

/ TECHNICAL DATA **HARDWARE**



**BLACK MOUNTAIN**  
**DOOR™**

[www.blackmountaindoor.com](http://www.blackmountaindoor.com)

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<u>Description</u>	<u>Number</u>
Standard Hardware Locations in Black Mountain Door Frames.....	H-1.0
Firedoor Brand 5-10-Equal Type Hardware Locations.....	H-1.1
Black Mountain Door’s Vertical Hinge Location .....	H-2.0
Hardware Reinforcing in Doors & Frames Dutch.....	H-3.0
Hardware Reinforcing Gages .....	H-4.0
4-1/2" Standard and Heavy Weight Hinge Preparation .....	H-5.0
5" Standard and Heavy Weight Hinge Preparation .....	H-5.0
Anchor Hinge Preparation .....	H-6.0
Bored Lock Prep in 1-3/4" Doors (D Lock) .....	H-7.0
Mortise Lock Prep in 1-3/4" Doors (Y Lock).....	H-8.0
ANSI/DHI Manual Flush Bolt Preparation.....	H-10.0
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Thru-Bolted Cylindrical Locks .....	H-13.0
Black Mountain Door’s Hinge Basket .....	H-14.0

Black Mountain Door reserves the right to make changes to designs or specifications or make improvements to its products without prior notice without incurring an obligation to incorporate such changes in products previously manufactured.



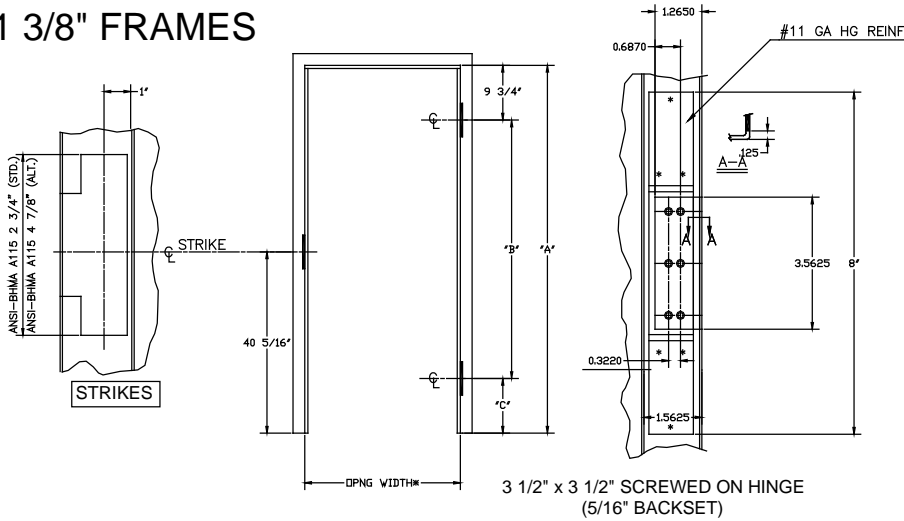
**SCOPE:**

This bulletin covers the normal hinge and strike preparations and their locations in standard frames.

**PURPOSE:**

To provide the distributor with a single document he can convey to manufacturers of wood and other related items to insure their product matches our frames.

**1 3/8" FRAMES**



SEE H2.0 FOR EXCEPTIONS

**1 3/8" THICK DOORS**

FRAME HEIGHT	"A"	"B"	"C"
6'-8"	80"	59 7/8"	10 3/8"
7'-0"	84"	59 7/8"	14 3/8"
7'-2"	86"	59 7/8"	16 3/8"

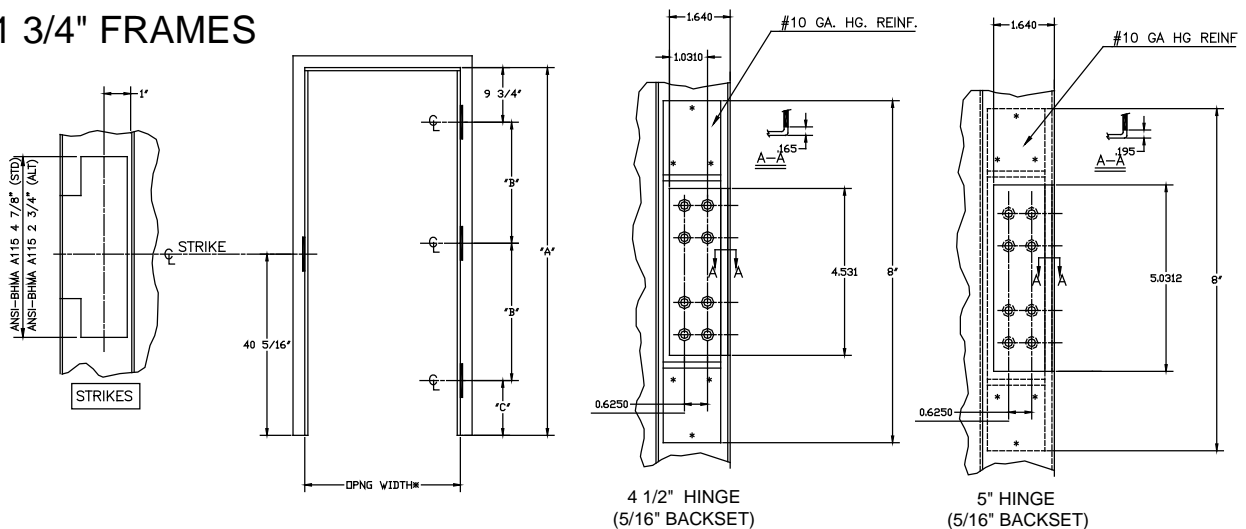
NOTE FOR 1 3/8" DOORS:  
3 HINGE PREPS(ALT.)  
DIVIDE "B" DIM. IN HALF.  
(i.e. 2 @ 29 15/16"  
FOR A 6'8" DOOR)

**1 3/4" THICK DOORS**

FRAME HEIGHT	"A"	"B"	"B"	"C"
6'-8"	80"	29 15/16"	29 15/16"	10 3/8"
7'-0"	84"	31 15/16"	31 15/16"	10 3/8"
7'-2"	86"	31 15/16"	31 15/16"	12 3/8"
7'-10"	94"	25 5/16"	25 5/16"	8 5/16"
8'-0"	96"	25 5/16"	25 5/16"	10 5/16"
10'-0"	120"	32 15/16"	32 15/16"	11 7/16"

\* WIDTH AND HEIGHT OF SINGLE OPENINGS SHALL BE NOMINAL (i.e. 3070 FRAME=36" x 84"). WIDTH OF DOUBLE OPENING OVER 4'0" SHALL BE 1/16" LESS THAN NOMINAL (i.e. 6'-0" WIDTH =71 15/16").

**1 3/4" FRAMES**



**SCOPE:**

This bulletin is intended to show the "5-10-equal" type hardware locations historically used by the Firedoor Brand of Black Mountain Door on frames for 1 3/4" thick doors. **These locations are used only when specifically ordered as special locations** such as may occur on retrofits of older Firedoor material, additions to projects, or where specifically necessary for Miami-Dade windstorm products.

**PURPOSE:**

To provide specific dimensional information for instances where 5-10-equal type hinge spacing and 38" strike centerline is required by project specifications or for matching to previously supplied Firedoor Brand products.

**IMPORTANT NOTE:**

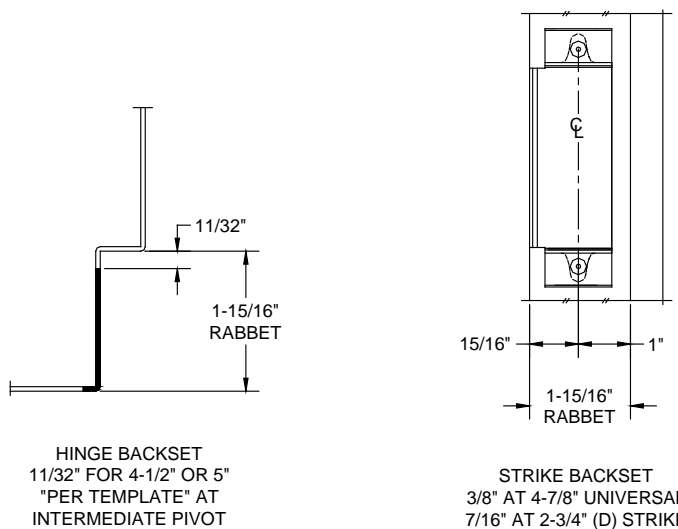
Hardware locations for Miami-Dade windstorm product NOAs are currently undergoing a revision to incorporate Amweld Brand vertical hardware locations. We expect this change to be finalized shortly. Since NOAs require both doors and frames by Firedoor as an assembly, match-up of vertical locations is not an issue. If this creates any questions or for consistency within a certain project, please contact Amweld International for instructions on ordering special locations.

**DESCRIPTION:**

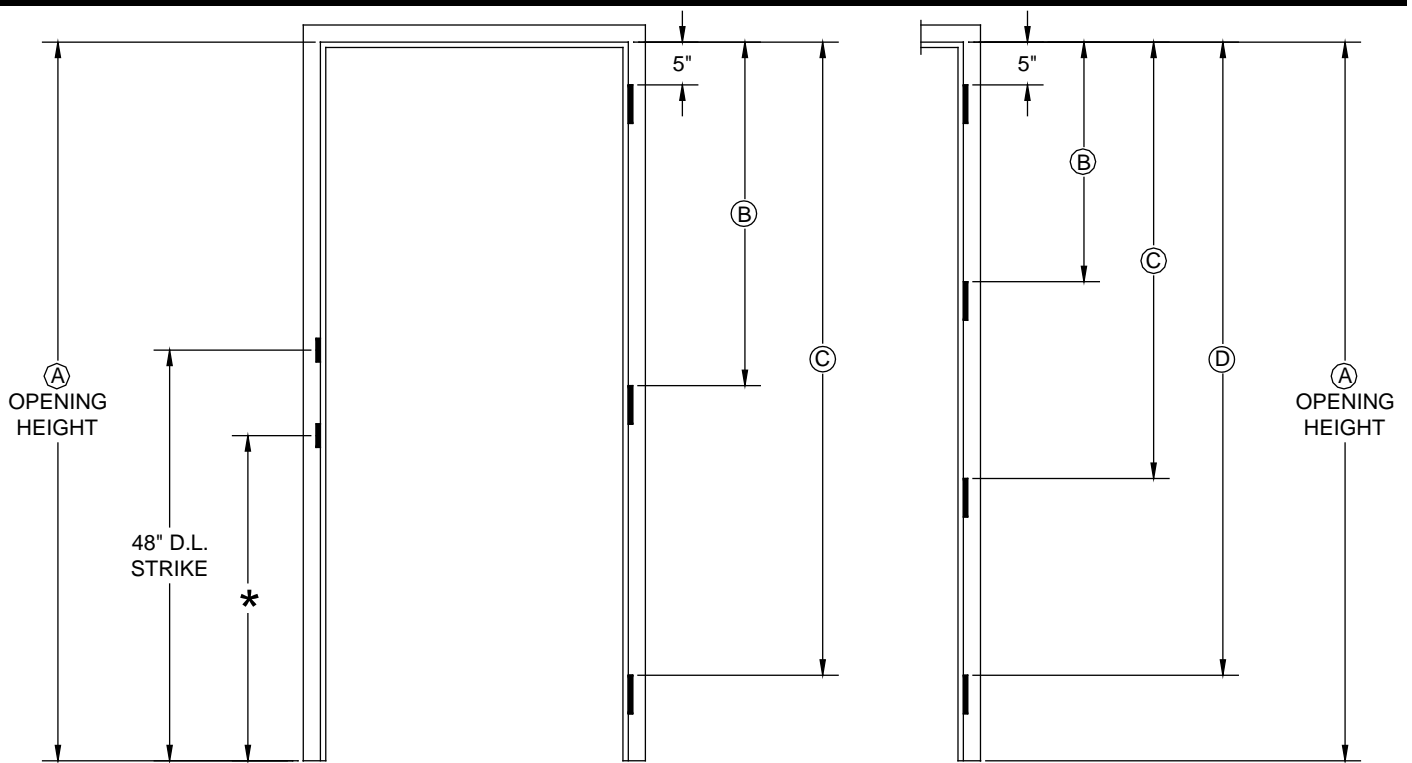
As part of the "harmonization" of both the Amweld and Firedoor Brands of Black Mountain Door, the Firedoor brand began using the Amweld Brand VERTICAL locations (see Tech Data H-1.0) which are more prevalent in the Industry and on hardware templates.

