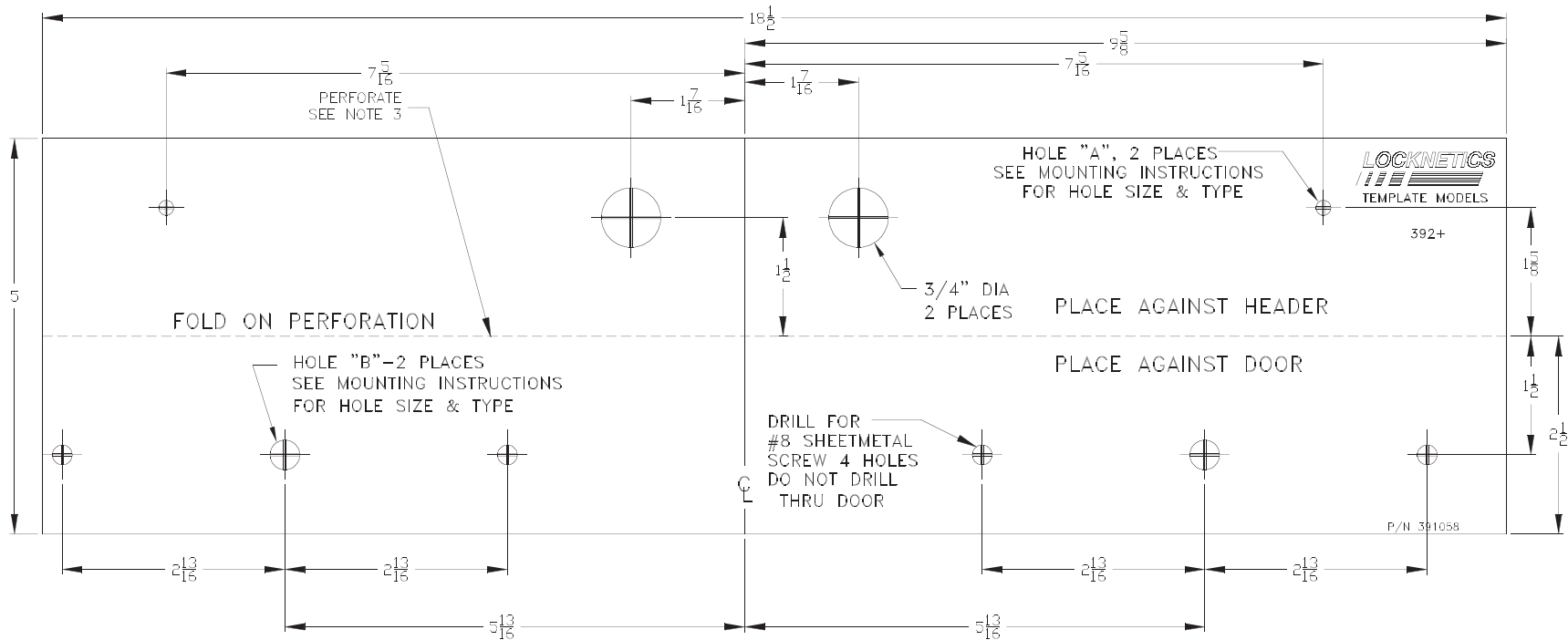


**NOTE:**

A variety of #10 fasteners is included in the hardware pack. Select the correct fasteners for the door and frame materials involved. For wood or hollow metal doors used self-tapping sheet metal screws; for reinforced or heavy-gauge metal doors and frames, use machine screws.

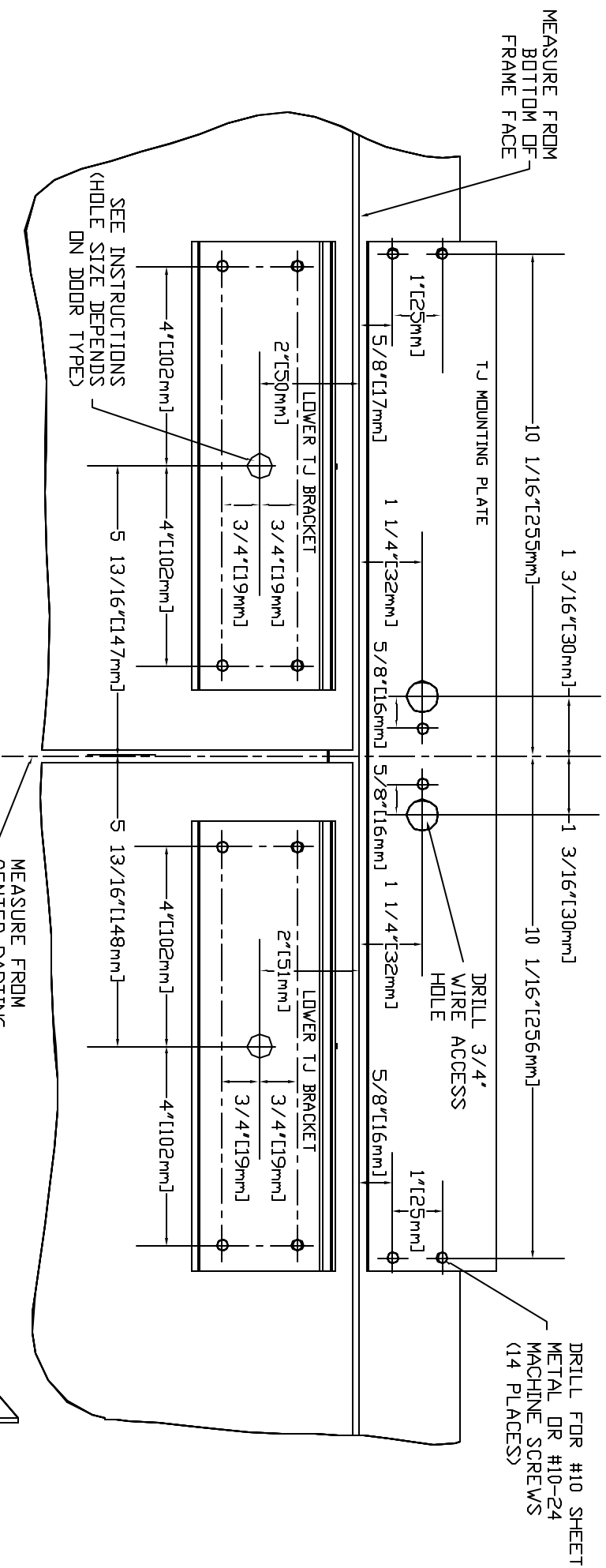
# TEMPLATE INFORMATION

**392+**



**NOTE:**

A variety of #10 fasteners is included in the hardware pack. Select the correct fasteners for the door and frame materials involved. For wood or hollow metal doors used self-tapping sheet metal screws; for reinforced or heavy-gauge metal doors and frames, use machine screws.



MEASURE FROM  
BOTTOM OF  
FRAME FACE

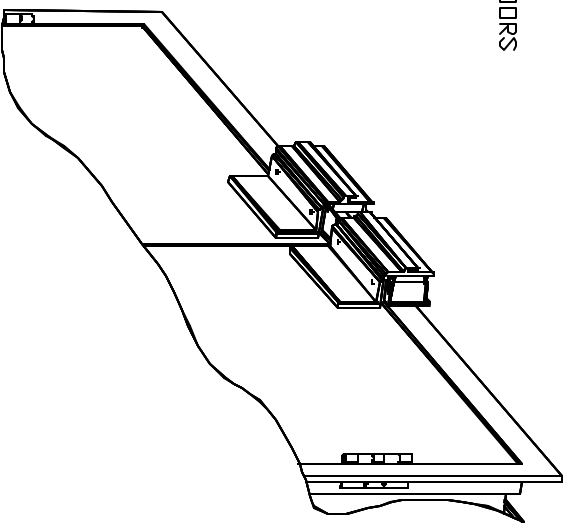
DRILL FOR #10 SHEET  
METAL OR #10-24  
MACHINE SCREWS  
(14 PLACES)

SEE INSTRUCTIONS  
(HOLE SIZE DEPENDS  
ON DOOR TYPE)

MEASURE FROM  
CENTER PARTING  
LINE BETWEEN DOORS

NOTE:  
A variety of #10 fasteners is included in the hardware pack. Select the correct fasteners for the door and frame materials involved. For wood or hollow metal doors use self-tapping sheet metal screws; for reinforced or heavy gauge metal doors and frames, use machine screws.

OVERALL DIMENSIONS:  
TJ MOUNTING PLATE  
20 1/2"L x 2 1/2"H x 1/4"THICK  
LOWER TJ BRACKET  
9"L x 2 7/8"H x 1/4"THICK



DRAWN BY: TG	DATE: 04-01	TITLE	392+TJ92	FDRM NO.	392+TJ_TMP	REV.
CHKD BY:		DOOR AND FRAME PREP		B		04-01
APP'D BY:						



# LOCKNETICS.

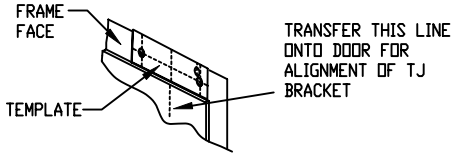
## 40TJ SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

# TEMPLATE & INSTALLATION SHEET

THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

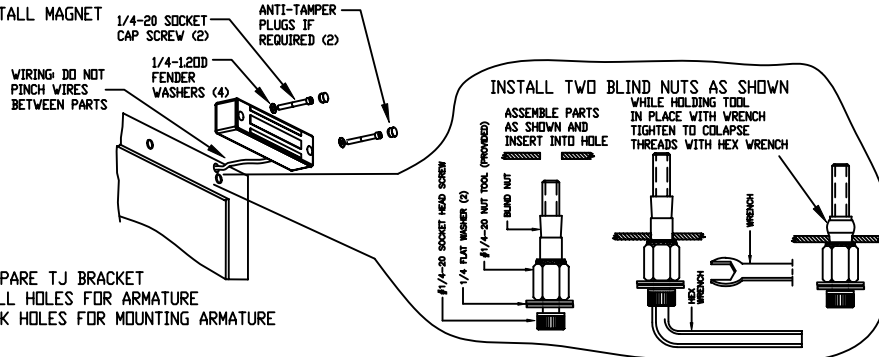
- ① PLACE TEMPLATE ON FRAME FACE AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.



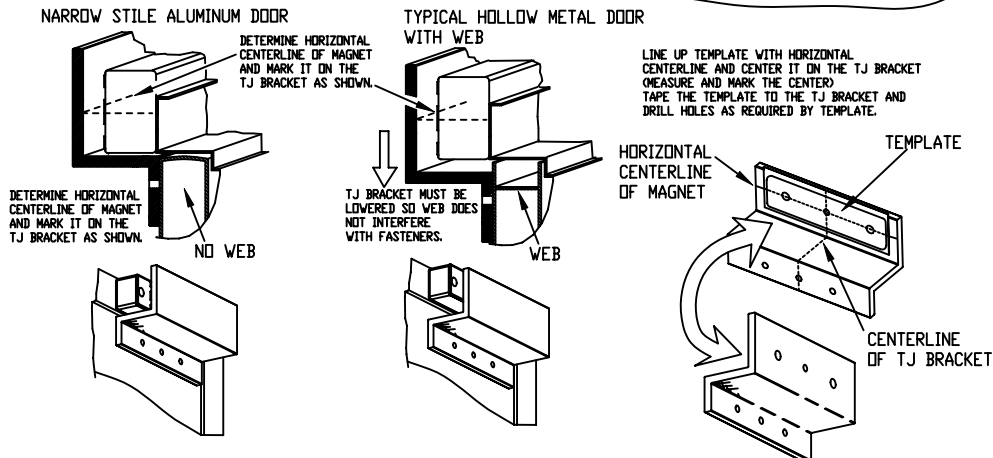
- ② MAKE WIRING CONNECTIONS (AFTER INSTALLING BLIND NUTS - SEE STEP 3)

WIRING:	(+) 0.300 AMP @ 12VDC
RED:	(-) 0.150 AMP @ 24VDC
BLACK:	
WHITE:	MBS C } 1 AMP MAX.
GREEN:	MBS ND } @ 30VDC
ORANGE:	MBS NC } @ 30VDC
YELLOW:	DSM C } 0.10 AMP MAX.
BLUE:	DSM ND } @ 30VDC
BROWN:	DSM NC } @ 30VDC

- ③ INSTALL MAGNET



- ④ PREPARE TJ BRACKET  
DRILL HOLES FOR ARMATURE  
MARK HOLES FOR MOUNTING ARMATURE

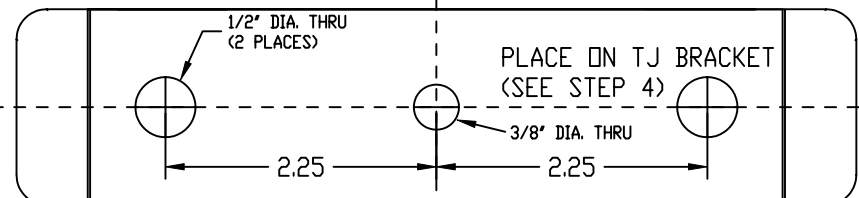
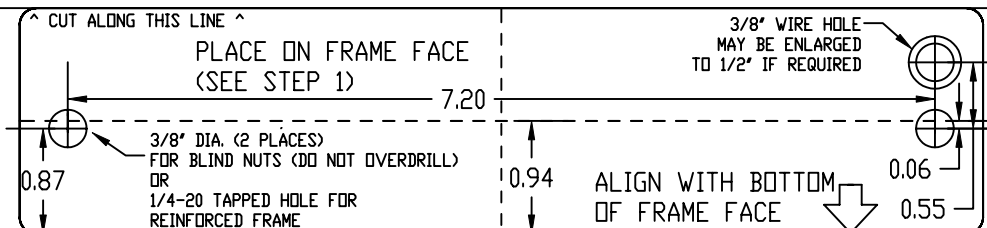
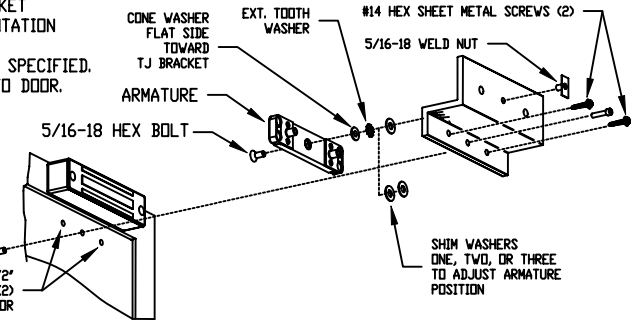


PART NUMBER 700196

- ⑤ INSTALL ARMATURE ONTO TJ BRACKET USING FASTENERS IN ORDER/ORIENTATION AS SHOWN. DRILL HOLES FOR TJ BRACKET AS SPECIFIED. MOUNT TJ BRACKET ASSEMBLY ONTO DOOR.

SEX NUT  
DRILL 3/8" THRU 1/2" THIS SIDE (WOOD DOORS: 1/2" THRU)

DRILL PILOT HOLES FOR 1-1/2" #14 HEX SHEET METAL SCREWS (2) DO NOT DRILL THRU DOOR



PART NUMBER 700196

# LOCKNETICS.

## 70TJ SERIES MAGNETIC LOCK

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED) - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING SHIM WASHERS.

# TEMPLATE & INSTALLATION SHEET

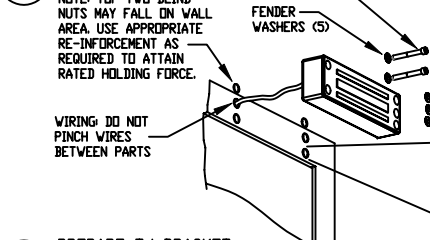
THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

1 PLACE TEMPLATE ON FRAME FACE AS SHOWN. LEAVE ROOM IF REQUIRED FOR EXISTING DOOR HARDWARE SUCH AS VERTICAL ROD PANIC HARDWARE, ETC. DRILL REQUIRED HOLES.

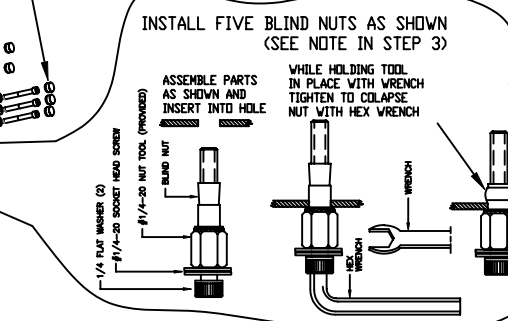
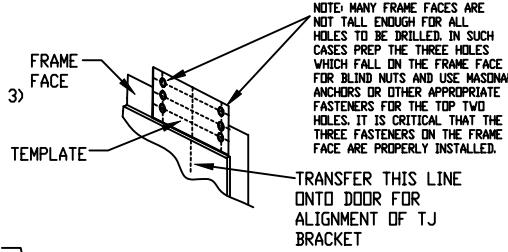
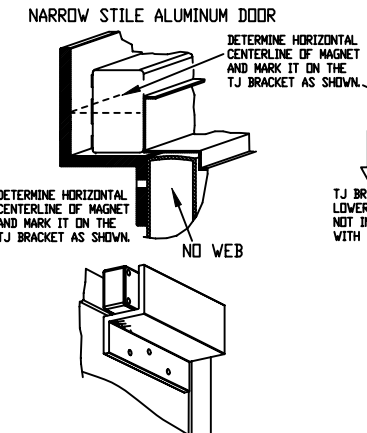
2 MAKE WIRING CONNECTIONS (AFTER INSTALLING BLIND NUTS - SEE STEP 3)

WIRING:		
RED:	(+)	0.300 AMP @ 12VDC
BLACK:	(-)	0.150 AMP @ 24VDC
WHITE:	MBS C	1 AMP MAX. @ 30VDC
GREEN:	MBS NO	
ORANGE:	MBS NC	
YELLOW:	DSM C	0.10 AMP MAX. @ 30VDC
BLUE:	DSM NO	
BROWN:	DSM NC	

3 INSTALL MAGNET  
NOTE: TOP TWO BLIND NUTS MAY FALL ON WALL AREA. USE APPROPRIATE RE-INFORCEMENT AS REQUIRED TO ATTAIN RATED HOLDING FORCE.



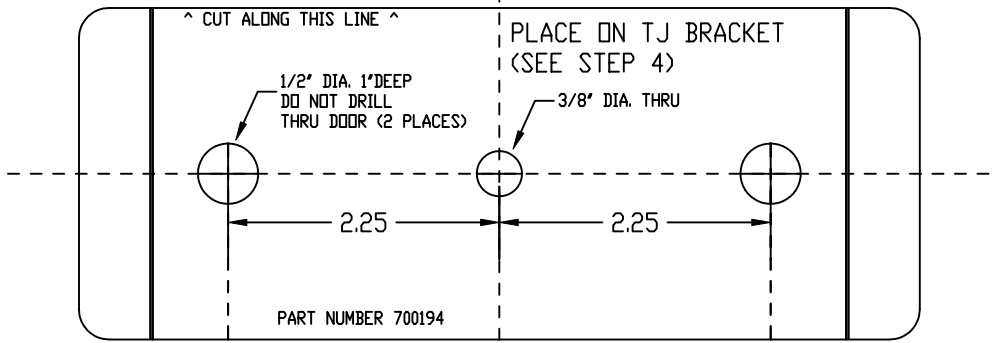
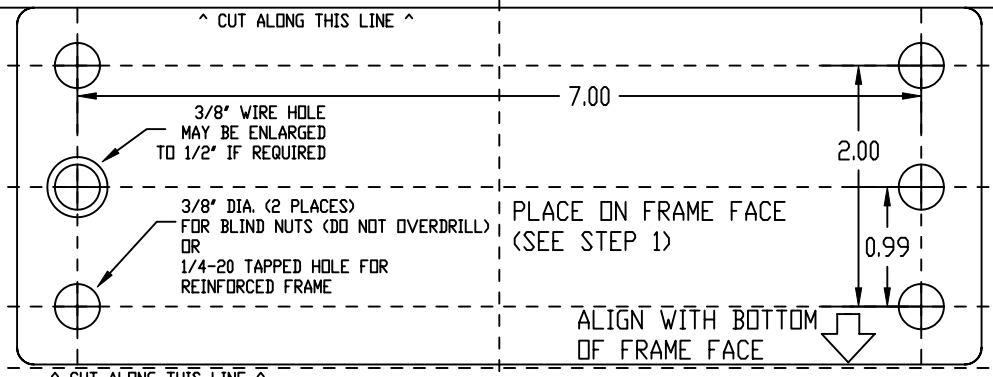
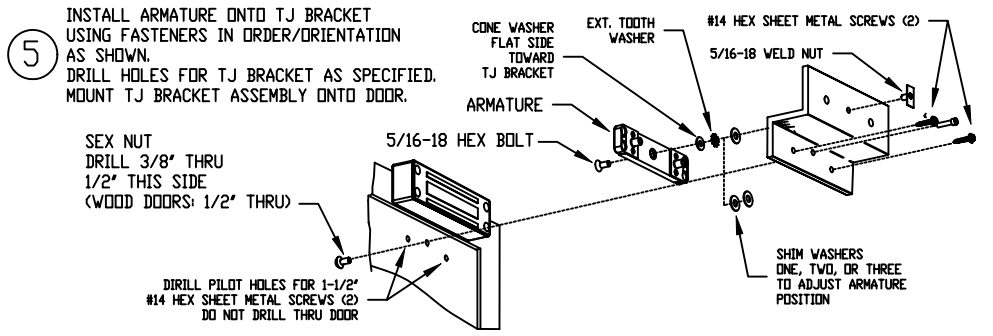
4 PREPARE TJ BRACKET  
DRILL HOLES FOR ARMATURE  
MARK HOLES FOR MOUNTING ARMATURE



PART NUMBER 700194

5 INSTALL ARMATURE ONTO TJ BRACKET USING FASTENERS IN ORDER/ORIENTATION AS SHOWN.  
DRILL HOLES FOR TJ BRACKET AS SPECIFIED.  
MOUNT TJ BRACKET ASSEMBLY ONTO DOOR.

SEX NUT  
DRILL 3/8" THRU 1/2" THIS SIDE (WOOD DOORS: 1/2" THRU)



PART NUMBER 700194



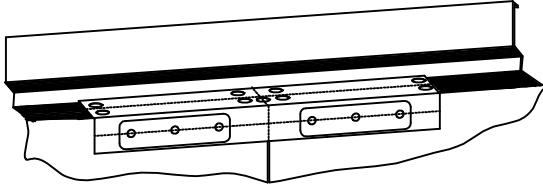
# LOCKNETICS®

## 72 SERIES MAGNETIC LOCK

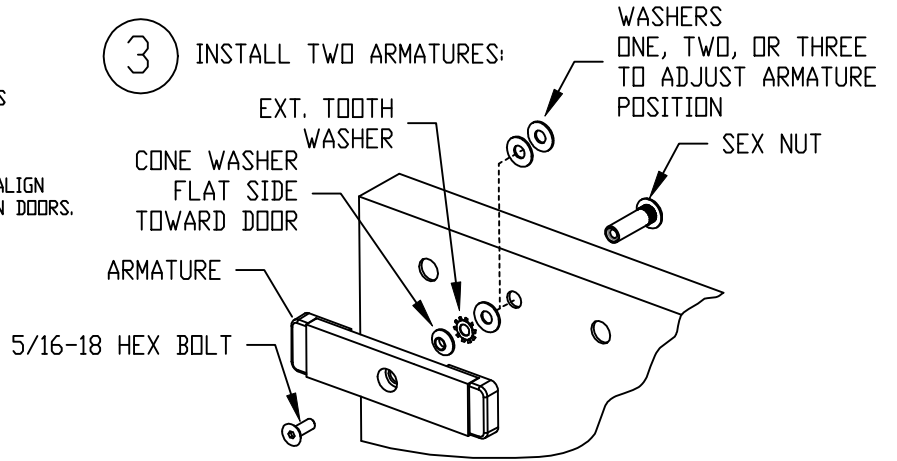
# INSTALLATION SHEET

NOTE: MAGNET AND ARMATURE PLATE MUST MATE WHEN DOOR IS IN CLOSED (AND LATCHED - IF APPLICABLE) POSITION. ADJUSTMENT IS BY ADDING/SUBTRACTING WASHERS.

- 1 PLACE TEMPLATE ON DOOR AND FRAME AS SHOWN. ALIGN CENTER OF TEMPLATE WITH PARTING LINE BETWEEN DOORS. TAPE IN PLACE AND DRILL REQUIRED HOLES.

