INERGEN 150-BAR SYSTEMS

Component Sheet Library

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CV-98 Valve / Cylinder Shipping Assembly

Description

The cylinder is factory filled with INERGEN® agent. A single cylinder may be used or multiple cylinders can be manifolded together to obtain the required quantity of agent for total flooding. The cylinder valve can be actuated electrically, pneumatically, and/or manually with approved valve actuation components. All valves are equipped with an anti-recoil feature.

The cylinders are shipped with a maintenance record card and protective shipping cap attached to the threaded neck of each cylinder. This cap entirely encloses and protects the valve while in shipment.

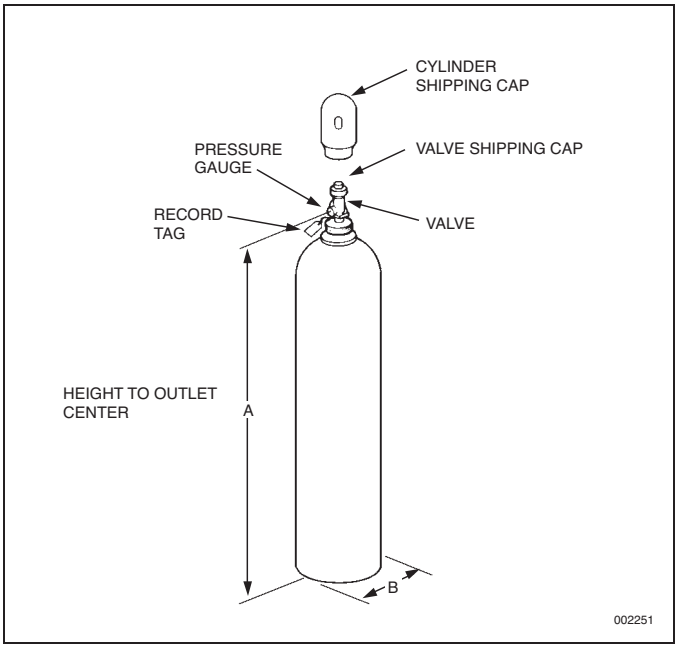
The equivalent length of the valve is equal to 20 ft (6.1 m) of 1/2 in. Sch. 40 pipe.

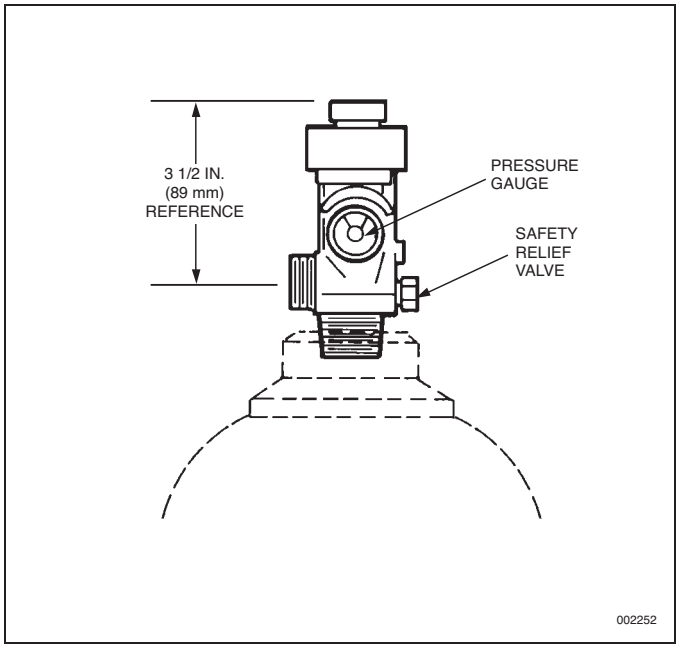
Component	Material	Approvals
Cylinder	Steel	Meets DOT 3AA2300; Meets TC3AM176 or TC3AAM176
Valve	Brass	
Safety Relief Valve	Brass	
Valve/Cylinder Assembly		UL Listed (EX-4510); Listed for use with FM Approved systems
Shipping Cap	Steel	

Shipping Assembly Part No.	Nominal Cylinder Size ft³	(m³)	Actual INERGEN Agent Quantity ft³	m³	Approximate Weight lb	(kg)	Dimension A in.	(mm)	Dimension B in.	(mm)
Shipping Assemblies – Red Standard Paint										
426147	200	(5.7)	205	(5.8)	128	(58)	52.7	(1339)	8.5	(216)
426148	250	(7.1)	266	(7.5)	169	(77)	57.7	(1466)	9.3	(236)
426149	350	(9.9)	355	(10.1)	217	(98)	59.7	(1516)	10.7	(272)
426620 (LC)	350	(9.9)	355	(10.1)	217	(98)	60.2	(1529)	10.5	(268)
428646	435	(12.3)	439	(12.4)	260	(117.9)	66.9	(1699)	11.0	(279)
426150* (LC)	435	(12.3)	439	(12.4)	260	(117.9)	66.9	(1699)	11.0	(279)
Shipping Assemblies – Red Corrosion Resistant Paint										
426256	200	(5.7)	205	(5.8)	128	(58)	52.7	(1339)	8.5	(216)
426257	250	(7.1)	266	(7.5)	169	(77)	57.7	(1466)	9.3	(236)
426258	350	(9.9)	355	(10.1)	217	(98)	59.7	(1516)	10.7	(272)
426621 (LC)	350	(9.9)	355	(10.1)	217	(98)	60.2	(1529)	10.5	(268)
426259 (LC)	435	(12.3)	439	(12.4)	260	(117.9)	66.9	(1699)	11.0	(279)

* **Note 1:** For Shanghai version, order Part No. 430935.

Note 2: For Shanghai version requiring 172-bar cylinder (rating on cylinder not actual pressure in cylinder), order Part No. 437299.





CV-98 INERGEN Valve

The CV-98 valve has a ten (10) year warranty. **The valve requires no internal maintenance.** The valve is sealed closed and must not be disassembled. If there is ever a malfunction of the CV-98 valve, the complete valve must be sent back to Ansul for warranty replacement. **If the external seal is broken, the warranty is voided.**

Note: Use Flexible Discharge Bend (Part No. 427082) when attaching valve to supply pipe or manifold.

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Form No. F-9877-05

CV-98 Valve / Cylinder Shipping Assembly – Non-TC Approved for China Market

Description

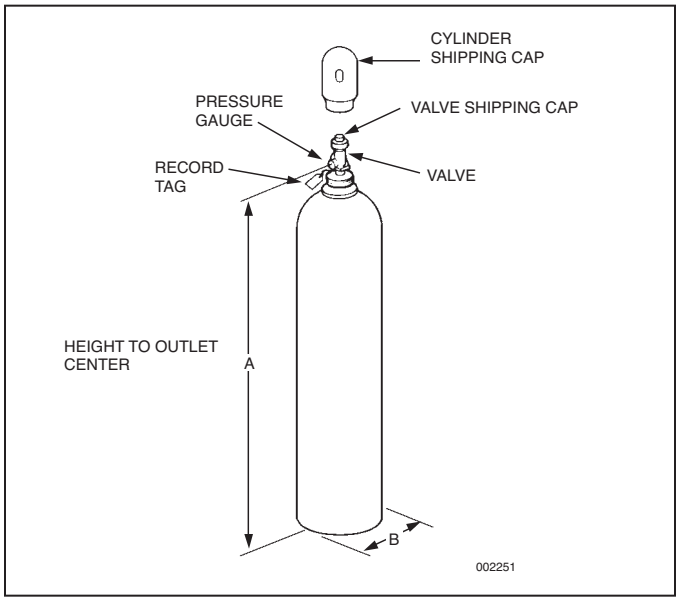
The cylinder is factory filled with INERGEN agent. A single cylinder may be used or multiple cylinders can be manifolded together to obtain the required quantity of agent for total flooding. The cylinder valve can be actuated electrically, pneumatically, and/or manually with approved valve actuation components. All valves are equipped with an anti-recoil feature.

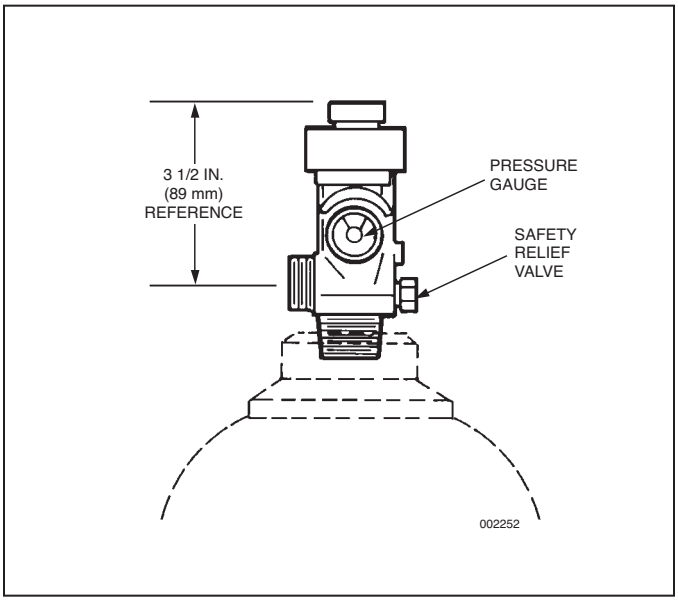
The cylinders are shipped with a maintenance record card and protective shipping cap attached to the threaded neck of each cylinder. This cap entirely encloses and protects the valve while in shipment.

The equivalent length of the valve is equal to 20 ft (6.1 m) of 1/2 in. Sch. 40 pipe.

Component	Material	Approvals
Cylinder	Steel	Meets DOT 3AA2300
Valve	Brass	
Safety Relief Valve	Brass	
Valve/Cylinder Assembly		UL Listed (EX-4510); Listed for use with FM Approved systems
Shipping Cap	Steel	

Shipping Assembly Part No.	Nominal Cylinder Size ft³ (m³)	Actual INERGEN Agent Quantity ft³ m³	Approximate Weight lb (kg)	Dimension A in. (mm)	Dimension B in. (mm)
Shipping Assemblies – Red Standard Paint					
439037 (LC)	435 (12.3)	439 (12.4)	260 (117.9)	66.9 (1699)	11.0 (279)





CV-98 INERGEN Valve

The CV-98 valve has a ten (10) year warranty. **The valve requires no internal maintenance.** The valve is sealed closed and must not be disassembled. If there is ever a malfunction of the CV-98 valve, the complete valve must be sent back to Ansul for warranty replacement. **If the external seal is broken, the warranty is voided.**

Note: Use Flexible Discharge Bend (Part No. 427082) when attaching valve to supply pipe or manifold.

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CV-98 Valve / Cylinder Shipping Assembly – BIS Approvals

Description

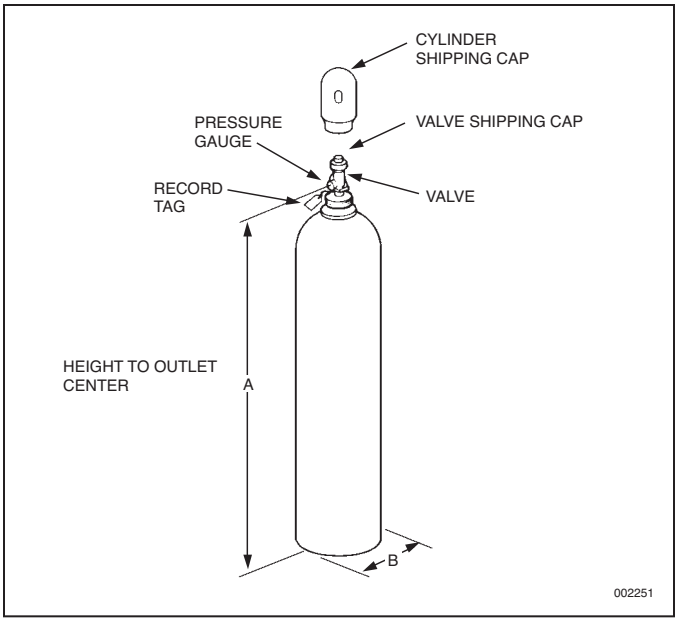
The cylinder is factory filled with INERGEN agent. A single cylinder may be used or multiple cylinders can be manifolded together to obtain the required quantity of agent for total flooding. The cylinder valve can be actuated electrically, pneumatically, and/or manually with approved valve actuation components. All valves are equipped with an anti-recoil feature.

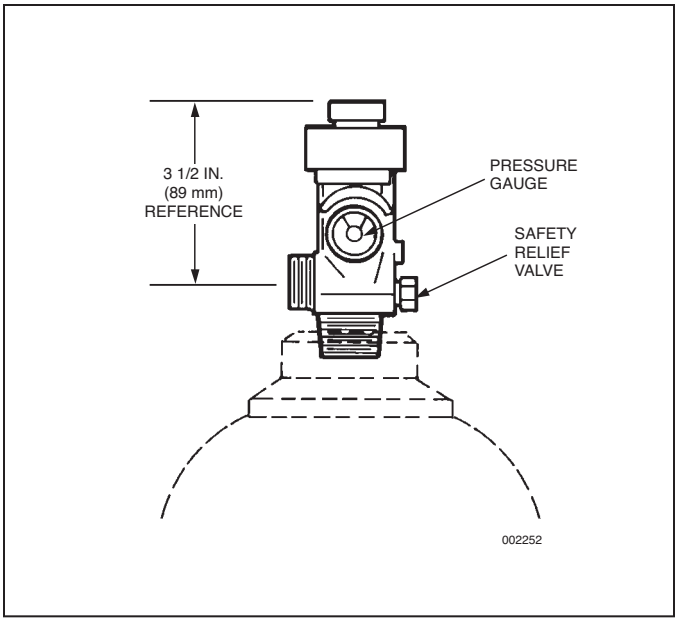
The cylinders are shipped with a maintenance record card and protective shipping cap attached to the threaded neck of each cylinder. This cap entirely encloses and protects the valve while in shipment.

The equivalent length of the valve is equal to 20 ft (6.1 m) of 1/2 in. Sch. 40 pipe.

Component	Material	Approvals
Cylinder	Steel, Red Epoxy CR Paint	IS 7285
Valve	Brass	
Safety Relief Valve	Brass	
Valve/Cylinder Assembly		UL Listed (EX-4510); Listed for use with FM Approved systems
Shipping Cap	Steel, Red Epoxy CR Paint	

Shipping Assembly Part No.	Nominal Cylinder Size ft³	(m³)	Actual INERGEN Agent Quantity ft³	m³	Approximate Weight lb	(kg)	Dimension A in.	(mm)	Dimension B in.	(mm)
438806	435	(12.3)	439	(12.4)	260	(117.9)	66.9	(1700)	11.0	(279)





CV-98 INERGEN Valve

The CV-98 valve has a ten (10) year warranty. **The valve requires no internal maintenance.** The valve is sealed closed and must not be disassembled. If there is ever a malfunction of the CV-98 valve, the complete valve must be sent back to Ansul for warranty replacement. **If the external seal is broken, the warranty is voided.**

Note: Use Flexible Discharge Bend (Part No. 427082) when attaching valve to supply pipe or manifold.

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CV-98 Electric Actuator

Description

Electrical actuation of a CV-98 INERGEN® valve is accomplished by a CV-98 electric actuator interfaced through an AUTOPULSE Control System. This actuator can be used in hazardous environments where the ambient temperature range is between 32 °F to 130 °F (0 °C to 54 °C). The electric actuator meets the requirements of N.E.C. Class I, Div. 1, Groups B, C, D and Class II, Div. 1, Groups E, F, G. A maximum of two CV-98 electric actuators can be used on a single AUTOPULSE release circuit. When using either one or two CV-98 electric actuators, a current limiter module, Part No. 427354, must always be used.

The Actuator Shipping Assembly contains a current limiter module along with an installation instruction sheet.

The actuator specifications are:

Nominal Voltage

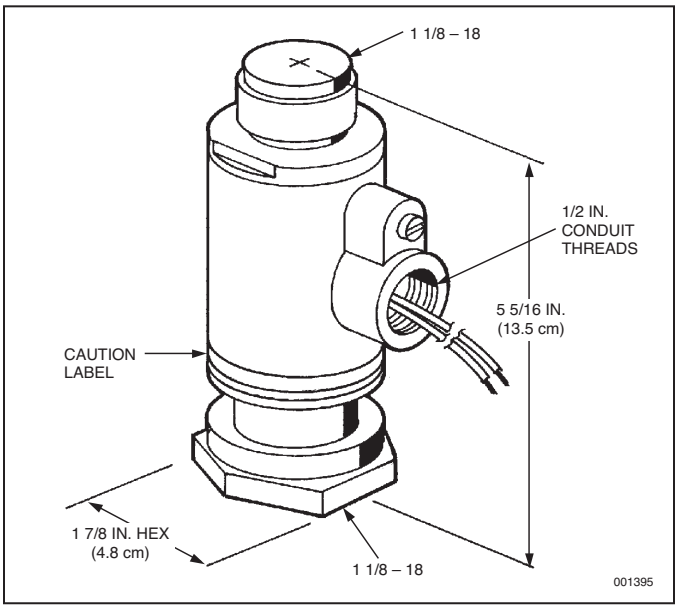
24 VDC @ .75 amps

In auxiliary or override applications, a manual cable pull actuator can be installed on top of the CV-98 electric actuator by removing the safety cap.