The hinge backset on frames prepared for 4 1/2" and 5" hinges manufactured by the Firedoor Brand will remain at 11/32". The 1/32" smaller hinge backset (5/16") on Amweld Brand frames should present no difficulties with Firedoor Brand doors, especially when beveled doors are used or doors are adjusted to maintain the 1/8" design clearance at hinge edges.

The strike backset and stop to centerline of strike match between the two Brands.



The vertical hinge location charts on this Tech Data are for reference only and apply to standard template 4 1/2" and 5" butt hinges in 2" increments. The locations for both 4 1/2" and 5" hinges are identical when measured to the top of hinges. These hinge locations ARE NOT exactly to the "5-10-equal" formula, but represent vertical locations historically used. Consult Black Mountain Door if dimensions for locations of substantially less common 3 1/2", 4", or 6" hinges, locations for other than 1 3/4" thick doors, or if exact dimensions are needed for use by other trades or other products.



\* = 38" TO CENTER OF LOCK OR LATCH STRIKE

3 HINGES

4 HINGES

<b>FRAME PREPARATIONS FOR 3 HINGES</b>			
<b>4 1/2" or 5" TEMPLATE BUTT HINGES</b>			
<b>OPENING HEIGHT "A"</b>	<b>"B"</b>	<b>"C"</b>	<b>FIRE-RATED</b>
6'-0" (72")	31 1/4"	57 1/2"	YES
6'-2" (74")	32 1/4"	59 1/2"	YES
6'-4" (76")	33 1/4"	61 1/2"	YES
6'-6" (78")	34 1/4"	63 1/2"	YES
6'-8" (80")	35 1/4"	65 1/2"	YES
6'-10" (82")	36 1/4"	67 1/2"	YES
7'-0" (84")	37 1/4"	69 1/2"	YES
7'-2" (86")	38 1/4"	71 1/2"	YES
7'-4" (88")	39 1/4"	73 1/2"	YES
7'-6" (90")	40 1/4"	75 1/2"	YES
7'-8" (92")	41 1/4"	77 1/2"	<b>NO</b>
7'-10" (94")	42 1/4"	79 1/2"	<b>NO</b>
8'-0" (96")	43 1/4"	81 1/2"	<b>NO</b>
<b>GREATER HEIGHTS NOT RECOMMENDED</b>			

<b>FRAME PREPARATIONS FOR 4 HINGES</b>			
<b>4 1/2" or 5" TEMPLATE BUTT HINGES</b>			
<b>OPENING HEIGHT "A"</b>	<b>"B"</b>	<b>"C"</b>	<b>"D"</b>
6'-8" (80")	25 1/4"	45 1/2"	65 1/2"
7'-0" (84")	26 1/2"	48"	69 1/2"
7'-2" (86")	27 3/16"	49 5/16"	71 1/2"
7'-4" (88")	27 13/16"	50 11/16"	73 1/2"
7'-6" (90")	28 1/2"	52"	75 1/2"
7'-8" (92")	29 3/16"	53 5/16"	77 1/2"
7'-10" (94")	29 13/16"	54 11/16"	79 1/2"
8'-0" (96")	30 1/2"	56"	81 1/2"
8'-2" (98")	31 3/16"	57 5/16"	83 1/2"
8'-4" (100")	31 13/16"	58 11/16"	85 1/2"
8'-6" (102")	32 1/2"	60"	87 1/2"
8'-8" (104")	33 3/16"	61 5/16"	89 1/2"
8'-10" (106")	33 13/16"	62 11/16"	91 1/2"
9'-0" (108")	34 1/2"	64"	93 1/2"
9'-2" (110")	35 3/16"	65 5/16"	95 1/2"
9'-4" (112")	35 13/16"	66 11/16"	97 1/2"
9'-6" (114")	36 1/2"	68"	99 1/2"
9'-8" (116")	37 3/16"	69 5/16"	101 1/2"
9'-10" (118")	37 13/16"	70 11/16"	103 1/2"
10'-0" (120")	38 1/2"	72"	105 1/2"
<b>ALL ABOVE PREPARATIONS MAY BE FIRE-RATED</b>			

<b>DUTCH FRAME PREPARATIONS (4 HINGES)</b>			
<b>4 1/2" or 5" TEMPLATE BUTT HINGES</b>			
<b>OPENING HEIGHT "A"</b>	<b>"B"</b>	<b>"C"</b>	<b>"D"</b>
6'-8" (80")	28 1/2"	43"	65 1/2"
7'-0" (84")	32 1/2"	47"	69 1/2"

**SUMMARY AND CERTIFICATION:**

Not applicable. This Tech Data is informational only within the bounds of the SCOPE-PURPOSE DESCRIPTION stated.



**SCOPE:**

This bulletin covers the formula used by Black Mountain Door to determine vertical hinge locations.

**PURPOSE:**

To provide the reader with a template that can be used in the fabrication of frames.

**DESCRIPTION:**

The chart on the inside of this bulletin shows the vertical location of hinges and strikes that will be used on Black Mountain Door frames. Several points should be emphasized in the use of this information:

- 1) The issuance of this bulletin does not relieve the reader of the responsibility of noting on his purchase order the specific hinge and strike spacing required for non-standard height units for which he has fabricated frames. We hope the bulletin will save time in the passing of templates but we still want the spacing on record to avoid costly errors in assembling the door.
- 2) Heights above those indicated are so special that a formula cannot be established. Again, please consult with Black Mountain Door for special directions on this point if it is encountered.
- 3) Four-sided access door/frames employ a different hinge spacing than shown enclosed. Please see D-14 for the details of this type of assembly.
- 4) Non-Formula Hardware Spacing. If, for some reason, there is a need for hardware spacing that does not conform to the locations indicated, the distributor must forward an initial copy of the enclosed form with his order. This cannot be handled by telephone. (Note that the form is based on hinge and strike centerlines.) Orders not complying with this requirement will be held in the Black Mountain Door Engineering Department until the form is received.

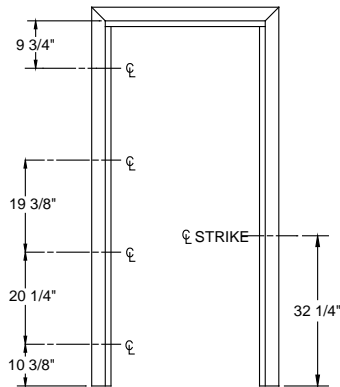
If additional copies of the form are required, they may be obtained through normal Customer Service sources by specifying Part D-9445A.

- 5) While not necessarily to the point of special hardware spacing, it should always be noted that orders for special height and width products be received with the dimension noted as being "nominal" (assuming normal clearances) or "actual". Orders for special height and width products received will not be processed until one of these words is indicated.

**SUMMARY:**

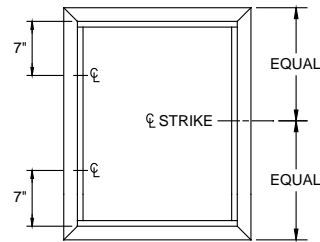
The use of the information in this bulletin should save you time in the fabrication of frames for special height doors.





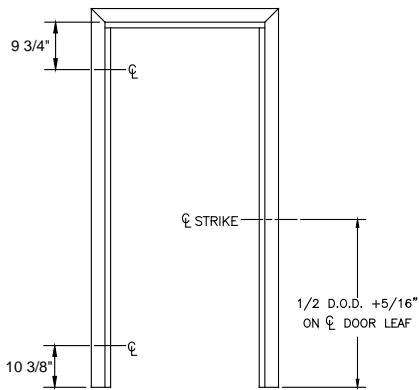
ALL HEIGHTS (1-3/4")

**Dutch Door Frames**

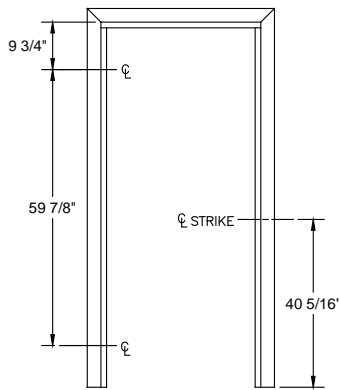


2'-0" TO 5'0"

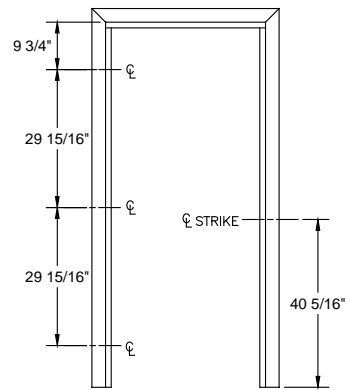
**4 Sided Access Frames**



3'-0" UP TO 6'-6"  
 (NOT INCLUDING 6'-6")



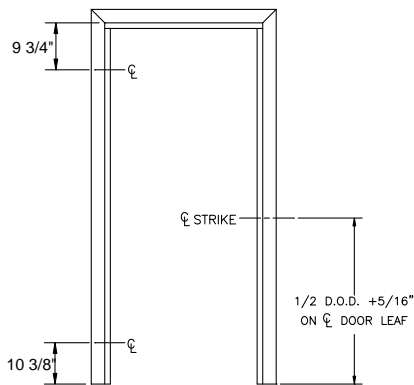
6'-6" UP TO & INCLUDING 7'-2"  
 (WITH 2 HINGES)



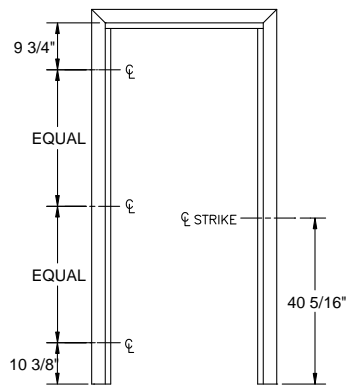
6'-6" UP TO & INCLUDING 7'-2"  
 (WITH 3 HINGES)