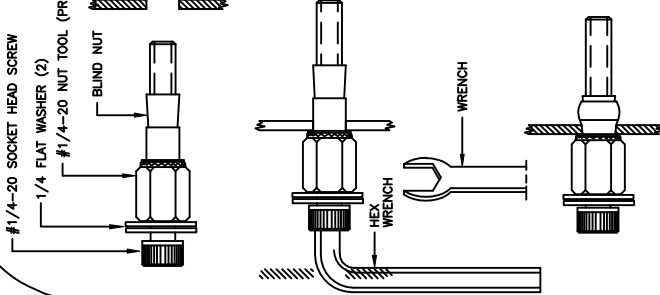


- 3 INSTALL TWO ARMATURES:

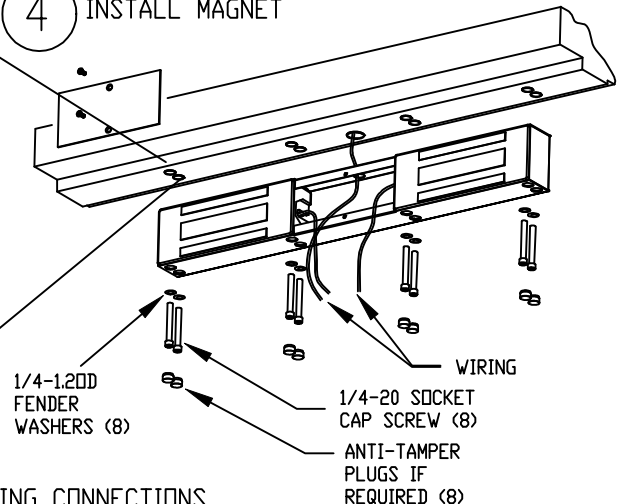


- 2 INSTALL EIGHT BLIND NUTS AS SHOWN

ASSEMBLE PARTS AS SHOWN AND INSERT INTO HOLE WHILE HOLDING TOOL IN PLACE WITH WRENCH TIGHTEN TO COLAPSE NUT WITH HEX WRENCH



- 4 INSTALL MAGNET

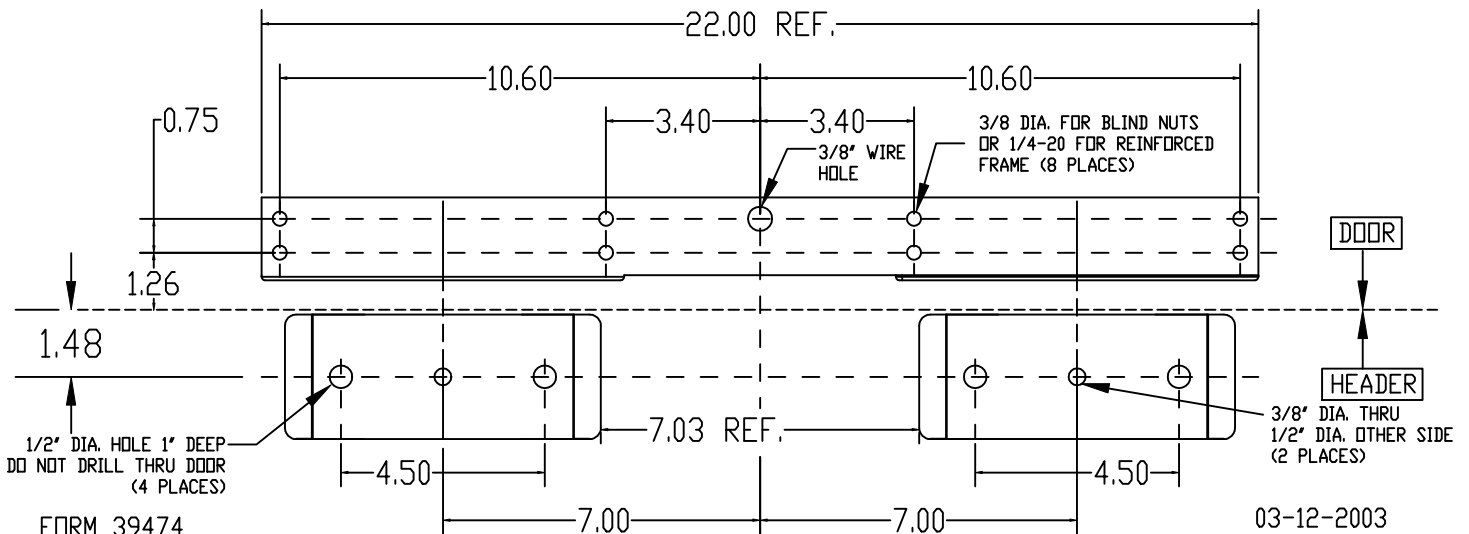


THE MAGNET IS POWERED BY 12 OR 24 VDC ONLY. LOCKNETICS OFFERS SEVERAL POWER SUPPLIES WHICH CAN BE USED TO POWER MAGNETIC LOCKS. MAGNETIC LOCKS ARE USUALLY CONTROLLED BY AN ACCESS CONTROL READER (CARD/PROX, ETC.) AND AN EGRESS DEVICE SUCH AS AN EXIT DEVICE WITH A SWITCH, PUSHBUTTON AND/OR MOTION DETECTOR. IN MOST CASES IT IS REQUIRED THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM CAUSE ALL MAGNETIC LOCKS TO UNLOCK. CONSULT LOCAL AUTHORITY HAVING JURISDICTION REGARDING SYSTEM REQUIREMENTS FOR LOCAL LIFE SAFETY AND ELECTRICAL CODES.

- 5 MAKE WIRING CONNECTIONS AND INSTALL WIRE COVER.

WIRING:	(CURRENT PER MAGNET)
RED:	(+) } 0.300 AMP @ 12VDC
BLACK:	(-) } 0.150 AMP @ 24VDC
WHITE:	MBS C } 1 AMP MAX.
GREEN:	MBS NO } @ 30VDC
ORANGE:	MBS NC } @ 30VDC
YELLOW:	DSM C } 0.10 AMP MAX.
BLUE:	DSM NO } @ 30VDC
BROWN:	DSM NC } @ 30VDC

## 72 TEMPLATE: NOT TO SCALE





30500

# GF3000



## INSTALLATION MANUAL

### Models Covered: Standard, TRD, BRD, SM, and TJ

GF3000 (Standard Model)	GF3000TRD	GF3000BRD
GF3000SM	GF3000TJ	

**Gravity Force Shear Locks:  
Mortise & Surface Mount**

**Customer Service**  
 1-877-671-7011    [www.allegion.com/us](http://www.allegion.com/us)



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 30500 1/15-f

# GF3000 SERIES INSTALLATION MANUAL

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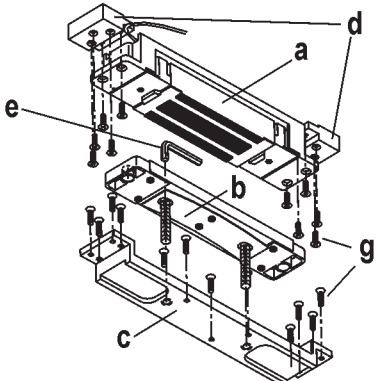
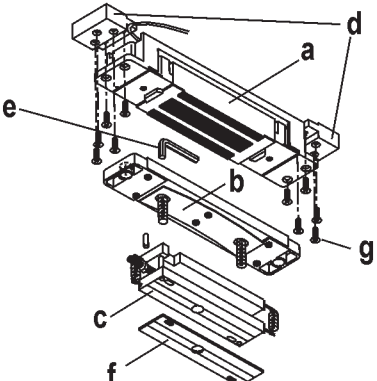
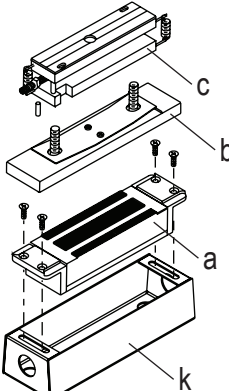
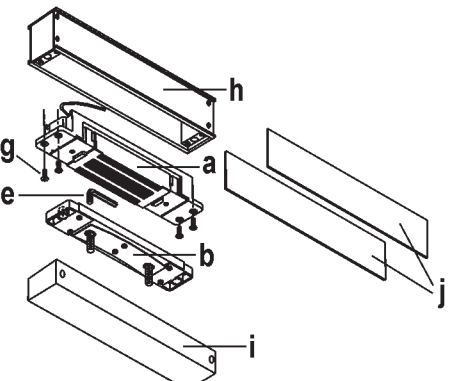
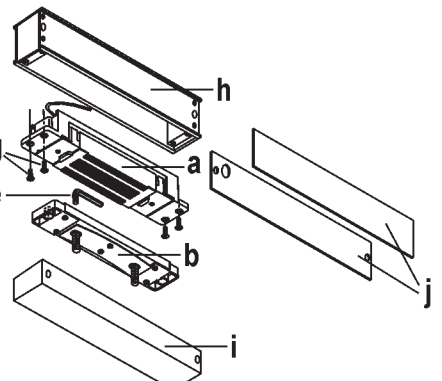
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# GF3000 SERIES INSTALLATION MANUAL

## Confirming the Box Contents

### Confirming the Box Contents

<p>GF3000(STANDARD)</p> 	<p>GF3000TRD</p> 	<p>GF3000BRD</p> 
<p>GF3000SM</p> 	<p>GF3000TJ</p> 	
<p>a - MAGNETIC COIL ASSEMBLY  b - ARMATURE  c - ARMATURE MOUNTING ASSEMBLY  d - MOUNTING TABS  e - HEX WRENCH  f - SHIM PLATE  g - HARDWARE PACK  h - MAGNETIC COIL HOUSING  i - ARMATURE HOUSING  j - FACE PLATES  k - THRESHOLD BOX</p>		

# GF3000 SERIES INSTALLATION MANUAL

## *Introduction / Tools and Materials Needed / Contact Info*

---

### **Introduction**

This manual covers the complete installation and wiring instructions for the following GF3000 Series models:

#### **MORTISE:**

- GF3000 (Standard model)
- GF3000TRD (Top Rail Door)
- GF3000BRD (Bottom Rail Door)

#### **SURFACE MOUNT:**

- GF3000SM (Surface Mount)
- GF3000TJ (Top Jamb)

### **Tools and Materials Needed Not Included in Box**

Whichever model you are installing, you should have all of the following tools on hand:

- Pencil
- Tape Measure
- Hammer
- Center Punch
- Power Drill w/Set of Drill Bits
- Chisel
- Small Sawsall or other metal cutting saw
- Set of Hex (Allen) Wrenches
- Set of Philips Head Screwdrivers
- Electrical Tool Kit (containing: wire cutter/stripper, electrical tape, needle-nose pliers, etc.)

If you are installing a GF3000BRD, you might also need:

- Pavement Breaker or Demolition Hammer

**Contact Information:** 1-877-671-7011

# GF3000 SERIES INSTALLATION MANUAL

## Specifications

---

### Specifications:

#### Electrical

Input Voltage	Filtered, regulated 12 or 24 VDC (auto voltage selection)
Input Current	0.9 Amps at 12VDC, 0.45 Amps at 24VDC
Adjustable Time Delay (ATD)	Adjustable from 2 to 30 seconds. ..... Factory default: expect approx. 3-5 seconds.
Automatic Relock Switch (ARS)	Integral magnetic reed switch
Optional Monitoring Outputs (Standard, TRD, SM, and TJ)	
DSM	Contact rating - 0.1 Amps maximum at 28VDC
MBS	Contact rating - 0.2 Amps maximum at 30VDC
Optional Monitoring Outputs (BRD)	
DSM	Contact rating - 0.2 Amps maximum @ 30VDC
MBS	Contact rating - 0.1 Amps maximum @ 24VDC

#### Mechanical

Mounting Position/Type	Horizontally. Mortise and Surface. Non-handed
Shear Holding Force	3000 pounds maximum
Door Thickness	1-3/4" minimum
Plating	Magnetic face and armature; nickel plated to resist corrosion
Warranty	Magnetic coil: Lifetime    Electronics: 1 year limited
Certifications/Compliance	UL# R12092; MEA# 222-96-E; CSFM# 3774-0544:107
Shipping Weight	GF3000 - 6 Pounds;    GF3000TRD & BRD - 8 Pounds
Dimensions - Mortise Mount	Magnet - 9.5L x 1.5W x 1.5H ..... Magnet w/Mounting Tabs - 11.56L x 1.5W x 1.5H ..... Armature - 8.38L x 1.38W x 0.5D ..... Armature Bracket - 10.63L x 1.38W x 1.0D
Dimensions - Surface Mount	Magnet Housing - 9.81L x 1.25H x 1.5D ..... Armature Housing - 8.38L x 1.38W x 0.5D

### Operation:

A shear lock is designed to rely on the shear strength of steel for holding force. A strong magnet is energized that attracts an armature which overcomes an air gap to engage with the magnet. The magnet and the armature, besides being bonded by magnetic force, are also designed to mechanically interlock. This gives the system 3000 pounds of holding force. Because of this design, precise door and frame preparation is necessary. Also important is that the centerlines of the magnet and armature line up to form a vertical axis. It is also critical that the air gap be adjusted to be as close as possible without interfering with door operation. This ensures the best reliability possible.

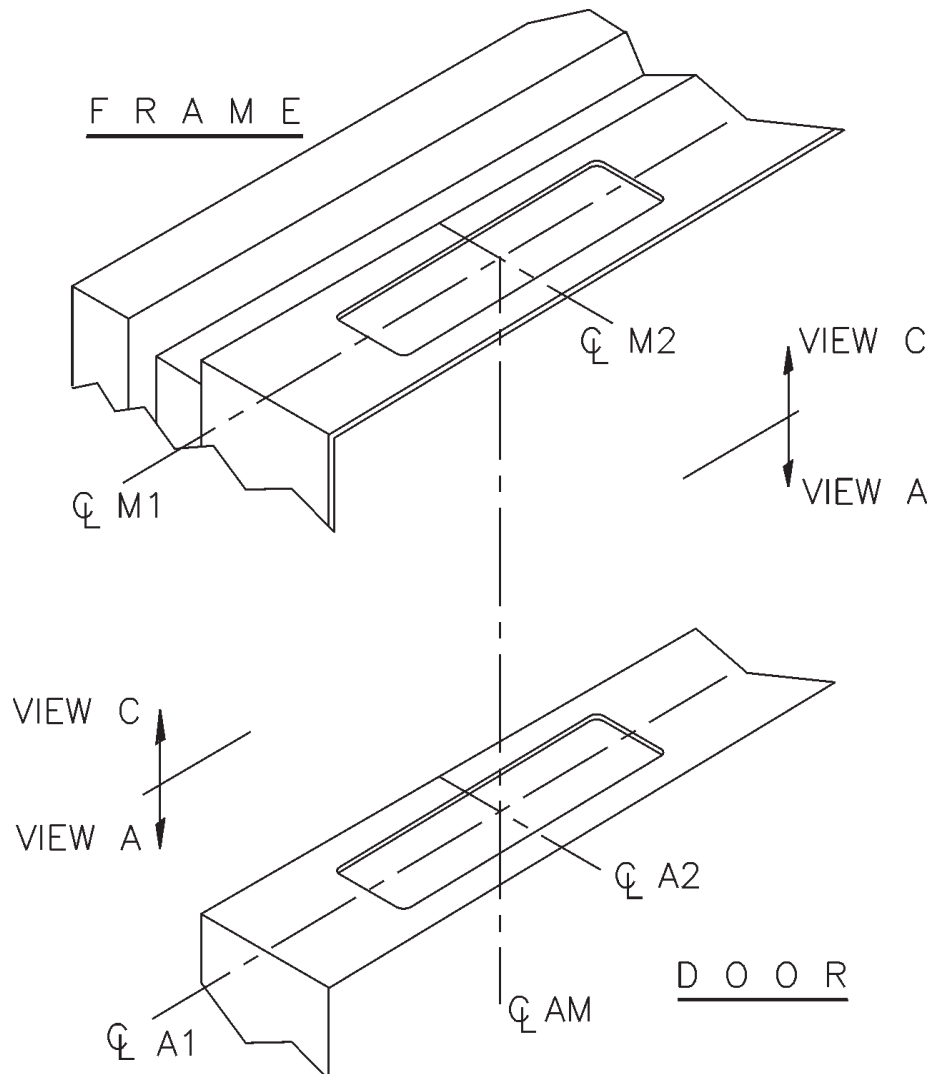
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Preparing the Frame and Door

#### 1) Establish Frame and Door Centerlines (Standard and TRD):

- For proper operation, it's critical to establish centerlines of magnet and armature assembly that line up to form a vertical axis. The figure below shows the centerline scheme for a standard GF3000 and a GF3000TRD. Note that centerlines for magnet (M1 and M2) are directly above centerlines for armature assembly (A1 and A2) thus forming a vertical axis (AM).
- Check door & frame for any structural member or hardware component that might interfere with magnet and armature mounting areas before selecting template location.
- Remove existing hung doors for template application and armature installation.
- The standard model GF3000 can be installed in a horizontal or vertical configuration.
- To achieve maximum resistance to forced entry, position as follows:
  - > Horizontal configuration - position unit closest to the latch side of door.
  - > Vertical configuration - positioning unit closest to the strike plate is recommended.
- In some applications, the door and frame may require reinforcement.

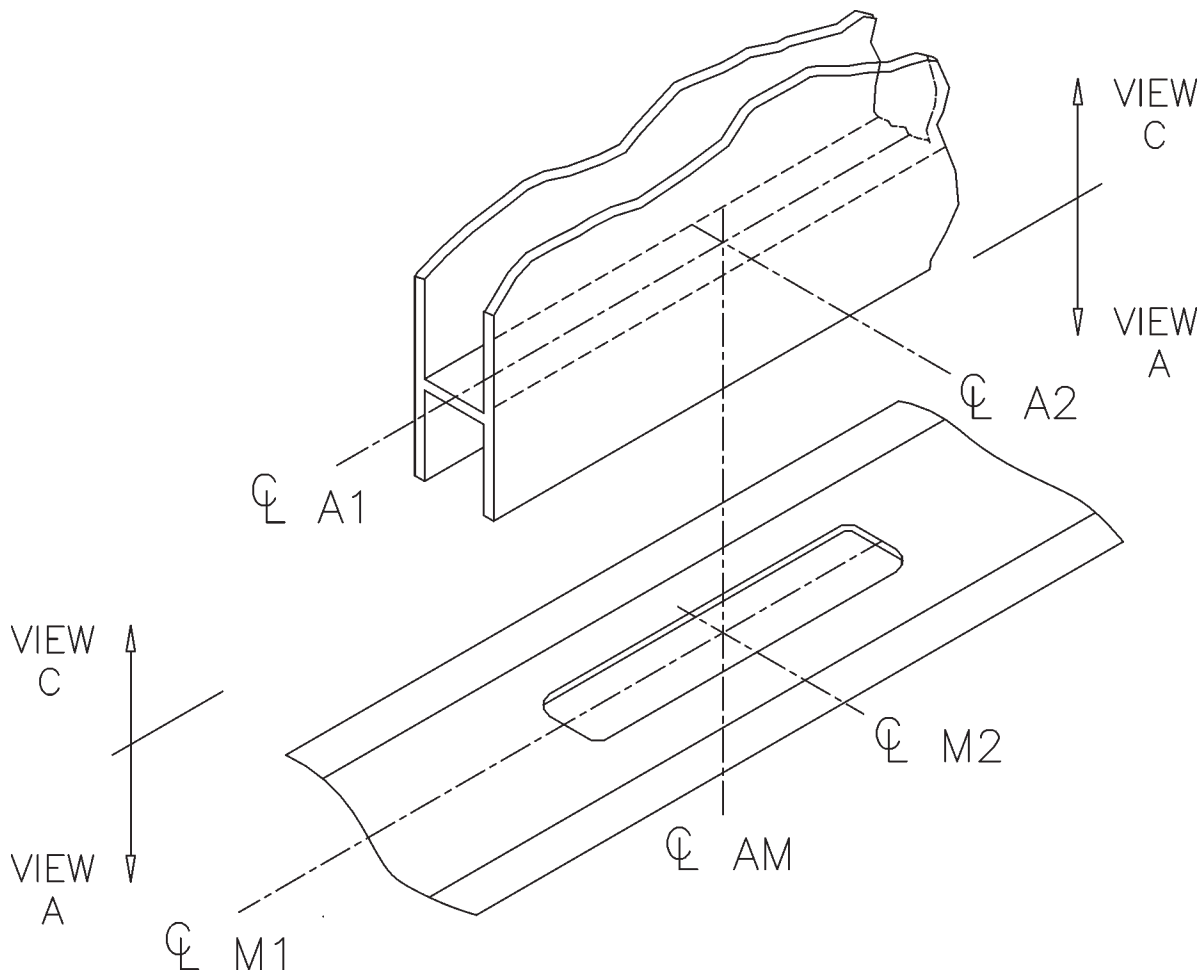


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 1) Establish Frame and Door Centerlines (BRD):

- For proper operation, it's critical to establish centerlines of the magnet and armature assembly that line up to form a vertical axis. The figure below shows the centerline scheme for a GF3000BRD. Note that centerlines for magnet (M1 and M2) are directly below centerlines for armature (A1 and A2) thus forming a vertical axis (AM).
- To achieve maximum resistance to forced entry, position unit closest to latch side of door.
- Adjusting screw must be accessible with a long bladed screwdriver when door is hung.
- Check both door & frame for any structural member or hardware component that might interfere with magnet and armature mounting areas before selecting template location.
- Existing hung doors will normally have to be removed for template application and armature installation.
- In some applications, the door and frame may require reinforcement.





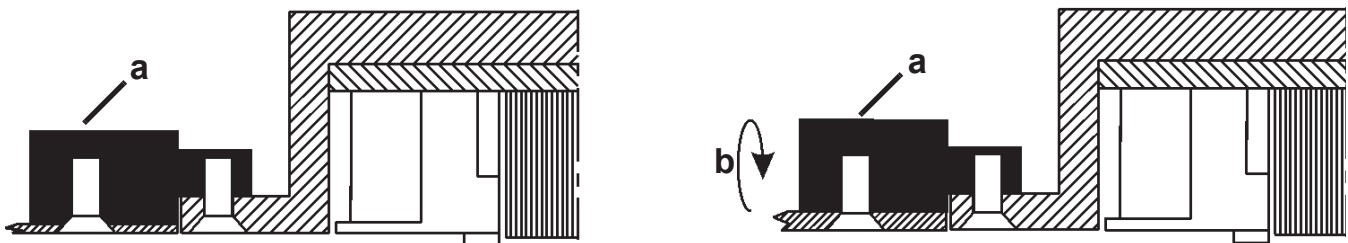
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Installing the Lock - Standard, TRD, TJ, SM

#### 1) Mounting Tabs (Standard, TRD):

Secure two mounting tabs (a) to ends of lock cutout in frame. Mounting tabs can be installed upside-down (b) so that they may be used with 16 gauge hollow metal or 1/8" thick aluminum frames.



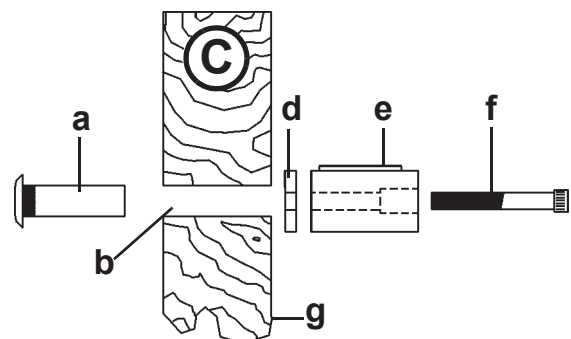
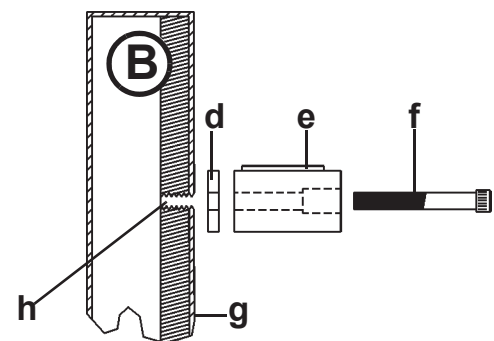
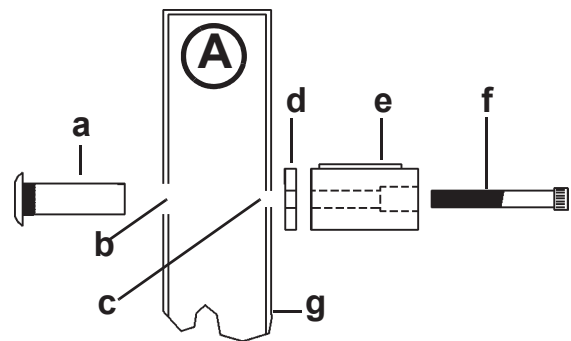
#### 2) Surface Mount Armature Housing Sex Bolt Hole Sizes (TJ, SM):

##### Door Types:

- A = Hollow Metal
- B = Reinforced
- C = Solid Wood

##### Hole Sizes and Parts:

- a = sex bolt
- b = 1/2" hole
- c = 1/4" hole
- d = mounting spacer
- e = armature
- f = 1/4-20 x 2
- g = inside of door
- h = 1/4-20 threaded hole (thru reinforced side of door only)



# GF3000 SERIES INSTALLATION MANUAL

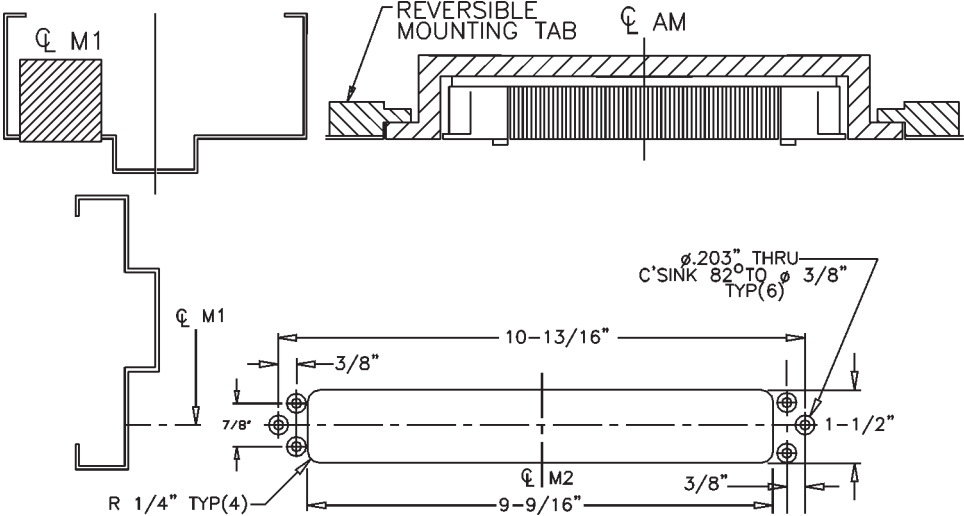
## Installing a GF3000 Series Lock

### • FRAME AND DOOR PREP - Standard, TRD, TJ, SM

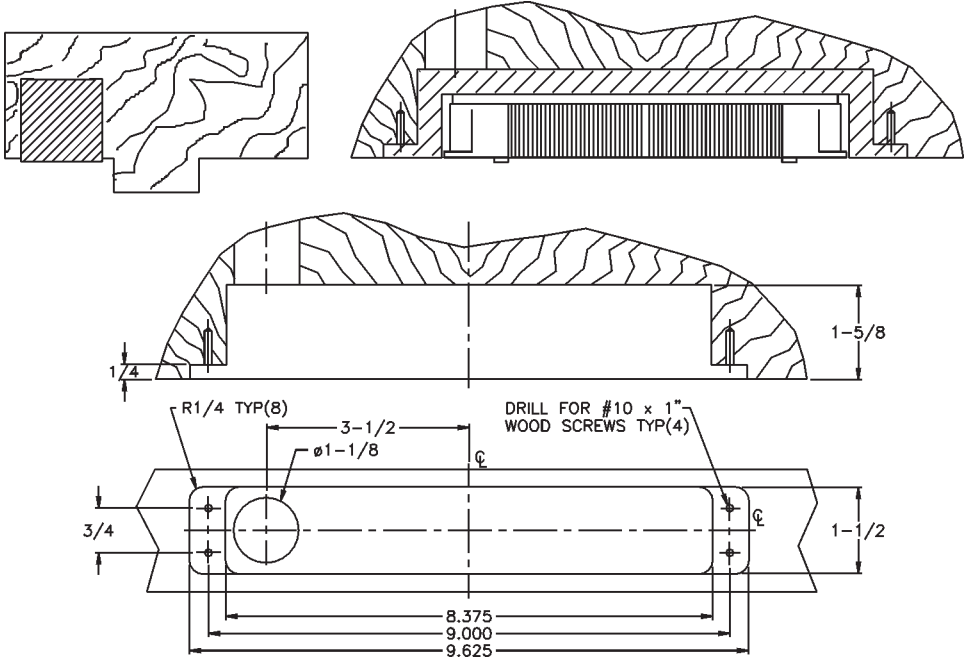
#### 3) Frame Prep (Standard and TRD):

- The frame prep is the same for the Standard and the TRD models. The door prep for the standard model has many options (see - ) depending on the depth of the channel (if any). The TRD model has a specific prep of its own (see - ). The lock should be located as close to the strike side as possible while still allowing room for the mounting tabs and screws.