A manual lever actuator, Part No. 423309, is available for use with the CV-98 electric actuator.

The actuator contains a standard 1/2 in. threaded female straight connector for electrical conduit hookup.

The CV-98 electric actuator uses a replaceable METRON® PROTRACTOR which is a device designed to produce a high force mechanical output. The actuator is electrically actuated and will operate within milliseconds.



The METRON PROTRACTOR must be replaced after discharge of the INERGEN system.

Shipping Assembly Part No.	Description
423684	CV-98 Electric Actuator
423958	Replaceable METRON PROTRACTOR
427354	Current Limiter Module

Component	Material	Thread Size/Type	Approvals
CV-98 Electric Actuator	Body: Brass METRON PROTRACTOR Plunger: Stainless Steel	1/2 in. Straight Female on Conduit Connection	UL (E62842); Listed for use with FM Approved systems

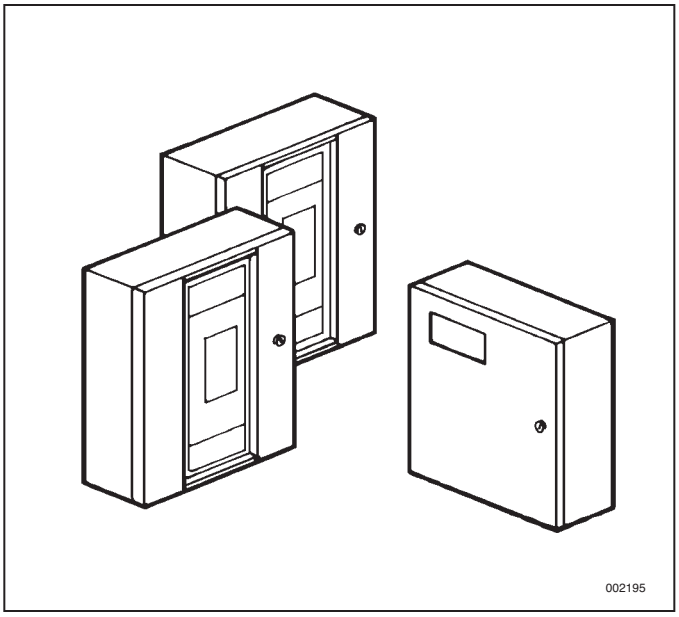
AUTOPULSE® Control System

Description

The AUTOPULSE® Control System provides a range of features and benefits, ranging from simple detection through counting circuits.

Several models of the AUTOPULSE® Control System are available depending on the type of hazard being protected.

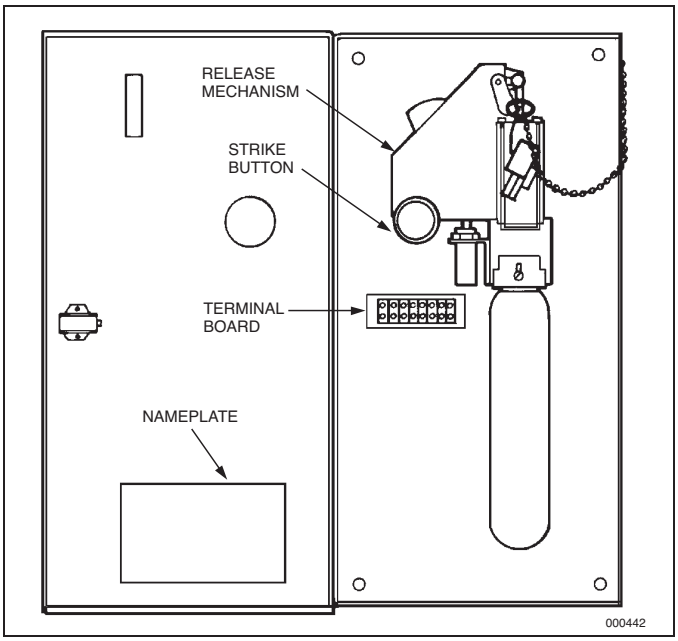
Refer to the Ansul Detection and Control Application Manual for detailed information concerning all AUTOPULSE Control Systems.



ANSUL AUTOMAN® II-C Releasing Device

Description

The ANSUL AUTOMAN® II-C Releasing Device consists of a metal enclosure which contains a spring-loaded puncture pin release mechanism, an actuation cartridge, electrical circuitry, and an input/output terminal strip for making electrical connections. The ANSUL AUTOMAN II-C releasing device provides automatic pneumatic actuation of the INERGEN® System. When wired to an AUTOPULSE® Control System, it will provide supervised electric detection and release. It also provides manual actuation using the strike button on the release enclosure and with the optional remote manual cable pull station. When an AUTOPULSE Control System is used, manual actuation is accomplished using an electric manual pull station.



Component	Approvals
ANSUL AUTOMAN II-C Releasing Device	UL Listed (EX-4510);
ANSUL AUTOMAN II-C Releasing Device (Explosion-Proof)	Listed for use with FM Approved systems

Shipping Assembly Part No.	Description
17728	ANSUL AUTOMAN II-C Releasing Device, 24 VDC
31492	ANSUL AUTOMAN II-C Releasing Device, Explosion-Proof, 24 VDC
32525*	ANSUL AUTOMAN II-C Releasing Device, Explosion-Proof, 120 VAC
32526*	ANSUL AUTOMAN II-C Releasing Device, Explosion-Proof, 240 VAC
5373	LT-30-R Nitrogen Cartridge

*Not FMRC Approved

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Selector Valves

Description

Selector valves are used to direct the flow of INERGEN® into a single hazard of a multiple hazard system.

When pneumatic actuation is required for the 1 in. and 2 in. valves, a Stackable Actuator Assembly, Part No. 428566, must be ordered separately.

When electric actuation is required for the 1 in. and 2 in. valves, a Booster Actuator, Part No. 428949, must be ordered separately.

When electric actuation is required for the 2 1/2 in., 3 in. and 4 in. valves, a Selector Valve Electric Actuation Kit, Part No. 426893, must be ordered separately. **Note:** These selector valves cannot be pressure operated.

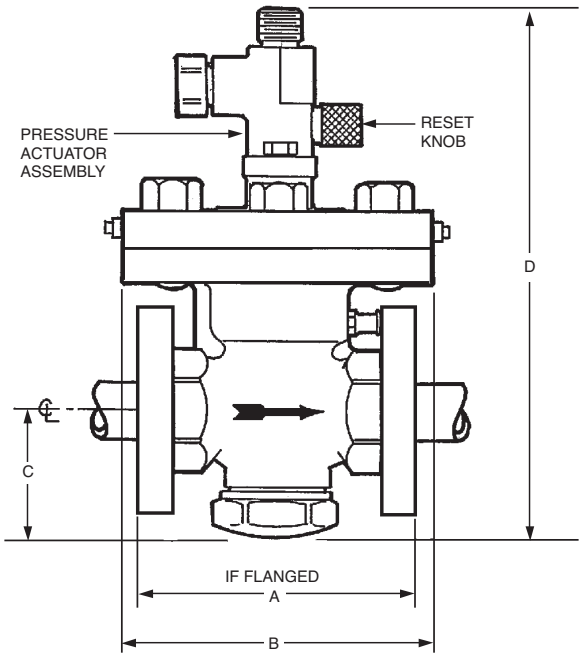
Selector valves can be manually operated by mounting a lever actuator either directly onto the valve or onto the top of the electric actuator. See Lever Release Actuator Component Sheet for correct actuator.

Component	Material	Thread Size/Type	Approvals	Equivalent Length (Sch. 80 Pipe)
1 in. Selector Valve (Used for 1/2 in., 3/4 in. and 1 in. pipe sizes)	Bronze	1 in. NPT Female	UL Listed (EX-4510); Listed for use with FM Approved systems	1/2 in. – 1.9 ft (0.6 m) 3/4 in. – 6.4 ft (1.9 m) 1 in. – 10.4 ft (3.2 m)
2 in. Selector Valve (Used for 1 1/4 in., 1 1/2 in. and 2 in. pipe sizes)	Bronze	2 in. NPT Female	UL Listed (EX-4510); Listed for use with FM Approved systems	1 1/4 in. – 16.2 ft (4.9 m) 1 1/2 in. – 22.4 ft (6.8 m) 2 in. – 67.4 ft (20.5 m)
2 in., 2 1/2 in., 3 in. Selector Valve	Ductile Iron	3 in. Flange American Standard Raised Face	UL Listed (EX-4510); Listed for use with FM Approved systems	2 in. – 17 ft (5.2 m) 2 1/2 in. – 43 ft (13.1 m) 3 in. – 78 ft (23.8 m)
4 in. Selector Valve	Ductile Iron	4 in. Flange American Standard Raised Face	UL Listed (EX-4510); Listed for use with FM Approved systems	4 in. – 111 ft (33.8 m)

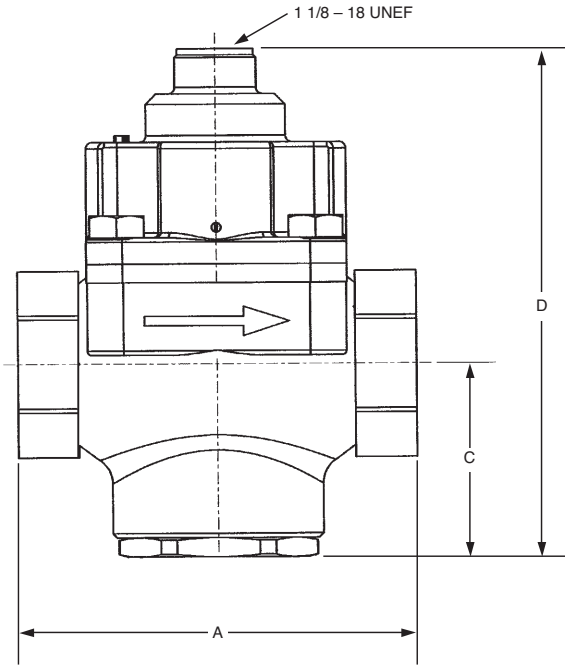
Note: The 3 in. and 4 in. flanged selector valves latch open upon actuation. They must be manually reset by pulling out the reset knob on the side of the pressure actuator. If the valve is not reset, it will reopen the next time the system is actuated, even if a different hazard requires protection.

Shipping Assembly Part No.	Description
427185	1 in. selector valve – threaded
427150	2 in. selector valve – threaded
857433	2, 2 1/2, 3 in. selector valve – flanged
857445	4 in. selector valve – flanged
426893	Electric actuator kit
842402	Brass cap
428566	Pressure operated stackable actuator

NOTE: A LEVER ACTUATOR, BRASS CAP, OR CV-98 ELECTRIC ACTUATOR, MUST BE USED WITH EACH SELECTOR VALVE. VALVE WILL NOT OPERATE PROPERLY WITHOUT ONE OF THESE ON TOP OF PRESSURE ACTUATOR ASSEMBLY.



3 IN. AND 4 IN. FLANGED VALVE



1 IN. AND 2 IN. THREADED VALVE

006035

Valve Size	Body	A		B		C		D	
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
1 in.	Threaded – 1 in. NPT female	5 1/2	(140)	—		2 9/16	(67)	7	(178)
2 in.	Threaded – 2 in. NPT female	7 1/2	(191)	—		3 1/2	(89)	8 9/16	(218)
2 in., 2 1/2 in., 3 in.	Flanged – 3 in.	13	(330)	5 3/4	(146)	6 1/8	(156)	16 1/4	(413)
4 in.	Flanged – 4 in.	16	(406)	5 3/4	(146)	8 3/4	(222)	19 7/8	(505)

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Form No. F-99024-04

Valve Electric Actuation

Description

Electrical actuation of an agent cylinder and/or selector valves is accomplished by an HF electric actuator interfaced through an AUTOPULSE Control System. This actuator can be used in hazardous environments where the ambient temperature range is between 0 °F to 130 °F (–18 °C to 54 °C). The HF electric actuator meets the requirements of N.E.C. Class I, Div. 1, Groups B, C, D and Class II, Div. 1, Groups E, F, G. A maximum of two HF electric actuators can be used on a single AUTOPULSE release circuit. When utilizing only one HF electric actuator, an in-line resistor, Part No. 73606, is required in the supervised release circuit.

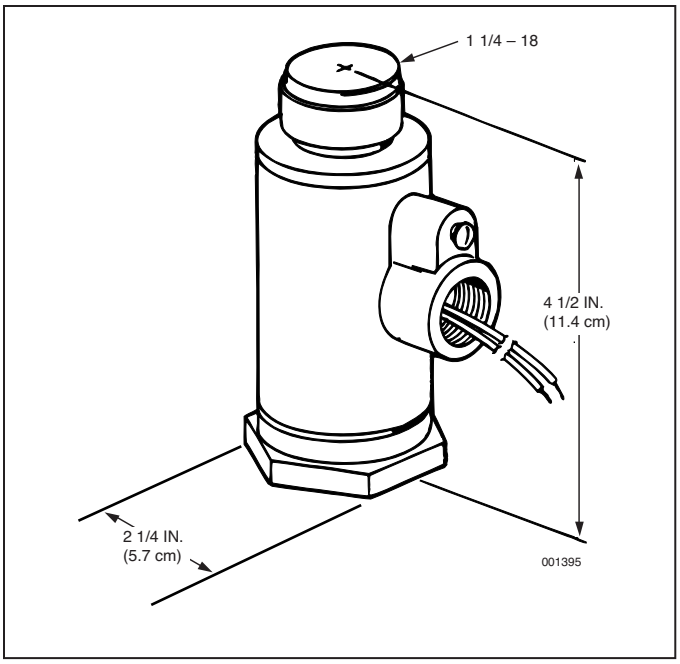
The actuator specifications are:

Nominal Voltage	Rated Voltage Minimum	Maximum
12 VDC @ 0.57 amps	12.0 VDC	14.0 VDC

In auxiliary or override applications, a manual-local override valve actuator or a manual cable pull actuator can be installed on top of the HF electric actuator by removing the safety cap.

A reset tool is required to reset the actuator after operation. The actuator contains a standard 1/2 in. threaded female straight connector for electrical conduit hookup.

Shipping Assembly Part No.	Description
73327	HF electric actuator
75433	HF Reset Tool

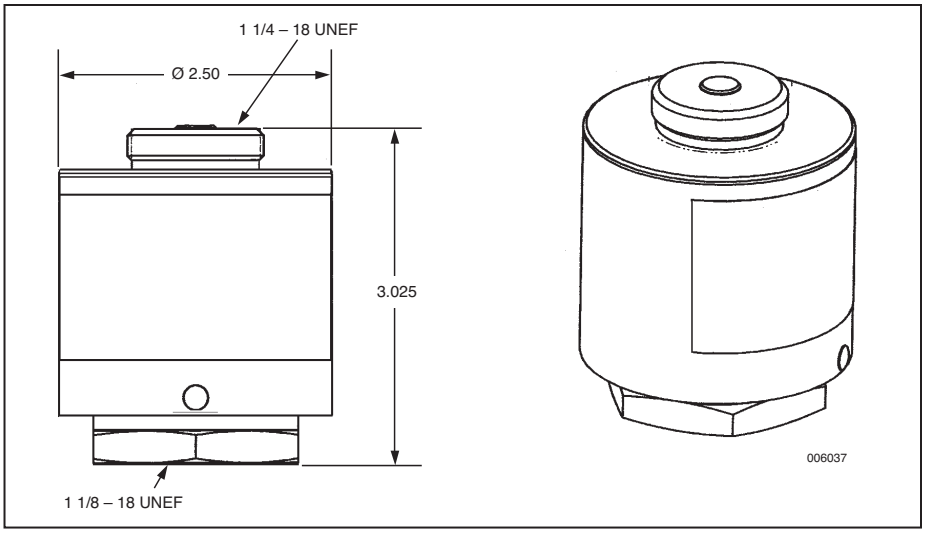


Component	Material	Thread Size/Type	Approvals
HF Electric Actuator	Body: Brass Plunger: Stainless Steel	1/2 in. Straight Female	UL (EX-4510); Listed for use with FM Approved systems

Description

The Booster Actuator, Part No. 428949, is used when electric actuation is required on the selector valve or the CV-98 cylinder valve. The actuator mounts directly to the component and then a HF electric actuator mounts to the top of the booster actuator.

The Booster Actuator requires resetting after actuation. A Reset Tool, Part No. 429847, is available for this use.