**1-3/8" Door Frames**

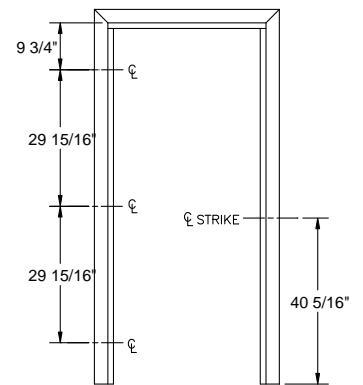




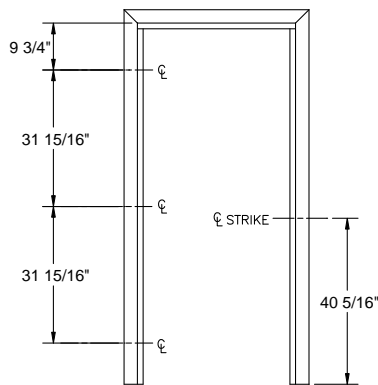
**3'-0" UP TO 5'-0"**  
**(BUT NOT INCLUDING 5'-0")**



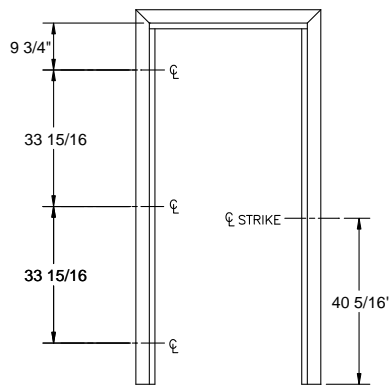
**5'-0" UP TO 6'-6"**  
**( BUT NOT INCLUDING 6'-6")**



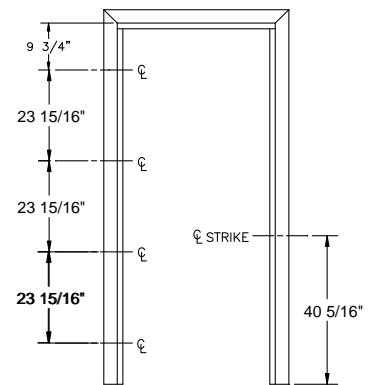
**6'-6" UP TO 6'-10"**  
**( BUT NOT INCLUDING 6'-10")**



**6'-10" TO AND INCLUDING 7'-2"**

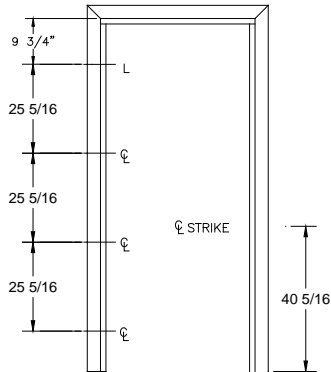


**OVER 7'-2" TO AND INCLUDING 7'-6"**

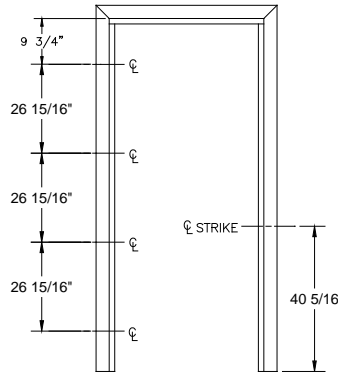


**OVER 7'-6" TO 7'-10"**  
**(BUT NOT INCLUDING 7'-10")**

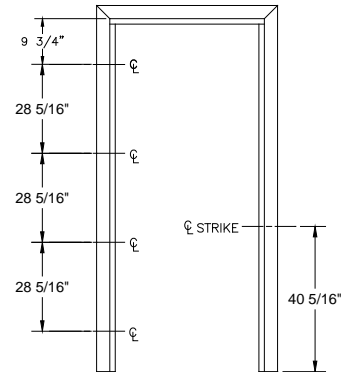
**1-3/4" Door Frames**



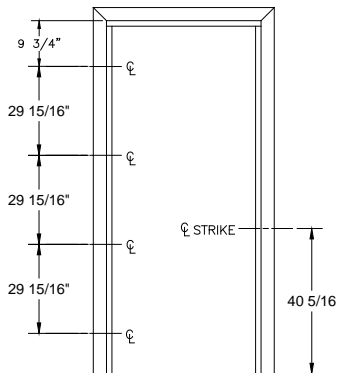
7'-10" TO AND INCLUDING 8'-2"



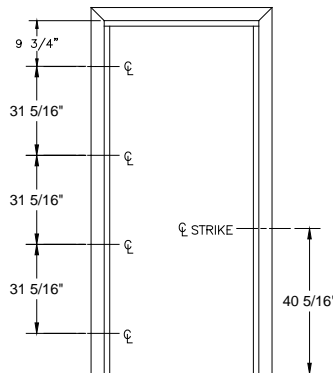
OVER 8'-2" TO & INCLUDING 8'-7"



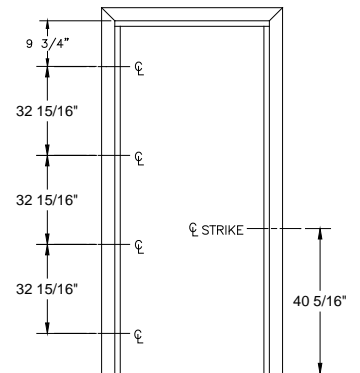
OVER 8'-7" TO & INCLUDING 8'-11"



OVER 8'-11" TO & INCLUDING 9'-4"



OVER 9'-4" TO AND INCLUDING 9'-8"



OVER 9'-8" TO & INCLUDING 10'-0"

**1-3/4" Door Frames**

**SCOPE:**

This bulletin covers the reinforcing normal in Black Mountain Door's standard, engineered or custom 300, 07WE, 07LS, 15LE, 17LE, 25LE, 27LE, 35LE, 51LE-53LE, 61LE-63LE, OR 37LE Amweld Series Doors, and 400, 800, 1800 and 2600 Amweld Series Frames.

**PURPOSE:**

To keep the reader abreast of the latest change in Black Mountain Door's program in this critical area.

**DESCRIPTION:**

While the enclosed details are clear, a clarification of Black Mountain Door's program as to what is standard, what is engineered or what is custom may be in order.

1) All 1 3/4" doors, with the exception of Series 300 are equipped with the regular closer reinforcing shown in section "F-F". Closer reinforcing must be called for in 300 Series doors. 07WE/07LS Series doors are as shown in section details following.

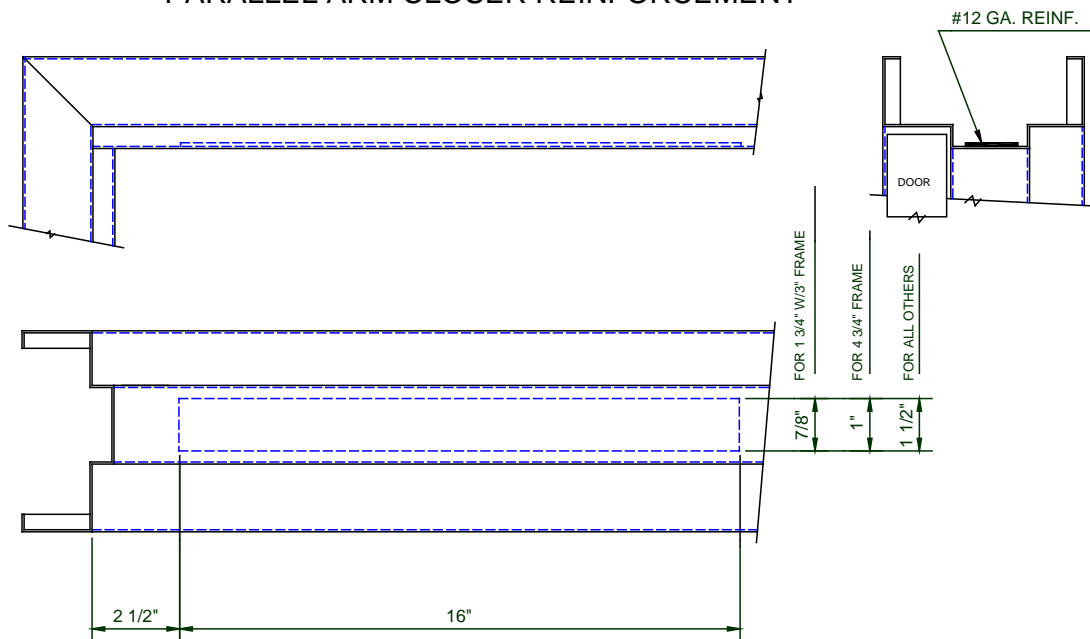
2) The 300, 15LE, 17LE, 25LE, 27LE, 51LE, 53LE, 61LE, 63LE, 35LE, and 37LE series 1 3/4" doors automatically receive flush bolt preparations, but 15LE and 17LE Series 1 3/4" type units can be equipped with the surface bolt reinforcing if specified. Flush bolt reinforcing are available if required in all other 1 3/4" doors and 15LE and 17LE units. 700 Series specify flush or surfaces bolt reinforcing.

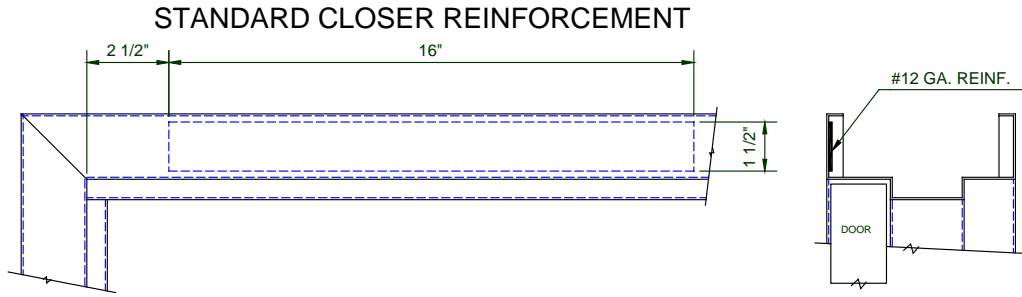
3) All other reinforcing shown are furnished only on an engineered basis in the doors and frames. The frame reinforcing are also available for attachment in the distributors' warehouses.