#### Frame Prep - Hollow Metal or Aluminum



#### Frame Prep - Wood



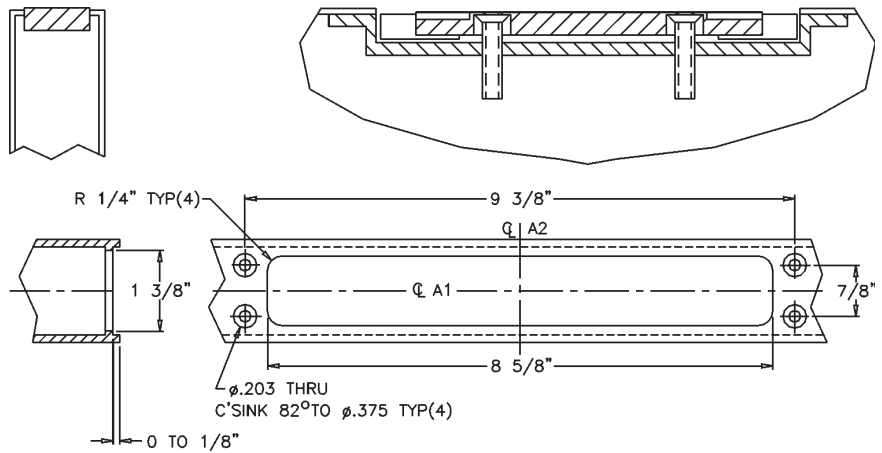
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 4) Door Prep (Standard and TRD):

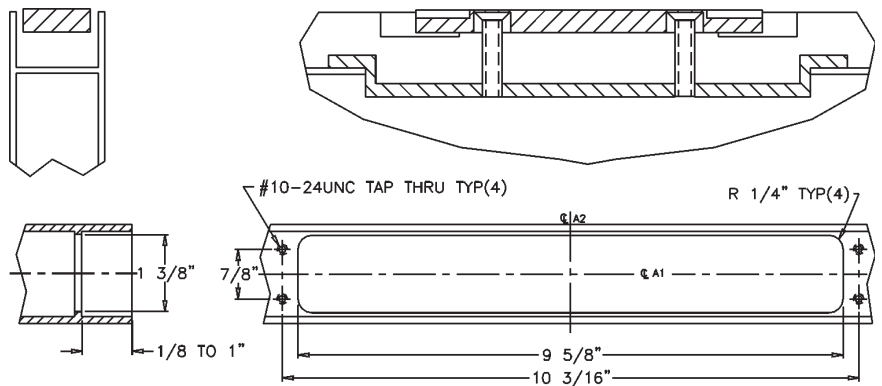
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: flush to 1/4"



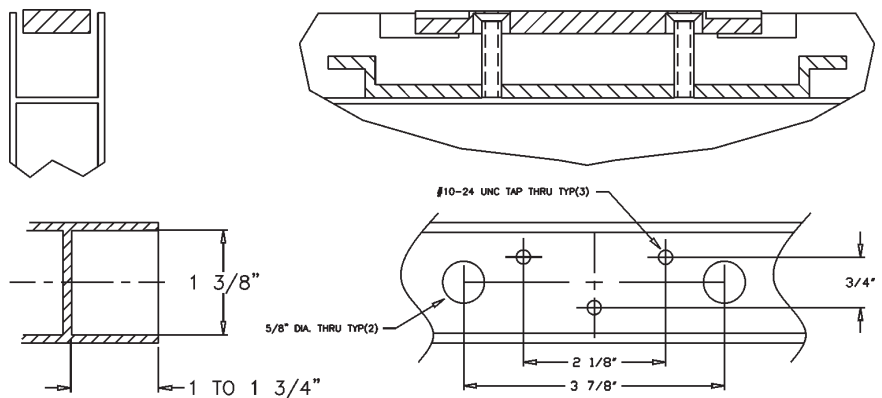
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1/4" to 1"



#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1/4" to 1-3/4"



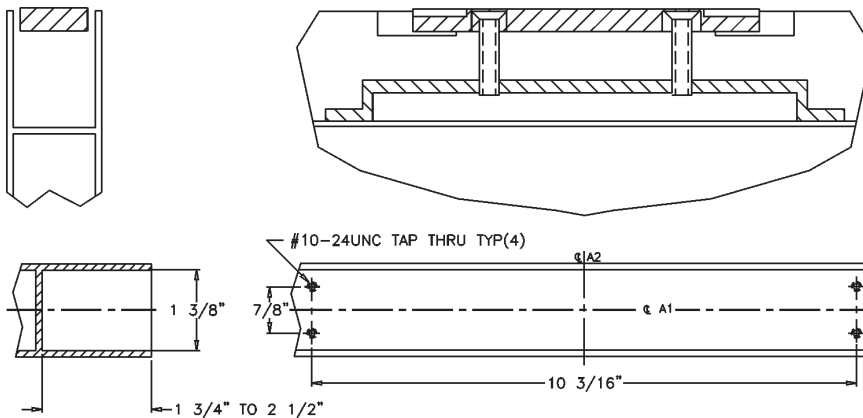
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Standard and TRD Door Prep (continued):

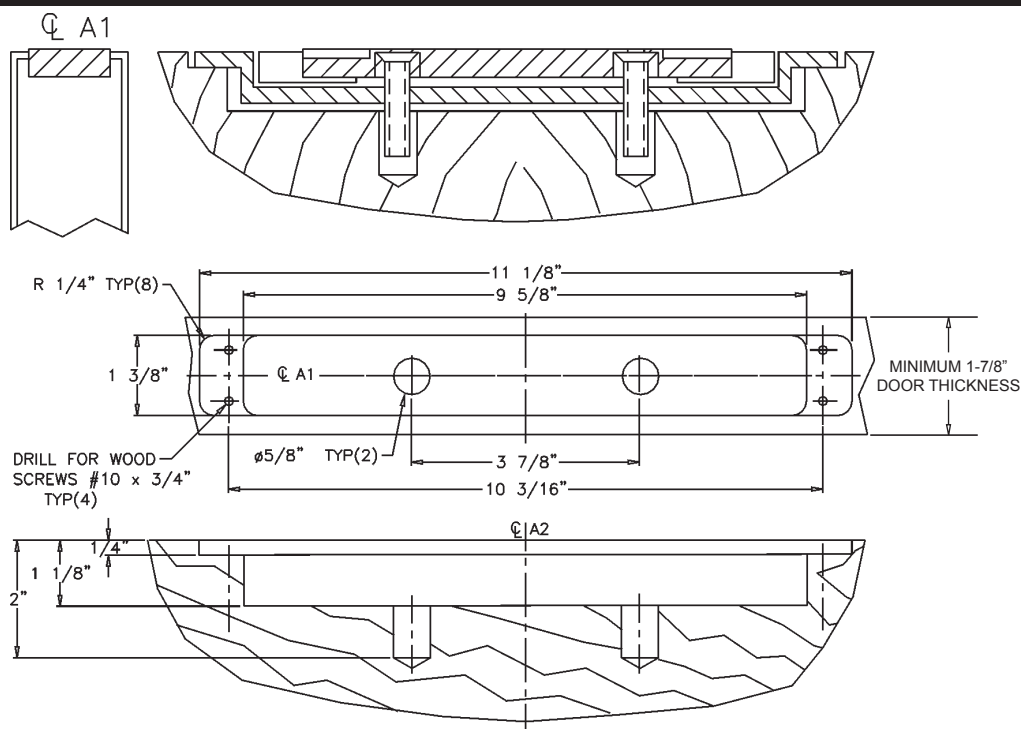
#### DOOR PREP

- Hollow Metal or Aluminum
- Depth: 1-3/4" to 2-1/2"



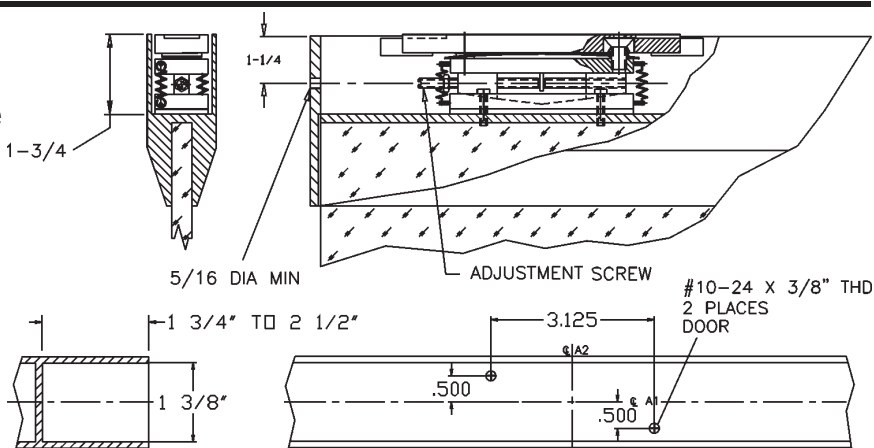
#### DOOR PREP

- Wood



#### DOOR PREP - TRD

- Hollow Metal or Aluminum door where the top adjustment is not accessible.
- Depth: 1-3/4"

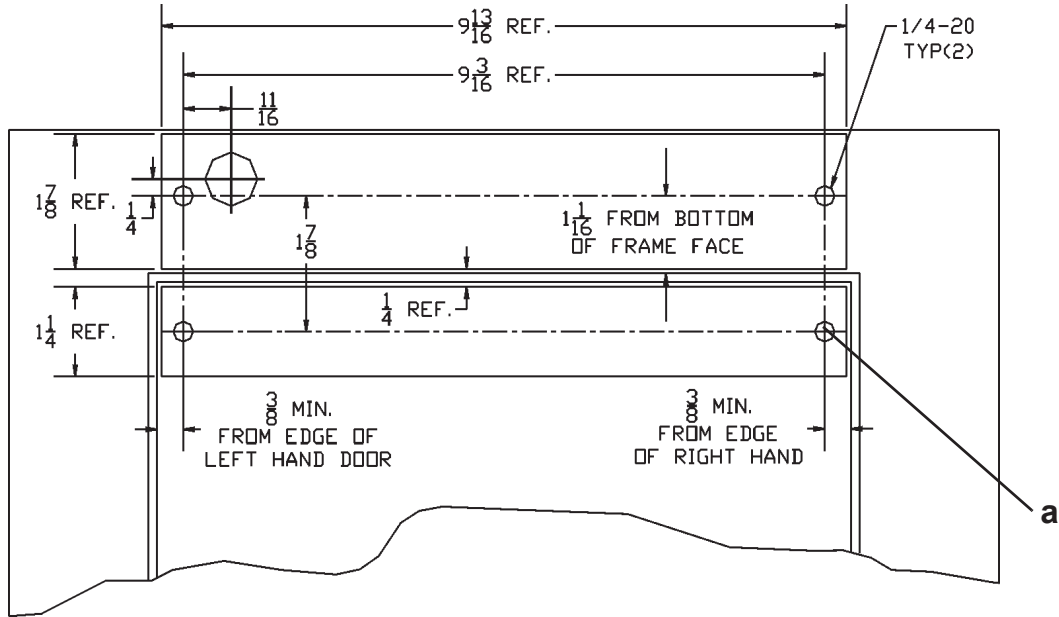


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### 5) Template information (TJ):

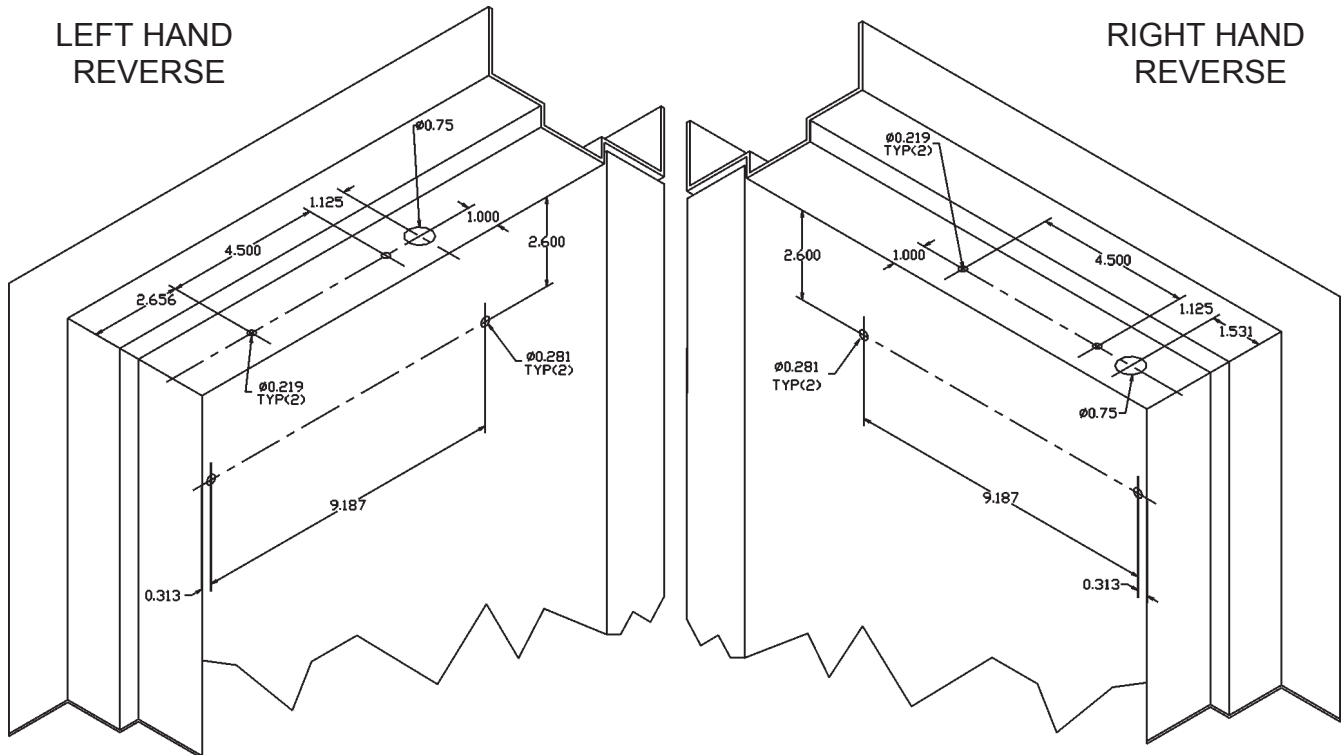
All dimensions in inches.



**NOTE: Hole (a) - size and type depends on door type and mounting style.**

### 6) Template information (SM):

All dimensions in inches.



# GF3000 SERIES INSTALLATION MANUAL

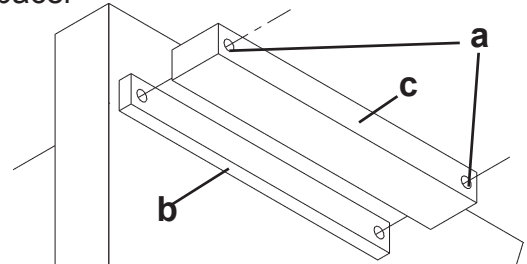
## Installing a GF3000 Series Lock

### Mounting the Lock - Standard, TRD, TJ, SM

After the door and frame have been prepared, do the following:

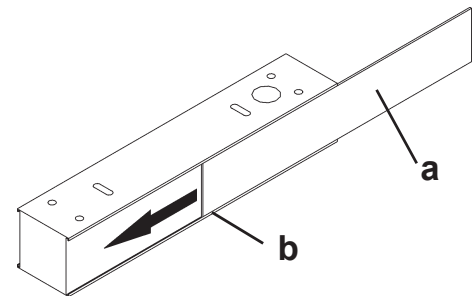
#### 1) Install Armature Mounting Spacer:

- Using two, 1/4 x 20 screws, secure mounting spacer (b) and armature housing (c) onto door.
  - > Use through-holes (a).



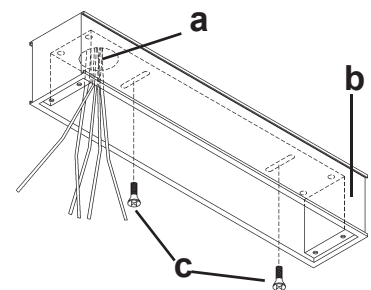
#### 2) Install Faceplate:

- Install faceplate (a) into magnet housing.
- Tighten set screws (b).



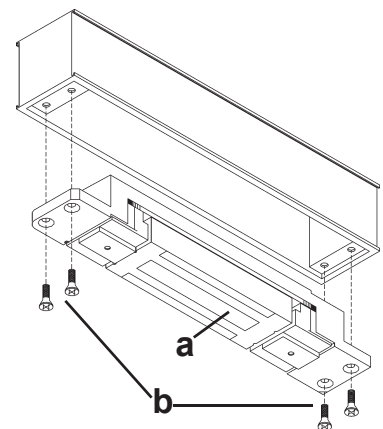
#### 3) Attach Magnet Housing to Frame:

- Carefully feed wires through access hole (a) in magnet housing (b).
- Using either two, 10 x 3/4 sheet metal screws or two, 10 x 1/2 machine screws (c), loosely attach magnet housing to frame.
  - > **DO NOT COMPLETELY TIGHTEN AT THIS TIME**



#### 4) Install Magnet:

- Make final wiring connections (see **Wiring Diagram: on page 21**).
- Insert GF3000 magnet (a) into magnet housing.
- Using four, 10-24 x 1/2 screws (b), secure mounting spacer and armature housing onto door.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Installing the Lock - BRD

#### • INSTALLING THE MAGNET AND ARMATURE

##### 1) Preparing the Floor for the GF3000BRD Magnet:

Since the GF3000BRD magnet is installed in the floor directly below the bottom rail of the door, a threshold box (that will hold the magnet) that is inset into a pocket (a) in the floor, and a trench (b) for the electrical conduit is required.

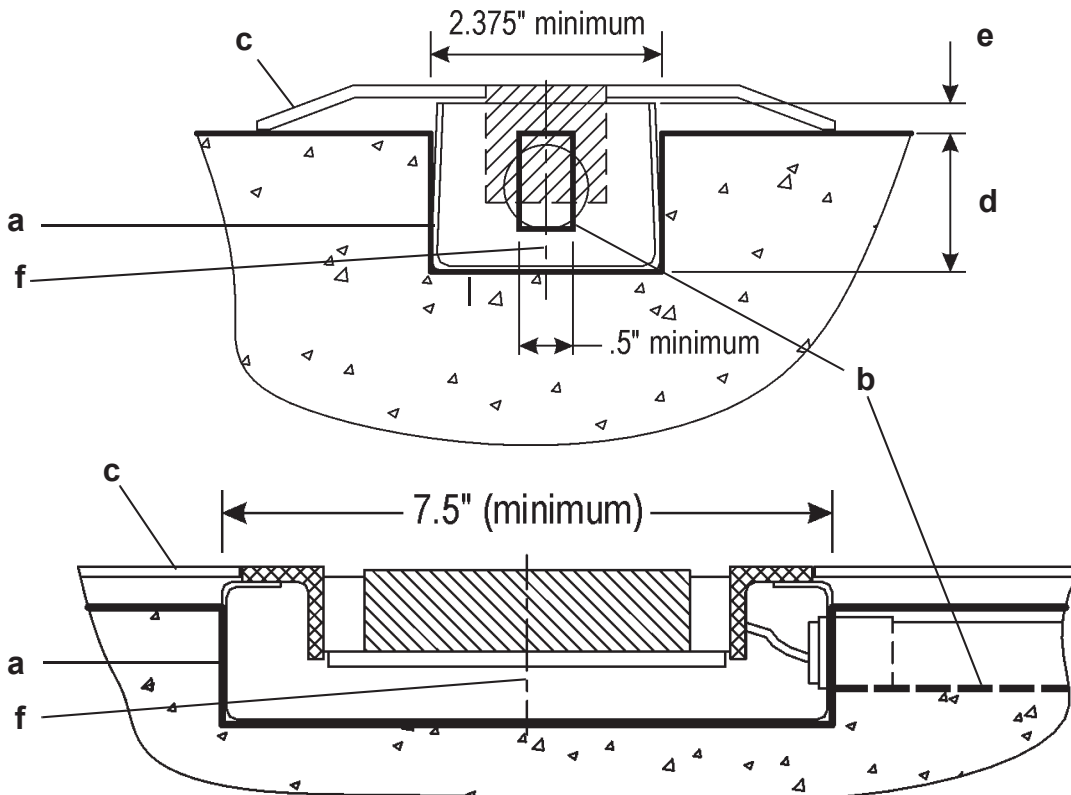
**NOTE: Retrofit Installations - You may find that conditions vary from site to site after the threshold plate (c) is removed. If a cement, stone, or other hard material is encountered, using a pavement breaker or demolition hammer might be useful for chiseling out the pocket and trench in the floor.**

Using tools applicable for conditions found at the site, create a pocket that is at least 2.375" wide x 7.5" long within the threshold area, centered directly below door's bottom rail and furthest away from hinges. Depth of this pocket (d) may vary from site to site. The guiding dimension for depth of the pocket is distance (e). Distance (e) is from top of the threshold box that is inset into the pocket to the underside of the threshold plate. Distance (f) is from centerline of the threshold box to the centerline of the door.

**IMPORTANT: Considerations to keep in mind for position of metal box are:**

- > When magnet and threshold are installed, magnet must not protrude above threshold.
- > You should be able to use box's shim washers to raise and lower magnet to proper level.
- > Box centerline (f) must be placed on centerline of door.

The trench for the conduit should be at least 1/2" wide and deep enough so that the conduit can be easily inserted into the 7/8" hole in end of box. Direction and length of the trench away from the metal box may vary from site to site.



# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

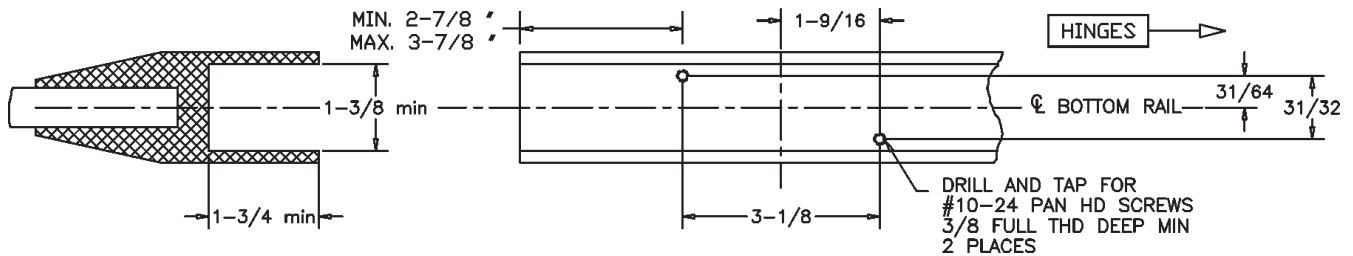
### 2) Installing the GF3000BRD Threshold Box:

After the pocket and trench are created, do the following:

- Feed 1/2" conduit into either 7/8" diameter hole in threshold box.
- Secure conduit with nut.
- Position box in pocket and conduit in trench.
- Pour concrete around threshold box and conduit and allow to cure.

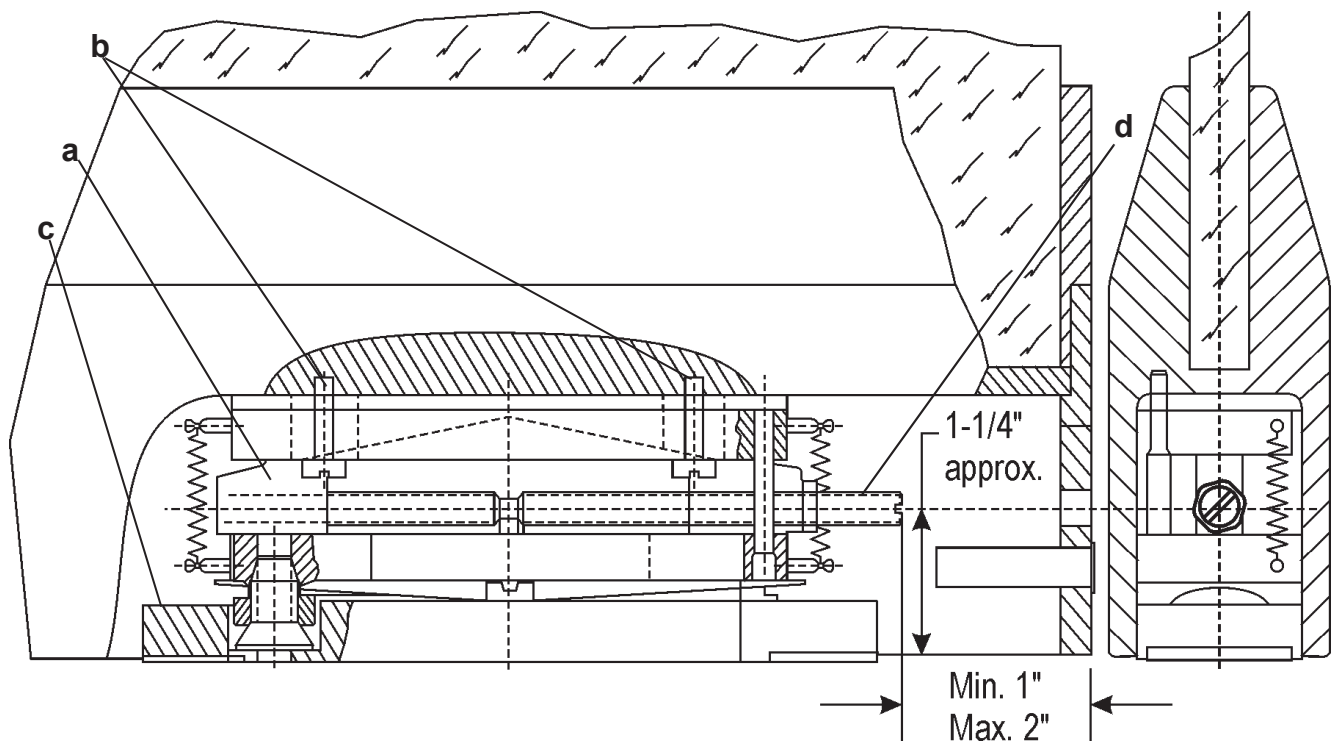
### 3) Preparing the Door for the Armature:

in the Door's Bottom Rail:



### 4) Mounting the GF3000BRD Armature in the Door's Bottom Rail:

- Mount armature mounting bracket assembly (a) to bottom rail using #10-24 x 3/4" Pan head screws (b) supplied.
- Mount armature assembly (c) to armature mounting bracket assembly (a)
- Remove end cap on door to expose adjusting screw (d). If door doesn't have a removable end cap, an access hole will have to be drilled in edge of door according to the approximate dimensions as shown.





# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

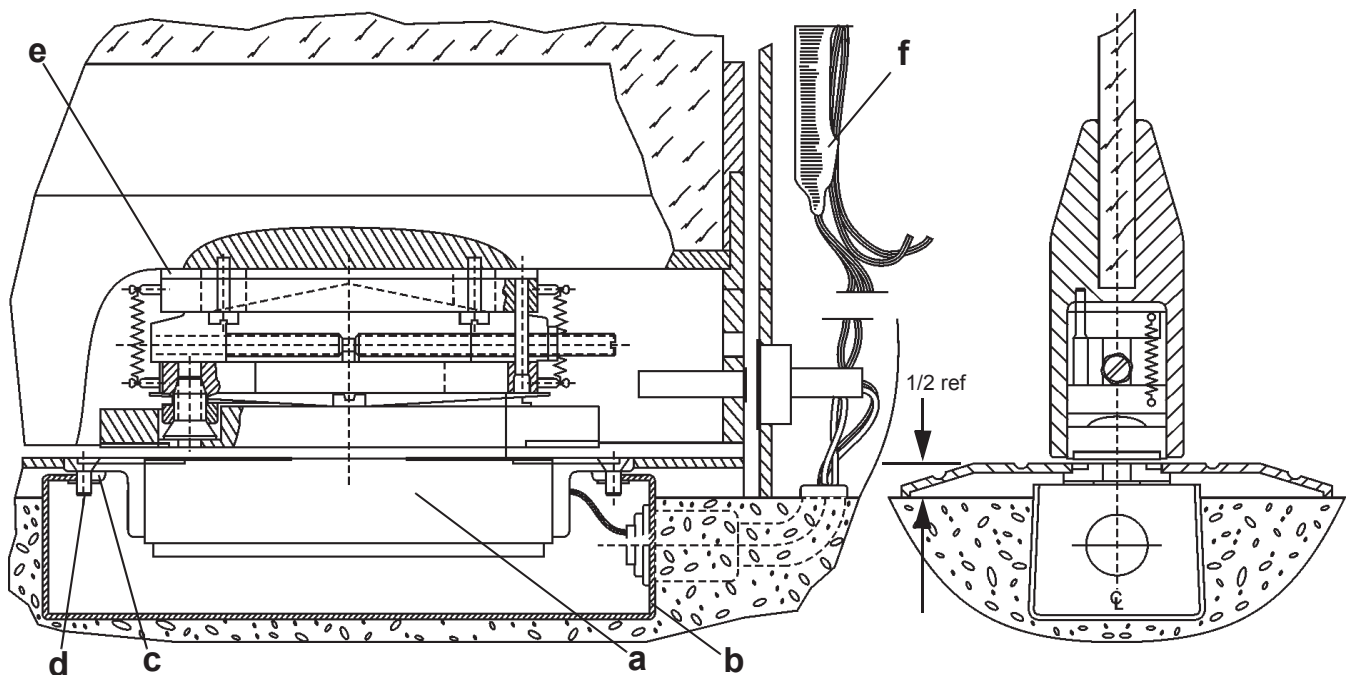
### 5) Mounting the GF3000BRD Magnet Into the Threshold Box:

- Mount magnet (a) to box (b) by placing two speed nuts (c) per slot, side by side in flanges of box.
- Line up magnet over speed nuts. Insert #10-24 x 1/2" flat head screws (d) into magnet brackets and through speed nuts. Align magnet, making sure centerlines of armature are on the centerlines of magnet. Tighten screws.
- If needed, add shims under magnet to bring magnet flush with top of threshold.

**NOTE: Top surface of magnet must not protrude above top surface of threshold.**

- Replace door on hinges.
- Adjust armature, using adjusting screw located in access hole so that the clearance gap of approx. 1/16" between magnet face and armature is achieved. It may be necessary to slightly re-adjust the gap to achieve proper locking action and spring return action when the magnet is de-energized.
- If door's bottom raildepth is greater than 1-3/4", spacers (e) may be needed (one, 1/8" thick spacer is supplied).
- Install door status switch into frame and actuating magnet into door (see **Door Status Monitor (DSM) - GF3000BRD on page 23.**).
- After all magnet adjustments have been completed, it is strongly recommended to fill the magnet box with a spray urethane foam insulation (available from most building supply companies) to keep water out.
- Make final wiring connections (see **Wiring Diagram: on page 22**

**NOTE: Mount Control Module (f) in a remote and dry location, and no more than 15 feet away from lock.**

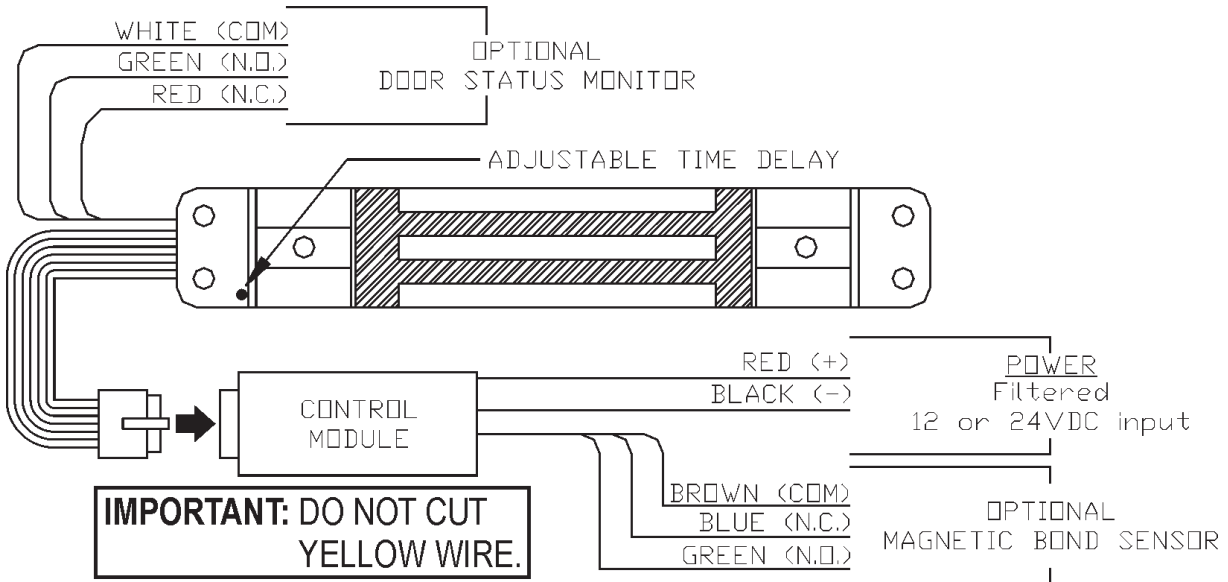


# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Wiring the Lock-Standard, TRD, TJ, SM

#### 1) Wiring Diagram:



#### 2) Standard Features:

##### Operating Voltage

The GF3000 will operate only on filtered and regulated 12 or 24 volts DC. Automatic voltage selection circuitry is standard, eliminating the need for a voltage selection switch.

##### Automatic Relock Switch (ARS)

A built-in relock switch requires the door to be in the closed position before the magnet can be energized.

##### Adjustable Time Delay (ATD)

The ATD provides a time delay to relock that is adjustable from 2 to 30 seconds. The unit has been preset at the factory for a 3 second relock delay.

#### 3) To Adjust Relock Time Delay:

- 1) Refer to the wiring diagram above and note location of ATD arrow.
- 2) With door open, apply power.
- 3) Remove 5/64" hex head screw to allow access to recessed momentary pushbutton switch.
- 4) Using the hex wrench provided, depress and release the recessed switch one time for each second of delay required (max. =30 seconds/min.=2 seconds).

Example To set ATD to 5 seconds, depress the recessed switch 5 times.

**NOTE: If a mistake is made, wait 10 seconds, then repeat Step #4.**

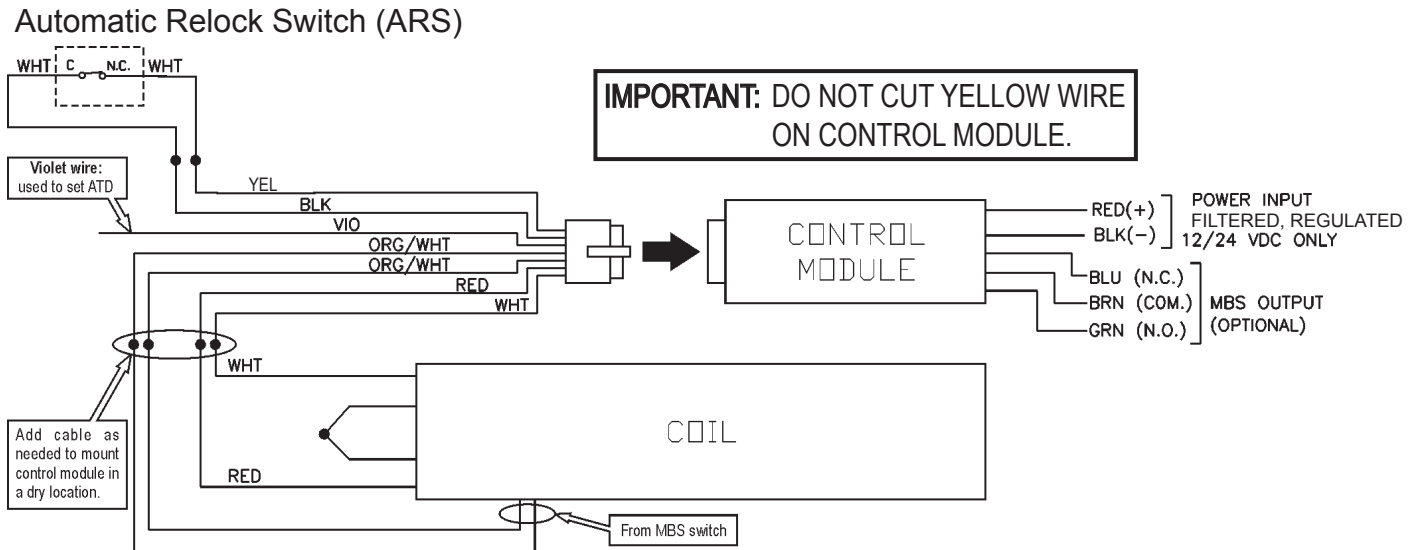
- 5) Reinstall hex head screw, after setting desired relock time delay.
- 6) Close door and verify delay.

# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Wiring the Lock - BRD

#### 1) Wiring Diagram:



#### 2) Standard Features:

##### Operating Voltage

The GF3000BRD will operate only on filtered and regulated 12 or 24 volts DC. Automatic voltage selection circuitry is standard, eliminating the need for a voltage selection switch.

##### Automatic Relock Switch (ARS)

A built-in relock switch requires the door to be in the closed position before the magnet can be energized.

##### Adjustable Time Delay (ATD)

The ATD provides a time delay to relock that is adjustable from 2 to 30 seconds. The unit has been preset at the factory for a 3 second relock delay.

#### 3) To Adjust Relock Time Delay:

- 1) Verify that the exposed yellow wire on the ARS is not shorting against anything.

**IMPORTANT: Do not cut yellow wire.**

- 2) With door open, apply power.
- 3) Touch the violet wire to the black ARS wire one time for each second of delay required (maximum = 30 seconds, minimum = 2 seconds).

Example To set ATD to 5 seconds, touch the violet wire to the black ARS wire 5 times.

**NOTE: If a mistake is made, wait 10 seconds, then repeat Step #4.**

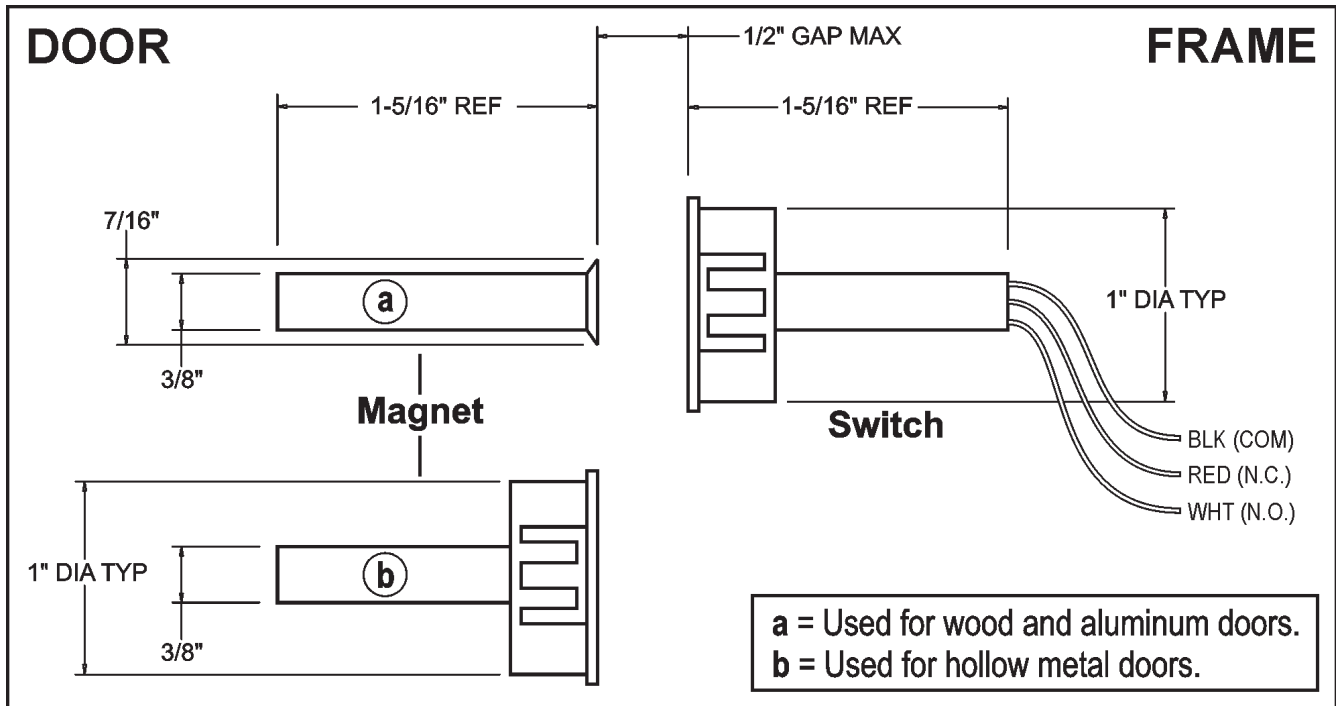
**NOTE: A pushbutton switch may be used if desired.**

- 4) Properly insulate the violet wire after setting desired relock time delay.
- 5) Close door and verify delay.
- 6) If OK, permanently connect and insulate the yellow wire on the ARS.

# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Door Status Monitor (DSM) - GF3000BRD



- Hole for switch: 1" diameter in frame.
- Hole for magnet:
  - > (a) Wood or Aluminum doors - 3/8" diameter
  - > (b) Hollow metal doors - 1" diameter
- Installation of magnet and switch must be concentric (common centerline).
- Switch insertion: snap-in fit.
- Magnet insertion:
  - > Wood or aluminum doors - press-in fit
  - > Hollow metal doors - snap-in fit
- If necessary, use epoxy.
- Contact Type: Single Pole/Double Throw (SPDT)
- Contact Rating: 28VDC @ 300 mA (max)
- With door closed, no more than 1/2" air gap is allowed between switch and magnet.

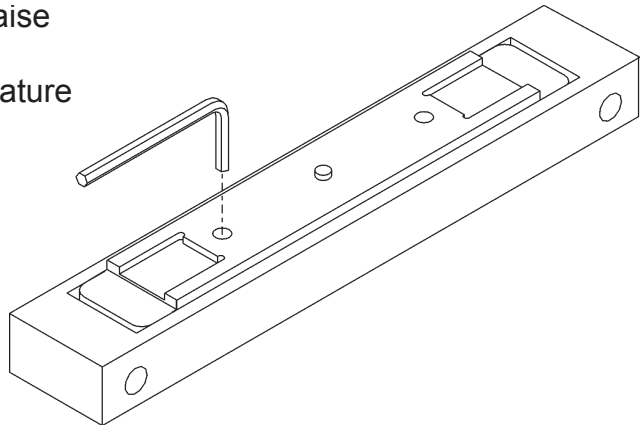
# GF3000 SERIES INSTALLATION MANUAL

## Installing a GF3000 Series Lock

### Air Gap Adjustment

#### 1) Set Armature Height:

- Using the provided 7/32 hex wrench, raise or lower the armature as needed.
  - > Clearance between magnet and armature is recommended to be 1/8", and must be less than 1/4".

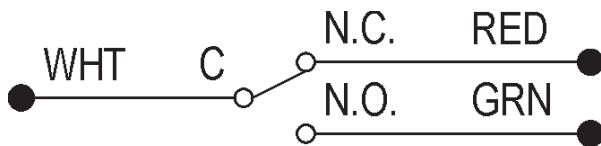


### Options

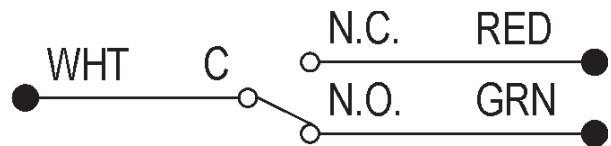
#### 1) Optional Monitoring Outputs:

##### Door Status Monitor (DSM)

The optional DSM provides a dry set of contacts for monitoring “door open” or “door closed” conditions.



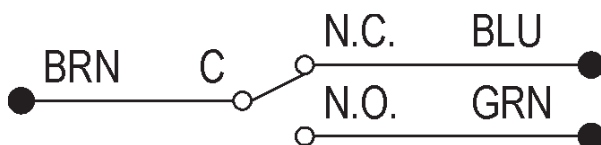
Door Open



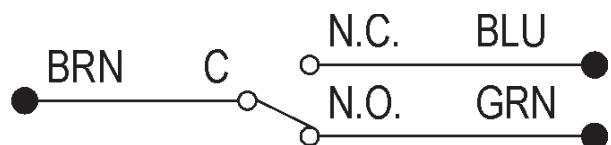
Door Closed

##### Magnetic Bond Sensor (MBS)

The optional MBS provides a dry set of contacts for monitoring “door locked” or “door unlocked” conditions. The MBS measures the magnetic holding force between the armature and the magnetic coil. Poor magnetic bond is the result of low voltage, foreign material between the surfaces of the magnetic coil and armature, or improper alignment of magnet and armature.



Poor Magnetic Bond



Good Magnetic Bond



653071

# 650 Series Keyswitches



Installation Instructions and Template

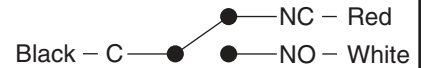
- ① 653 Models mount in a standard single-gang box as shown below. Template may be cut out or follow dimensions for prep of mounting area. See other side for special application notes.

## Template



**DO NOT PHOTOCOPY THIS DOCUMENT!  
TEMPLATE MUST BE TO SCALE.**

Standard Keyswitch  
5A @ 30VAC/VDC



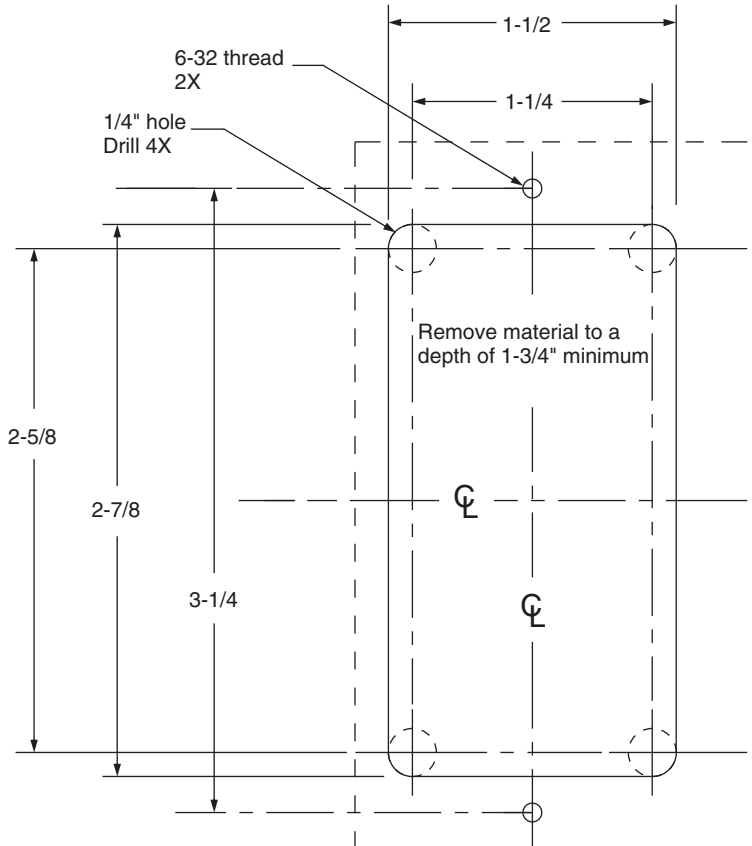
ATS switch closes  
when cover is on.  
0.025A @ 28VDC



LED indicator lights  
operate @ 12-24VDC  
0.025A @ 28VDC

Red (+)  
Black (-)

Recommended cutout for 653 Keyswitches.



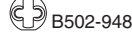
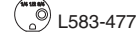
Blocking Ring required for cylinders over 1-1/8"  
Thickness = cylinder length - 1-1/8"

Anti-Pullout Tab (optional)

Recommended Cams:

Modular Cams

Non-Modular Cams



1/16"  
Hex set screw

Anti-Tamper Plugs  
(HDP only)



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653071 Rev. 09/14-f

## Functions

The 653 Keyswitch comes with all parts (except switch assemblies) to make any function shown below. If switch assemblies are needed, order P/N P653059.

**NOTE:** The Keyswitch uses magnetic springs to activate. Dot facing up on Spring Magnet configures momentary action; dot down configures maintained action. For maintained key, remove one position (041 and 141 functions). Stop pins will be needed.

**Stop Pins**      **Stop Magnet**      **Spring Magnet**

**Dot Up**      **Dot Down**  
*(Magnets can be removed, flipped and reinstalled using a steel tool as shown.)*

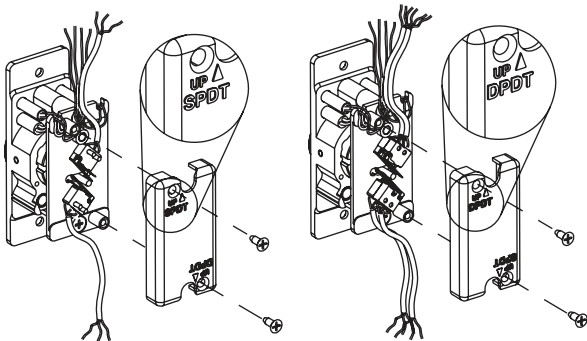
Function	Switch Configuration	Magnet Configuration
 653-0404 CCW-SPDT-CW Maintained Maintained		
 653-1414 CCW-DPDT-CW Maintained Maintained		
 653-0505 CCW-SPDT-CW Momentary Momentary		
 653-1515 CCW-DPDT-CW Momentary Momentary		
 653-0405 CCW-SPDT-CW Momentary Momentary		
 653-1415 CCW-DPDT-CW Momentary Momentary		

Function	Switch Configuration	Magnet Configuration
 653-04 SPDT-CW Maintained		
 653-05 SPDT-CW Momentary		
 653-14 DPDT-CW Maintained		
 653-15 DPDT-CW Momentary		

Install 2 stop pins as shown.

 653-041 CCW-SPDT Maintained Key can not be removed when switch is activated.		
 653-141 CCW-DPDT Maintained Key can not be removed when switch is activated.		

Verify switch cover is oriented correctly for switch configuration. Note that only one, two or four switches can be installed. Three is not recommended.



**Customer Service**

1-877-671-7011      [www.allegion.com/us](http://www.allegion.com/us)





620142

# 620 and 631 Series Pushbuttons

## Installation Instructions and Template



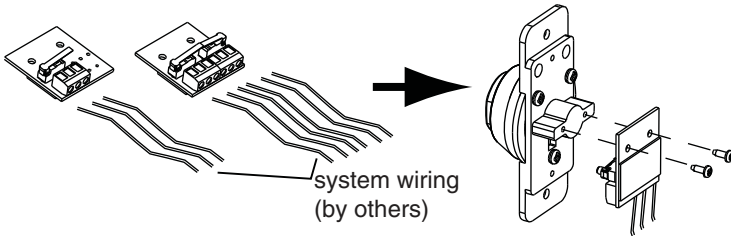
**! DO NOT PHOTOCOPY THIS DOCUMENT!  
TEMPLATE MUST BE TO SCALE.**

### Information

The 620 and 631 Series Pushbuttons mount in a standard single-gang box. 620-NS & 631-NS pushbuttons mount with prep shown below. Cut out template or follow mounting prep dimensions.

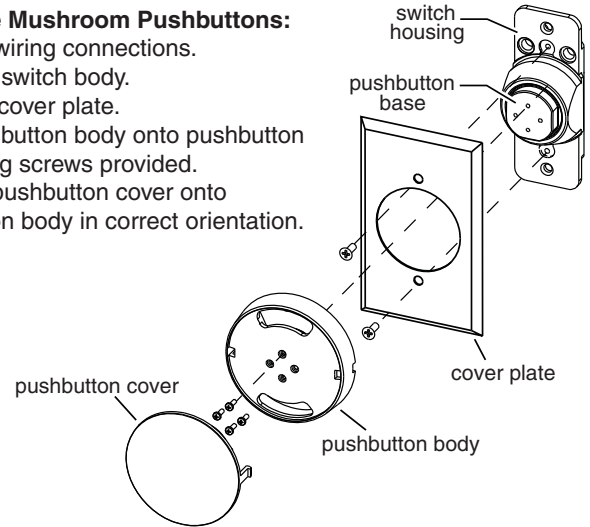
### Instructions

**1 Install system wiring (see PCB for contact positions). Screw PCB assembly onto switch housing using screws provided.**



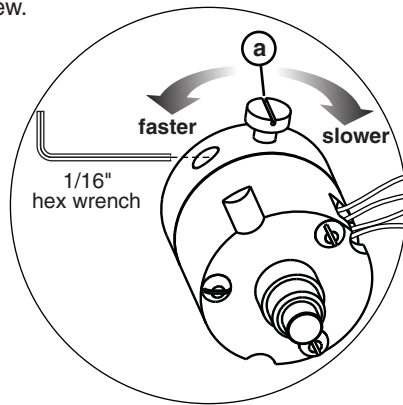
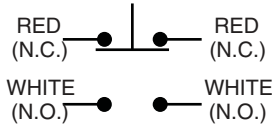
**2 On Large Mushroom Pushbuttons:**

1. Make wiring connections.
2. Mount switch body.
3. Install cover plate.
4. Screw button body onto pushbutton base using screws provided.
5. Snap pushbutton cover onto pushbutton body in correct orientation.



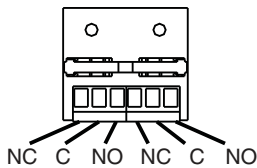
**3 All DA Pushbuttons 5A @ 30VDC**

After adjusting delay with screw (a), use the provided 1/16" hex wrench to tighten set screw.