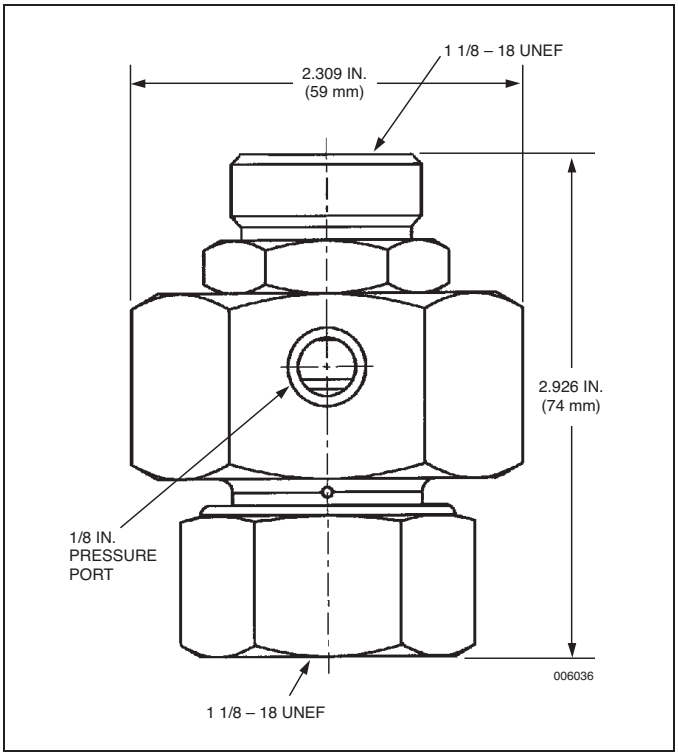


Pressure-Operated Stackable Actuator

Description

The Pressure-Operated Stackable Actuator (Part No. 428566) is necessary when pneumatic actuation is required on any selector valve. This actuator is installed on top of the selector valve and a 1/4 in. pressure line must be attached to the 1/8 in. pressure port on the side of the actuator. The actuator must be manually reset.

Installations which utilize the pressure-operated stackable actuator must incorporate a Selector Valve Pneumatic Actuation Line Kit (Part No. 436127) in the directional/ selector valve actuation line for each actuator. See Component Page 1-3.8 for kit details.



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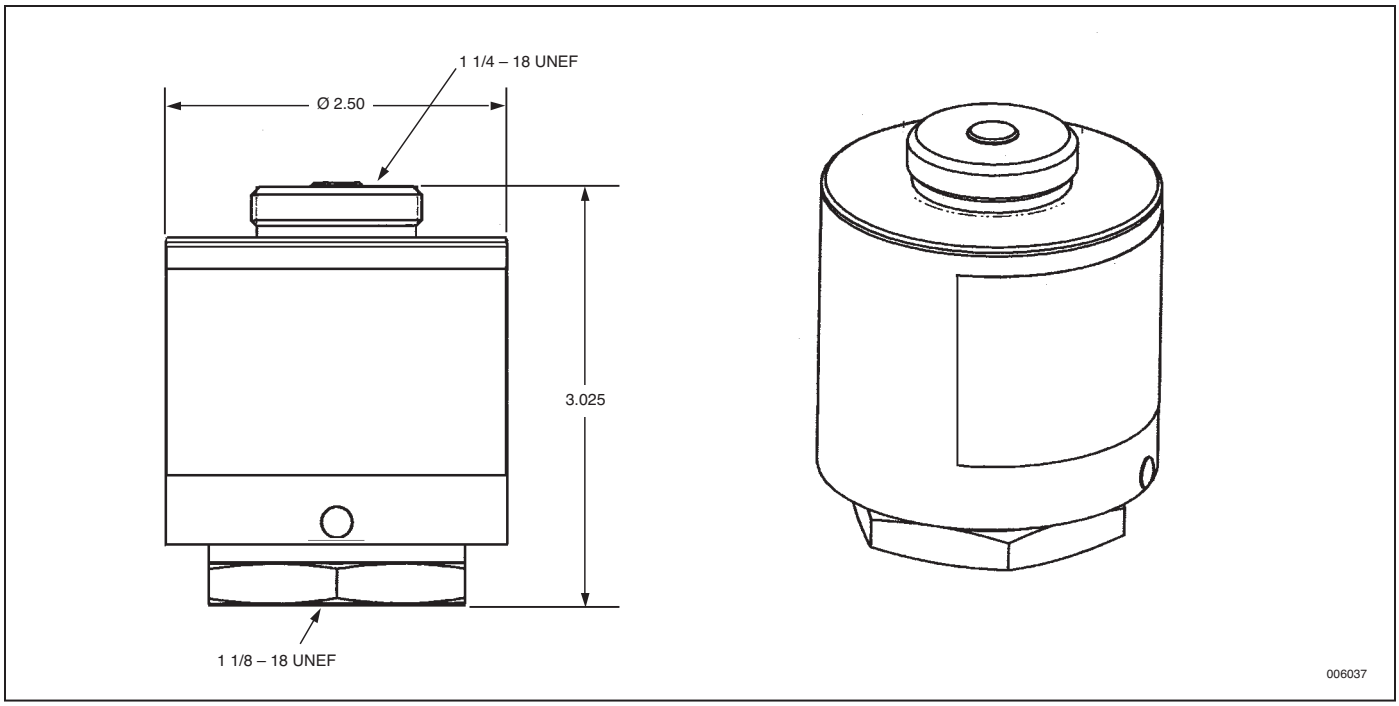
Booster Actuator

Description

The Booster Actuator, Part No. 428949, is used when electric actuation is required on the 1 in. selector valve, 2 in. selector valve, or the CV-98 cylinder valve. The actuator mounts directly to the component and then a HF electric actuator mounts to the top of the booster actuator.

The Booster Actuator requires resetting after actuation. A Reset Tool, Part No. 429847, is available for this use.



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HF Electric Actuator

Description

Electrical actuation is accomplished by an HF electric Actuator, Part No. 73327, interfaced through an AUTOPULSE® Control System. This actuator can be used in hazardous, indoor environments where the ambient temperature range is between 0 °F to 130 °F (–18 °C to 54 °C). The HF electric actuator meets the requirements of N.E.C. Class I, Div. 1, Groups B, C, D and Class II, Div. 1, Groups E, F, G. A maximum of two HF electric actuators can be used on a single AUTOPULSE release circuit. When utilizing only one HF electric actuator, an in-line resistor, Part No. 73606, is required in the supervised release circuit.

In auxiliary or override applications, a manual-local override valve actuator or a manual cable pull actuator can be installed on top of the HF electric actuator by removing the safety cap.

An arming tool, Part No. 75433, is required to reset the actuator after operation. The actuator contains a standard 1/2 in. threaded female straight connector for electrical conduit hookup.

Technical Information

Nominal Voltage: . . . . . 12 VDC @ 0.57 amps

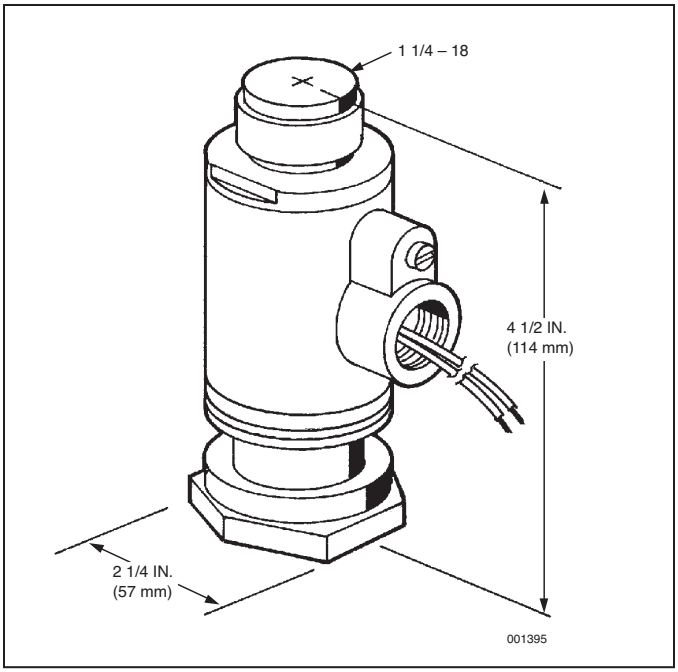
Rated Voltage:
- Minimum: . . . . . 12.0 VDC
- Maximum: . . . . . 14.0 VDC

Thread Size/Type: . . . . . 1/2 in. straight female for electrical conduit hookup

Material:
- Body: . . . . . Brass
- Plunger: . . . . . Stainless Steel

Listings and Approvals

UL E91021
ULC 1165
FM 2T8A9.AF



Selector Valve Pneumatic Actuation Line Kit

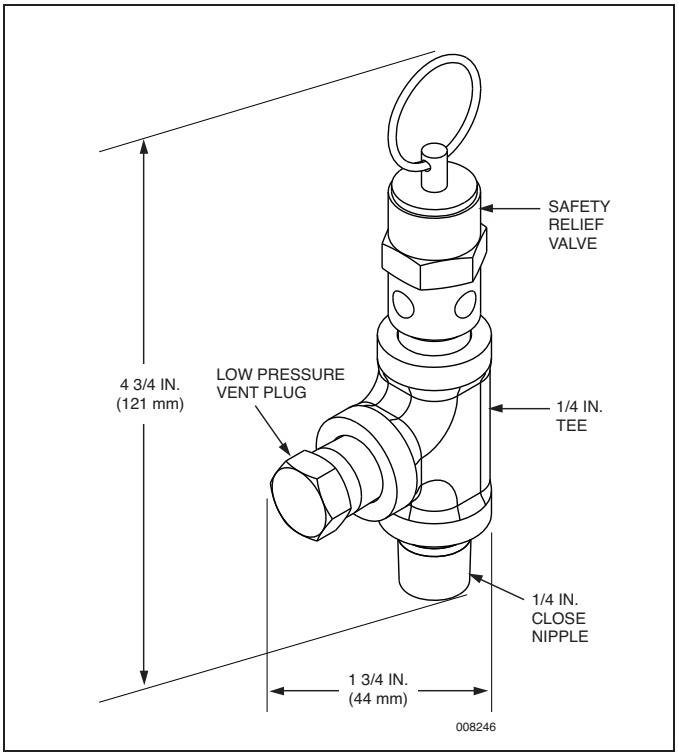
Description

The Selector Valve Pneumatic Actuation Line Kit (Part No. 436127) is used to control the pressure in the actuation lines of the selector valves. One selector valve pneumatic actuation line kit is required for each Pneumatic Actuator (Part No. 428566) and must be installed within 1 ft (0.3 m) of the actuator/isolation valve.

The Low Pressure Vent Plug (Part No. 436085) and Safety Relief Valve (Part No. 15677) are to be installed with a torque of 125 in.-lb (14 N m).

After system discharge, all pressure in the actuation line must be relieved by pulling the ring on the safety relief valve.

Component	Material	Approvals
Low-Pressure Vent Plug	Brass	UL Listed (EX-4510); Listed for use with FM Approved systems
Safety Relief Valve	Brass	UL Listed (EX-4510); Listed for use with FM Approved systems
1/4 in. Close Nipple	Galvanized Steel	UL Listed (EX-4510); Listed for use with FM Approved systems
1/4 in. Tee	Galvanized Steel	UL Listed (EX-4510); Listed for use with FM Approved systems



Shipping Assembly Part No.	Description
436127	Selector Valve Pneumatic Actuation Line Kit
436085	Low Pressure Vent Plug
15677	Safety Relief Valve
28484	1/4 in. Close Nipple
27350	1/4 in. Tee

Note: The low pressure vent plug cannot be ordered separately.

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Form No. F-2012053

Booster Actuator/Selector Valve Adaptor

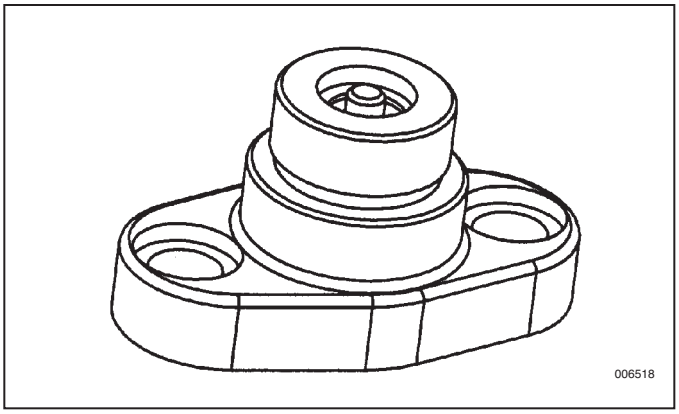
Description

The Booster Actuator/Selector Valve Adaptor, Part No. 430832, is used to adapt the booster actuator to the 3 and 4 in. selector valves (Part Nos. 857433 and 857445). The actuator/adaptor is mounted to the selector valve and the booster (Part No. 428949) is threaded to the top of the adaptor.

By adapting the booster actuator to the 3 and 4 in. selector valves, the valves can then be actuated by utilizing the electric HF actuator.

Shipping Assembly Part No.	Description
430832	Booster Actuator/ Selector Valve Adaptor

Component	Material	Approvals
Adaptor	Brass	UL Listed (EX-4510); Listed for use with FM Approved systems



Note: This actuator/adaptor can also be used to retrofit older model 1/2 in. through 2 1/2 in. selector valves (Part Nos. 857428, 857429, 857430, 857431, 857432, and 857433) when used in conjunction with the booster actuator (Part No. 428949) and the HF actuator (Part No. 73327).

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Form No. F-2002139-01

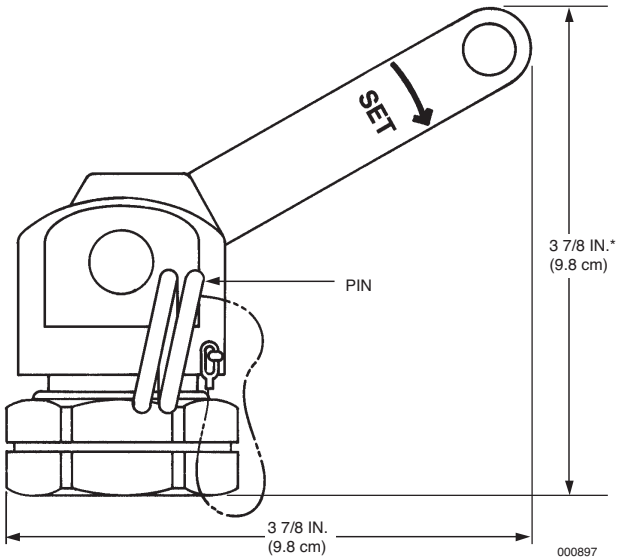
Lever Release Actuator

Description

The manual lever release actuator provides a manual means of actuating cylinder valves and selector valves. This can be accomplished by direct manual actuation of its pull lever or cable actuation when used in conjunction with a remote manual pull station. When used with a remote manual pull station, the pull station must contain the components necessary to meet the actuator lever traveling requirements of 7 in. (178 mm).

The actuator is shipped with ring pin and chain attached. If the ring pin is not required, it must be removed. Failure to remove the ring pin/chain assembly will prevent system actuation if a remote cable pull actuation system is employed and the ring pin is accidentally installed in the actuator.

Four actuators are available. Each is designed for a specific component.



DEPTH: 3 7/8 IN. (7.6 cm)

* Add 1 9/16 in. (3.9 cm) to height when lever is in the straight up position.

Component	Material	Approvals
All Manual Cable-pull Actuators	Brass with Stainless Steel Pin	UL Listed (EX-4510); Listed for use with FM Approved systems

Shipping Assembly Part No.	Description
842484	Lever Release (1 1/4-18 mounting thread) – Mounts directly to pressure actuator on 2 1/2 in., 3 in. and 4 in. selector valves.
423309	Lever Release (1 1/8-18 mounting thread) – Mounts directly to a CV-98 electric actuator. Mounts directly to a CV-98 cylinder valve.
70846	Lever Release (1 1/4-18 mounting thread) – Mounts directly to an HF electric actuator.
427207	Lever Release (1 1/8-18 mounting thread) – Mounts directly to the 1 in. and 2 in. selector valves. Mounts directly to pressure operated stackable actuator for 1 in. and 2 in. selector valves. Actuator has the handle painted red.

Manual Pull Box

Description

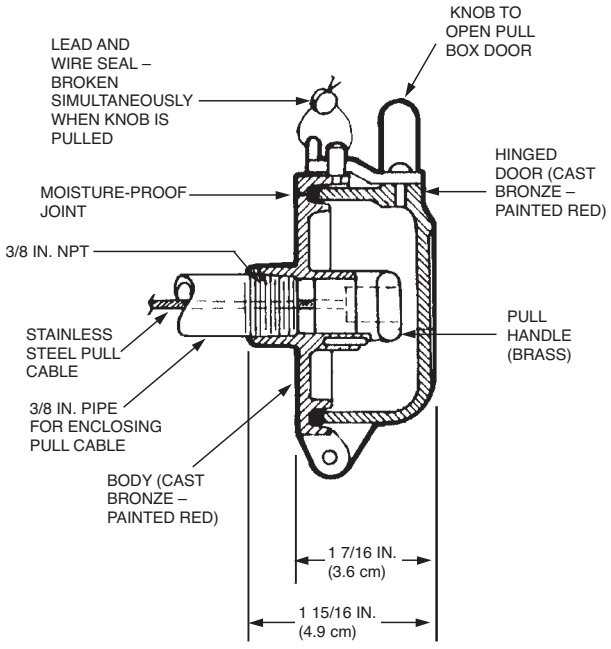
The pull box on an INERGEN® system is used to provide mechanical release of the system from a manually operated remote station. Two types of pull boxes are available. The latched door type has a solid cast brass door which must be opened to reach the pull handle. The second type has a break glass window and a spring mounted handle which rotates forward for use when the glass is broken. A 3/8 in. female NPT opening is provided at the back of each enclosure for connection of the cable housing. Both types are painted red.