**DETAILS:**

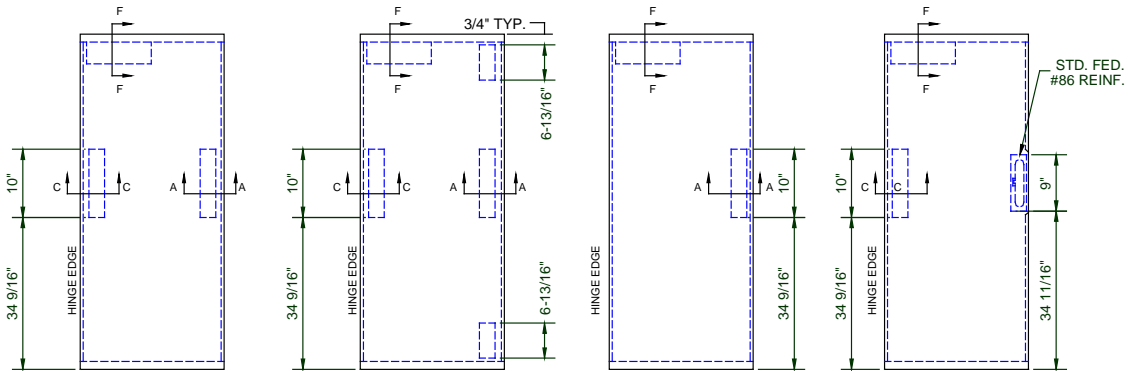
**Standard Frame Closer Detail (PAC/SC)**

**PARALLEL ARM CLOSER REINFORCEMENT**





**Standard Door Device Reinforcements (LE Style Doors)**

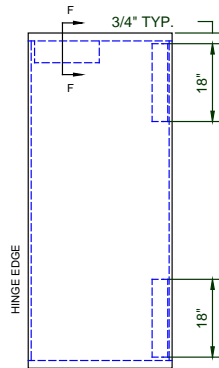


**RIM APPLIED  
 PANIC BAR  
 REINFORCEMENT  
 FOR UL & STD.**

**VERTICAL ROD  
 PANIC BAR  
 REINFORCEMENT  
 FOR UL & STD.**

**PUSH/PULL  
 REINFORCEMENT**

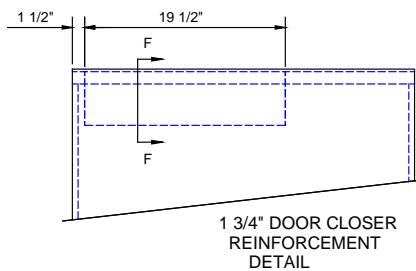
**MORTISED  
 PANIC BAR  
 REINFORCEMENT  
 FOR UL & STD.**



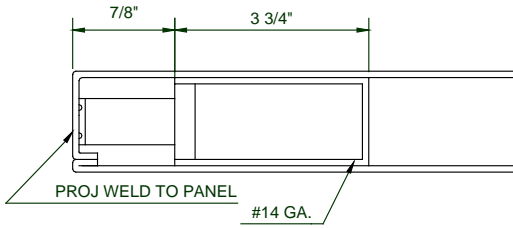
**SURFACE BOLTS  
 REINFORCEMENT**



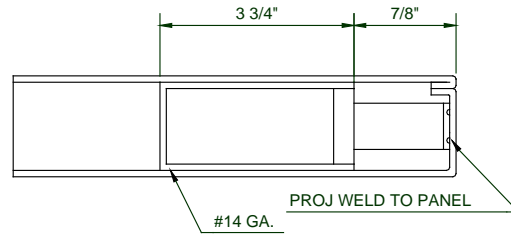
**1 3/4" DOOR F-F**



**Standard Exit Device Reinforcements (LE Style Doors)**



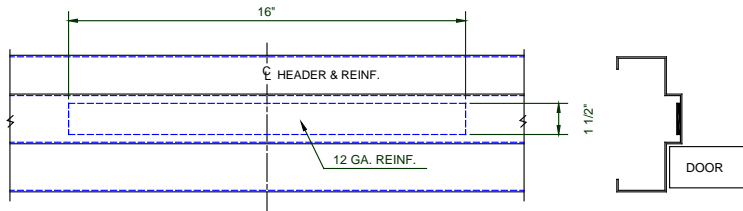
SECTION C--C  
 (15LE SERIES)



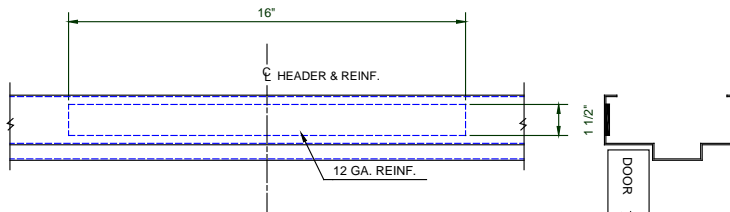
SECTION A--A  
 (15LE SERIES)

**VR Strike and Surface Bolt Reinforcements**

**Standard Dutch Door**

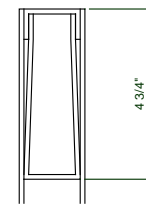
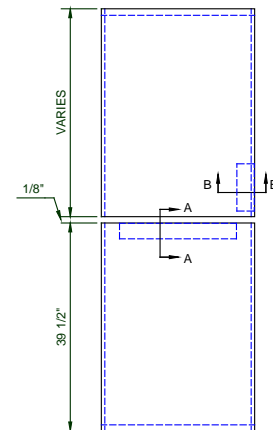


VERTICAL ROD W/ SURFACE STRIKE REINFORCEMENT  
 SURFACE BOLT REINFORCEMENT- STOP SIDE OF DOOR

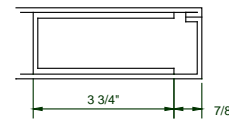


SURFACE BOLT REINFORCEMENT- HINGE SIDE OF DOOR

**DUTCH DOOR BOLT AND SHELF REINFORCEMENT**  
 (MUST BE SPECIFIED ON ORDER)



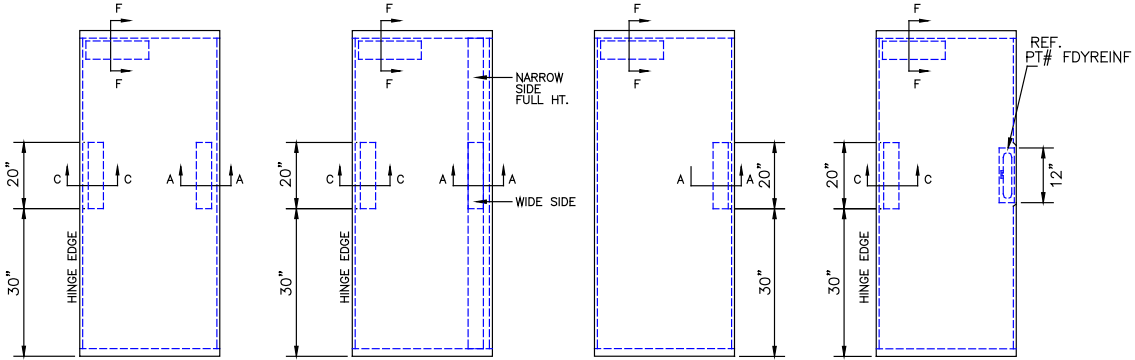
SECTION A-A



SECTION B-B

Continued.

**Standard Door Device Reinforcements (WE & LS Style Doors)**

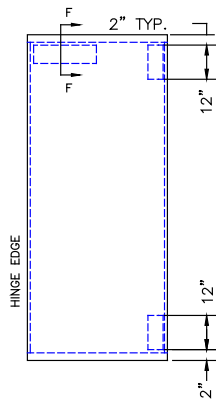


RIM APPLIED  
 PANIC BAR  
 REINFORCEMENT  
 FOR UL & STD.

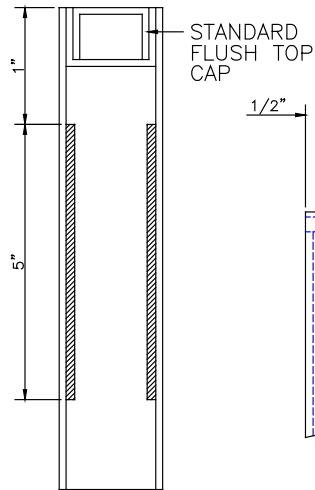
VERTICAL ROD  
 PANIC BAR  
 REINFORCEMENT  
 FOR UL & STD.

PUSH/PULL  
 REINFORCEMENT

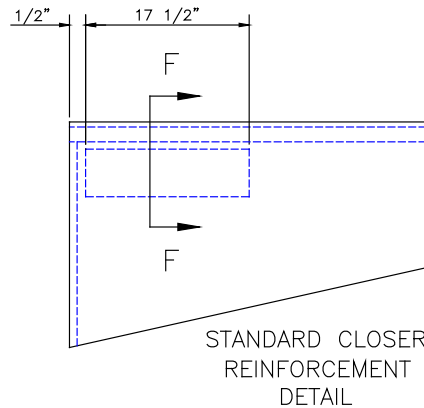
MORTISED  
 PANIC BAR  
 REINFORCEMENT  
 FOR UL & STD.



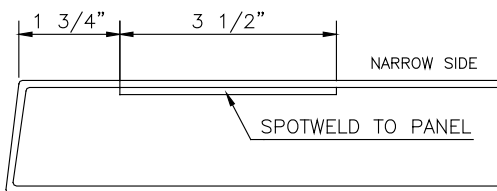
SURFACE BOLTS  
 REINFORCEMENT



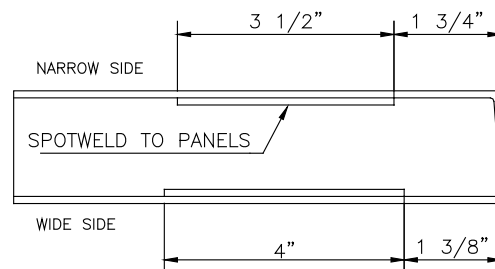
SECTION F--F



STANDARD CLOSER  
 REINFORCEMENT  
 DETAIL



SECTION C--C



SECTION A--A

**SCOPE:**

This bulletin covers the standard metal gages in Black Mountain Door hardware reinforcing. For further information refer to ANSI/SDI A250.6 (SDI 107), ANSI A250.8

**PURPOSE:**

To provide the reader with reinforcement gage information in a convenient format for architectural specification checking.

SERIES	LOCK/ STRIKE	HINGE	CLOSER	PANIC BARS	PULL PLATES & BARS	SURFACE BOLTS	FLUSH BOLTS	DEAD LOCKS
1538-1544 1 3/4"	14 Gage (1)	7 Gage - 5"	12 Gage	14 Gage	14 Gage	14 Gage	14 Gage	14 Gage (1)
300 1 3/4"	14/16 Gage (1)	10 Gage 7 Gage - 5"	12 Gage Opt.	14 Gage	14 Gage	14 Gage	16 Gage	14 Gage (1)
25LE-27LE 15LE-17LE 35LE-37LE 61LE-63LE 1 3/4" X 20 Gage	14 Gage (1)	10 Gage	12 Gage	14 Gage	14 Gage	14 Gage	14 Gage	14 Gage (1)
15LE-17LE 45LE-47LE 25LE-27LE 35LE-37LE 1 3/4" X 16 & 18 Gage	14 Gage (1)	10 Gage 7 Gage	12 Gage	14 Gage	14 Gage	14 Gage	14 Gage	14 Gage (1)
400-600-2600 Series 1 3/4" Door Frame	16 Gage (4 7/8" Strike)	10 Gage Std., 7 Gage available in 400 Series	12 Gage Opt.	--	--	14 Gage	14 Gage	14 Gage
07WE Series 1 3/4"	14/12 Gage	7 Gage	12 Gage	14 Gage	14 Gage	12 Gage	12 Gage	14/12 Gage

- (1) Thinner steel may be employed as long as tapped holes used for mounting the hardware are extruded to produce an equivalent number of threads. (Ref. ANSI/SDI A250.8)

ANSI/SDI A250.8, the standard door and frame industry's standard specification, indicates the following hardware reinforcing gages as the industry norm. These same gages appear in the DHI's brochure "Hardware reinforcements for Steel Doors & Frames".