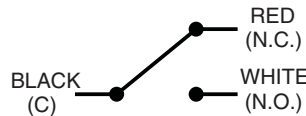


### Additional Info

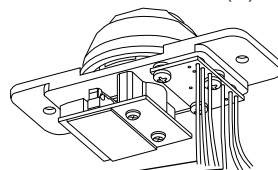
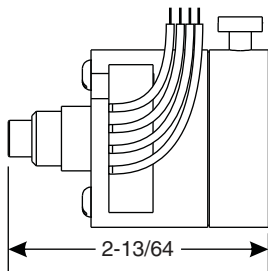
**MOMENTARY (STANDARD)**  
STANDARD: 3A@30VDC



**AA PUSHBUTTONS**  
3A @ 30VDC



**LEDS OPERATE AT:**  
12-24 VDC  
0.025A@28VDC  
RED, GREEN, YELLOW (+)  
BLACK (-)

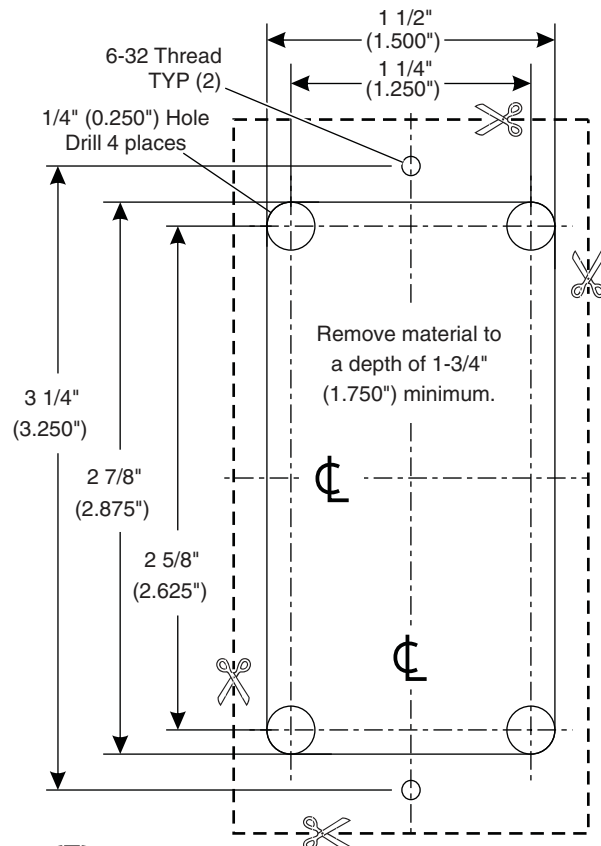


**LED WIRES**  
**NOTE:** BLACK WIRE NEXT TO COLORED WIRE IS THE COLORED WIRE'S GND.

### Template

Recommended cutout for 620-NS and 631-NS narrow pushbuttons.

**NOTE:** Standard pushbuttons can be mounted using same cutout.



### Customer Service

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620142 Rev. 8/15-f





620142

# 620 and 631 Series Pushbuttons

## Installation Instructions and Template



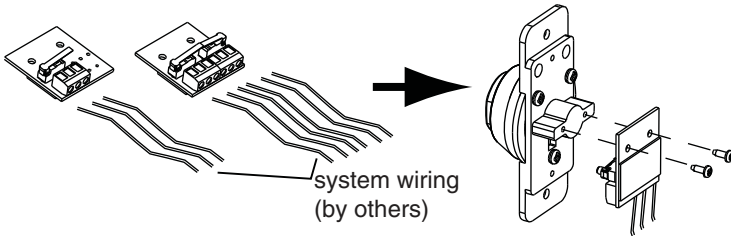
**DO NOT PHOTOCOPY THIS DOCUMENT!**  
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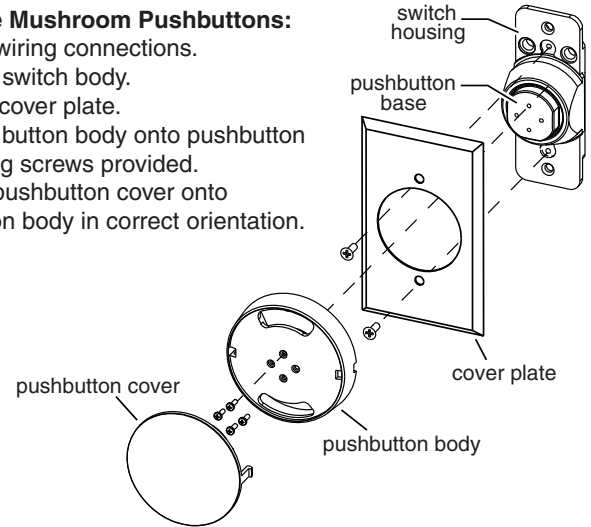
### Instructions

**1 Install system wiring (see PCB for contact positions). Screw PCB assembly onto switch housing using screws provided.**



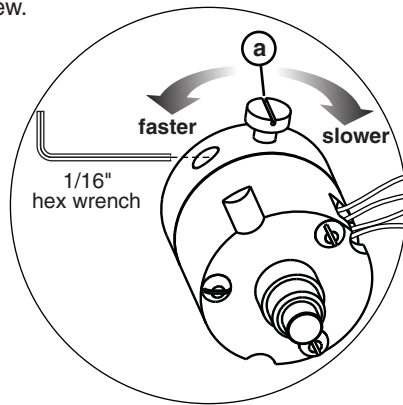
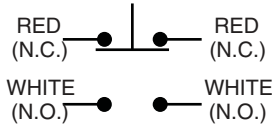
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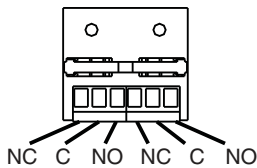
**3 All DA Pushbuttons 5A @ 30VDC**

After adjusting delay with screw (a), use the provided 1/16" hex wrench to tighten set screw.

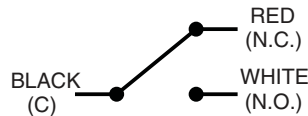


### Additional Info

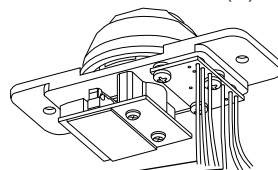
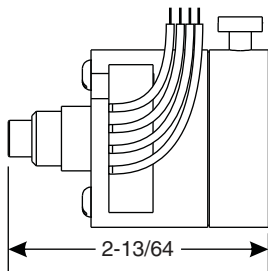
**MOMENTARY (STANDARD)**  
STANDARD: 3A@30VDC



**AA PUSHBUTTONS**  
3A @ 30VDC



**LEDS OPERATE AT:**  
12-24 VDC  
0.025A@28VDC  
RED, GREEN, YELLOW (+)  
BLACK (-)

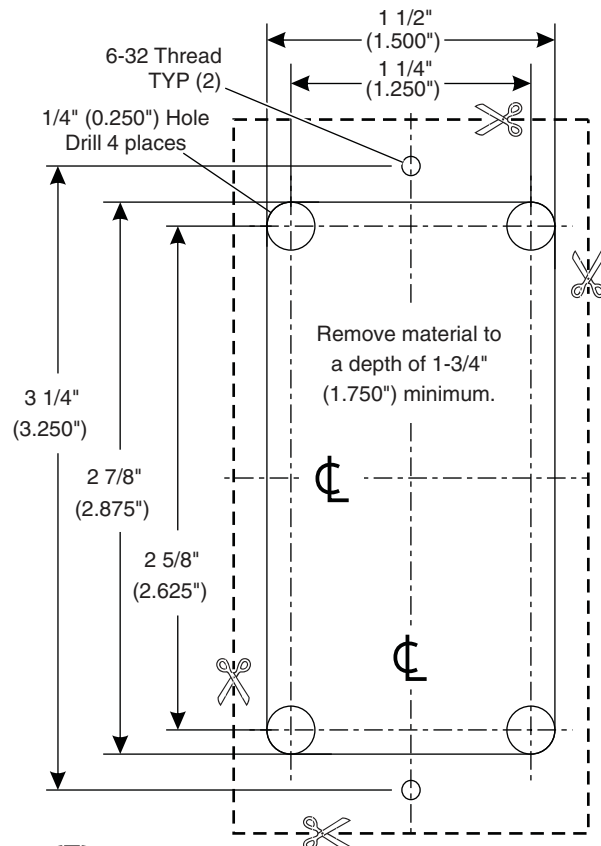


**NOTE:** BLACK WIRE NEXT TO COLORED WIRE IS THE COLORED WIRE'S GND.

### Template

Recommended cutout for 620-NS and 631-NS narrow pushbuttons.

**NOTE:** Standard pushbuttons can be mounted using same cutout.



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66000

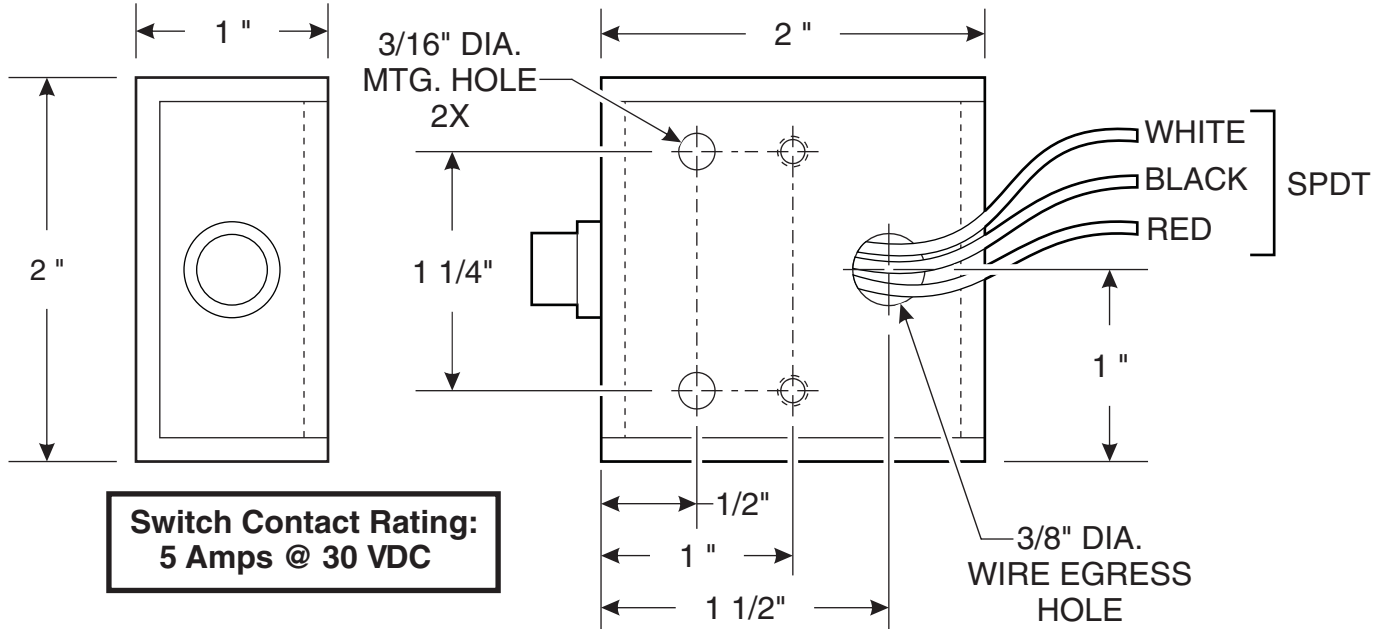
# 660PB/660PB-DP

## Installation Instructions



### Surface Box

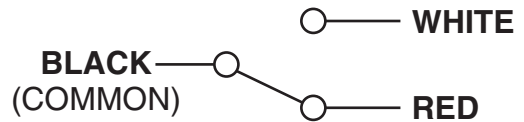
The 660PB is a SPDT momentary pushbutton switch that can be surface mounted. A typical application is an under-desk release of entrance doors.



### Shipped Items

- 8-32 x 3/8" Lg Pan HD Screw (2x)
- #8 x 3/4 Lg Pan HD Sheet Metal Screw (2x)
- #8 External Tooth Lockwasher (2x)

### Pushbutton Switch



Shown in OFF position.

### Mounting Instructions

1. Remove screws which secure housing cover to switch housing.
2. Place switch housing in desired position and mark mounting hole locations.
3. Pre-drill for either 8-32 x 3/8" pan head screws or #8 sheet metal screws.
4. Mount switch housing using two screws and two lock washers.
5. Make wiring connections (see above diagram).
6. Install housing cover.

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66000 Rev. 8/15-d

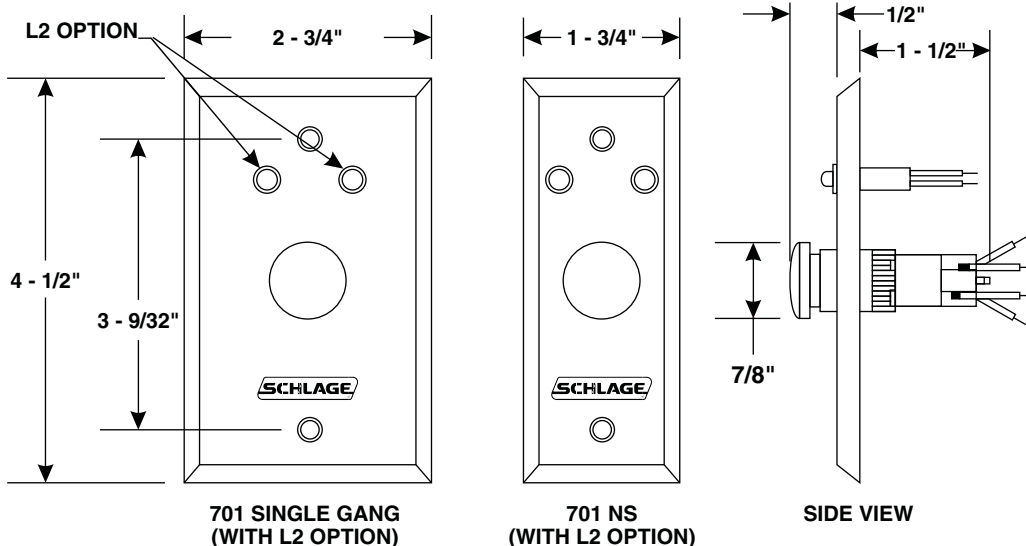


70101\_FST

# 701 Series Pushbutton Switch Mushroom Cap



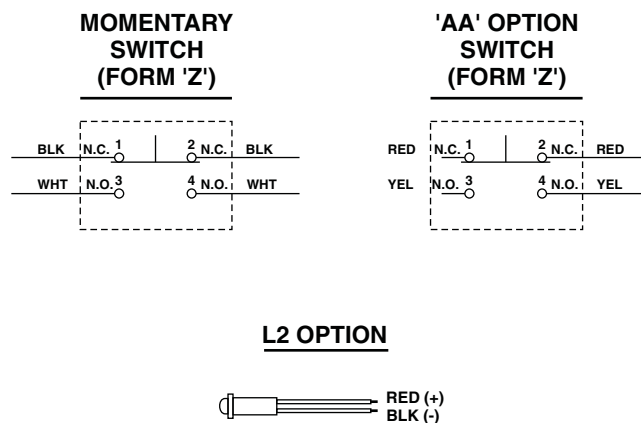
## Installation Instructions



### Specifications

<b>Switches:</b>	<b>L2 Options:</b>
<b>Contact Ratings:</b> 5 Amps @ 30 VDC	<b>Input Requirements:</b> Voltage: 12 - 24 VAC/VDC Current: 30 mA Max each
<b>Wire Leads:</b> 20 AWG - 6" Long	<b>Wire Leads:</b> 24 AWG - 6" Long

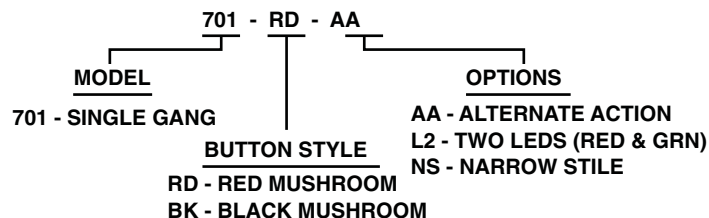
### Wire Colors

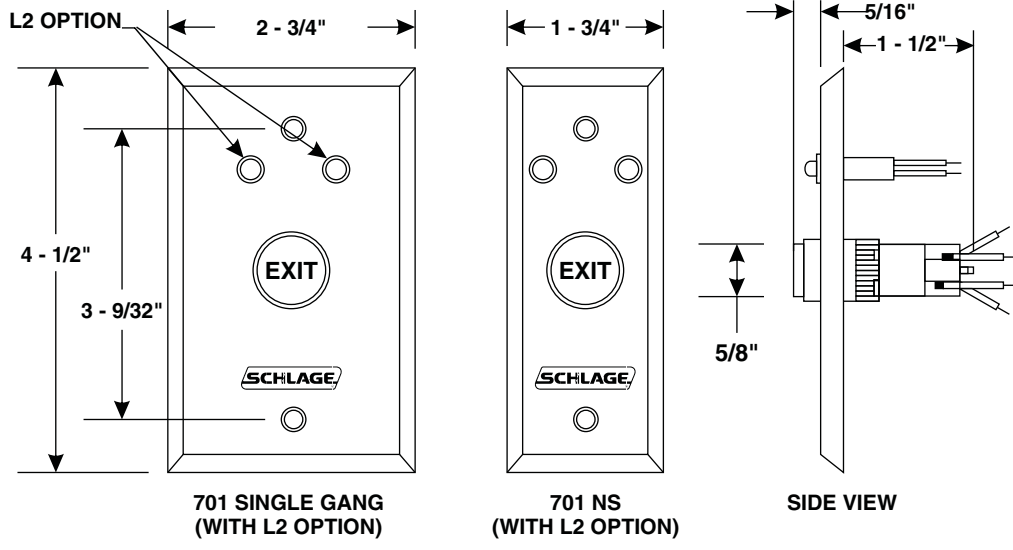


### Recommended Electrical Mounting Box

<b>Style:</b>	<b>Part Number:</b>
Mortise Mount	724-40
Surface Mount	744-1

### Model Numbering

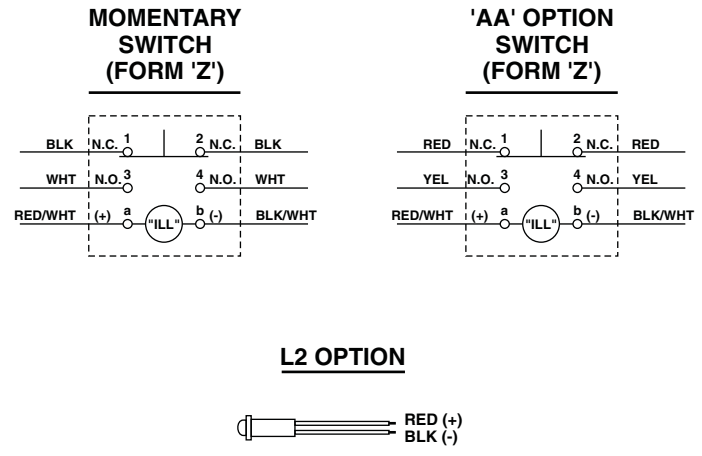




**Specifications**

<b>Switches:</b>	<b>L2 Options:</b>
<b>Contact Ratings:</b> 5 Amps @ 30 VDC	<b>Input Requirements:</b> Voltage: 12 - 24 VAC/VDC Current: 30 mA Max each
<b>“III” Option:</b> 24 VDC LED	<b>Wire Leads:</b> 24 AWG - 6” Long
<b>Wire Leads:</b> 20 AWG - 6” Long	

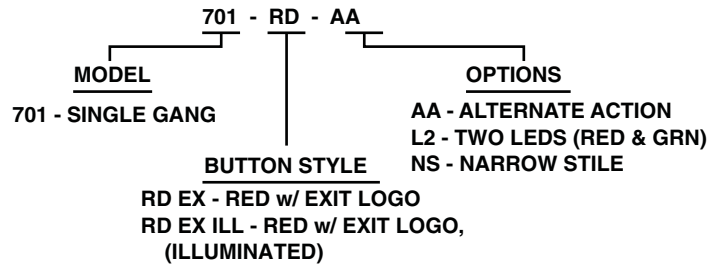
**Wire Colors**



**Recommended Electrical Mounting Box**

<b>Style:</b>	<b>Part Number:</b>
Mortise Mount	724-40
Surface Mount	744-1

**Model Numbering**



**Customer Service**

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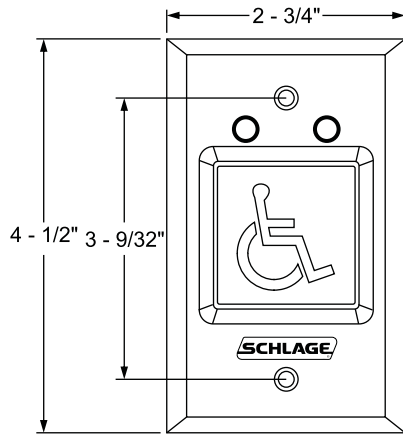




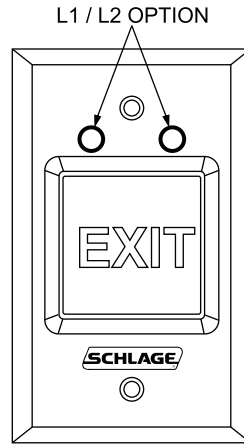
70901\_FST

# 709 Series Illuminated Pushbutton Switch

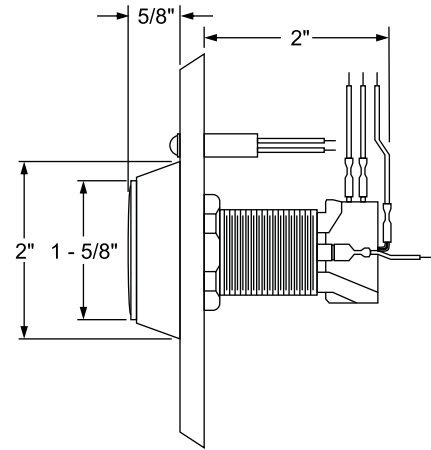
## Installation Instructions



709 SINGLE GANG  
(‘BLH’ STYLE SHOWN w/‘L2’ OPTION)



709 SINGLE GANG  
(‘RD EX’ STYLE SHOWN w/‘L2’ OPTION)



SIDE VIEW

### Specifications

**Switches:**

**Contact Ratings:**

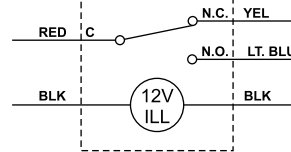
5 Amps @ 30 VDC

**Wire Leads:**

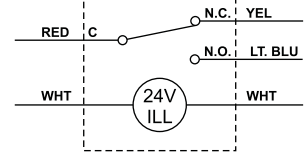
20 AWG - 8” Long

### Wire Colors

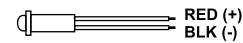
**12 VOLT SPDT SWITCH CONTACTS**



**24 VOLT SPDT SWITCH CONTACTS**



**L1 / L2 OPTION**



### Recommended Electrical Mounting Box

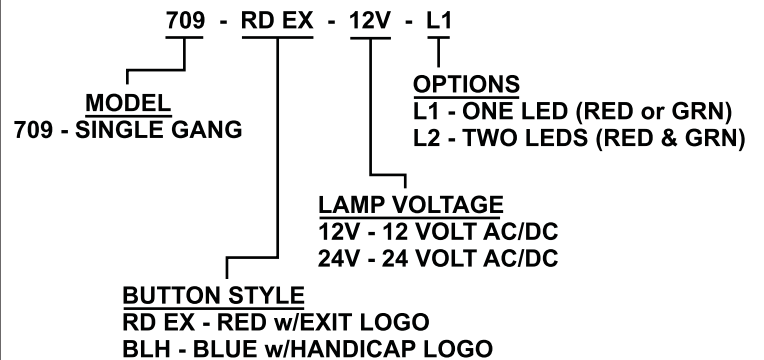
**Style:**

Surface Mount

**Part Number:**

744-1

### Model Numbering



### Customer Service

1-877-671-7011

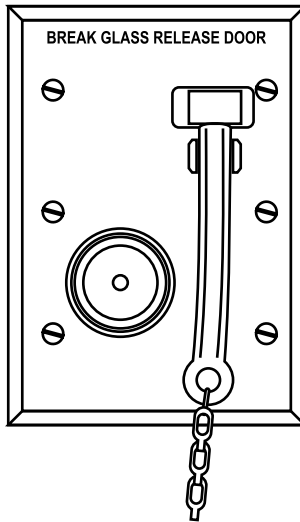
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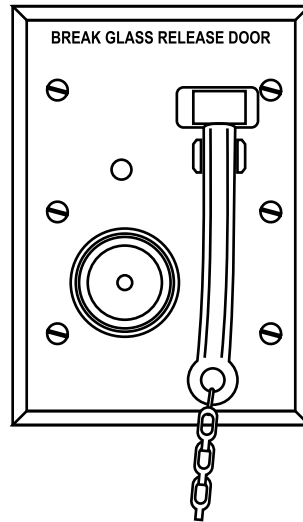
# 740 Series Break Glass Release and Indicator Assembly



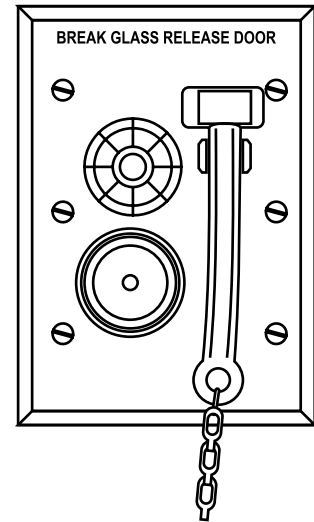
## Installation Instructions



**#740 Standard Break Glass Assembly**



**#741 Similar to #740 with additional LED Luminous Indicator to signal usage.**



**#742 Similar to #740 with the addition of an audio to signal usage.**

### Operations

#740 Series Break Assemblies are a preferred method of releasing non-designed egress doors.

The unit consists of a replaceable Break Glass cartridge that normally holds a plunger activated switch that is depressed until the cartridge lens is broken.

When the lens is broken, the plunger jumps forward and alters the switch contact position. Four replacement lens disks are provided with each assembly.

A small hammer is attached to the Break Glass Assembly via a mounting clip along with 12" of chain to insure it will not stray from the assembly.

On the top edge of the assembly is a red sign clearly indicating the purpose of the release.

### Why Used

The Break Glass Assembly is a preferred alternate to the conventional pull box installation, as accidental activation is all but eliminated as far as false alarms are concerned. Breaking the lens requires more of a commitment on the user's part than merely pulling the handle and leaving the scene.