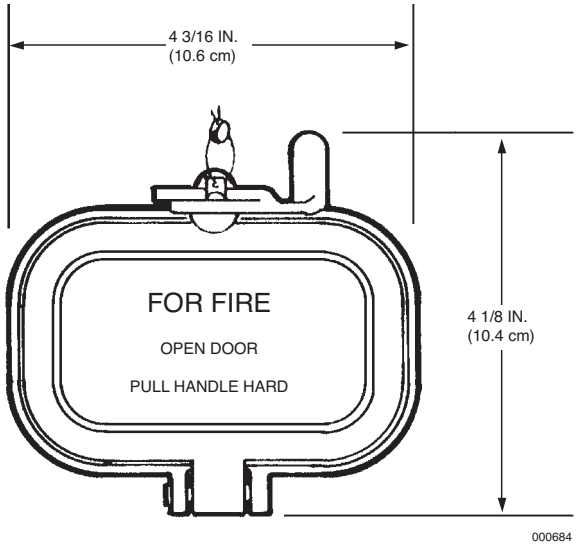
A pulley elbow may be attached directly to the back of the pull box, if necessary, to provide immediate changes in pull cable direction. With this option, the pull box can be extended an additional 3 1/2 in. (8.9 cm) from the mounting surface by using support legs attached to the back of the pull box (one set for latched door type, two sets for break-glass type).

Component	Material	Approvals
Latch door pull box	Brass	UL Listed (EX-4510); Listed for use with FM Approved systems
Break glass window pull box	Brass	UL Listed (EX-4510); Listed for use with FM Approved systems

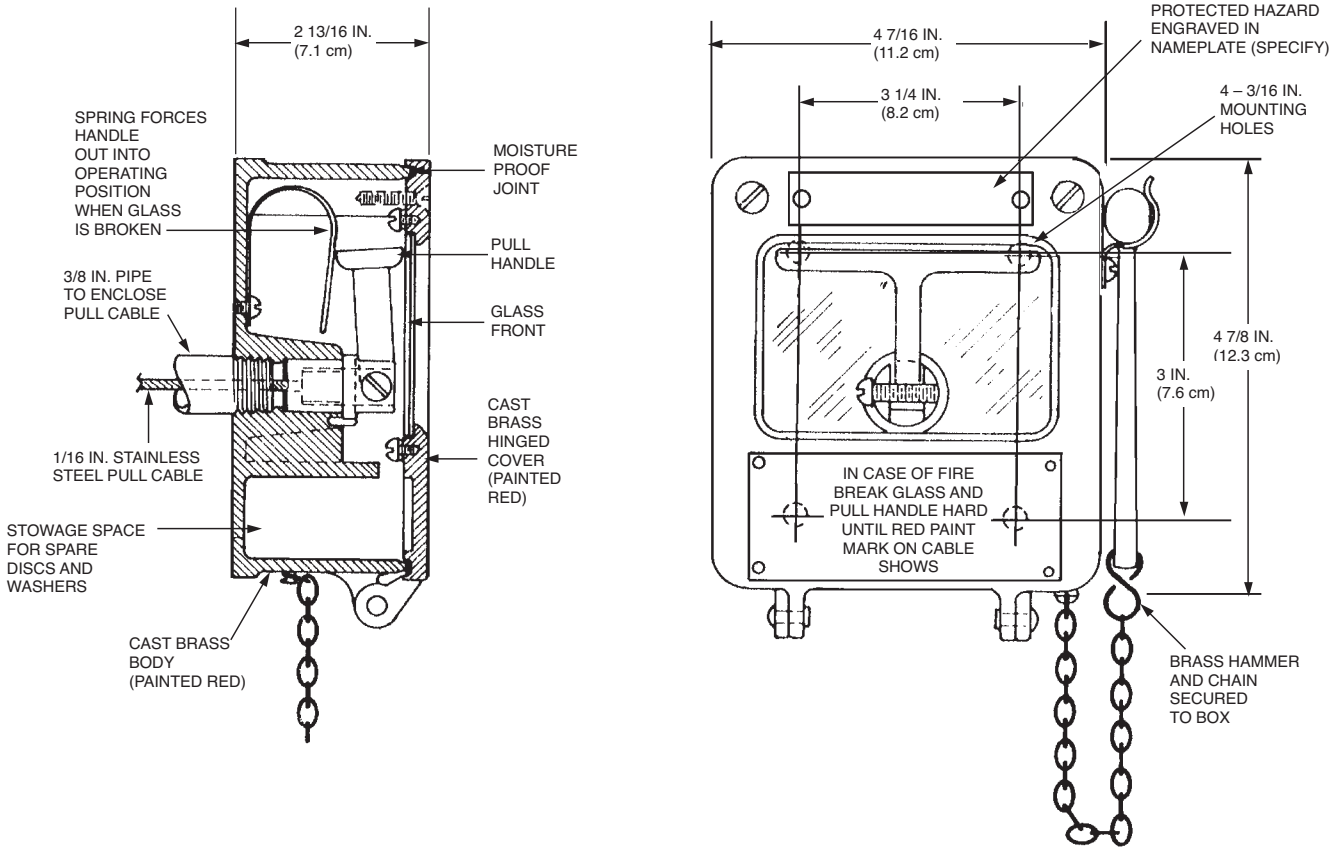
Shipping Assembly Part No.	Description
845062	Latch door type pull box
841527	Break-glass window pull box
841542	Support legs

Manual Pull Box Latched Door Type





Manual Pull Box Break Glass Type “A”



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Form No. F-9318-04

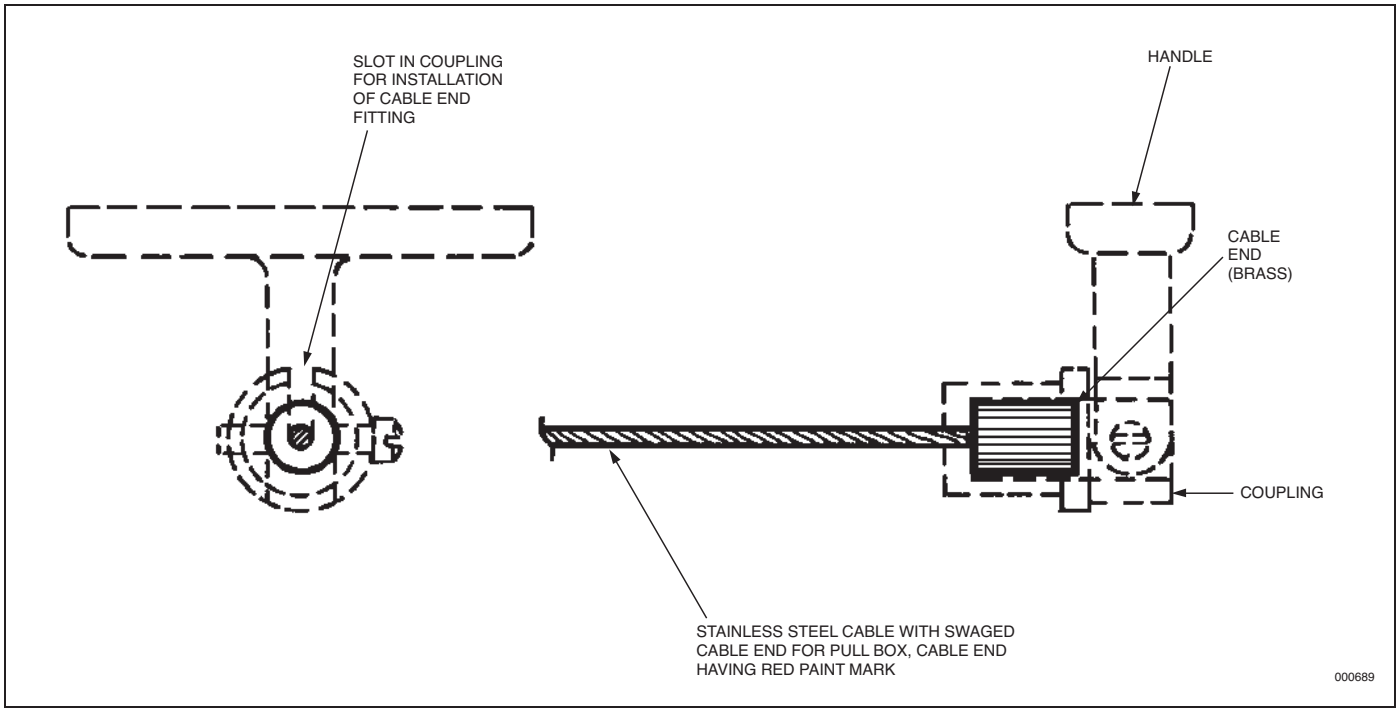
Cable with Swaged End Fitting

Description

The 1/16 in. diameter cable is used to attach remote manual pull boxes to cylinder valves, pull equalizers and control boxes. The cable is constructed of stranded, stainless steel wire. The cable is available in lengths of 50, 100, and 150 ft (15.2, 30.5, and 45.7 m). The cable assemblies include a brass swaged end fitting for attaching to the remote pull box.

Component	Material	Approvals
Cable Assembly	Cable: Stainless Steel Swaged Fitting: Brass	UL Listed (EX-4510); Listed for use with FM Approved systems

Shipping Assembly Part No.	Description
842104	50 ft (15.2 m) 1/16 in. (0.16 cm) cable with swaged end fitting
842109	100 ft (30.5 m) 1/16 in. (0.16 cm) cable with swaged end fitting
842113	150 ft (45.7 m) 1/16 in. (0.16 cm) cable with swaged end fitting



Note: The strength of the end fitting exceeds the breaking point of the cable.

Corner Pulley

Description

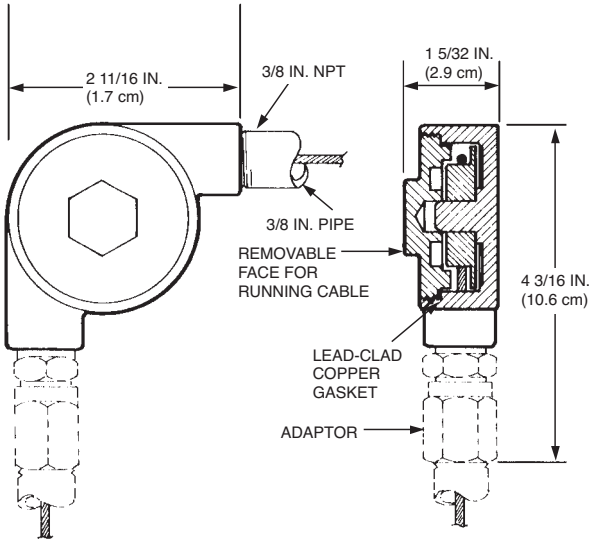
The corner pulley is required on an INERGEN® system whenever a mechanical release pull cable run involves a change in direction. Corner pulleys are installed as part of the cable housing (pipe or conduit) and provide 90° direction changes with minimal force loss and no induced kinking.

Two types of corner pulleys are available. One is made of die cast aluminum, has a ball bearing roller, and uses compression fittings for 1/2 in. EMT connections. The second type is made of forged brass and is threaded for 3/8 in. NPT pipe. Two styles of forged brass corner pulleys are available: one with a brass wheel and one with a nylon wheel. Both styles of brass pulleys are watertight. The brass wheel corner pulley is designed for location inside or outside the protected space. The nylon wheel corner pulley is designed for location only outside the hazard space. Thread adaptors are available to simplify the installation.

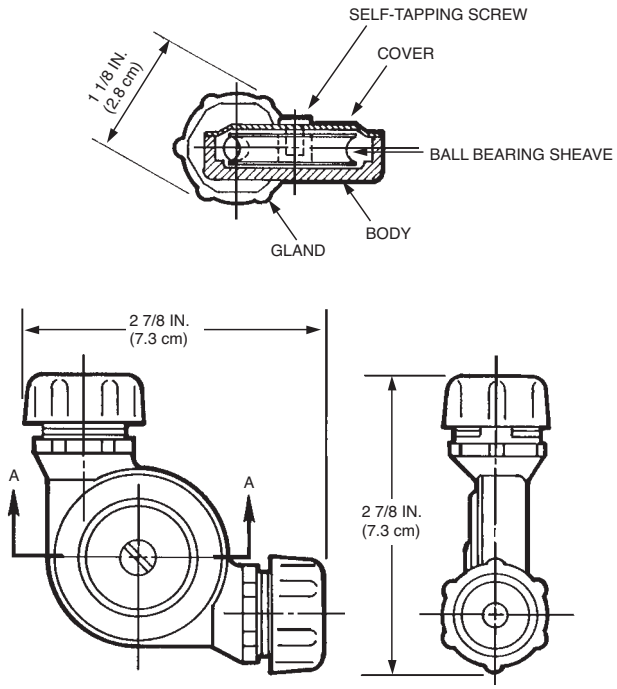
Component	Material	Thread Size/Type	Approvals
Corner Pulley	Body: Aluminum Roller: Stainless Steel	1/2 in. EMT	UL Listed (EX-4510); Listed for use with FM Approved systems
Corner Pulley	Body: Brass Wheel: Brass	3/8 in. NPT	UL Listed (EX-4510); Listed for use with FM Approved systems
Corner Pulley	Body: Brass Wheel: Nylon	3/8 in. NPT	UL Listed (EX-4510); Listed for use with FM Approved systems

Shipping Assembly Part No.	Description
423250	Aluminum corner pulley
842678	Brass corner pulley (nylon wheel)
845515	Brass corner pulley (brass wheel)
840696	Thread adaptor – (brass pulley only)

Forged Brass Watertight Corner Pulley, Sheave Type, Part No. 842678 and 845515



Corner Pulley For 1/2" EMT Aluminum, Part No. 423250



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Form No. F-9319-05

Dual/Triple Control Boxes

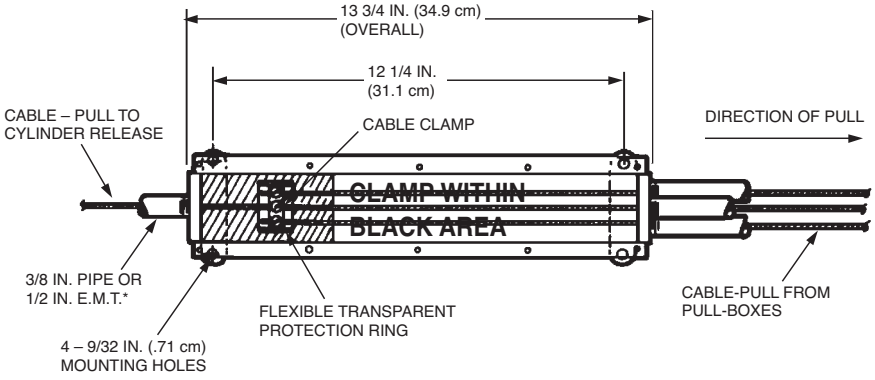
Description

The dual/triple control boxes allow manual actuation of a cylinder valve from two or three remote pull stations. Two styles of control boxes are available. Part No. 842784 is 13 3/4 in. (34.9 cm) and Part No. 843166 is 20 3/4 in. (52.7 cm) long. Both styles can be used for cylinder valve actuation. The inlet and outlet connections are threaded for 3/8 in. pipe. If 1/2 in. EMT conduit connections are required, adaptor Part No. 845780 is available.