<b>HARDWARE</b>	<b>DOOR THICKNESS</b>	<b>FRAME</b>
Hinge 1 3/4" (44mm) Door**	.123" (3mm)***	.123" (3mm)***
Mortise Lock or Deadbolt**	.067" (1.6mm)	.067" (1.6mm)
Bored Lock or Deadbolt**	.067" (1.6mm)	.067" (1.6mm)
Flush Bolt Front**	.067" (1.6mm)	.067" (1.6mm)
Surface Bolt****	.067" (1.6mm)	.067" (1.6mm)
Surface Applied Closer****	.067" (1.6mm)	.067" (1.6mm)
Hold Open Arms****	.067" (1.6mm)	.067" (1.6mm)
Pull Plates and Bars****	.053" (1.3mm)	.053" (1.3mm)
Surface Exit Device****	.067" (1.6mm)	.067" (1.6mm)
Floor Checking Hinges	.167" (4.2mm)	.167" (4.2mm)
Pivot Hinges	.167" (4.2mm)	.167" (4.2mm)
Kick Plates / Pull Plates	Not Required	Not Required

\* Minimum steel thicknesses are derived from minimum thickness for specific gages as defined by Underwriters Laboratories Inc.

\*\* A thinner steel may be employed as long as tapped holes used for mounting the hardware are extruded to produce an equivalent number of threads.

\*\*\* If reinforcing is angular or channel shaped, .093" (2.4mm) is permitted.

\*\*\*\* When reinforcing is omitted and thru-bolting is required, the use of spacers or sex-bolts is required.



**SCOPE:**

This bulletin covers Black Mountain Door's version of a common preparation for standard and heavy duty hinges in our standard doors and frames.

**PURPOSE:**

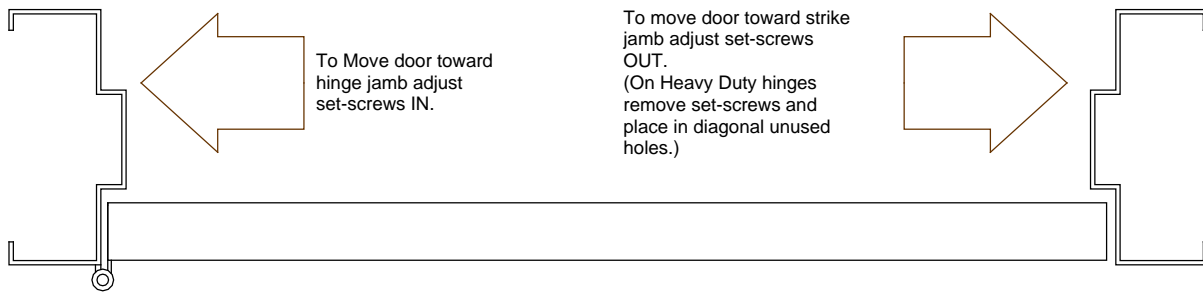
To provide the unique details of this program.

**DESCRIPTION:**

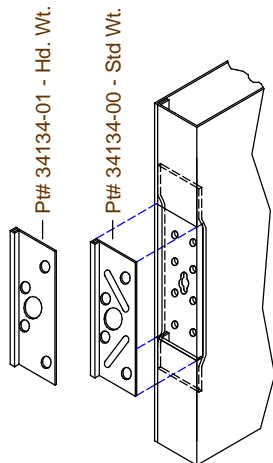
With Black Mountain Door's 4 1/2" hinge preparation, it is now possible to easily convert from standard weight to heavy duty hinges. This is only available on 4 1/2" 10 gage hinge reinforcing.

Doors Covered: 1 3/4", 15LE, 17LE, 25LE, 27LE, 35LE, 37LE, 45LE, 47LE, 61LE, 63LE, 05WE, 05LS Amweld & Firedoor series. (Square Edge Doors)

Frames Covered: All series of our 1 3/4" frames with 10 gage reinforcing. With our frame detail, in addition to the hinge conversion, it is now possible to adjust the door clearances along the hinge and strike jambs.



**ADJUSTING DOOR CLEARANCE**



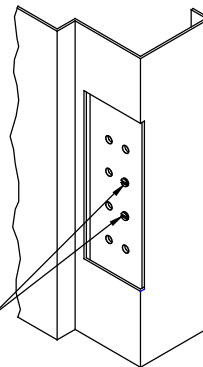
**COMMON DOOR PREPARATION IN 15LE SERIES**

The 4-1/2" hinge filler has raised embossments to handle standard duty hinges.

Pt# 34134-00 Supplied with Standard Door or Custom Door with Option: 4.50 Denoted.

When heavy duty hinges are required flatten out embossments or order hinge fillers without embossments.

Pt# 34134-01 Supplied on Custom Door. When Option: 45HD Denoted.



Each 4-1/2" frame hinge reinforcing will have two(2) set-screws in place as shown for standard duty hinges.

When heavy-duty hinges are required adjust set-screws in until they are flush with top of reinforcing.(alt: Remove set-screws)

**COMMON PREPARATION IN 1-3/4" FRAME**

**SCOPE:**

This bulletin covers Black Mountain Door's version of a common preparation for standard and heavy duty hinges.

**PURPOSE:**

To provide the unique details of this program.

**DESCRIPTION:**

With Black Mountain Door's 5" hinge preparation, differences between standard and heavy duty weight hinges are addressed using subsequent hinge reinforcement backsets based on the option being ordered.

Doors Covered: 1 3/4", 15LE, 17LE, 25LE, 27LE, 35LE, 37LE, 45LE, 47LE, 61LE, 63LE, 05WE, 05LS Amweld Series. (Square Edge Doors) All 5" Hinge reinforcements for the doors covered will be constructed of 7 Gage materials.

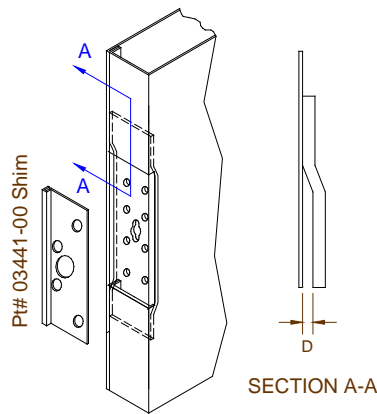
*Available Door Options:*

- 507 - 5" Standard Weight Hinge Preparation (7 Ga) - Pt# 03441-00 Hinge Shim
- 5HD - 5" Heavy Duty Weight Hinge Preparation (7 Ga) - Pt# 03441-00 Hinge Shim

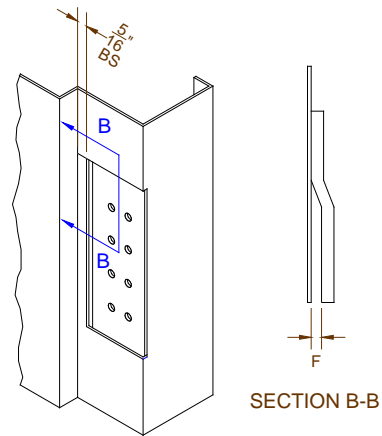
Frames Covered: All series of our 1 3/4" frames with 10 or 7 gage reinforcing based on the option selected. Set screws are not supplied with 5" hinge preparations.

*Available Frame Options:*

- 500 - 5" Standard Weight Hinge Preparation (10 Ga)
- 507 - 5" Standard Weight Hinge Preparation (7 Ga)
- 5HD - 5" Heavy Weight Hinge Preparation (7 Ga)
- 5H1 - 5" Heavy Weight Hinge Preparation (10 Ga)



**COMMON DOOR  
 PREPARATION**



**COMMON FRAME  
 PREPARATION (1-3/4")**

DOOR OPTION	HINGE TYPE	-D- REINF OS.	REINF. PART#
507	STD WT. (.134)	0.125	HINGEREINF507
5HD	HD WT. (.180)	0.1719	HINGEREINF50HD

FRAME OPTION	HINGE TYPE	-F- REINF OS.	REINF. PART#
500	STD WT. (.134)	0.086	14171-00
507	STD WT. (.134)	0.086	24901-00
5HD	HD WT. (.180)	0.141	24901-01
5H1	HD WT. (.180)	0.141	64155-02

**SCOPE:**

This bulletin covers the use of anchor hinges on Black Mountain Door's doors and frames.

**PURPOSE:**

To inform the reader of Black Mountain Door's program when this type of hinge is specified.

**DESCRIPTION:**

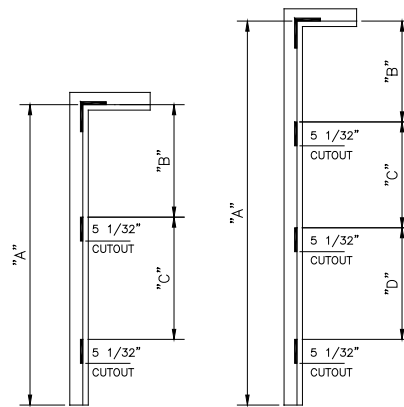
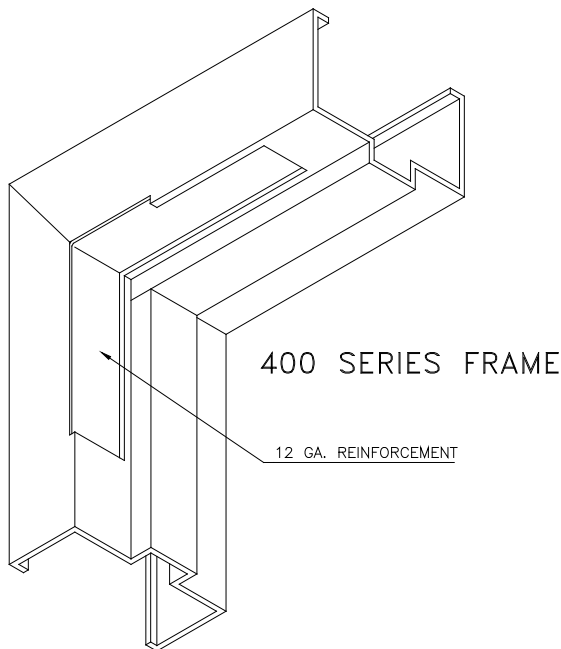
This type of hinge was primarily designed for use on wood doors being hung in wood or metal frames where they are a requirement for heavy duty openings.

Although we are not in complete favor of the anchor hinge for use on steel doors, we will prepare for this hinge.

However, the following points must be kept in mind.