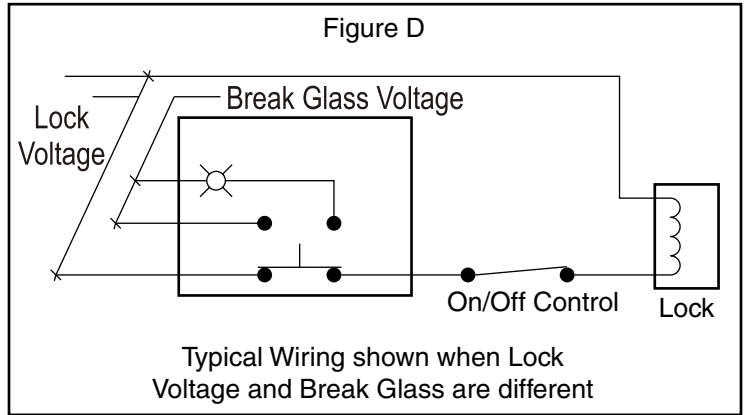
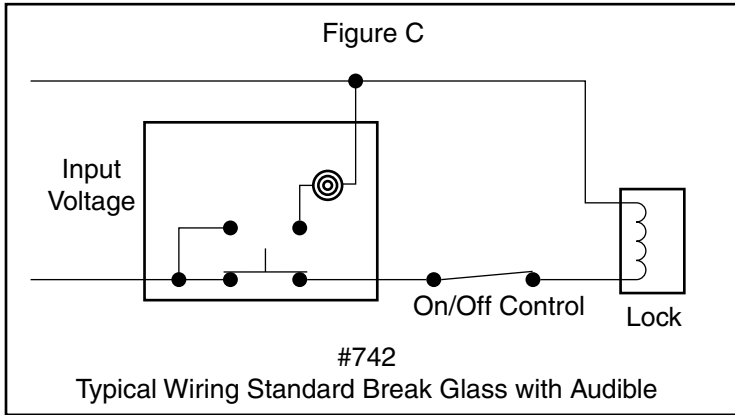
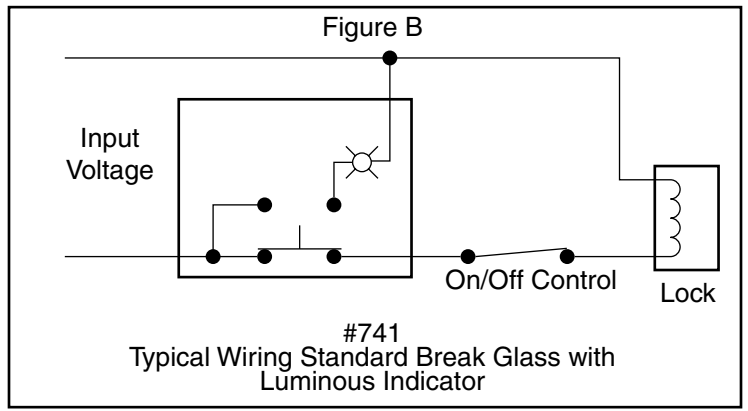
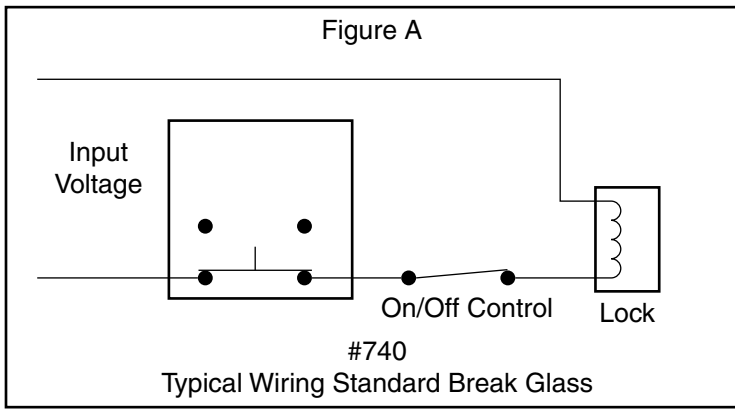
### Where Used

Laboratories, testing areas, and other similar rooms provided with exit doors.

Fail Safe multiple door interlocks, where in the event of equipment malfunction, incorrect usage or wiring, someone may be trapped between doors.

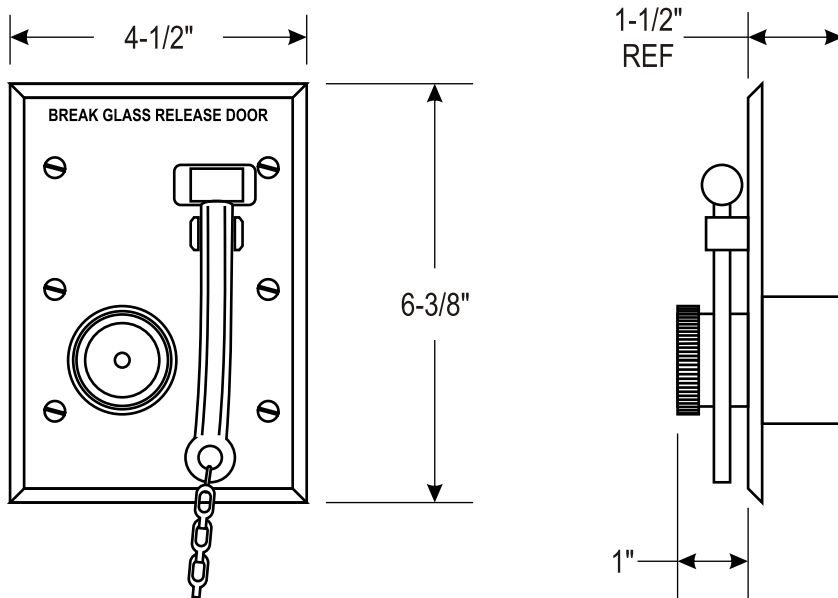
### Features

- Surface or mortise mounts, in a standard 3 gang enclosure.
- Compatible with all Fail Safe type Electric Locking Systems.
- An effective alternate to the standard pull box type.
- Standard finish US26, special finishes available, consult factory for price and delivery.



Note: Figures B and C are shown with Break Glass being operated with voltage the same as the lock. For installations utilizing different operating voltages, see Figure D.

## Specifications



Switch contacts rated 6 amps @ 120 VAC  
Screw type wiring connections

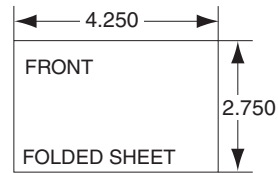
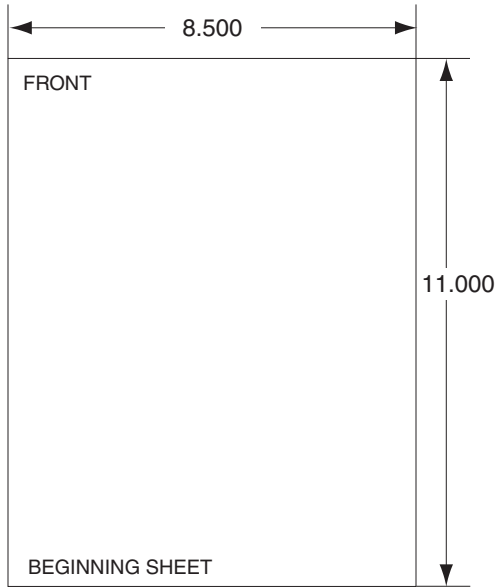
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24481707 Rev. 12/14-c



**DRAWING:** In this area, draw the following:

beginning sheet, to scale

folded sheet, to scale

Enter the dimensions of the sheet with three decimal places.

Be sure to include FRONT labels, which indicate that the bar code must remain visible when the final fold is completed.

Additional Notes:
None

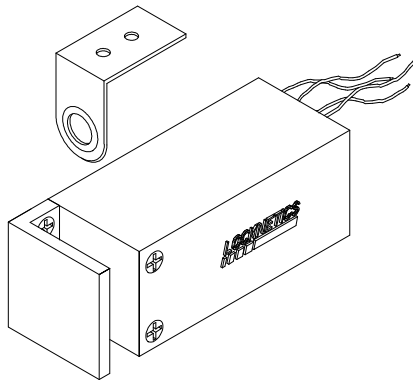
Revision History						Revision Description:					
A	B	C	D	E	F	C > Allegion Rebranding					
N/A	33550	060572									
Material						Edited By		Approved By		EC Number	Release Date
White Paper						R. Byun		P. Bockelman		060572	12/05/2014
Notes						Title					
<ol style="list-style-type: none"> <li>printed two sides</li> <li>printed black</li> <li>tolerance: ± .13</li> <li>see sheet 2 for artwork</li> <li>printed in country may vary</li> <li>drawings above not to scale</li> </ol>						Installation Instruction, 740 Series Break Glass Release					
Creation Date		Number				Revision					
02/12/2013		24481707				C					
Created By			Activity								
D. Myers			3899 Hancock Expwy						Allegion		
Software: Illustrator CS6			Security, CO 80911						Copyright © 2014		

**Notes:** Enter any notes here. These notes must include:

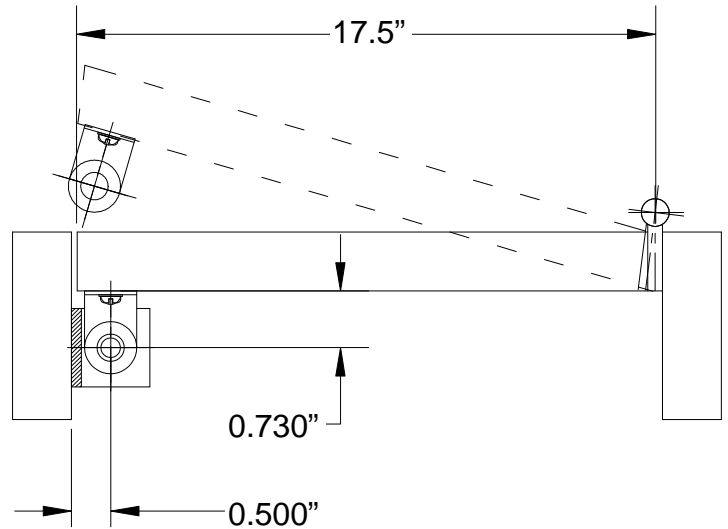
how many sides of the paper are printed

ink color (usually black, may also be one or two specific colors, such as a Pantone value, or

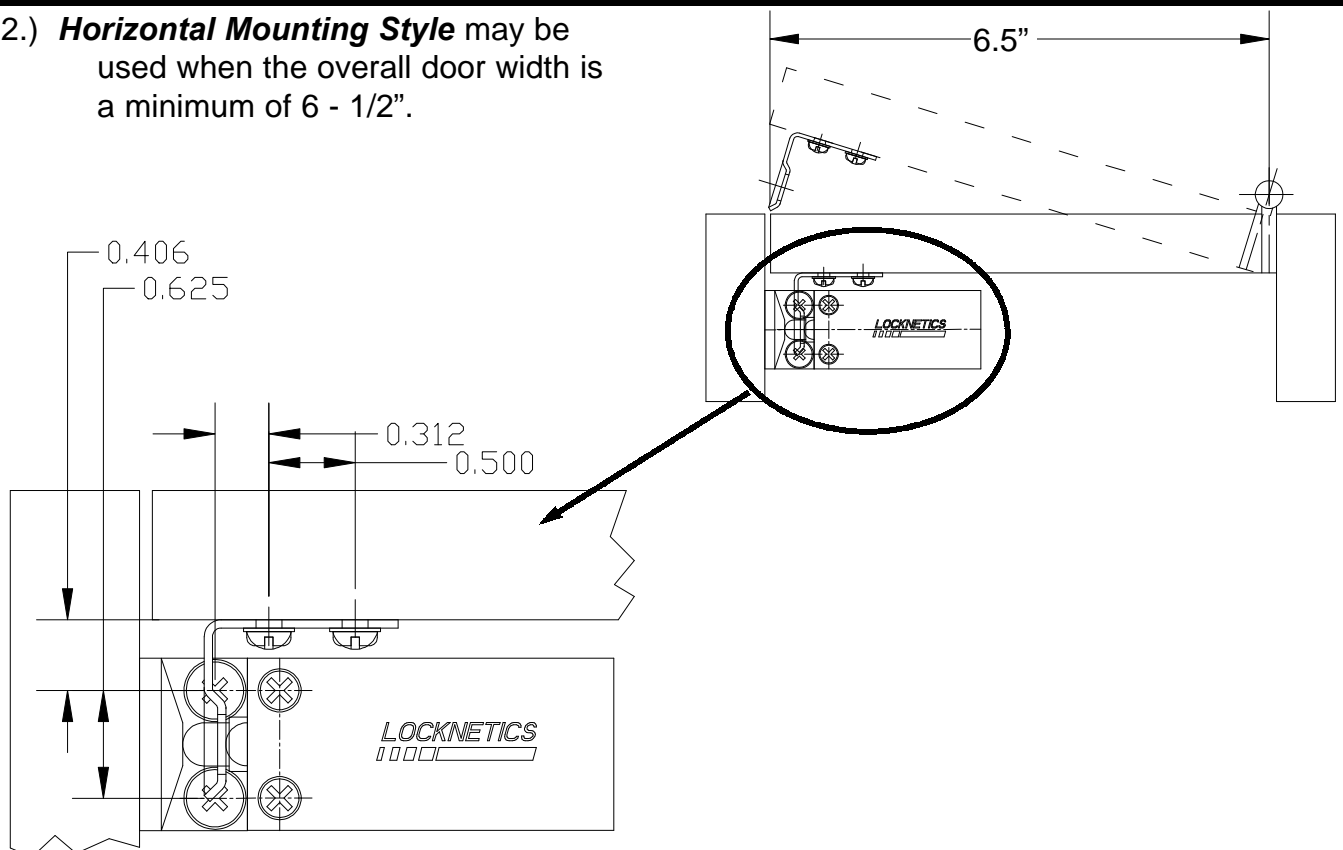




- 1.) **Vertical Mounting Style** may be used when the overall door width is a minimum of 17 - 1/2".

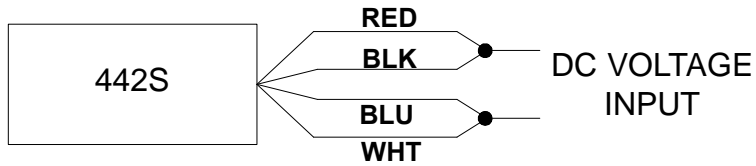


- 2.) **Horizontal Mounting Style** may be used when the overall door width is a minimum of 6 - 1/2".

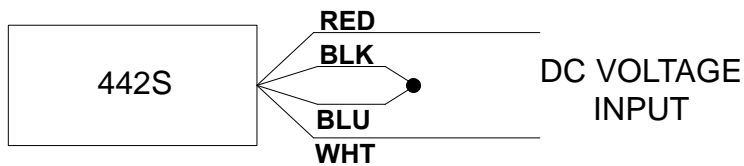


**Wiring Installation**

**Figure 1 - 12V Configuration**

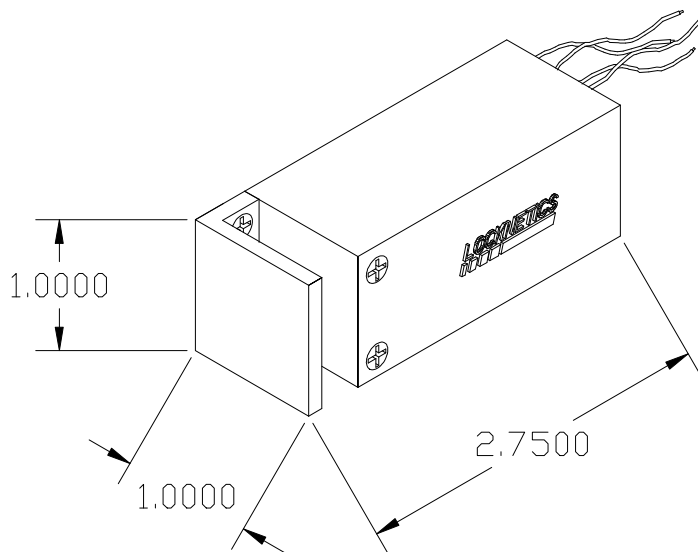
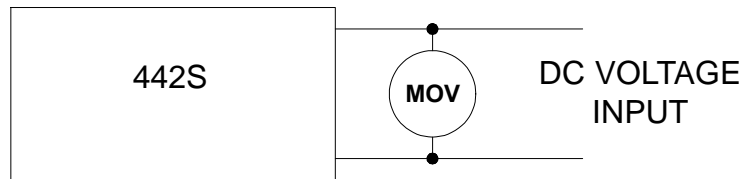


**Figure 2 - 24V Configuration**



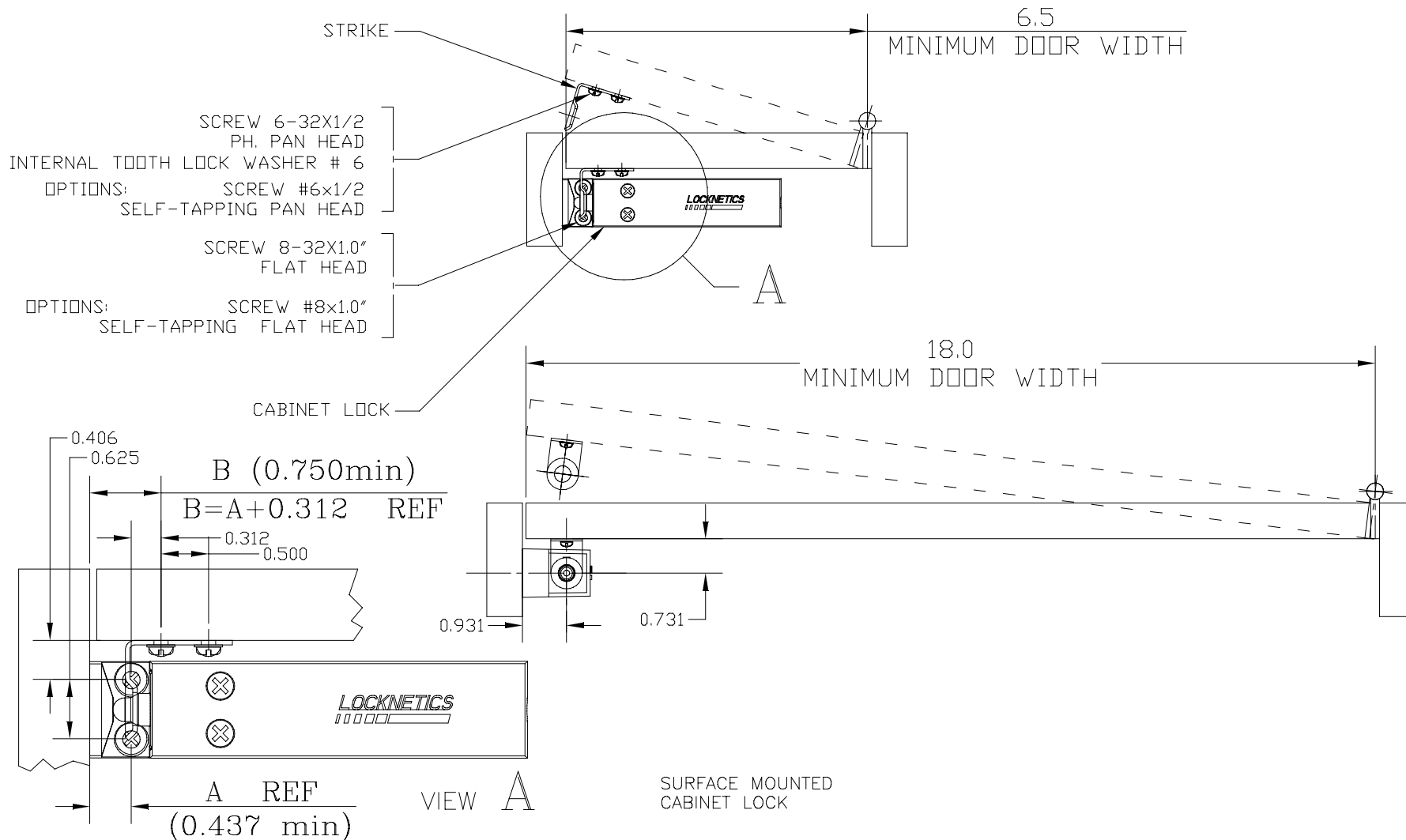
**Spike Suppressor Installation**

Install your suppressor across the input voltage wires as close to the solenoid as possible.

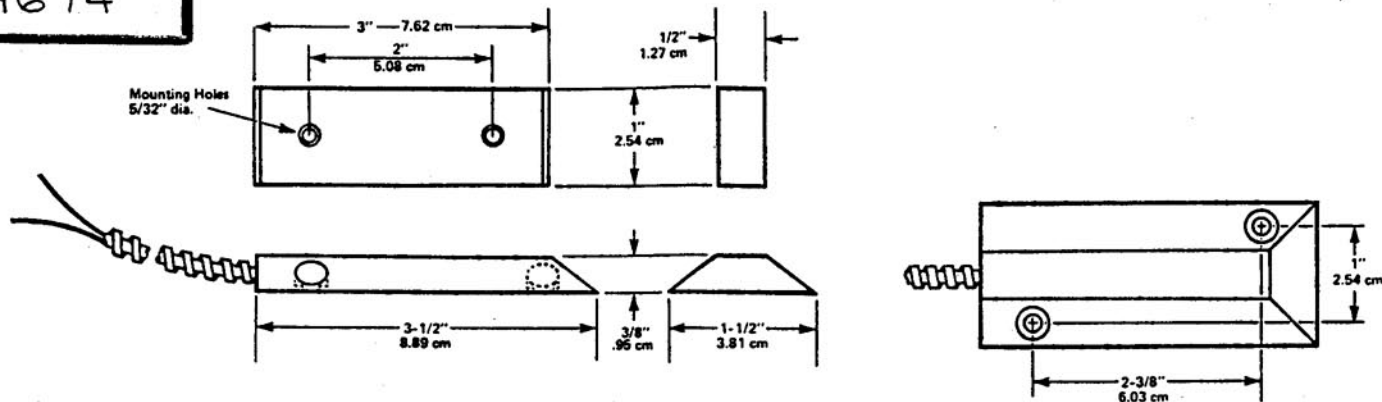


# 443 BATTERY POWERED CABINET LOCK

## TEMPLATE AND INSTALLATION INFORMATION



OH674



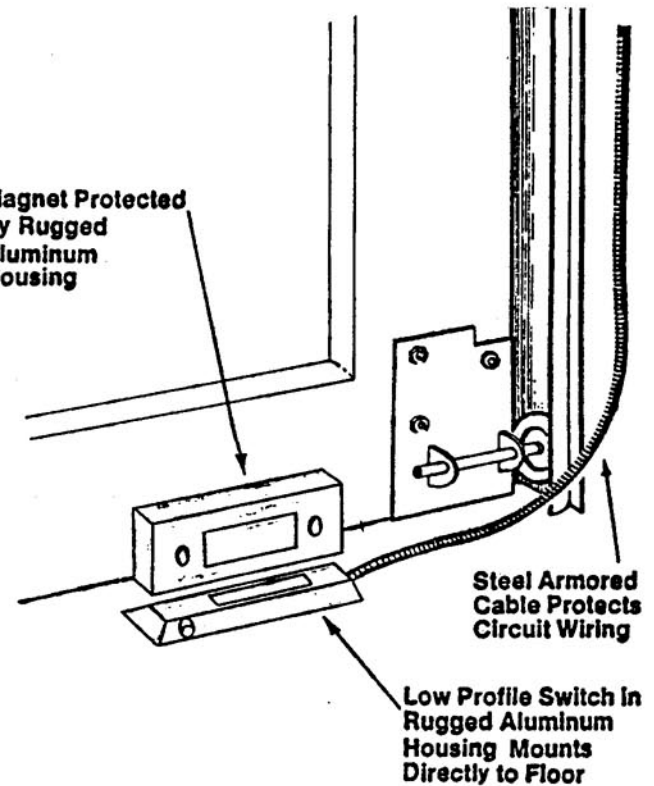
OH674 : 3 ft Stainless Steel Flex Cable

Lead Color	Function
Black	Common
White	Closed Loop (N.O.)
Red	Open Loop (N.C.)

### INSTALLATION INSTRUCTIONS

Secure switch to floor with appropriate fasteners (wood or concrete). Be certain to position the switch where it will be least likely to be a hindrance to traffic. Align labels on switch and magnet so labels read in same direction (switch is polarity sensitive). Attach magnet to door directly, or with L bracket.