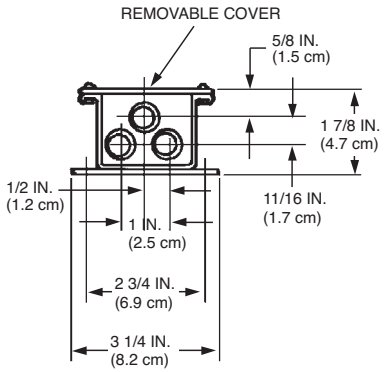
Shipping Assembly Part No.	Description
842784	Dual/triple control box (short)
843166	Dual/triple control box (long)

Component	Material	Thread Size/Type	Approvals
Control Box (short)	Steel	3/8 in. NPT Female	UL Listed (EX-4510); Listed for use with FM Approved systems
Control Box (long)	Steel	3/8 in. NPT Female	UL Listed (EX-4510); Listed for use with FM Approved systems

Part No. 842784



Junction Box (Shown Without Cover)

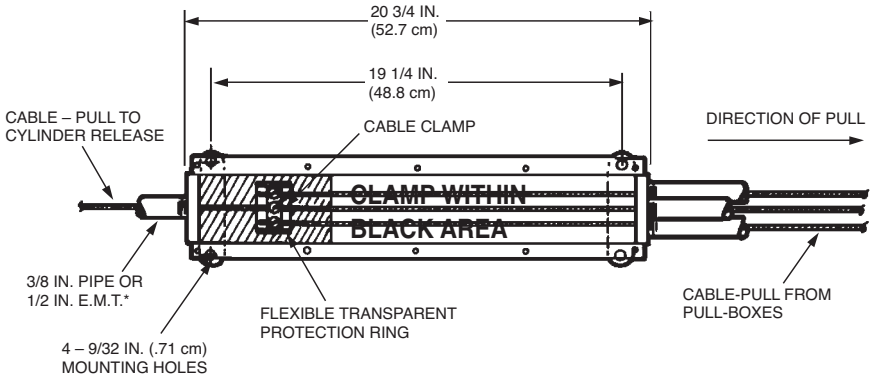


End View

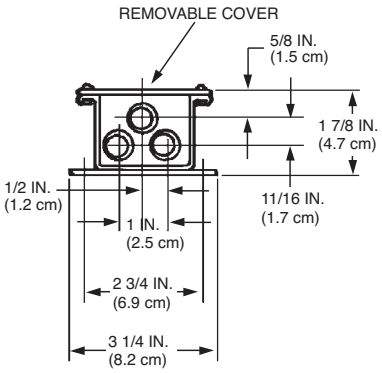
000685

* Adaptors furnished for use with 1/2 in. EMT – Part No. 845780

Part No. 843166



Junction Box
(Shown Without Cover)



End View

000685

* Adaptors furnished for use with 1/2 in. EMT – Part No. 845780

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Form No. F-9322-03

Remote Cable Pull Equalizer

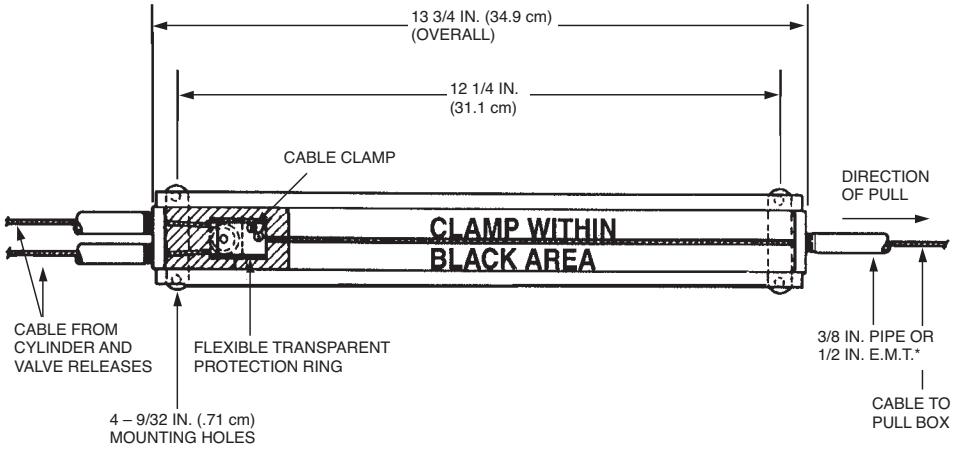
Description

The remote cable pull equalizer is used in systems where manual actuation of the cylinder valve and operation of a selector valve must be accomplished at the same time. The pull equalizer is mounted in the remote pull station cable line. By pulling the remote pull box, the cable attached to the pull equalizer will pull the internal cable clamp in the pull equalizer which in turn will pull the cables attached to the cylinder valve and selector valve, causing them to operate. Two styles of pull equalizers are available. Part No. 842791 is 13 3/4 in. (34.9 cm) long and Part No. 843168 is 20 3/4 in. (52.7 cm). Only the longest equalizer, Part No. 843168, can be used for valves utilizing sectors. The inlet and outlet connections are threaded for 3/8 in. pipe. If 1/2 in. EMT conduit connections are required, adaptor Part No. 845780 is available.

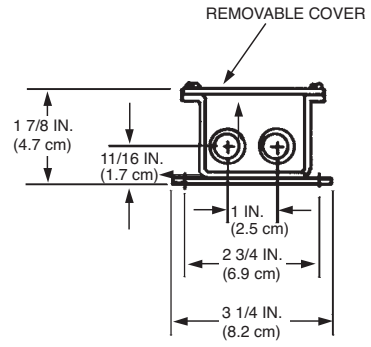
Shipping Assembly Part No.	Description
842791	Remote cable pull equalizer (short)
843168	Remote cable pull equalizer (long)

Component	Material	Thread Size/Type	Approvals
Pull Equalizer (short)	Steel	3/8 in. NPT Female	UL Listed (EX-4510); Listed for use with FM Approved systems
Pull Equalizer (long)	Steel	3/8 in. NPT Female	UL Listed (EX-4510); Listed for use with FM Approved systems

Part No. 842791



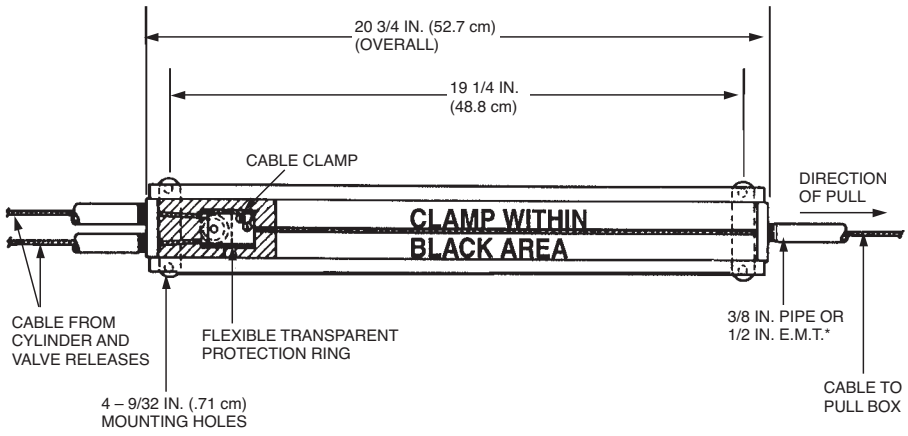
Equalizer Box (Shown Without Cover)



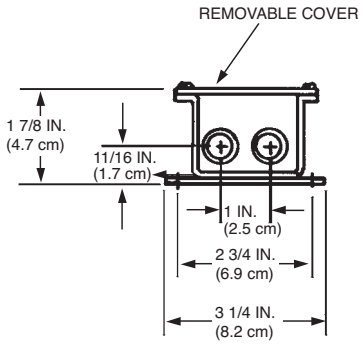
End View

* Adaptors furnished for use with 1/2 in. E.M.T. – Part No. 845780

Part No. 843168



Equalizer Box
(Shown Without Cover)



End View

* Adaptors furnished for use with 1/2 in. E.M.T. – Part No. 845780

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Form No. F-9338-05

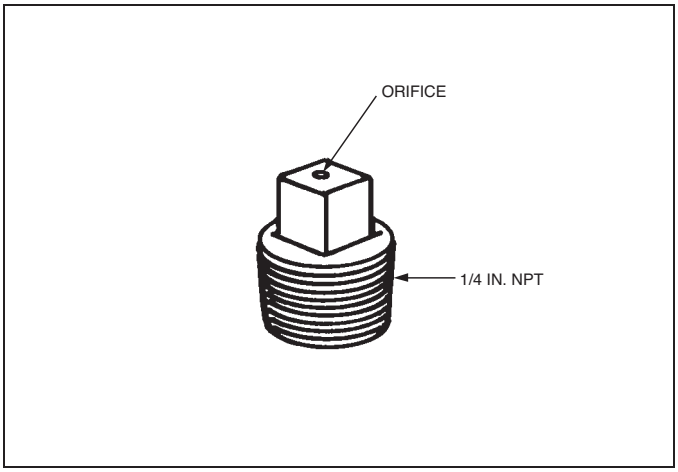
Pressure Bleeder Plug – 1/4 in.

Description

The pressure bleeder plug must be used to relieve the pressure in closed actuation lines. The plug relieves the pressure through a small orifice. This slow relief of pressure does not affect the function of the actuation line.

CAUTION

Pressure Bleeder Plug (Part No. 42175) **must not** be installed anywhere in the directional/selector valve actuation line as the directional/selector valve may not remain open during a complete system discharge, potentially interfering with the ability of the system to suppress a fire.



Shipping Assembly Part No.	Description
42175	Pressure Bleeder Plug

Component	Material	Thread Size/Type	Approvals
Bleeder Plug	Brass	1/4 in. NPT Male	UL Listed (EX-4510); Listed for use with FM Approved systems

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Flexible Discharge Bend

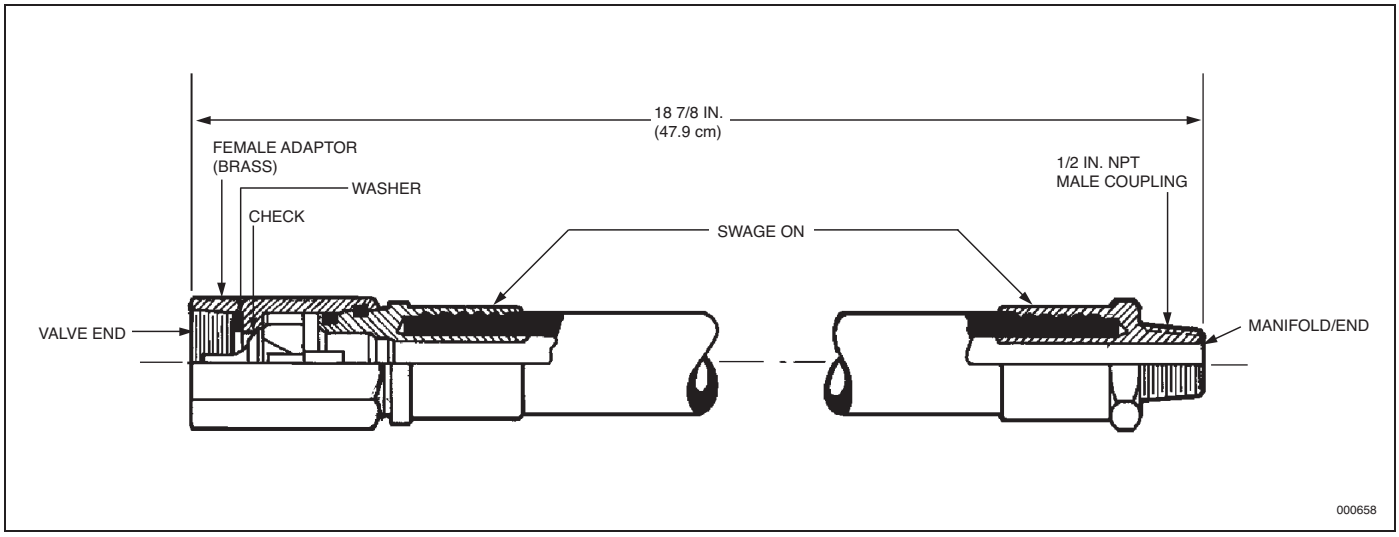
Description

The valve Flexible Discharge Bend (Part No. 427082) is a 5/8 in. (1.59 cm) I.D. extra-heavy flexible hose which connects the valve discharge outlet to the fixed piping or header manifold. The discharge bend has a special female thread for connecting to the valve outlet and a male 1/2 in. NPT thread for connecting to the fixed piping or manifold. The discharge bend will withstand a pressure of 9000 psi (621 bar). Its flexible connection allows for easy alignment of multiple cylinder banks to fixed piping. Each bend has a built-in check valve that prevents loss of agent should the system discharge while any cylinder is removed.

The equivalent length of this hose is equal to 18 ft (5.5 m) of 1/2 in. Sch. 40 pipe.

Shipping Assembly Part No.	Description
427082	Flexible discharge bend
842430	Washer

Component	Material	Thread Size/Type		Approvals
		Valve End	Manifold End	
5/8 in. Flexible Discharge Bend	SAE 100 R2 Type AT	Special to mate mate with CV90 and CV-98 Valve	1/2 in. NPT Male	UL Listed (EX-4510); Listed for use with FM Approved systems



Check Valves

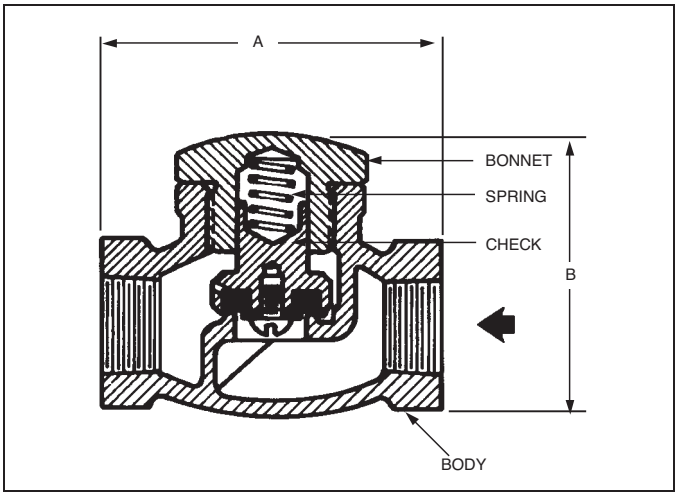
Description

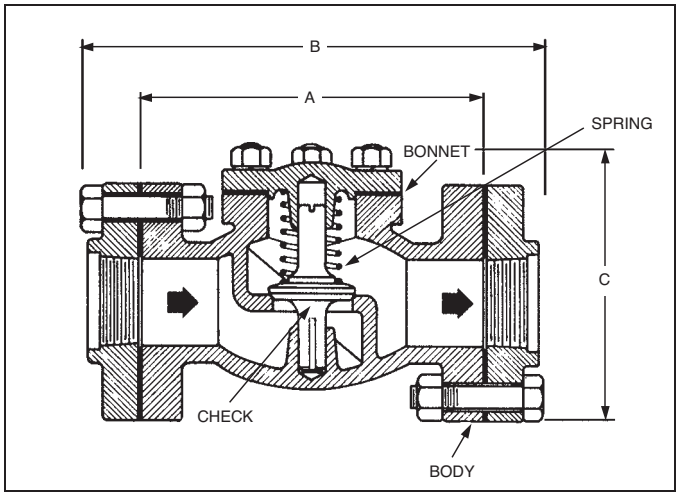
Check valves are used in main/reserve and selector valve systems. On main/reserve systems, the check valve prevents pressurization of the reserve system manifold by blocking the flow of INERGEN® agent from the main system to the reserve system. The check valve allows gas flow from the reserve (if actuated) to pass through into the distribution piping. On selector valve systems, check valves separate the actuation of smaller system(s) from the largest ones.

The check valves are available in sizes from 1/2 in. through 3 in.

Shipping Assembly Part No.	Description
840860	1/2 in. check valve
840852	3/4 in. check valve
841470	1 in. check valve
841549	1 1/4 in. check valve
841463	1 1/2 in. check valve
840649	2 in. check valve
840656	2 1/2 in. check valve
840665	3 in. check valve

Component	Material	Body Thread Size/Type	Type	Equivalent Length Approvals	(Sch. 80 Pipe)
Check Valve	Bronze	1/2-14 NPT Female	Threaded	UL Listed (EX-4510); Listed for use with FM Approved systems	12. 0 ft (3.7 m)
Check Valve	Bronze	3/4-14 NPT Female	Threaded	UL Listed (EX-4510); Listed for use with FM Approved systems	24.0 ft (7.3 m)
Check Valve	Bronze	1-11 1/2 NPT Female	Threaded	UL Listed (EX-4510); Listed for use with FM Approved systems	28.0 ft (8.5 m)
Check Valve	Bronze	1 1/4 -11 1/2 NPT Female	Threaded	UL Listed (EX-4510); Listed for use with FM Approved systems	43.0 ft (13.1 m)
Check Valve	Bronze	1 1/2-11 1/2 NPT Female	Threaded	UL Listed (EX-4510); Listed for use with FM Approved systems	51.0 ft (15.5 m)
Check Valve	Bronze	2-11 1/2 NPT Female	Threaded	UL Listed (EX-4510); Listed for use with FM Approved systems	48.0 ft (14.6 m)
Check Valve	Bronze	2 1/2-8 NPT Female	Threaded	UL Listed (EX-4510); Listed for use with FM Approved systems	60.0 ft (18.3 m)
Check Valve	Bronze Body Steel Flange	3-8 NPT Female	Threaded Flange	UL Listed (EX-4510); Listed for use with FM Approved systems	154.0 ft (46.9 m)





Check Valve – Threaded				
Valve Size	**Dimension A** in.	(cm)	**Dimension B** in.	(cm)
1/2 in.	3	(7.6)	2 5/8	(6.6)
3/4 in.	3 5/8	(9.2)	3 1/8	(7.9)
1 in.	4 1/8	(10.4)	3 3/4	(9.5)
1 1/4 in.	5	(12.7)	4 1/2	(11.4)
1 1/2 in.	5 1/2	(13.9)	5 1/8	(13)
2 in.	6 1/2	(16.5)	5 3/4	(14.6)
2 1/2 in.	8	(20.3)	6 3/4	(17.1)

Check Valve – Threaded Flange						
Valve Size	**Dimension A** in.	(cm)	**Dimension B** in.	(cm)	**Dimension C** in.	(cm)
3 in.	11 1/2	(29.2)	15	(38.1)	9 1/2	(24.1)