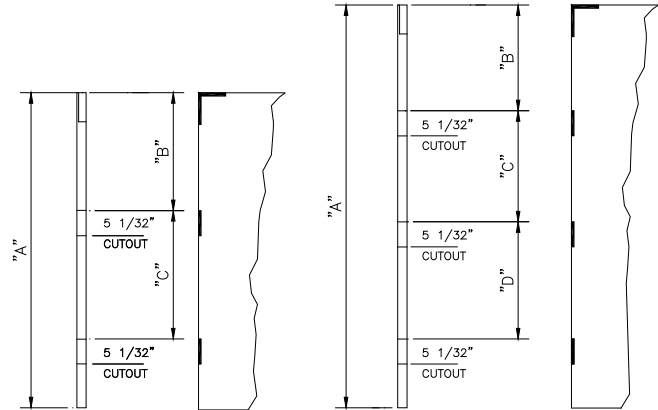
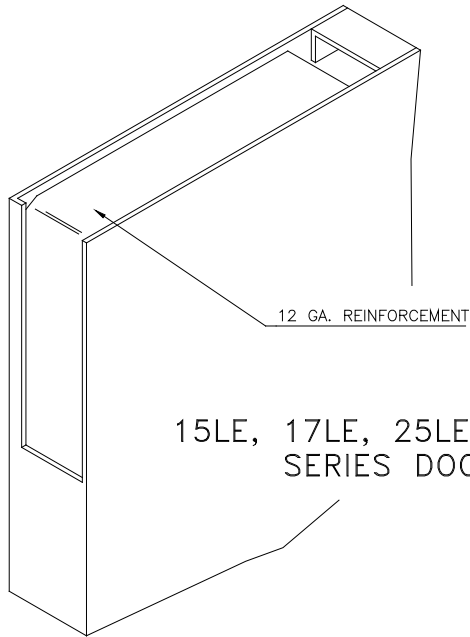
- 1) The drilling and tapping required to receive the anchor hinge itself and the notching of the face of the door to establish the hand will be done in the field. We have found these hinges have not always been made to template. In addition, adjustments must be made in the field, to compensate for imperfect installation.
- 2) In addition to the anchor hinge, the door and frame are prepared to receive one pair (1 1/2 pairs for 8'0" units) of extra heavy duty 5" x 4 1/2" hinges. (Refer to chart for Black Mountain Door spacing.)
- 3) Frames are only furnished spot-welded or welded and ground smooth or knock down without the anchor hinge reinforcement welded in.

**FRAME PREPARATION:**



DIM "A" (FRAME OPNG. HEIGHT)	DIM "B"	DIM "C"	DIM "D"
6'-8"	33 41/64"	33 15/32"	————
7'-0"	35 41/64"	35 15/32"	————
7'-2"	35 41/64"	35 15/32"	————
7'-10"	27 17/64"	26 59/64"	26 59/64"
8'-0"			

**DOOR PREPARATION:**



NOMINAL DOOR HEIGHT	DIM "A"	DIM "B"	DIM "C"	DIM "D"
6'-8"	79 1/8"	33 33/64"	33 15/32"	—
7'-0"	83 1/8"	35 33/64"	35 15/32"	—
7'-2"	85 1/8"	35 33/64"	35 15/32"	—
7'-10"	93 1/8"	27 9/64"	26 59/64"	26 59/64"
8'-0"	95 1/8"			

**SCOPE:**

This bulletin covers Black Mountain Door's 1 3/4" doors with ANSI/BHMA A115 bored lock preparation and Amweld Series 400 frames prepared for the ANSI/BHMA A115 (4 7/8" universal) strike. It also covers the use of extended backsets in glazed doors.

**PURPOSE:**

To show the widespread availability of bored locks with 2 3/4" backset and the 4 7/8" "universal" strike, and the use of 3 3/4" and 5" backsets with Black Mountain Door doors.

**BORED LOCK x EXTENDED BACKSETS:**

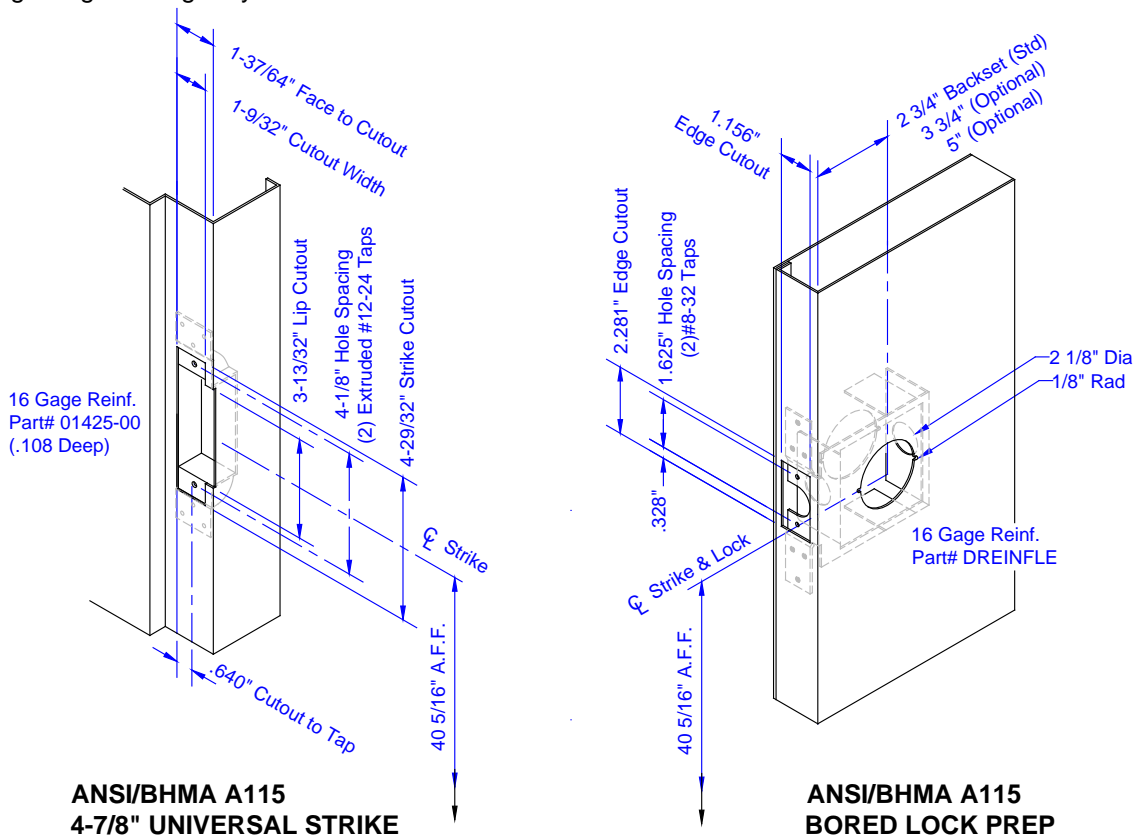
Doors with 3 3/4" and 5" backsets are available on an engineered basis. Special consideration must be given when glazed doors are specified. The following are combinations to be considered.

**V-N520-N425-N333 DOORS (Vision Lite & Narrow Lite Doors)**

- 1) 3 3/4" and 5" backset bored locks can be used with V lites in all series of doors except our 300 Series.
- 2) 3 3/4" and 5" backset bored locks cannot be used with N520, N425 and N333 lites in any series of doors because of obvious interference with lite.

**G DOORS (Half Glass Doors)**

- 1) 3 3/4" backset lock preparations are available in our 07WE, 15LE - 17LE, 25LE - 27LE and 35LE - 37LE Amweld Series doors. Our 300 Series door cannot be used because the tubular stile door construction.
- 2) Only standard door heights (6'8", 7'0", 7'2", 8'0"), standard "G" series glass cutouts and our normal lock height should be used since interference may be encountered if any of these are altered.
- 3) Please note that any escutcheon with a diameter larger than 3" should not be specified since interference with the glazing molding may result.



**SCOPE:**

This bulletin covers Black Mountain Door's 1 3/4" doors with mortise lock preparation.

**PURPOSE:**

To emphasize the universal compliance of our units in this respect.

**DESCRIPTION:**

The enclosed details cover all function holes required for ANSI/BHMA A115 mortise locks.

It is significant to note the 4 7/8" ANSI/BHMA A115 strike is standard with these devices in every case.

The preps shown are designed to accept the full escutcheon type trim.

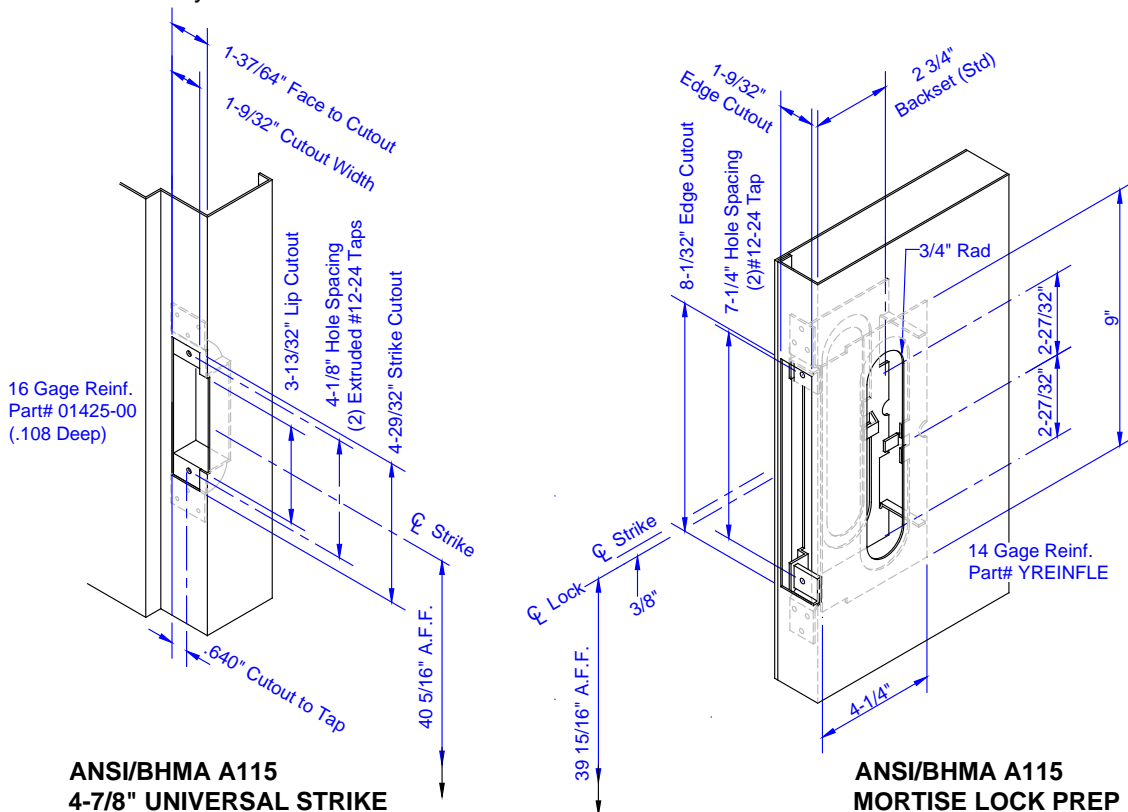
A change in the door face preparation was made to accommodate as much as possible the thru-bolted full escutcheon trim per ANSI/BHMA A115. Unfortunately no one has been able to devise a preparation that will cover all the manufacturers.

If trim is questionable, Black Mountain Door suggests checking manufactures template against preparation of door face.

Black Mountain Door also offers sectional trim preparation where escutcheon trim is not required.

**SUMMARY:**

Black Mountain Door doors with mortise locks preparations are engineered for maximum compatibility with the builders hardware industry.



**SCOPE:**

This bulletin covers the preparation in Black Mountain Door's standard 1 3/4" doors and standard frames when manual flush bolts are specified.

**PURPOSE:**

To advise the reader of the reversibility of this frame preparation and the standard top bolt location on doors.

**DESCRIPTION:**

The details enclosed conform to those established by ANSI/BHMA in their publication A115.

They are available in Amweld Series 300, 15LE/17LE, 35LE/37LE, 1 3/4" doors as well as Amweld 400 and 2600 Series frames.

The header preparation is designed in such a way to make it non-handed. It is Black Mountain Door's policy to prepare all doors and frames as shown when the flush bolt preparation is specified.