Magnet Protected  
by Rugged  
Aluminum  
Housing



**LOCKNETICS**  
HAMDEN, CONNECTICUT 06517 U.S.A.

DOOR STATUS SWITCH  
OVERHEAD DOORS

DRN BY JLS  
DATE 5-2-80  
CH'KD BY

OH674



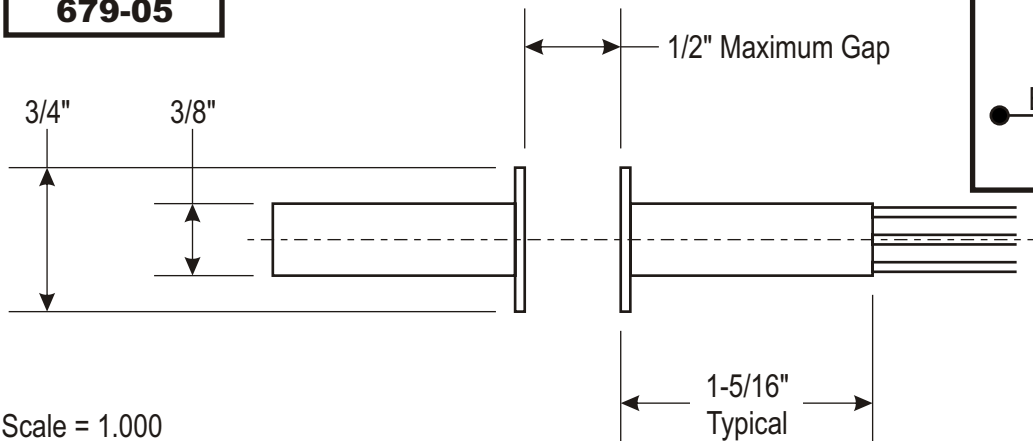
**LOCKNETICS**  
 575 BIRCH STREET  
 FORESTVILLE, CT 06010  
 PHONE: (866) 322-1237  
 FAX: (866) 322-1233

# 679 DOOR SWITCH

SINGLE POLE, DOUBLE THROW  
 FOR WOOD DOOR AND FRAME

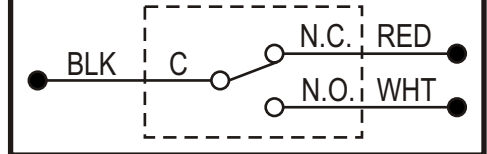
FORM NUMBER	REVISION	DATE
77661	A	12-21-2005

## 679-05



Scale = 1.000

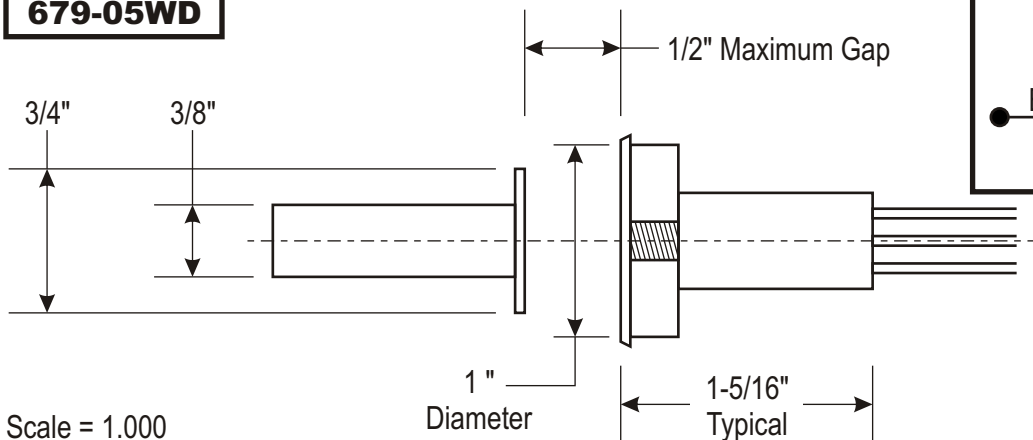
### Schematic of Switch



### NOTES:

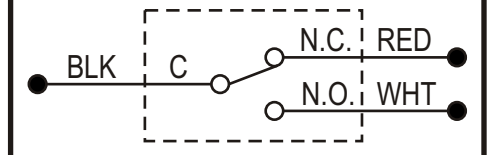
- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

## 679-05WD



Scale = 1.000

### Schematic of Switch

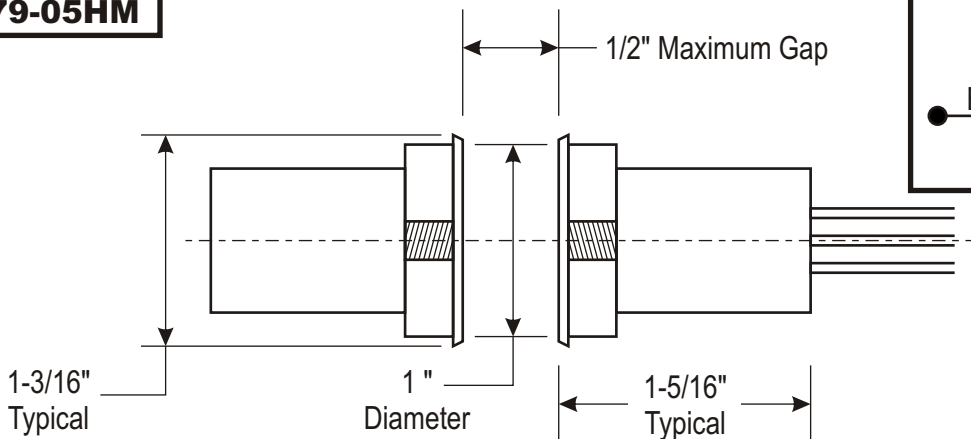


### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

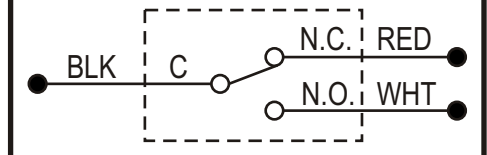
1" DIAMETER MOUNTING HOLE IS REQUIRED

## 679-05HM



Scale = 1.000

### Schematic of Switch



### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

1" DIAMETER MOUNTING HOLE IS REQUIRED



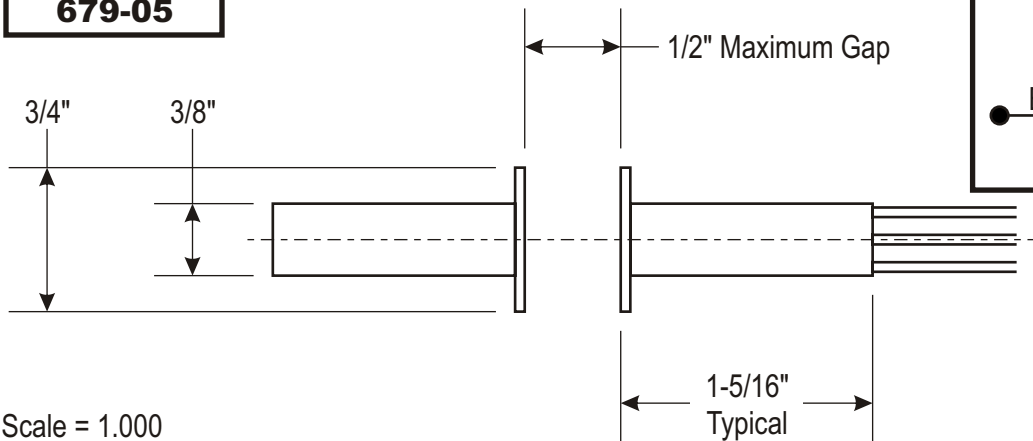
**LOCKNETICS**  
 575 BIRCH STREET  
 FORESTVILLE, CT 06010  
 PHONE: (866) 322-1237  
 FAX: (866) 322-1233

# 679 DOOR SWITCH

SINGLE POLE, DOUBLE THROW  
 FOR WOOD DOOR AND FRAME

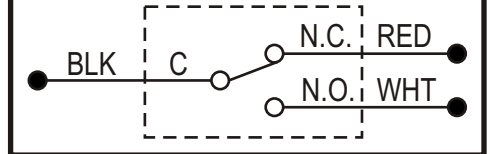
FORM NUMBER	REVISION	DATE
77661	A	12-21-2005

## 679-05



Scale = 1.000

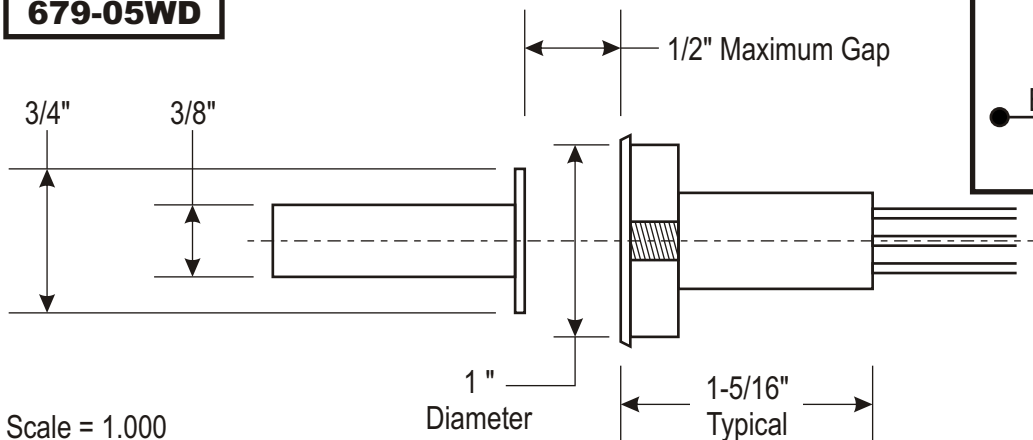
### Schematic of Switch



### NOTES:

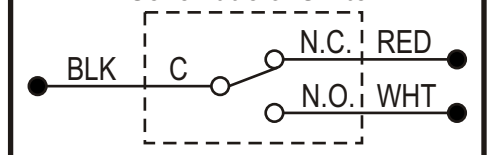
- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

## 679-05WD



Scale = 1.000

### Schematic of Switch

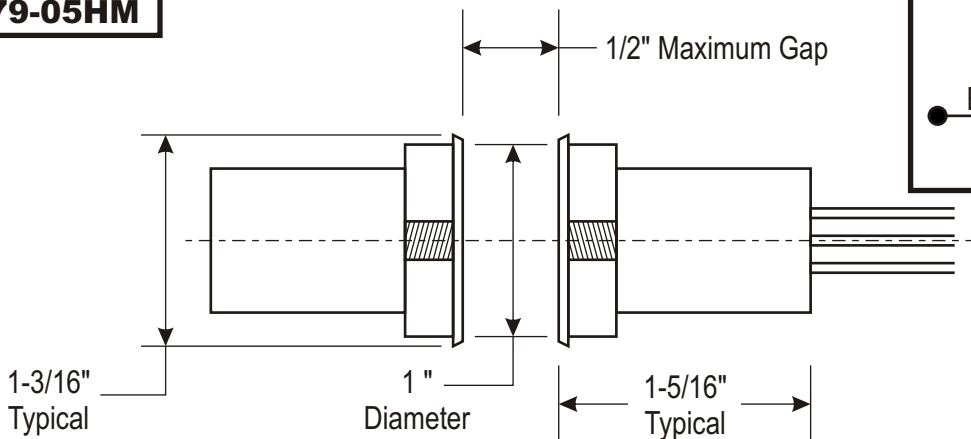


### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

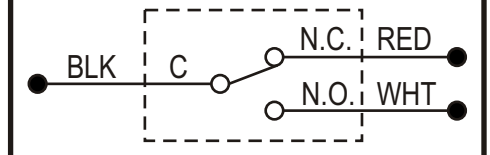
1" DIAMETER MOUNTING HOLE IS REQUIRED

## 679-05HM



Scale = 1.000

### Schematic of Switch



### NOTES:

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

1" DIAMETER MOUNTING HOLE IS REQUIRED



**LOCKNETICS**

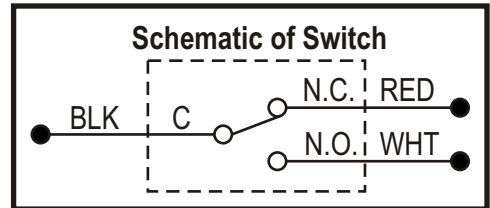
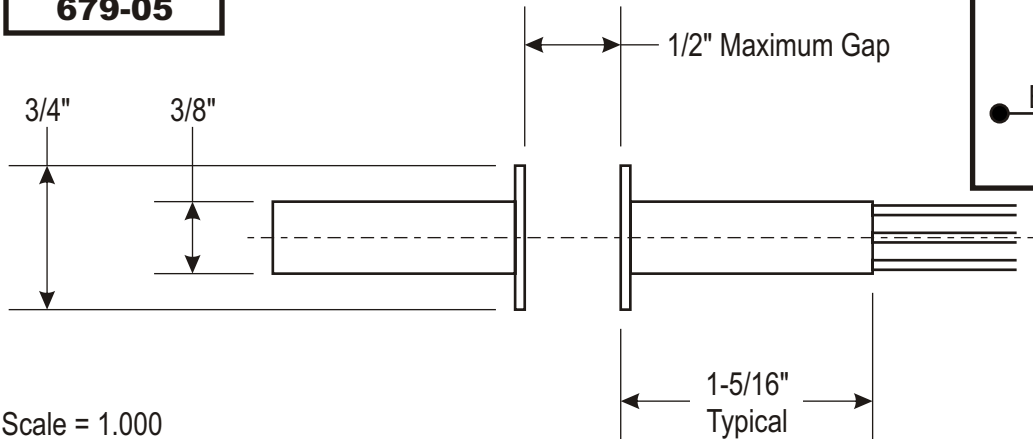
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (866) 322-1233

**679 DOOR SWITCH**

SINGLE POLE, DOUBLE THROW  
FOR WOOD DOOR AND FRAME

FORM NUMBER	REVISION	DATE
77661	A	12-21-2005

**679-05**

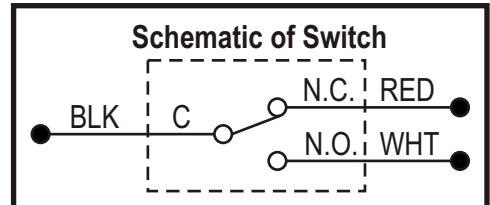
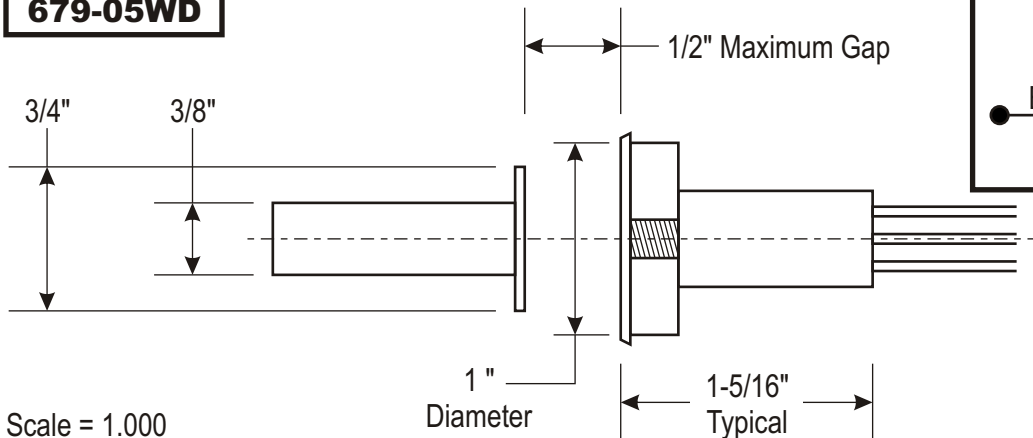


**NOTES:**

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

Scale = 1.000

**679-05WD**



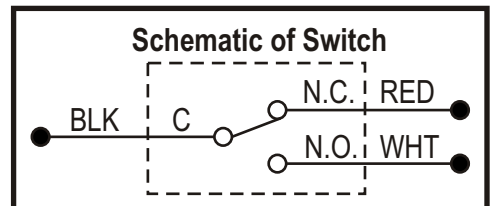
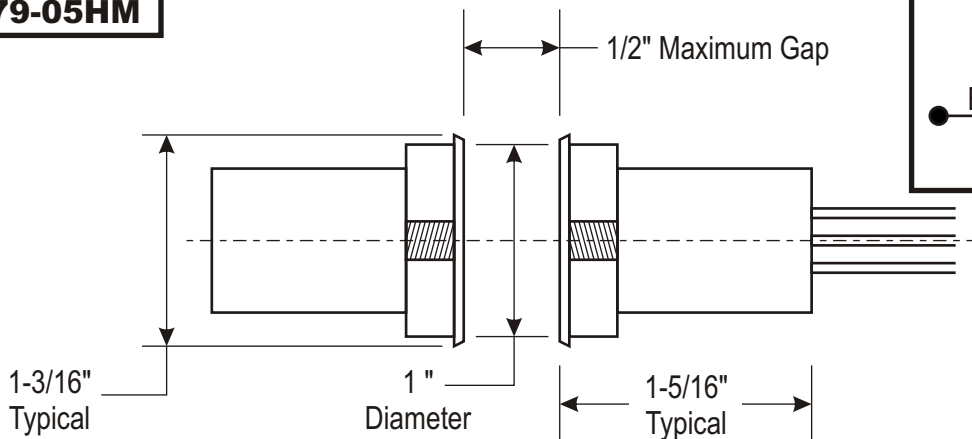
**NOTES:**

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

1" DIAMETER MOUNTING HOLE IS REQUIRED

Scale = 1.000

**679-05HM**



**NOTES:**

- RED IS NORMALLY CLOSED
- WHITE IS NORMALLY OPEN
- BLACK IS COMMON

1" DIAMETER MOUNTING HOLE IS REQUIRED

Scale = 1.000

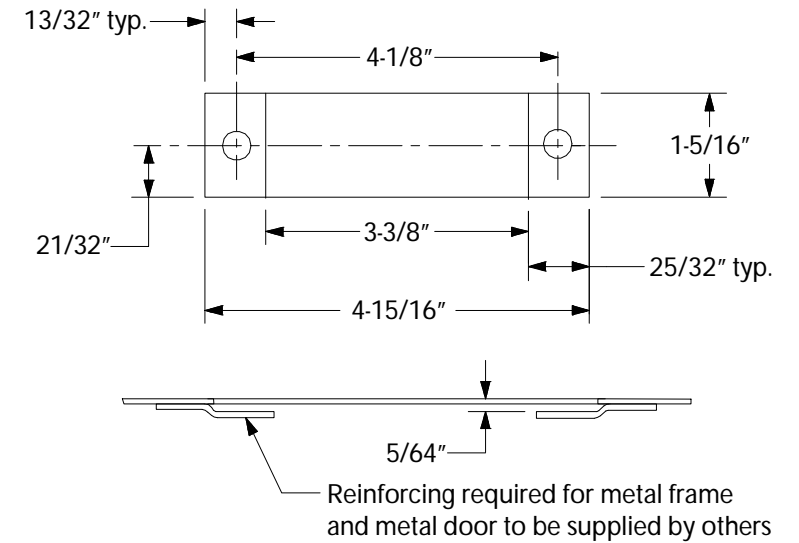
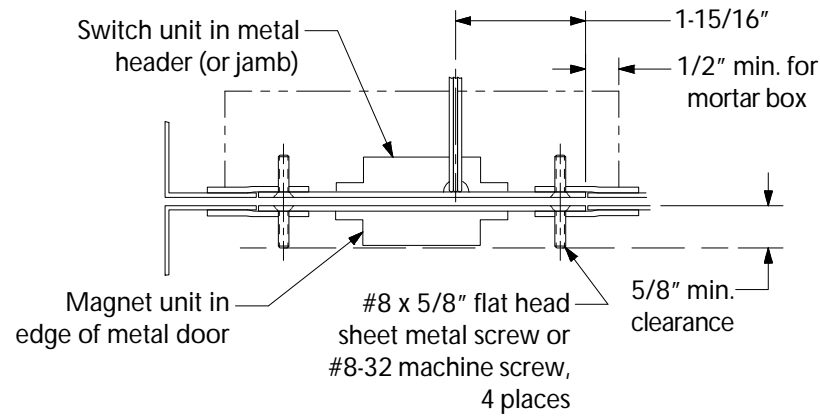
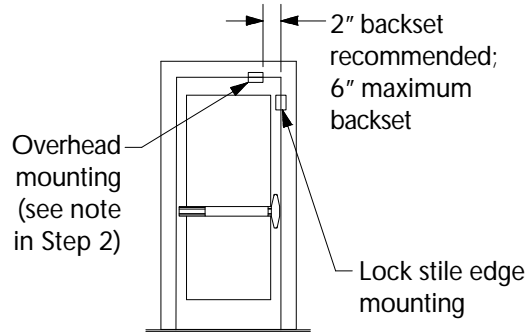
## INSTALLATION INSTRUCTIONS:

1. Prepare frame for mortise installation of 7764 (See opposite side of sheet for wood frame.)

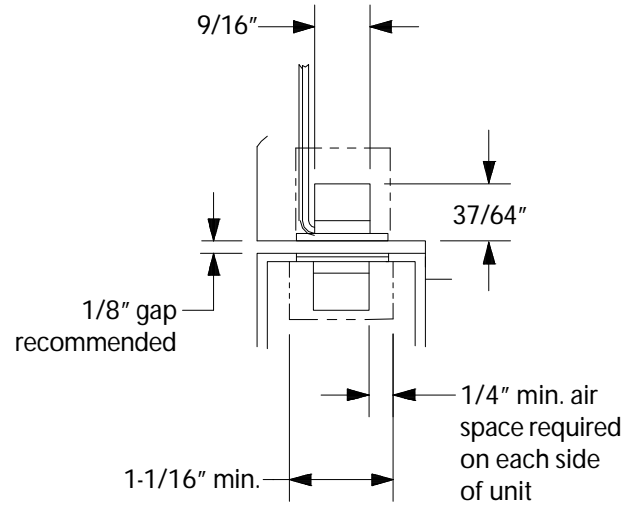
**NOTE**  
For maximum security, install the switch in the header, 2" from the lock stile edge.

2. Wire and install switch. (See opposite side of sheet for wiring diagram.)
3. Prepare door for magnet. (See opposite side of sheet for wood door.)
4. Install magnet.

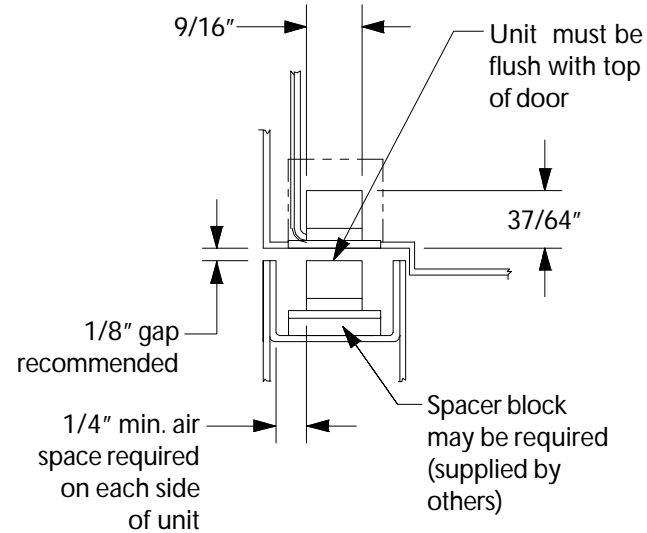
**NOTE**  
If switch does not work, check recommended gap and decrease if necessary.



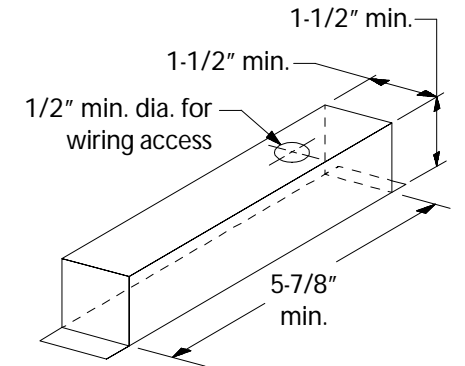
### Hollow Metal Door Installation



### Metal Door with "U" Channel Construction



### Suggested Mortar Box by Others



DESCRIPTION:

**7764 SERIES MAGNETIC SWITCH  
MORTISE INSTALLATION**

**LOCKNETICS**  
Security Engineering

575 Birch St.  
Forestville, CT 06010  
Ph: (860)584-9158  
Fax: (860)584-2136

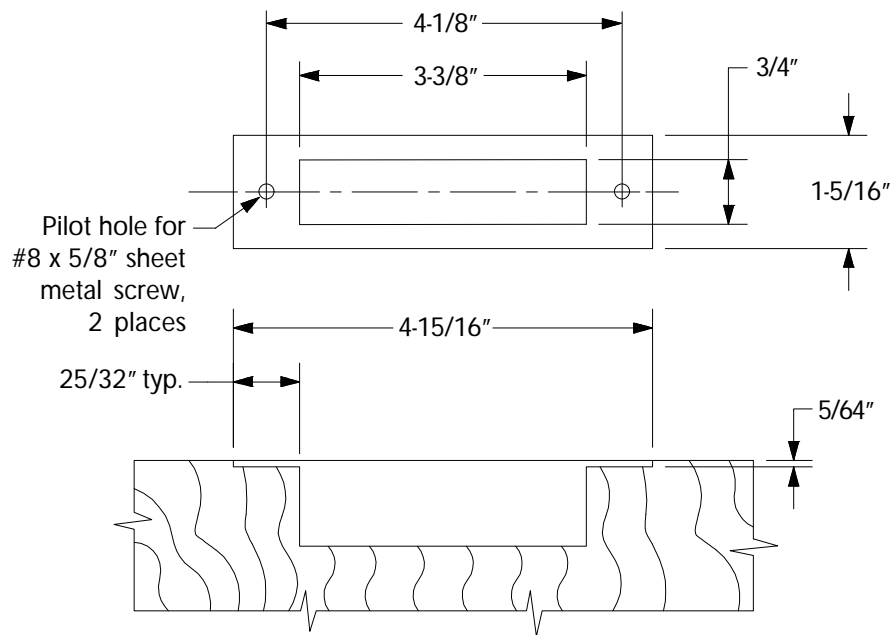
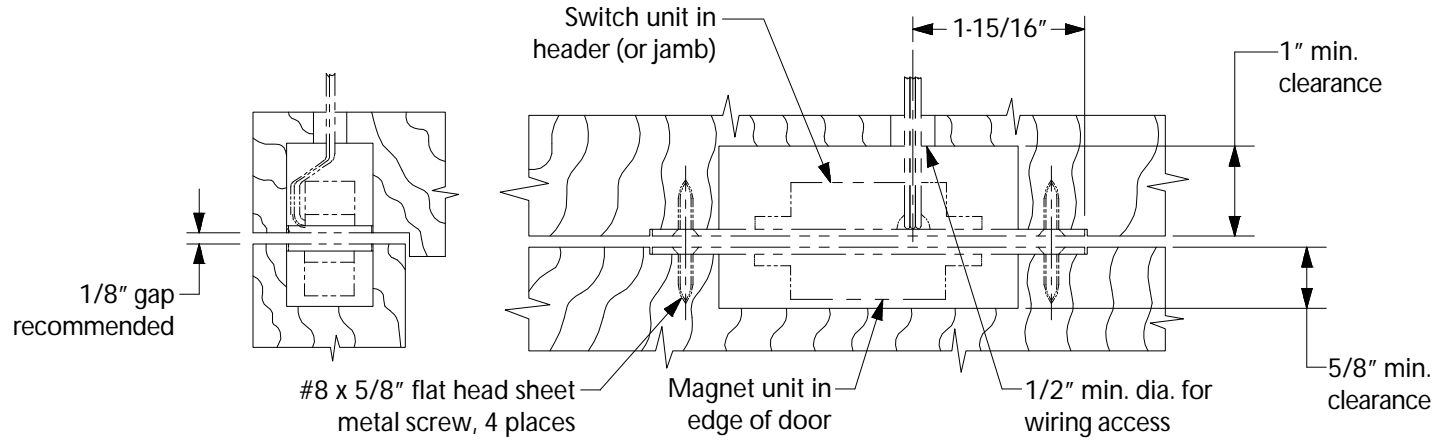
FORM NUMBER:  
**77640 Rev. A**

SHEET#:  
**1 of 2**

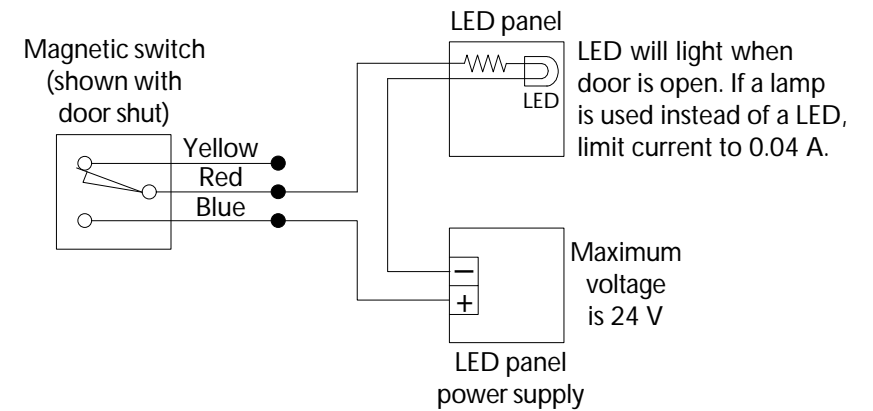
DATE:  
**11-08-2001**



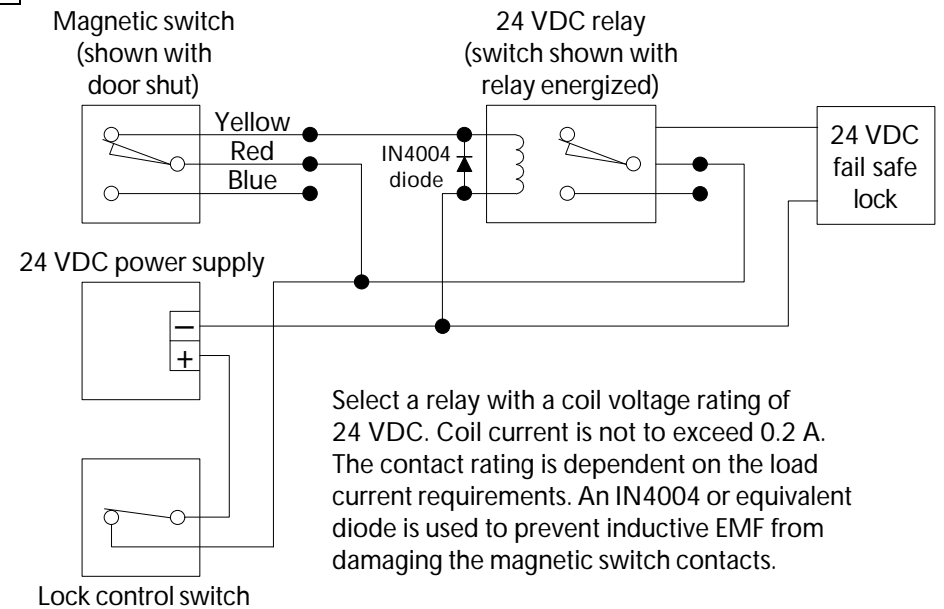
### Wood Door and Frame Preparation



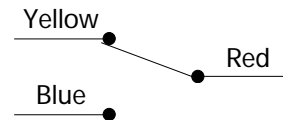
### Typical Signalling Application



### Typical Load Switching Application



### Wiring Diagram



Switch shown magnetically actuated

**WARNING**

These are signal switches with current ratings of 0.25 A. They are not intended for direct switching.