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Form No. F-9320-07

Header Vent Plug

Description

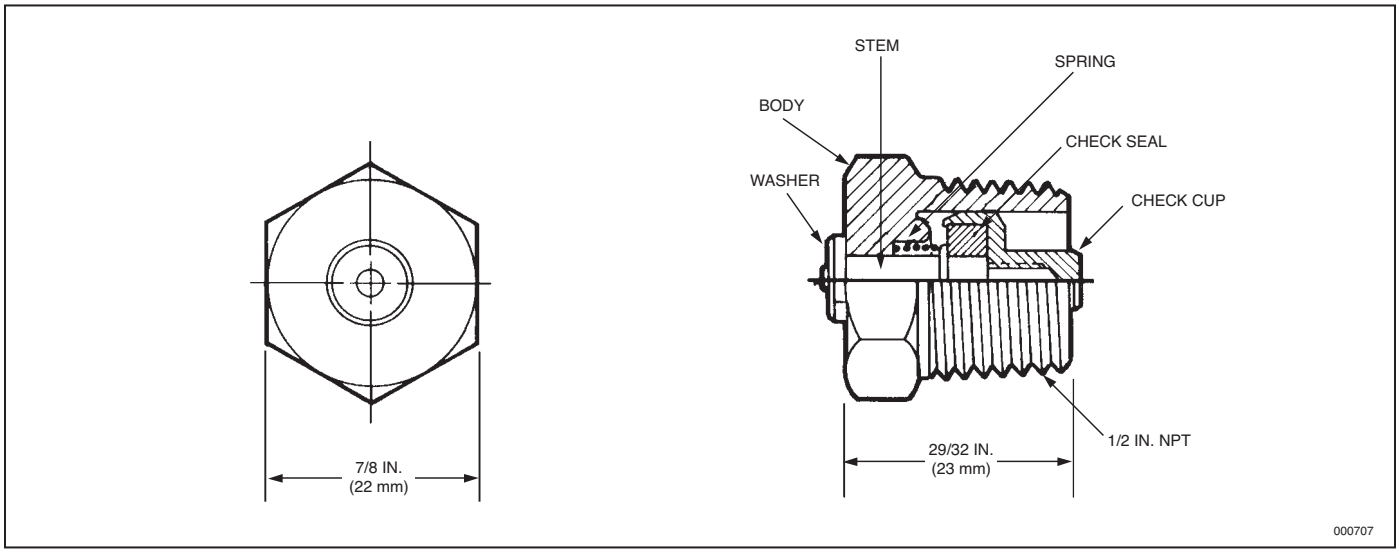
The header vent plug is used to release low pressure build-up that may occur in a closed system utilizing selector valves or check valves. The header vent plug should also be installed on the cylinder sides of the check valves on both main and reserve systems to relieve any pressure that may leak past the check valve and accidentally actuate the reserve system while the main system is discharging.

Shipping Assembly Part No.	Description
40309	Header vent plug

CAUTION

A header vent plug **must** be installed in all closed sections of the system manifold(s). The omission of a header vent plug may cause the manifold to build pressure. This could result in the actuation of a system cylinder, which would then cause all cylinders in that specific system to actuate.

Component	Material	Thread Size/Type	Approvals
Vent Plug	Body: Brass Spring: Bronze Seal: Neoprene	1/2 in. NPT Male	UL Listed (EX-4510); Listed for use with FM Approved systems



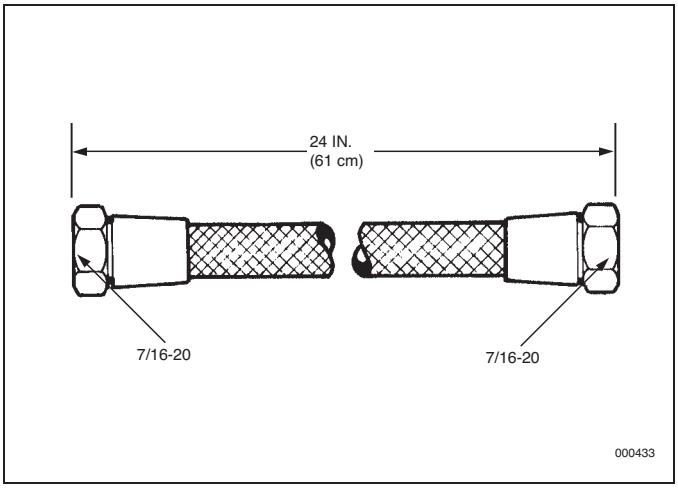
Inergen Clean Agent Systems

Stainless Steel Actuation Hose

Description

The Stainless Steel Actuation Hose is used to connect the actuation line flared tees between each agent tank. The hose has the same thread, 7/16-20, as the flared tees. The actuation hose allows flexibility between the rigid actuation piping and the tank valve.

Shipping Assembly Part No.	Description
831809	16 in. (40.6 cm) Stainless Steel Hose
832335	20 in. (50.8 cm) Stainless Steel Hose
832336	24 in. (60.9 cm) Stainless Steel Hose



Component	Material	Thread Size	Approvals
Stainless Steel Hose	Stainless Steel	Female 7/16-20 (Both ends)	UL Listed (EX-4510); Listed for use with FM Approved systems

Additional actuation fittings are available:

Part No.	Description
831810	Male Elbow (7/16-20 x 1/4 in. NPT)
831811	Male Tee (7/16-20 x 7/16-20 x 1/4 in. NPT)
832338	Male Straight Connector (7/16-20 x 1/4 in. NPT)

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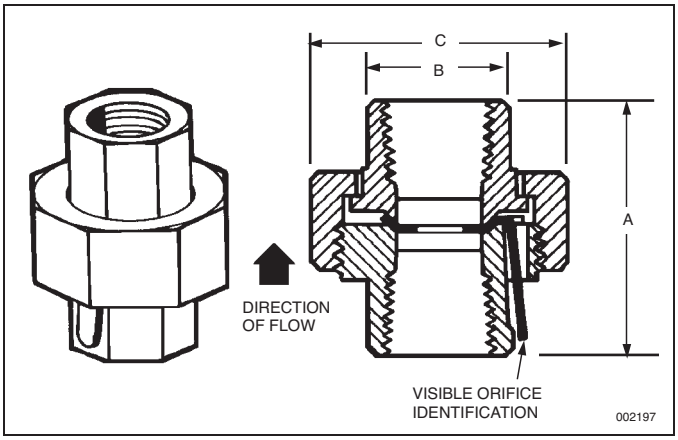
Pressure Reducer/Union

Description

The pressure reducer/union is required to restrict the flow of INERGEN® agent thus reducing the agent pressure down stream of the union. The 3000 psi (206.9 bar) NSCWP union contains a stainless steel orifice plate which is drilled to the specific size hole required based on the flow calculation.* The orifice plate provides readily visible orifice identification. The orifice union is available in six sizes: 1/2 in., 3/4 in., 1 in., 1 1/4 in., 1 1/2 in., and 2 in. NPT.

All pressure reducer/unions must be installed in the piping with the orifice identification tab on the pressure inlet side of the system. The 1 1/4 in., 1 1/2 in. and 2 in. orifice unions must be installed per the direction of the flow arrow stamped on the body.



Shipping Assembly Part No.	Description	A	B	C
416677	1/2 in. NPT pressure reducer/union	2.06 in. (5.2 cm)	1.18 in. (2.9 cm)	1.95 in. (4.9 cm)
416678	3/4 in. NPT pressure reducer/union	2.38 in. (6.1 cm)	1.50 in. (3.8 cm)	2.38 in. (6.1 cm)
416679	1 in. NPT pressure reducer/union	2.63 in. (6.7 cm)	1.78 in. (4.5 cm)	2.77 in. (7.0 cm)
416680	1 1/4 in. NPT pressure reducer/union	2.94 in. (7.5 cm)	2.04 in. (5.2 cm)	3.31 in. (8.4 cm)
416681	1 1/2 in. NPT pressure reducer/union	3.31 in. (8.4 cm)	2.31 in. (5.9 cm)	3.70 in. (9.4 cm)
416682	2 in. NPT pressure reducer/union	3.56 in. (9.0 cm)	2.85 in. (7.2 cm)	4.39 in. (11.2 cm)

Component	Material	Thread Size	Approvals
Pressure Reducer/ Union	Body: Forged Steel Orifice Plate: Stainless Steel	1/2, 3/4, 1, 1 1/4, 1 1/2, 2 in. NPT	UL Listed (EX-4510); Listed for use with FM Approved systems

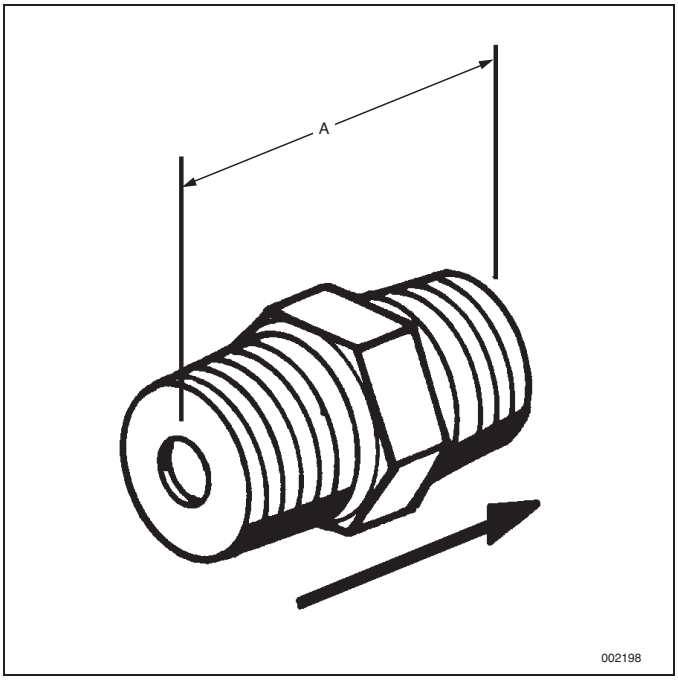
Note: Refer to “Nozzle/Pressure Reducer Range Chart” in Design Section for detailed orifice range information.

* Orifice diameter must be specified when placing order.

Pressure Reducer/Nipple

Description

The pressure reducer/nipple is required to restrict the flow of INERGEN® agent thus reducing the agent pressure downstream of the nipple. The nipple contains an orifice which is drilled to the specific size hole required based on the flow calculation.* The pressure reducer/nipple part number and orifice size are stamped on the body hex. The orifice nipple is available in two sizes: 2 1/2 in., and 3 in. NPT.



Shipping Assembly Part No.	Description
417057	2 1/2 in. NPT pressure reducer/nipple
417058	3 in. NPT pressure reducer/nipple

Nipple Size	Hex Size	"A" Dim.
2 1/2 in.	3 in.	4 3/8 in.
3 in.	3 1/2 in.	4 1/2 in.

Component	Material	Thread Size	Approvals
Pressure Reducer/ Nipple	Body: Brass	2 1/2 in., 3 in. NPT	UL Listed (EX-4510); Listed for use with FM Approved systems

Note: Refer to "Nozzle/Pressure Reducer Range Chart" in Design Section for detailed orifice range information.

* Orifice diameter must be specified when placing order.

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Form No. F-9432-06

Flanged Pressure Reducer

Description

The flanged pressure reducer assembly is required to restrict the flow of INERGEN® agent thus reducing the agent pressure down stream of the pressure reducer. The flanged pressure reducer assembly contains a stainless steel orifice plate which is drilled to the specific size hole required based on the flow calculation.* The orifice plate provides readily visible orifice identification. The flanged pressure reducer assembly is available in three sizes; 2 1/2, 3, and 4 in. Each size is available in threaded, slip-on, and weld neck flange.

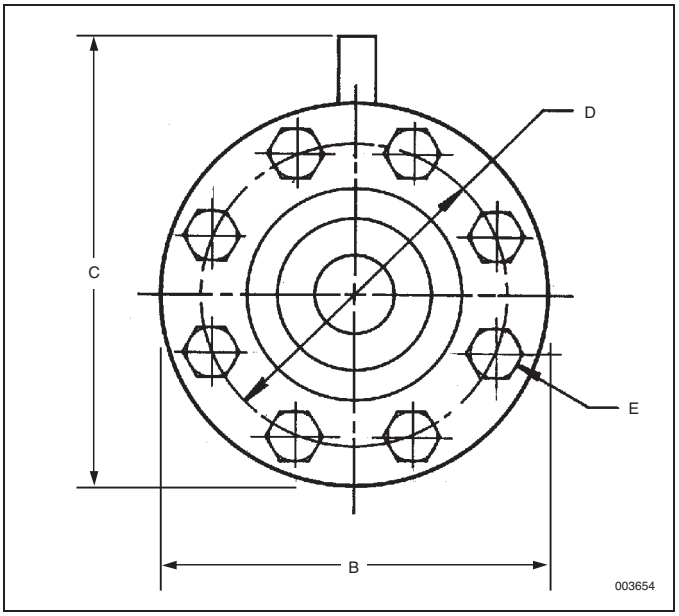
All orifice plates must be installed in the piping system with the orifice identification information on the tab facing the pressure inlet side of the system.

Component	Material	Approvals
Flange	Forged Steel	UL Listed (EX-4510)
Flange Gasket	Stainless Steel	
Orifice Plate	Stainless Steel	
Bolts	Plated Steel, Grade 5	

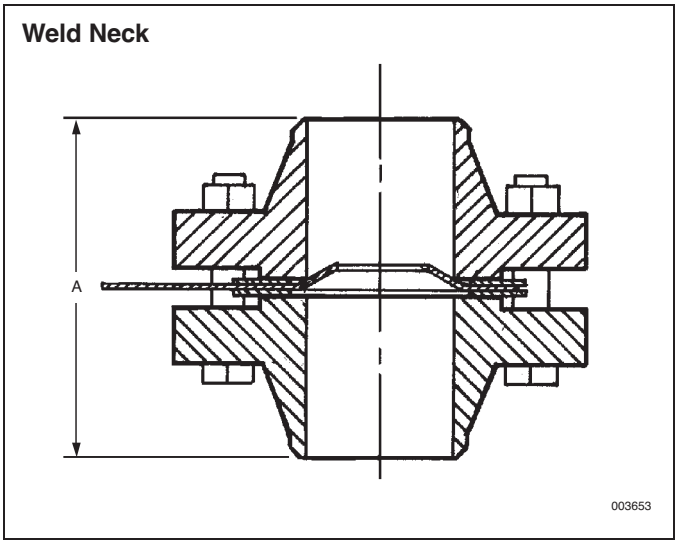
Shipping Assembly Part No.	Description	A	B	C	D	E
426823	2 1/2 in Threaded	4.23 in. (10.7 cm)	7.50 in. (19.1 cm)	9.70 in. (24.6 cm)	5.88 in. (14.9 cm)	.88 in. (8) (2.2 cm)
426824	3 in. Threaded	4.10 in. (10.4 cm)	8.25 in. (20.9 cm)	10.46 in. (26.6 cm)	6.63 in. (16.8 cm)	.88 in. (8) (2.2 cm)
426825	4 in. Threaded	4.73 in. (12.0 cm)	10.75 in. (27.3 cm)	12.59 in. (31.9 cm)	8.50 in. (21.6 cm)	1.00 in.(8) (2.5 cm)
426847	2 1/2 in. Slip-on	4.24 in. (10.8 cm)	7.50 in. (19.1 cm)	9.70 in. (24.6 cm)	5.88 in. (14.9 cm)	.88 in. (8) (2.2 cm)
426848	3 in. Slip-on	4.60 in. (11.7 cm)	8.25 in. (20.9 cm)	10.46 in. (26.6 cm)	6.63 in. (16.8 cm)	.88 in. (8) (2.2 cm)
426849	4 in. Slip-on	5.24 in. (13.3 cm)	10.75 in. (27.3 cm)	12.59 in. (31.9 cm)	8.50 in. (21.6 cm)	1.00 in. (8) (2.5 cm)
426853	2 1/2 in. Weld Neck	7.23 in. (18.4 cm)	7.50 in. (19.1 cm)	9.70 in. (24.6 cm)	5.88 in. (14.9 cm)	.88 in. (8) (2.2 cm)
426854	3 in. Weld Neck	7.48 in. (18.9 cm)	8.25 in. (20.9 cm)	10.46 in. (26.6 cm)	6.63 in. (16.8 cm)	.88 in. (8) (2.2 cm)
426855	4 in. Weld Neck	8.98 in. (22.8 cm)	10.75 in. (27.3 cm)	12.59 in. (31.9 cm)	8.50 in. (21.6 cm)	1.00 in. (8) (2.5 cm)

NOTE: Refer to “Nozzle/Pressure Reducer Range Chart” in Design Section for detailed orifice range information.