The centerline of the bolt will vary from the top of the door, depending on the height of the opening specified.

The following chart will serve as a reference guide to determine the correct bolt location. The bottom bolt preparation is constant at 12".

Centerline - Top Bolt	Door Opening Height
12"	6'8" to 7'6"
24"	Over 7'6" to 8'6"
36"	Over 8'6" to 9'6"
48"	Over 9'6" to 10'0"

Other preparations and down-sets are available as may be necessary for automatic or semi-automatic flush bolts.

If preparation requires a deviation from that specified herein, make specific notation on your order and forward a template.

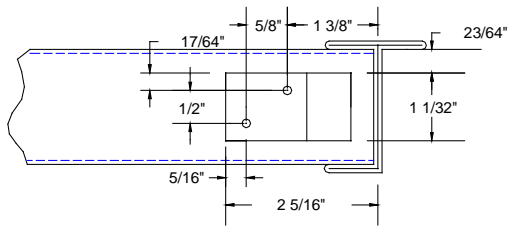
**SUMMARY:**

This program is another example of Black Mountain Door's policy of manufacturing doors with maximum hardware flexibility and a minimum of special handling.

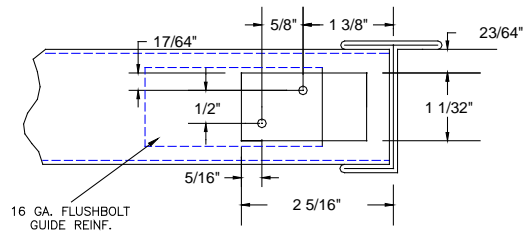
Details on following Pages...



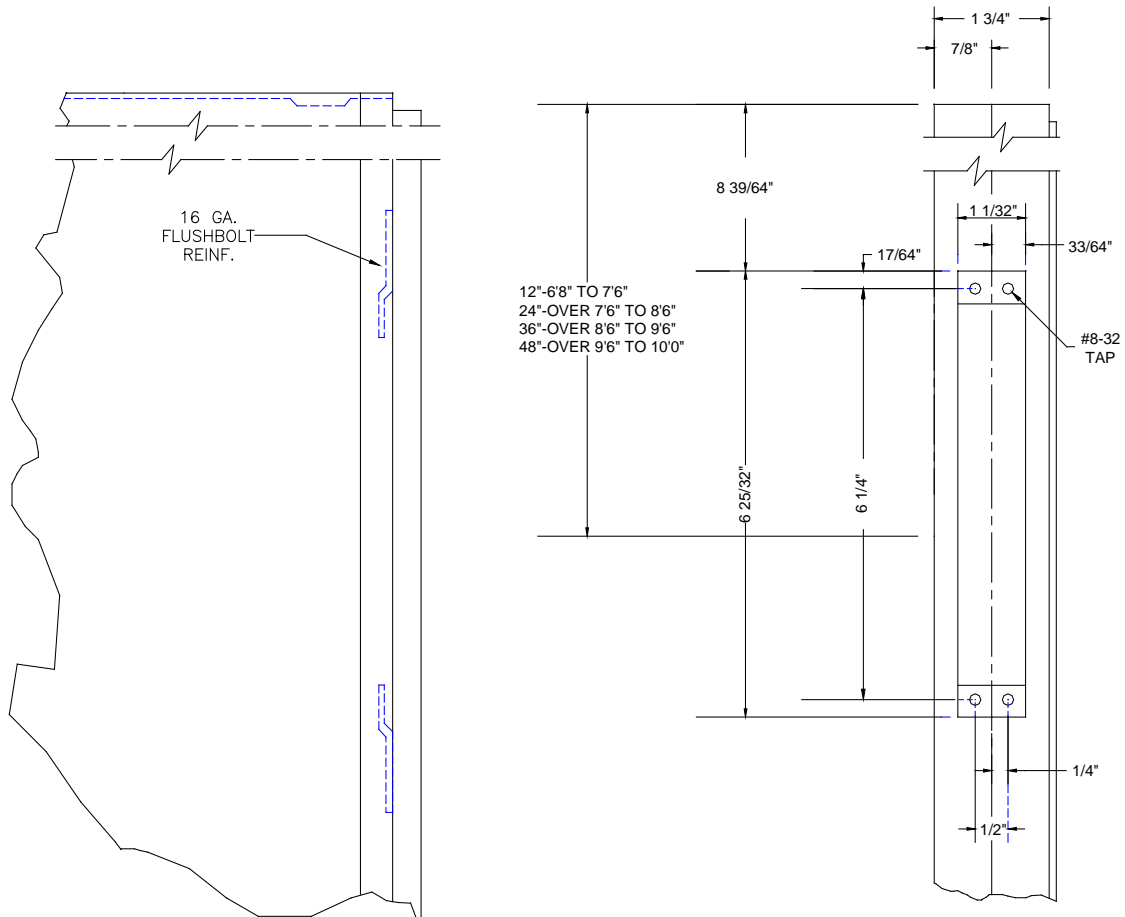
**STANDARD DOOR FLUSH BOLT DETAILS:**



**15LE-17LE SERIES DOOR**



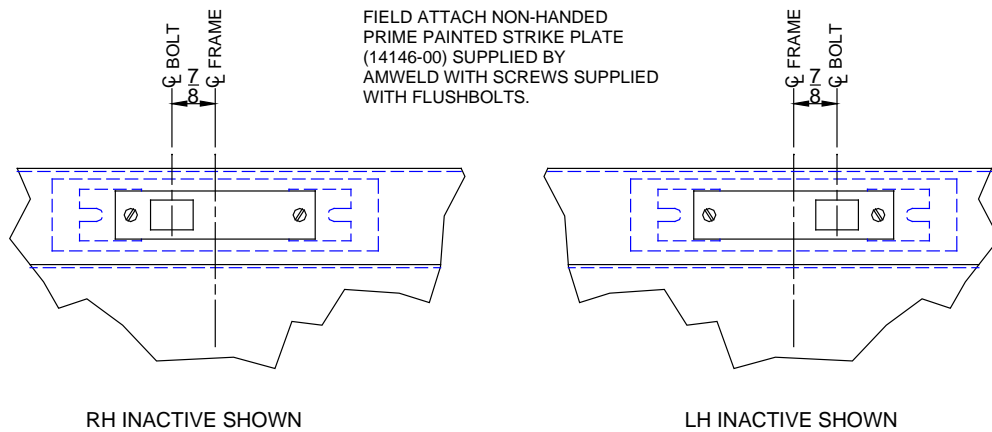
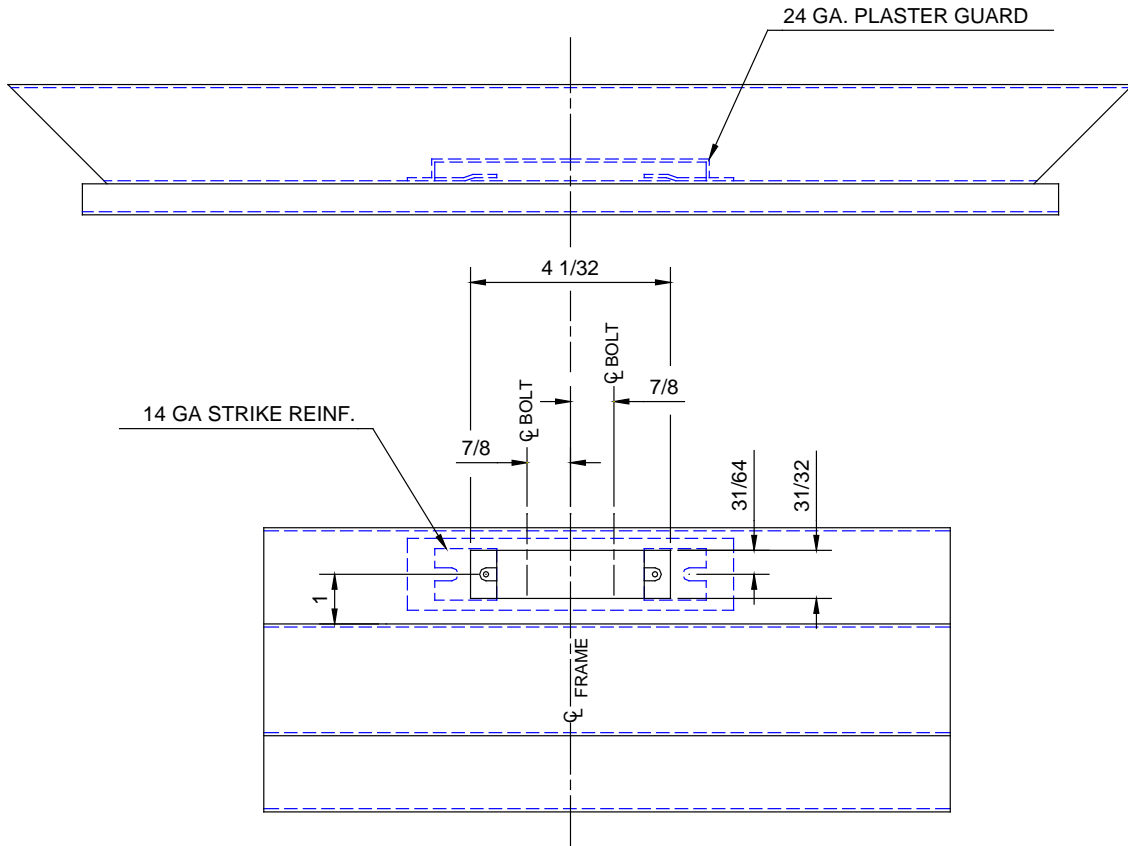
**300 SERIES DOOR**



**300, 15LE & 17LE, 35LE & 37LE SERIES 1 3/4\"/>**



**STANDARD FRAME FLUSH BOLT DETAILS:**



**ANSI/BHMA A115 FLUSHBOLT**  
**400 & 2600 SERIES FRAME**  
**NON-HANDED FLUSHBOLT**

**SCOPE:**

This bulletin defines Black Mountain Door's policy relating to double acting type hardware.

**PURPOSE:**

To provide a definitive statement concerning the relationship of frame opening widths, door widths, edge configuration and preparations.

**DESCRIPTION:**

Hardware for double acting openings generally falls into two categories:

1. Hinges
2. Pivot Sets

Previously, Black Mountain Door increased header lengths (where required) in order to utilize standard width doors. This practice has now been discontinued.

To preserve the utilization of standard frame header sizes, doors will be undersized as needed for operating clearance. Note also that Black Mountain Door does not manufacture a bullnose edge door in any series. Doors will be manufactured as square edge, including steel stiffened doors.

**DOUBLE ACTING HINGES**

The three most common types are the mortise type, half surface type and clamp flange type, as illustrated on page 2.

Mortise types are surface mounted to cased opening frames and mortised into the door edge. Frames may or may not require a hanging strip or soffit for mounting of hinges. Black Mountain Door's preferred hinge types incorporate an undersized door leaf that will fit into a 4 1/2" (or 3 1/2") template hinge mortise. When using these hinges, consult the hinge manufacturer's literature for door size or weight limitations, especially when using Black Mountain Door standard hinge location.

Half surface hinges are surface mounted to a cased opening frame and to the face of the door. These are more commonly used on wood doors, but may be used on hollow metal doors with proper reinforcing.