DESCRIPTION:

**7764 SERIES MAGNETIC SWITCH  
MORTISE INSTALLATION**



575 Birch St.  
Forestville, CT 06010  
Ph: (860)584-9158  
Fax: (860)584-2136

FORM NUMBER:

**77640 Rev. A**

SHEET#:

**2 of 2**

DATE:

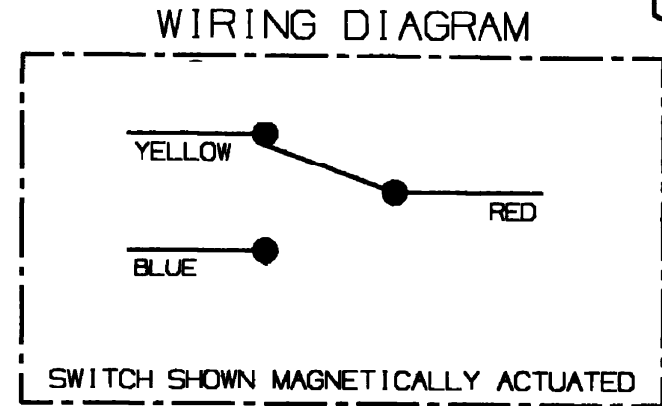
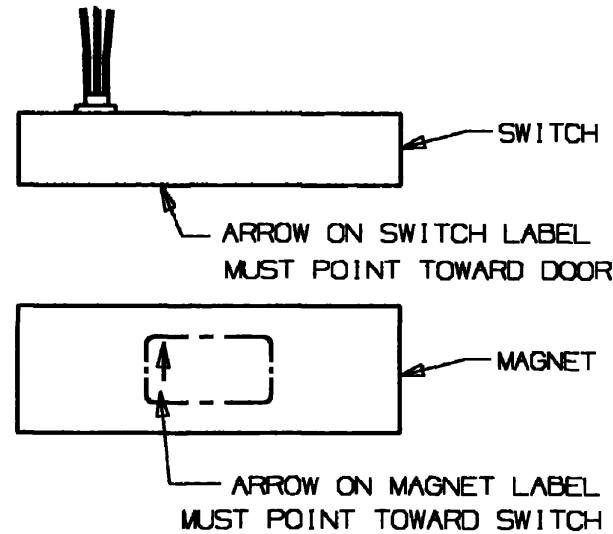
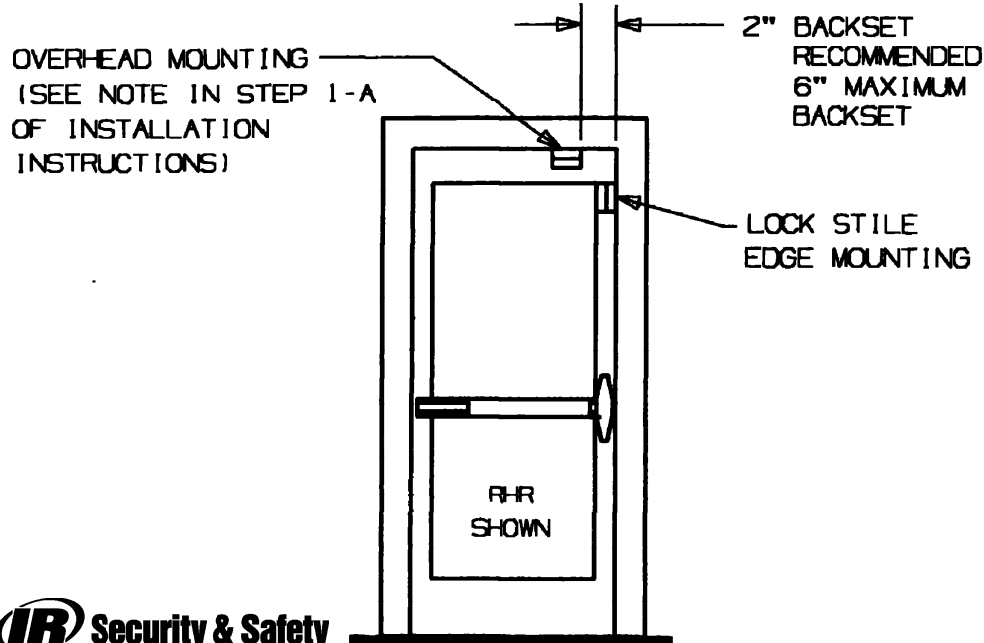
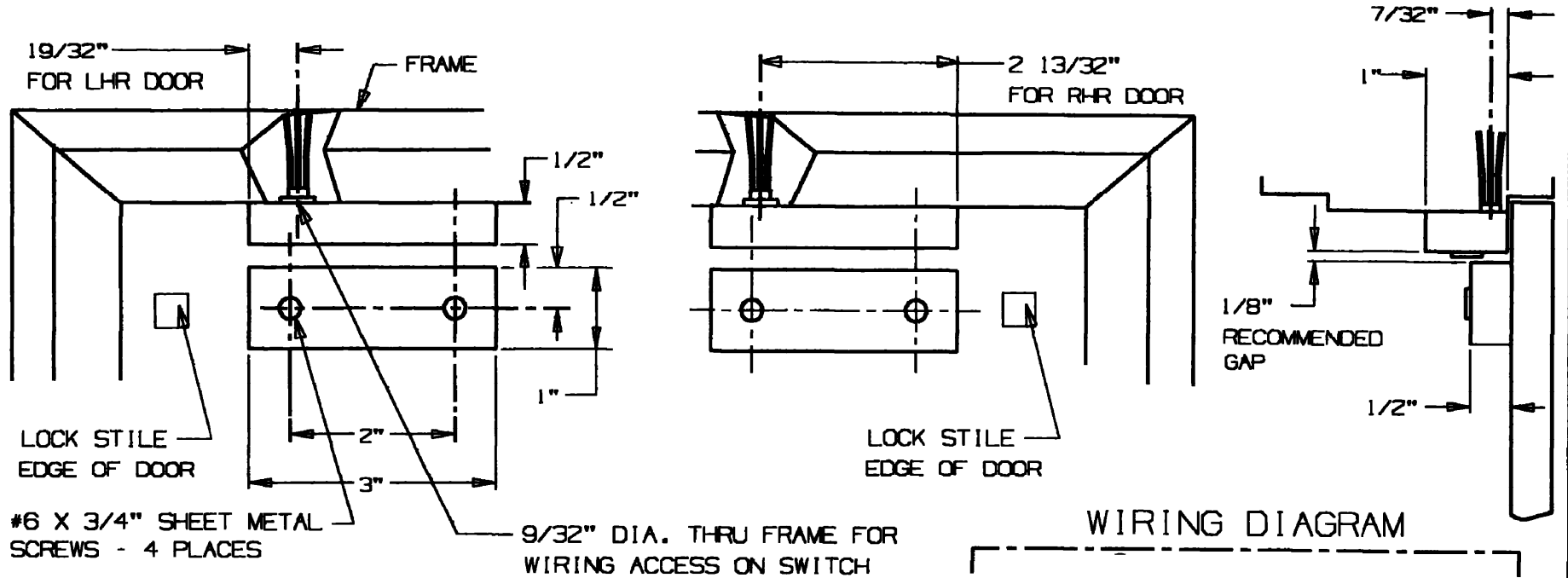
**11-08-2001**

**INSTALLATION INSTRUCTIONS**

1. PREPARE FRAME FOR SWITCH
  - A. PREPARE FRAME FOR SURFACE INSTALLATION OF 7766.  
NOTE: FOR MAXIMUM SECURITY, IT IS RECOMMENDED THAT THE SWITCH BE INSTALLED IN THE HEADER, 2" FROM THE LOCK STILE EDGE.
  - B. WIRE & INSTALL SWITCH
2. PREPARE DOOR FOR MAGNET
  - A. INSTALL MAGNET

**CHECK LIST**

IF SWITCH DOES NOT WORK:  
CHECK RECOMMENDED GAP  
AND DECREASE IF NECESSARY.

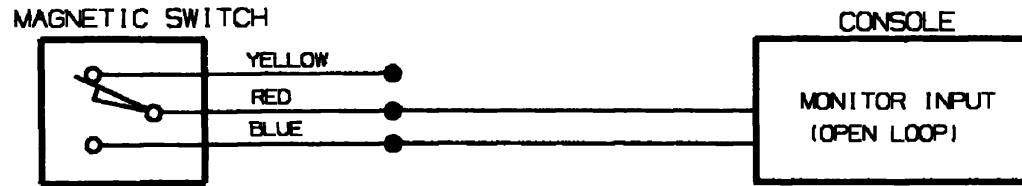


**WARNING:**

THESE ARE SIGNAL SWITCHES. NOT INTENDED FOR DIRECT SWITCHING.

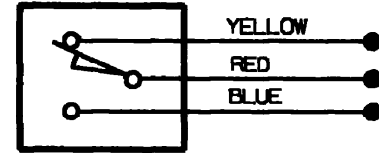
TYPE	CURRENT RATING
7766	.25 AMP

## TYPICAL SIGNALLING APPLICATION



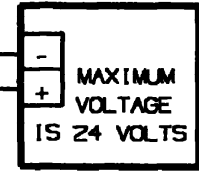
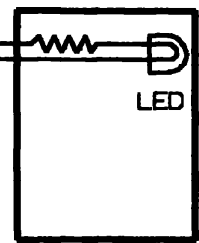
SWITCH SHOWN WITH DOOR SHUT

### MAGNETIC SWITCH



SWITCH SHOWN WITH DOOR SHUT

### LED PANEL

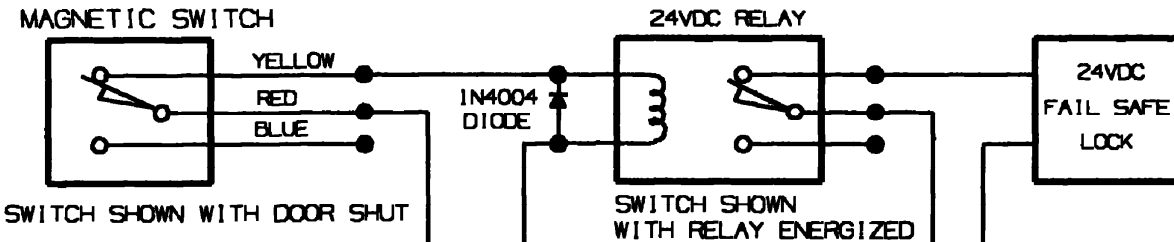


LED PANEL POWER SUPPLY

### LED PANEL NOTES:

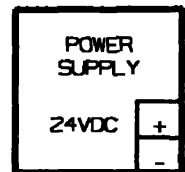
LED WILL LIGHT WHEN DOOR IS OPEN.  
IF A LAMP IS USED INSTEAD OF AN LED,  
LIMIT CURRENT TO .04 AMP.

## TYPICAL LOAD SWITCHING APPLICATION

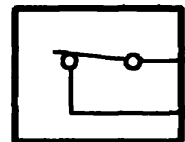


SWITCH SHOWN WITH DOOR SHUT

SWITCH SHOWN WITH RELAY ENERGIZED



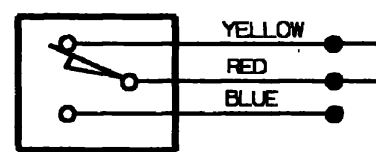
### LOCK CONTROL SWITCH



### RELAY NOTES:

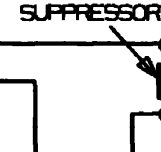
SELECT A RELAY WITH A COIL VOLTAGE RATING OF 24VDC. COIL CURRENT IS NOT TO EXCEED .2 AMP. THE CONTACT RATING IS DEPENDENT ON THE LOAD CURRENT REQUIREMENTS. AN IN4004 OR EQUIVALENT DIODE IS USED TO PREVENT INDUCTIVE EMF FROM DAMAGING THE MAGNETIC SWITCH CONTACTS.

### MAGNETIC SWITCH

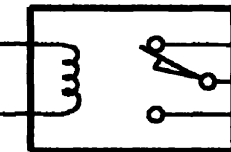


SWITCH SHOWN WITH DOOR SHUT

### VOLTAGE SUPPRESSOR



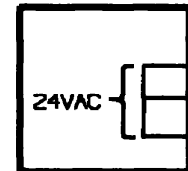
### 24VAC RELAY



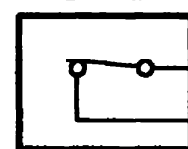
SWITCH SHOWN WITH RELAY ENERGIZED

### 24VAC FAIL SAFE LOCK

### TRANSFORMER



### LOCK CONTROL SWITCH



### RELAY NOTES:

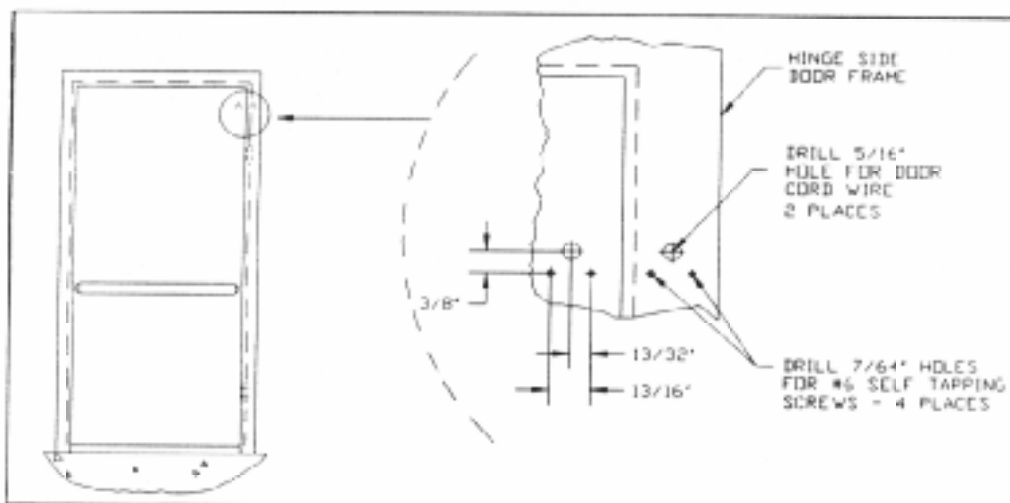
SELECT A RELAY WITH A VOLTAGE RATING OF 24VAC. COIL CURRENT IS NOT TO EXCEED .2 AMP. THE CONTACT RATING IS DEPENDENT ON THE LOAD CURRENT REQUIREMENTS. VOLTAGE SUPPRESSOR CAN BE A P6KE36C TRANSZORB (GENERAL SEMICONDUCTOR) OR A V39ZA1 MOV (GENERAL ELECTRIC), WHICH IS USED TO PREVENT INDUCTIVE EMF FROM DAMAGING THE MAGNETIC SWITCH CONTACTS.

## 788 SERIES FLEXIBLE ARMORED DOOR CORD

PRODUCT #	DESCRIPTION
788-18	FLEXIBLE ARMORED DOOR CORD, 18" LONG (NO WIRES)
788-18C	FLEXIBLE ARMORED DOOR CORD, 18" LONG (WITH WIRES) WIRES: RED, GRN, WHT, BLK, 20AWG, 24" LONG

### DOOR CORD INSTALLATION:

1. Locate Best Position for Door Cord. Although any location along hinge side of door and frame is functional, it is suggested that the higher the cord, the less susceptible it is to vandalism.
2. Layout and mark hole locations as shown.
3. Drill (4) 7/64" Dia. holes for #6 self tapping screws.
4. Drill (2) 5/16" Dia. Holes for wire access. Break sharp edges



### 5. SUGGESTED WIRE INSTALLATION:

Door cord with wire - One end of door cord wire is fed thru frame wire access hole with connections to system wiring being made in the frame. The other end of door cord wire is fed thru door wire access hole. This wire is pulled thru the door structure to the door wire access hole for the door mounted device.

Door cord without wire - Long wire leads from system wiring is fed thru frame wire access hole, thru door cord, thru door wire access hole, thru door structure to the door wire access hole for the door mounted device.

**OR**

Long wire leads from the door device is fed thru in the opposite direction to be connected to system wiring in the frame.

6. Install door cord end caps with (4) #6 self tapping flat head screws. End cap projections in cavity must "trap" armored cable to keep it from being pulled out.



Schlage Lock Company  
575 BIRCH STREET  
FORESTVILLE, CT 06010  
PHONE: (866) 322-1237  
FAX: (860) 584-2136



## 798 DOOR CORD

Includes: 798-12, 798-18, 798C-12, and 798C-18

### INSTALLATION INSTRUCTIONS

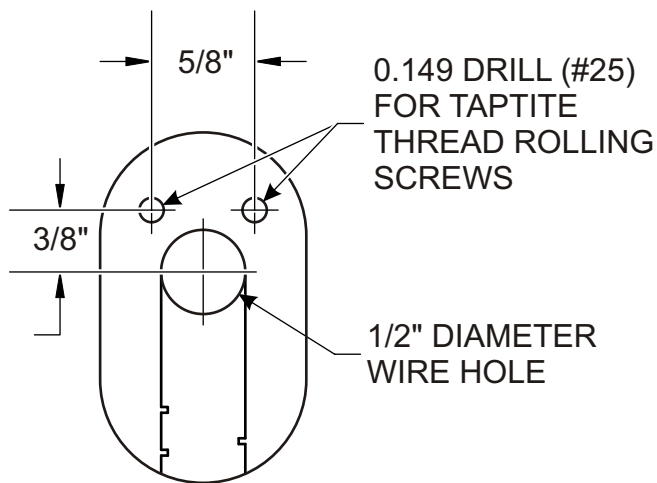
FORM NUMBER: 78802

REV A

DATE: 11-2007

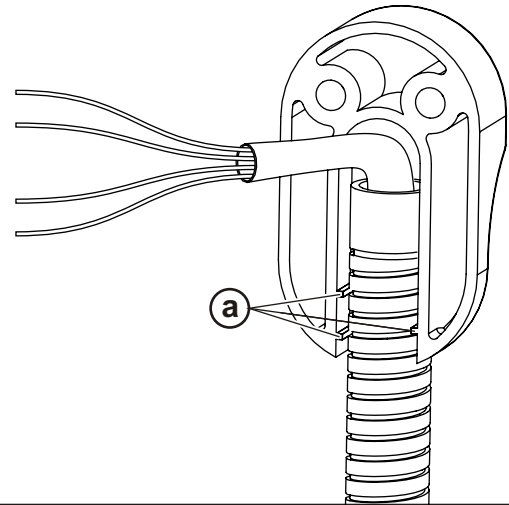
### TEMPLATE (NOT TO SCALE)

The door cord is furnished with four, #8-32 thread rolling screws. It is important that the correct drill be used for the screws to self tap.

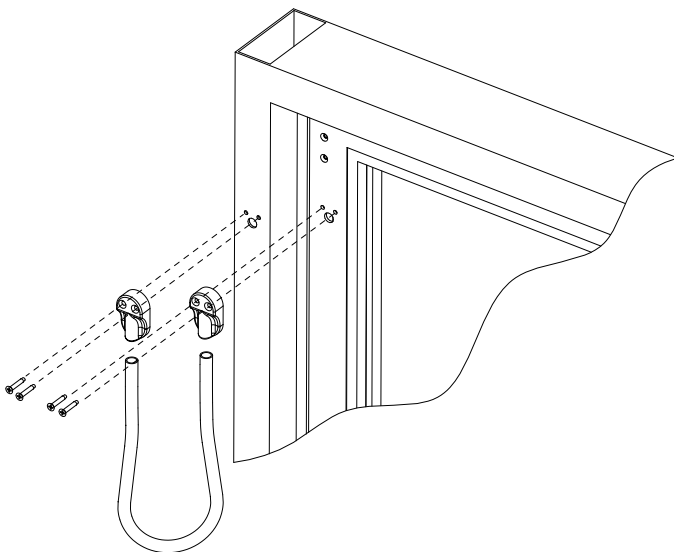


### MOUNTING:

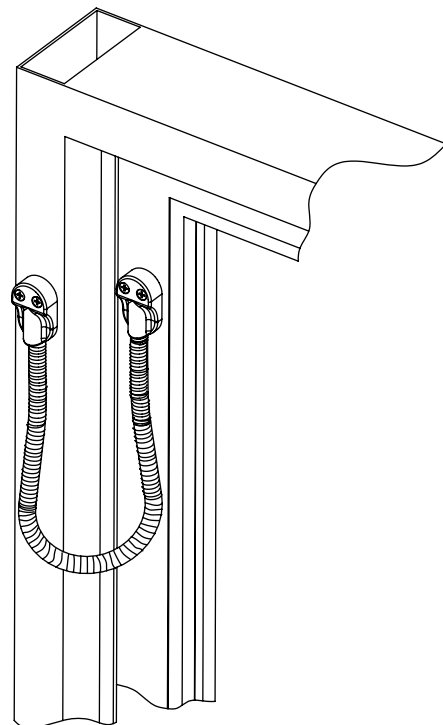
1) After drilling the four screw holes, run wires as required for your system. Install wire/hose assembly into cord ends as shown. Molded-in tabs (a) will engage with the grooves of the hose.



2) Install door cord onto door and frame. Use all four screws.



When finished, installation should look like this.



**LOCKNETICS**  
 575 BIRCH STREET  
 FORESTVILLE, CT 06010  
 PHONE: (866) 322-1237  
 FAX: (866) 322-1233

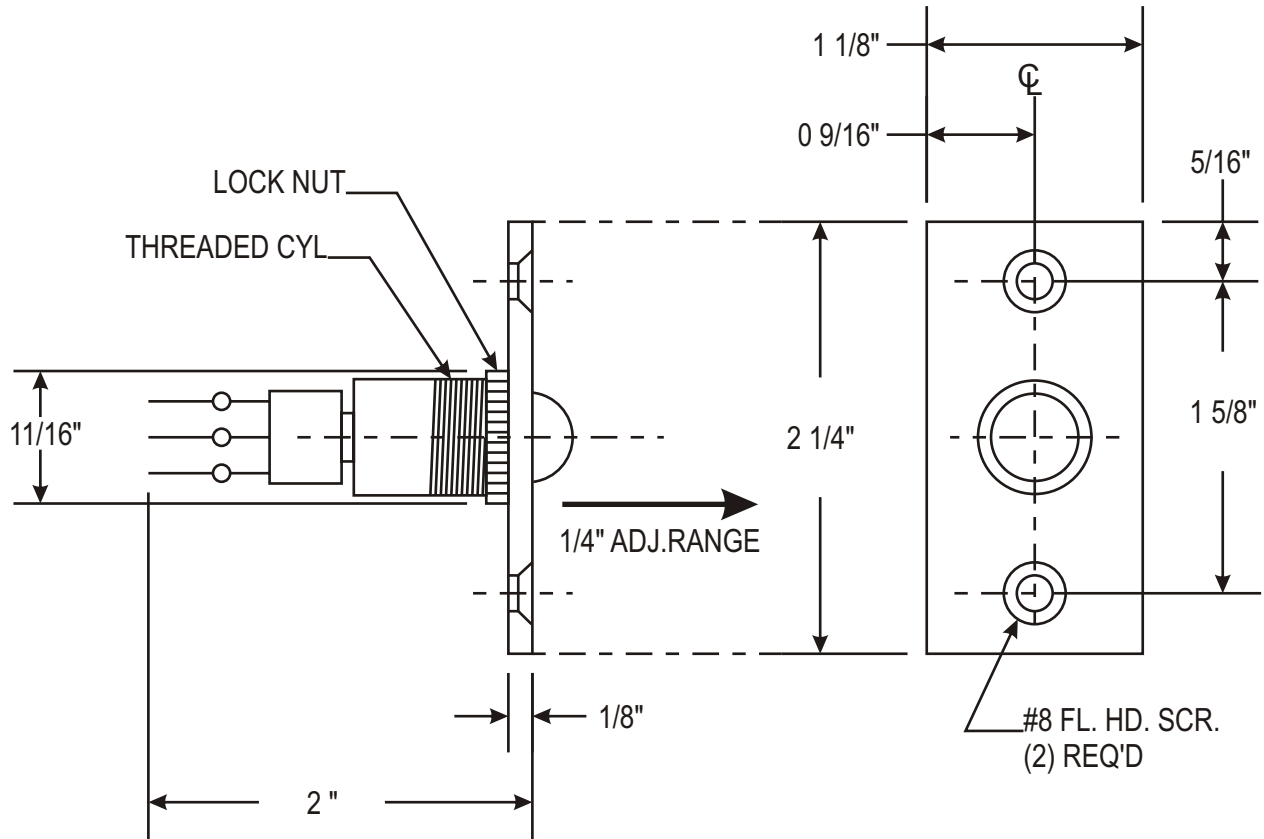
**Door Status Switch**  
**Ball Type #7803**

PART NUMBER: 780410-A

DATE: 11-17-2005

SCALE = 1:1

SPDT	DPDT
C-BLACK NO-WHITE NC-RED	C-LT. BLUE NO-GRAY NC-GREEN



**NOTES:**

1. SWITCH MAY BE ADJUSTED TO ENSURE POSITIVE ACTUATION OR DESIRED SENSITIVITY.
2. SWITCH MAY BE EITHER SPDT OR DPDT.