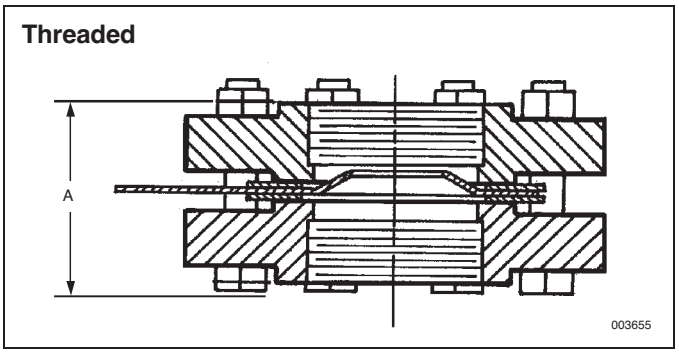
* Orifice diameter must be specified when placing order.



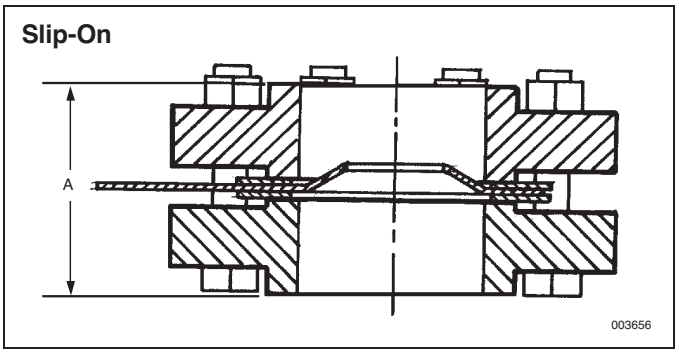
Weld Neck



Threaded



Slip-On



Orifice Plate

Description

Orifice plate shipping assemblies are available as replacement plates. Replacement plates may be required in situations where the piping and pressure reducer size can stay the same but because of some hazard change, the size of the orifice in the pressure reducer must change.

The orifice size must be specified when ordering the orifice plate.

NOTE: Replacement orifice plates for orifice nipples are not available as the plate is a permanent fixture of the part.

NOTE: Refer to “Nozzle/Pressure Reducer Range Chart” in Design Section for detailed orifice range information.

Part No.	Description
418095	1/2 in. Replacement Orifice Plate
418096	3/4 in. Replacement Orifice Plate
418097	1 in. Replacement Orifice Plate
418098	1 1/4 in. Replacement Orifice Plate
418099	1 1/2 in. Replacement Orifice Plate
418100	2 in. Replacement Orifice Plate
426984	2 1/2 in. Replacement Orifice Plate
426985	3 in. Replacement Orifice Plate
426986	4 in. Replacement Orifice Plate

Single Mating Flanges

Description

Single mating flanges are available for field assembly to the Ansul selector valves and the Ansul flanged pressure reducers. These single, flanged shipping assemblies are available in threaded, slip-on, and weld neck, in 2 1/2, 3, and 4 in. sizes. Each shipping assembly includes a flange, a stainless steel gasket, 8 bolts, and 8 nuts.

Shipping Assembly Part No.	Description
426856	2 1/2 in. Threaded Flange
426857	3 in. Threaded Flange
426858	4 in. Threaded Flange
426859	2 1/2 in. Slip on Flange
426860	3 in. Slip-on Flange
426861	4 in. Slip-on Flange
426862	2 1/2 in. Weld Neck
426863	3 in. Weld Neck
426864	4 in. Weld Neck

Component	Material	Approvals
Flange Flange Gasket Bolts/Nuts	Forged Steel Stainless Steel Plated Steel, Grade 5	UL Listed (EX-4510)

360° Discharge Nozzle

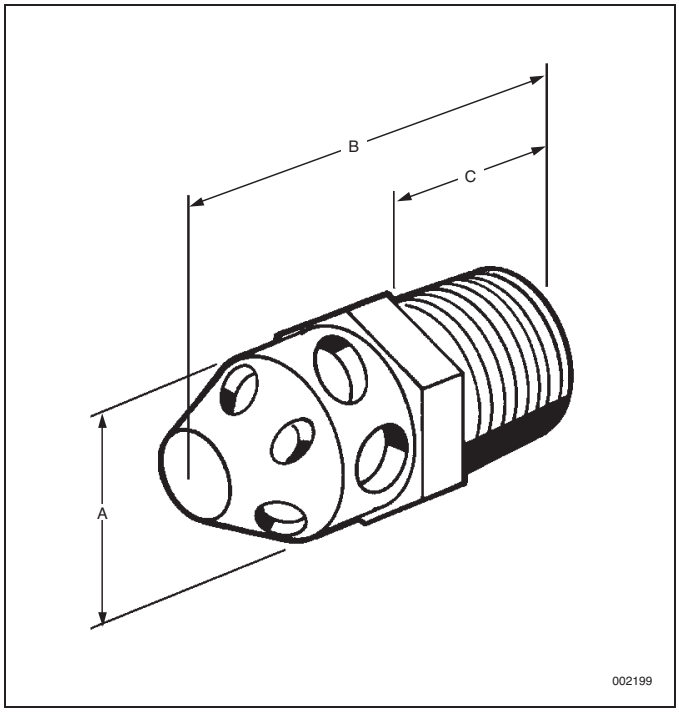
Description

Discharge nozzles are designed to direct the discharge of INERGEN® agent using the stored pressure from the cylinders. Ten sizes of nozzles are available. The system design specifies the orifice size to be used for proper flow rate and distribution pattern*. The nozzle selection depends on the hazard and location to be protected. Standard nozzles are constructed of brass.

Note: 2, 2 1/2, and 3 in. nozzles are not recommended in areas that are subject to damage by high velocity discharges, such as suspended ceiling tiles.

Shipping Assembly Part No.	Description
417908	1/4 in. NPT nozzle**
417723	3/8 in. NPT nozzle**
417362	1/2 in. NPT nozzle
417363	3/4 in. NPT nozzle
417364	1 in. NPT nozzle
417365	1 1/4 in. NPT nozzle
417366	1 1/2 in. NPT nozzle
426155	2 in. NPT nozzle
426156	2 1/2 in. NPT nozzle
426137	3 in. NPT nozzle

Component	Material	Thread Size	Approvals
Nozzle	Body–Brass	1/4**, 3/8**, 1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2, 3 NPT	UL Listed (EX-4510); Listed for use with FM Approved systems



Size	A-In.	B-In.	C-In.	Hex
1/4 in.	5/8	1 9/16	21/32	5/8
3/8 in.	3/4	1 5/8	23/32	3/4
1/2 in.	15/16	1 31/32	27/32	15/16
3/4 in.	1 1/8	2 5/32	7/8	1 1/8
1 in.	1 13/32	2 9/16	1	1 7/16
1 1/4 in.	1 3/4	2 3/4	1 1/16	1 3/4
1 1/2 in.	2	2 31/32	1 1/16	2
2 in.	2 3/8	3	1	2 3/8
2 1/2 in.	3	3 1/2	1	3
3 in.	3 1/2	4 1/8	1 1/4	3 1/2

Note: Refer to “Nozzle/Pressure Reducer Range Chart” in Design Section for detailed orifice range information.

* Orifice diameter must be specified when ordering nozzle. Refer to Orifice Size Chart in Manual Appendix Section.

**UL/ULC listed only.

180° Discharge Nozzle

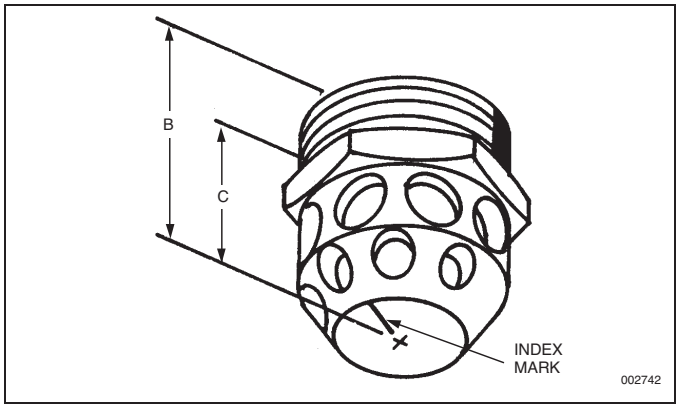
Description

Discharge nozzles are designed to direct the discharge of INERGEN® agent using the stored pressure from the cylinders. Ten sizes of nozzles are available. The system design specifies the orifice size to be used for proper flow rate and distribution pattern*. The nozzle selection depends on the hazard and location to be protected. The 180° nozzle is commonly used when nozzle placement is at the wall. Standard nozzles are constructed of brass.

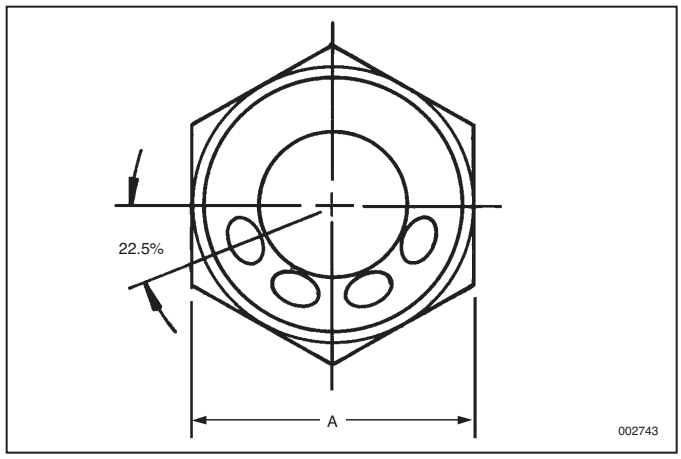
An index mark is stamped on the bottom of the nozzle to indicate the aiming direction.

Component	Material	Thread Size
Nozzle	Body: Brass	1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2, 3 NPT

Shipping Assembly Part No.	Description
426138	1/4 in. NPT nozzle
426139	3/8 in. NPT nozzle
426140	1/2 in. NPT nozzle
426141	3/4 in. NPT nozzle
426142	1 in. NPT nozzle
426143	1 1/4 in. NPT nozzle
426157	1 1/2 in. NPT nozzle
426144	2 in. NPT nozzle
426145	2 1/2 in. NPT nozzle
426146	3 in. NPT nozzle



Size	A-In.	B-In.	C-In.
1/4 in.	5/8	1 9/16	21/32
3/8 in.	3/4	1 5/8	23/32
1/2 in.	15/16	1 31/32	27/32
3/4 in.	1 1/8	2 5/32	7/8
1 in.	1 13/32	2 9/16	1
1 1/4 in.	1 3/4	2 3/4	1 1/16
1 1/2 in.	2	2 31/32	1 1/16
2 in.	2 3/8	3	1
2 1/2 in.	3	3 1/2	1
3 in.	3 1/2	4 1/8	1 1/4



NOTE: Refer to “Nozzle/Pressure Reducer Range Chart” in Design Section for detailed orifice range information.

* Orifice diameter must be specified when ordering nozzle. Refer to Orifice Size Chart in Manual Appendix Section.

Nozzle Deflector Shield

Description

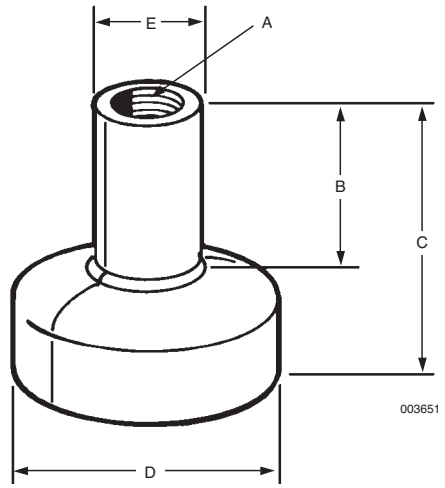
The INERGEN® system nozzle deflector shield is used to control the pattern of the discharge of the INERGEN agent. The deflector shield helps keep the agent discharge away from false ceiling tiles and fragile light fixtures, avoiding damage to them.

The deflector shields are constructed of steel and painted with a cameo cream colored paint. They are available in five sizes.

Component	Material	Approvals
Nozzle Deflector Shield	Steel	UL Listed (EX-4510); Listed for use with FM Approved systems

Shipping Assembly Part No.	A Inlet NPT	B Length of Coupling	C Overall Length	D Deflector O.D.	E Coupling O.D.
417708	1/2 in.	1 7/8 in. (4.8 cm)	3 in. (7.6 cm)	3 3/8 in. (8.6 cm)	1 1/8 in. (2.9 cm)
417711	3/4 in.	2 in. (5.1 cm)	3 1/4 in. (8.3 cm)	3 3/8 in. (8.6 cm)	1 3/8 in. (3.5 cm)
417714	1 in.	2 3/8 in. (6.0 cm)	3 13/16 in. (9.7 cm)	4 7/8 in. (12.4 cm)	1 3/4 in. (4.4 cm)
417717	1 1/4 in.	2 5/8 in. (6.7 cm)	4 3/16 in. (10.6 cm)	4 7/8 in. (12.4 cm)	2 1/4 in. (5.7 cm)
417720	1 1/2 in.	3 1/8 in. (7.9 cm)	4 29/32 in. (12.5 cm)	5 21/32 in. (14.4 cm)	2 1/2 in. (6.4 cm)

NOTE: There are no deflector shields available for the 2, 2 1/2, or 3 in. models.



Cylinder Bracketing

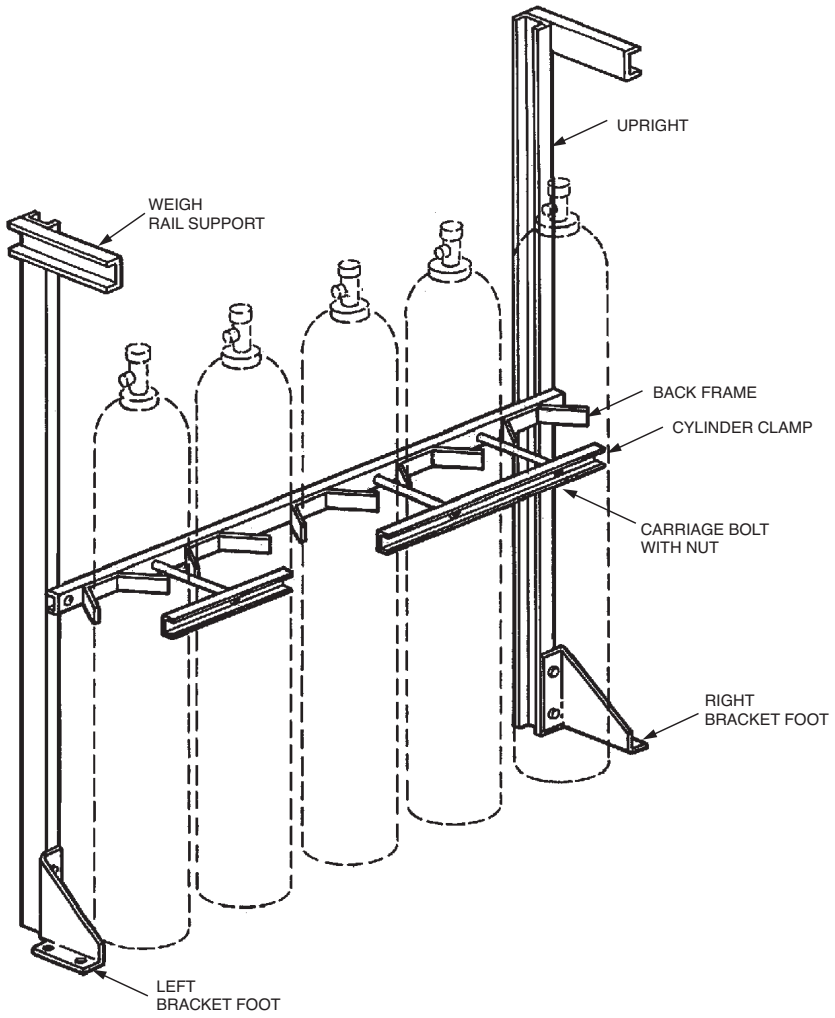
Description

The cylinder bracketing is designed to rigidly support the installed INERGEN® agent cylinders. The bracketing components are constructed of heavy structural steel. Bracket assemblies are available in modules for two to six cylinders and can also be connected together for any combination over six. Bracketing can be assembled to support single row, double row or back-to-back rows of cylinders. Bracketing components are painted with a red enamel coating. Uprights and back frame assemblies can be bolted or welded together, which ever makes the installation more convenient.