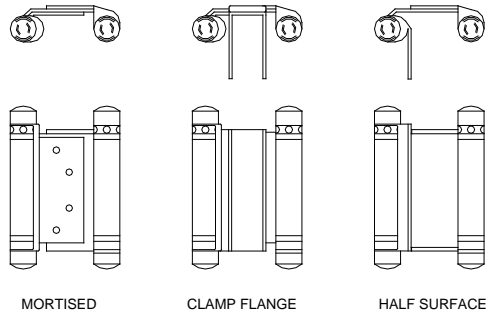
Clamp flange hinges are surface mounted to a cased opening frame. The box type flange wraps around the door edge and both faces, or doors may be notched to clear the hinge to reduce hinge edge clearance. Installation onto the door is usually by thru-bolts.

When using or specifying any of the above hinges, consult the hinge manufacturer's literature for door size or weight limitations, especially when using Black Mountain Door standard hinge locations. In many cases, non-standard vertical locations are suggested by the manufacturer. These may be requested by using Form D9445A.

Most of the hinges are also "non-template". It is mandatory to request a template from the hinge manufacturer to be included with your order to Black Mountain Door. In addition, the hinge manufacturer may require special operational clearances. A layout should also accompany your order to Black Mountain Door.



Types of Double Acting Hinges:



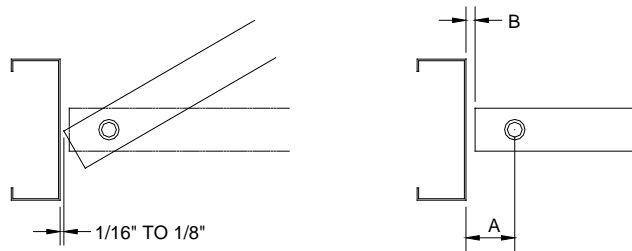
**DOUBLE ACTING PIVOT SETS**

Recent changes to ANSI/DHI documents affect preparations previously used by Black Mountain Door.

Since there is no longer an applicable American National Standard, template coordination becomes paramount. Black Mountain Door's doors (unless requested otherwise) will be undercut 3/4" in accordance with ANSI A250.10-98. In some cases this may leave bottom pivot arms exposed. It is therefore important to enclose a sketch of threshold conditions (if any) or special pivot shaft extensions, especially in the case of a jamb mounted bottom pivot.

Since Black Mountain Door's doors are square edge design, center hung or double acting pivots may require additional operating clearance at the hinge side. This clearance will allow a minimum of 1/16" clearance for the corners of doors to clear frames.

Reference illustration below.



PIVOT LOCATION A	HINGE EDGE CLEARANCE B
1 5/16"	1/2"
1 3/4"	3/8"
2"	3/8"
2 3/8"	3/8"
2 3/4"	1/4"
3 1/4"	1/4"

This chart shows hinge side clearances for common pivot point locations.

**SCOPE:**

This procedure details lever handle cylindrical lock preparations incorporating thru-bolt slots complying with ANSI A115 for 15LE-17LE-25LE-27LE-35LE-37LE-45LE-47LE-61LE-63LE Amweld series 1 3/4" thick doors.

Black Mountain Door's "T" preparation will also accept the Yale 5400LN and Sargent 6500 line where template dimensions do not fit the ANSI standard.

**DESCRIPTION:**

The flat area of door stiles must be at least 5 1/4" in order to fit most lever/rose combinations. (It cannot be used on 61LE-63LE doors under 3'0" except at 2'8" doors ordered as "NR6126" or "NR6326".) In addition, overlap type vision lite moldings may require special stile widths.

**NOTE:**

The detail on H-13.0 page 2 of this TECH DATA indicates an overall dimension of 3 1/4". It is therefore obvious that rose diameters must be somewhat larger than 3 1/4" in order to cover the preparation. It is the Distributor's responsibility to verify that the rose diameter of the lock specified is compatible with the cutout dimensions indicated.

KEEP IN MIND THAT THIS IS AN ANSI STANDARD PREPARATION developed through DHI and endorsed by (for example) SDI and BHMA.

Verification of compatibility may be done by consulting the Lock Manufacturer's TEMPLATE BOOKS or CATALOGS for an indication of compliance to ANSI A115. Most hardware Manufacturers will be able to confirm this.

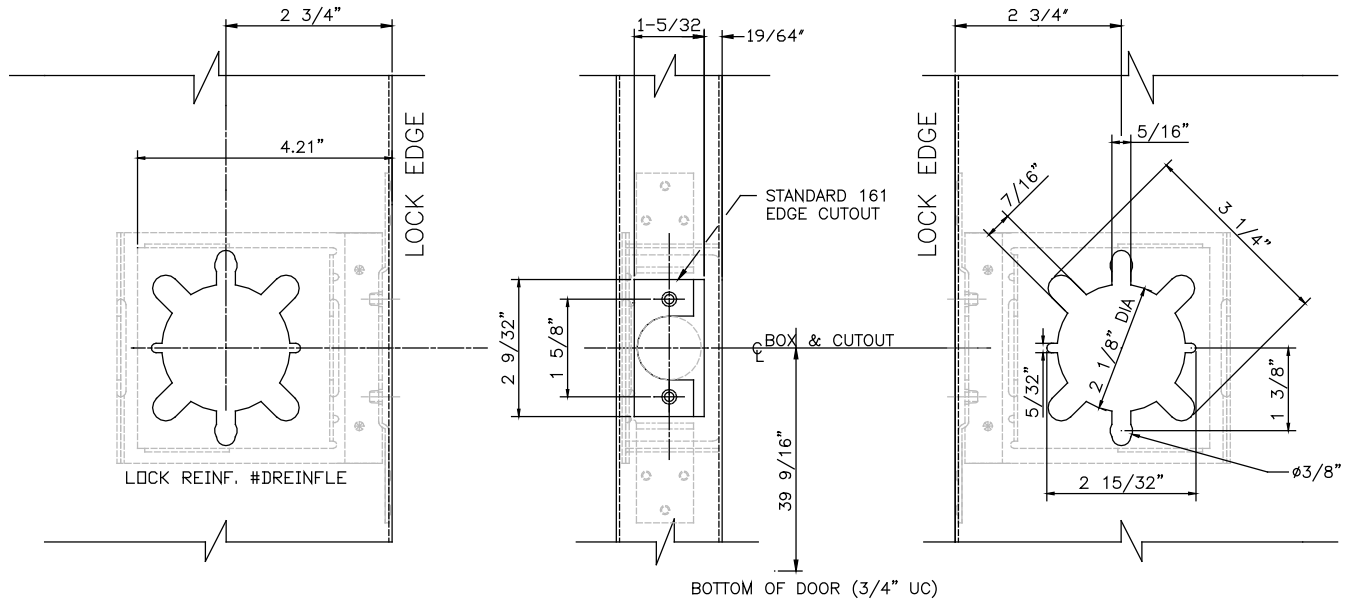
**We suggest you take some time to review this TECH DATA with your lock supplier to assure you do not experience compatibility problems.**

Details on page 2 of this document.



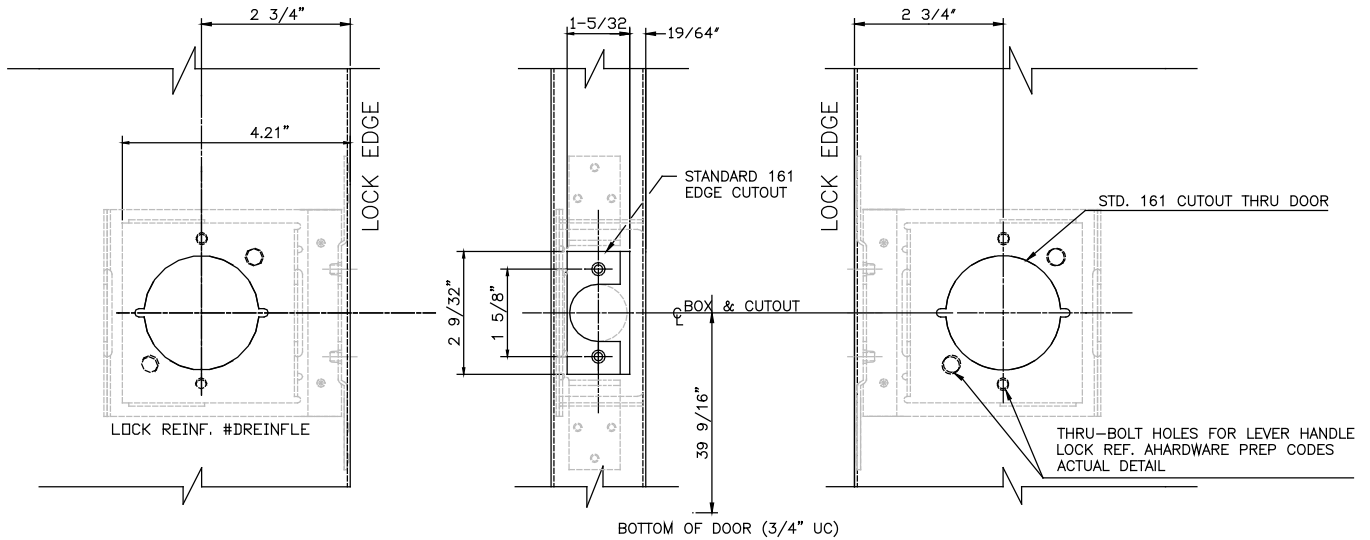
**LOCK OPTION – “T”:**

LEVER LOCK REINFORCEMENT & ASSEMBLY DETAIL FOR 15LE SERIES THRU-BOLTED 161 CYLINDRICAL LOCK – ANSI A115.



**LOCK OPTION – “L”:**

LEVER LOCK REINFORCEMENT & ASSEMBLY DETAIL FOR 15LE SERIES THRU-BOLTED 161 CYLINDRICAL LOCK – ANSI A115.



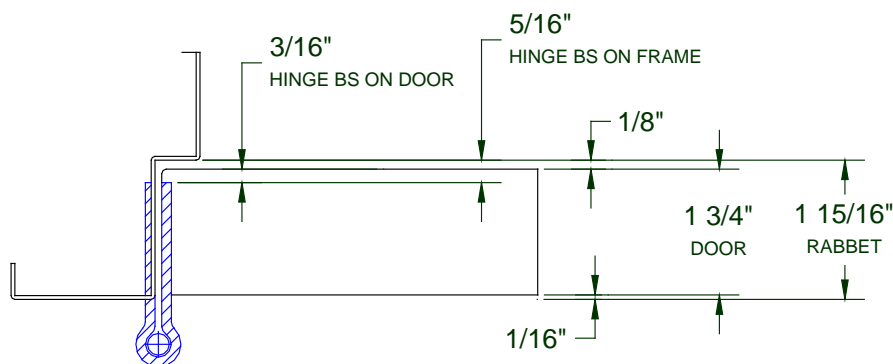
**SCOPE:**

This bulletin shows details of Black Mountain Door's standard hinge backset.

**PURPOSE:**

The purpose of this document is to provide the reader with a reference of the hinge backset currently used on Black Mountain Door's door and frame products.

Hinge Backset on Door – 3/16" from Door Face.  
Hinge Backset on Frame – 5/16" from Stop.



AMWELD INTERNATIONAL (1-3/4" DOORS)  
DOOR, FRAME, AND HINGE RELATIONSHIP.