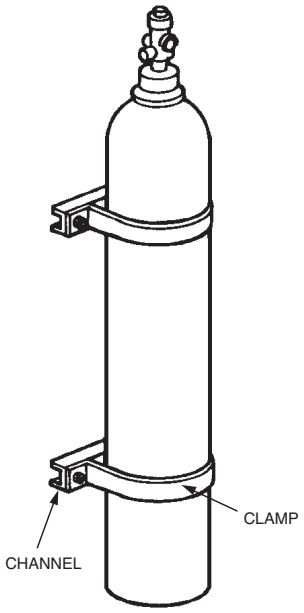
Component	Material	Approvals
Bracketing	Steel	UL Listed (EX-4510); Listed for use with FM Approved systems

Shipping Assembly Part No.	Description
845120	200 ft^3 (5.7 m^3) cylinder strap (single cylinder)
845244	200 ft^3 (5.7 m^3) cylinder channel with nuts and bolts (single cylinder)
845121	250 ft^3 (7.1 m^3) cylinder strap (single cylinder)
845261	250 ft^3 (7.1 m^3) cylinder channel with nuts and bolts (single cylinder)
845122	350 ft^3 (9.9 m^3), 425 ft^3 (12.0 m^3), 435 ft^3 (12.3 m^3) cylinder strap (single cylinder)
845245	350 ft^3 (9.9 m^3), 425 ft^3 (12.0 m^3), 435 ft^3 (12.3 m^3) cylinder channel with nuts and bolts (single cylinder)
879638	Back frame assembly (2 cylinder)
879639	Back frame assembly (3 cylinder)
879640	Back frame assembly (4 cylinder)
879641	Back frame assembly (5 cylinder)
879642	Back frame assembly (6 cylinder)
873257	Upright, for 200, 250, 350, and 435 ft^3 (12.3 m^3) cylinders (used either for right side, left side or center (center upright required when connecting seven or more cylinders in a row))
426592	Upright, for 425 ft^3 (12.0 m^3) cylinder (used either for right side, left side, or center (center upright required when connecting seven or more cylinders in a row))
873553	Single row or back-to-back row bracket foot (left side)
873554	Single row or back-to-back row bracket foot (right side)
873555	Double row bracket foot (left side)
873556	Double row bracket foot (right side)
418508	Center upright foot
879413	Connector (required to hook together back frames for seven or more cylinders)
873250	10.5 in. (26.7 cm) carriage bolt with nut (for single row 200 ft^3 (5.7 m^3) cylinders)
873251	11 in (27.9 cm) carriage bolt with nut (for single row 250 ft^3 (7.1 m^3) cylinders)
873252	12.5 in. (31.8 cm) carriage bolt with nut (for single row 350 ft^3 (9.9 m^3) and 425 ft^3 (12.0 m^3) cylinders)
418502	13 in. (33.0 cm) carriage bolt with nut (for single row 435 ft^3 (12.3 m^3) cylinders)
873253	21 in. (53.3 cm) carriage bolt with nut (for double row 200 ft^3 (5.7 m^3) cylinders)
873254	22 in. (55.9 cm) carriage bolt with nut (for double row 250 ft^3 (7.1 m^3) cylinders)
873255	26 in. (66 cm) carriage bolt with nut (for double row 350 ft^3 (9.9 m^3) and 425 ft^3 (12.0 m^3) cylinders)
418503	27 in. (68.6 cm) carriage bolt with nut (for double row 435 ft^3 (12.3 m^3) cylinders)
873091	Cylinder clamp (2 cylinders)
873092	Cylinder clamp (3 cylinders)
871683	Weigh rail support – single row
871682	Weigh rail support – double row
871684	Weigh rail support – back-to-back rows
423027	Weigh rail support back-to-back double row

Multi-Cylinder



Single Cylinder



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Form No. F-9309-09

Pressure Switch – DPST

Description

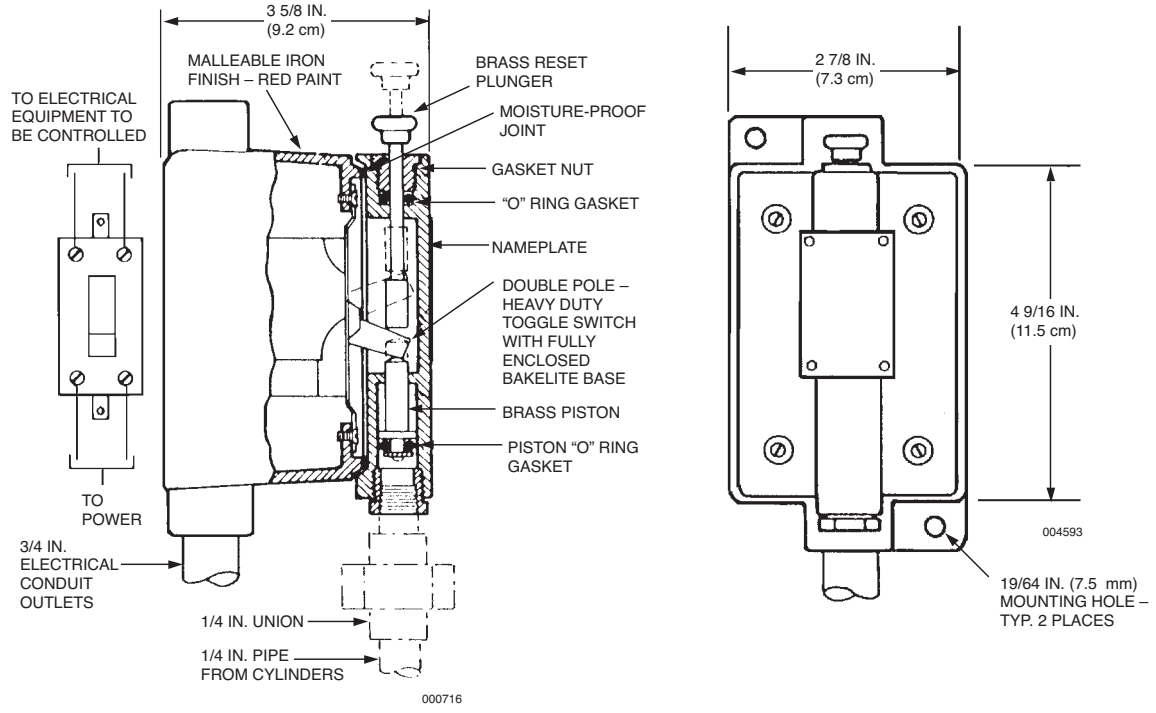
The pressure switch is operated by the INERGEN® agent pressure when the system is discharged. The pressure switch can be used to open or close electrical circuits to either shut down equipment or turn on lights or alarms. The double pole, single throw (DPST) pressure switch is constructed with a gasketed, water tight housing. The housing is constructed of malleable iron, painted red. A 1/4 in. NPT pressure inlet is used to connect the 1/4 in. pipe from the INERGEN system.

The pressure switch can be installed either before or after the pressure reducer in the distribution piping.

Minimum operating pressure is 50 PSI (3.5 bar).

Shipping Assembly Part No.	Description
846250	Pressure switch – DPST

Component	Material	Thread Size/Type	Electrical Rating	Approvals
Pressure Switch DPST	Switch: BAKELITE Housing: Malleable Iron Piston: Brass Cover: Brass	Conduit Inlet: 3/4 in. NPT Female Pressure Inlet: 1/4 in. NPT Female	2 HP – 240 VAC/ 480 VAC 2 HP – 250 VDC, 30A – 250V AC/DC 5A – 480V AC/DC	UL Listed (EX-4510); Listed for use with FM Approved systems



BAKELITE is a trademark of Union Carbide Corp.

Pressure Switch DPDT – Explosion-Proof

Description

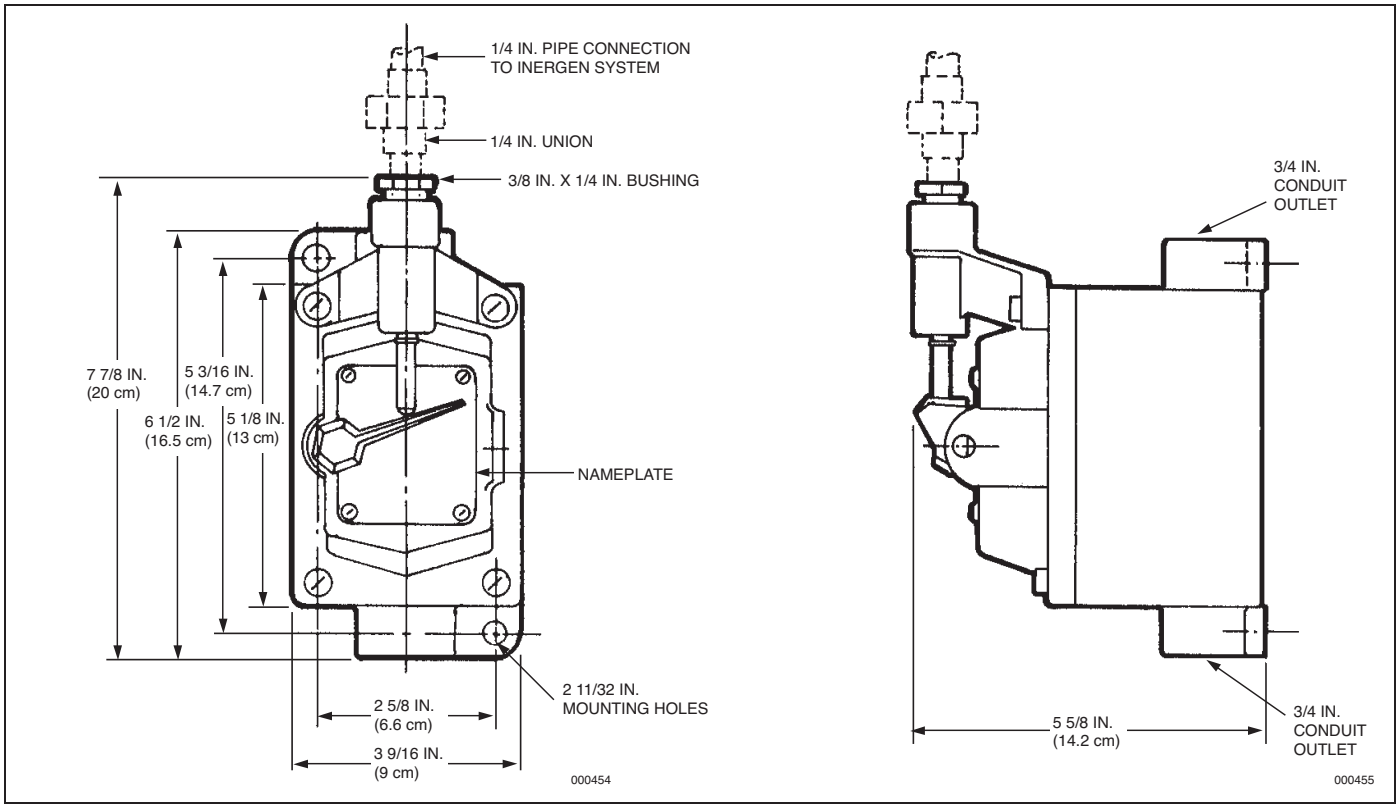
The pressure switch is operated by the INERGEN® agent pressure when the system is discharged. The pressure switch can be used to open or close electrical circuits to either shut down equipment or turn on lights or alarms. The double pole, double throw (DPDT) pressure switch is constructed with an explosion-proof housing suitable for hazardous environments. A 1/4 in. NPT pressure inlet is used to connect the 1/4 in. pipe from the INERGEN system.

The pressure switch can be installed either before or after the pressure reducer in the distribution piping.

Minimum operating pressure is 50 PSI (3.5 bar)

Shipping Assembly Part No.	Description
843241	Pressure switch – DPDT

Component	Material	Thread Size/Type	Electrical Rating	Approvals
Pressure Switch DPDT	Housing: Malleable Iron	Conduit Inlet: 3/4 in. NPT Female Pressure Inlet: 1/4 in. NPT Female	10A - 125 VAC 5A - 250 VAC	UL Listed (EX-4510); Listed for use with FM Approved systems



Note: Suitable for hazardous locations, Class I, Division I, Groups C, D, and Class II, Division I, Groups E, F, G.

Pressure Switch – 3PST

Description

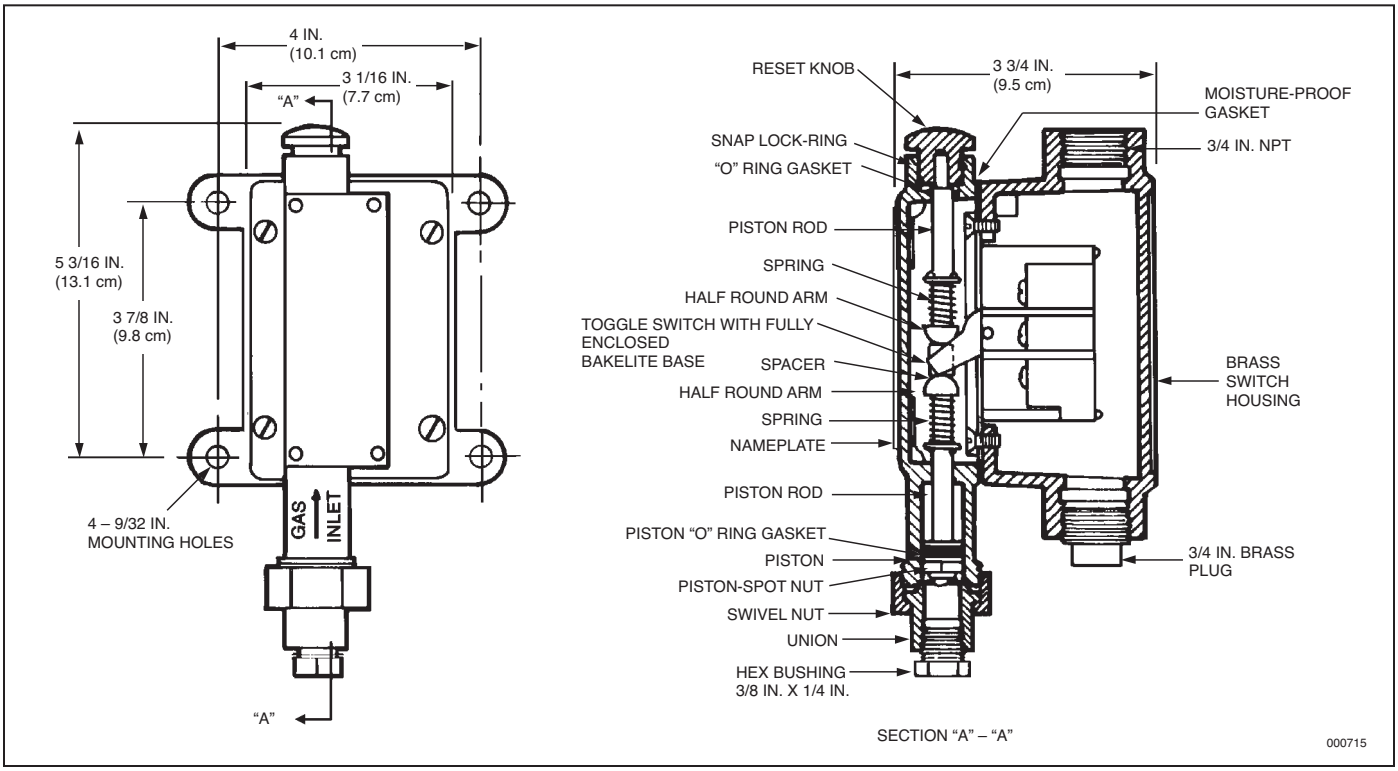
The pressure switch is operated by the INERGEN® agent pressure when the system is discharged. The pressure switch can be used to open or close electrical circuits to either shut down equipment or turn on lights or alarms. The three pole, single throw (3PST) pressure switch is constructed with a gasketed, water tight housing. The switch may be used for 3 phase wiring requirements. The housing is constructed of malleable iron, painted red. A 1/4 in. NPT pressure inlet is used to connect the 1/4 in. pipe from the INERGEN system.

The pressure switch can be installed either before or after the pressure reducer in the distribution piping.

Minimum operating pressure is 50 PSI (3.5 bar)

Shipping Assembly Part No.	Description
842344	Pressure switch – 3PST

Component	Material	Thread Size/Type	Electrical Rating	Approvals
Pressure Switch 3PST	Switch: BAKELITE Housing: Malleable Iron Piston: Brass	Conduit Inlet: 3/4 in. NPT Female Pressure Inlet: 1/4 in. NPT Female	30A - 240 VAC 20A - 600 VAC 3 HP - 120 VAC 7.5 HP - 240 VAC 15 HP - 600 VAC 3 PHASE AC	UL Listed (EX-4510); Listed for use with FM Approved systems



BAKELITE is a trademark of Union Carbide Corp.

Pressure Trip

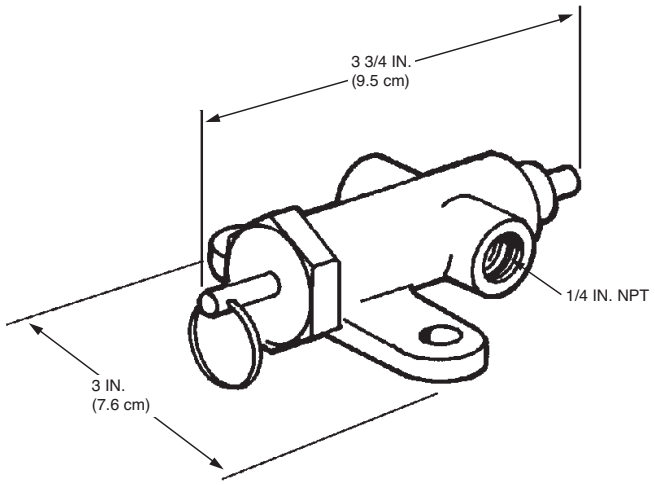
Description

The pressure trip is connected to the actuation or discharge line of an INERGEN® system. By either pneumatic or manual actuation, the pressure trip can release spring or weight powered devices to close doors and windows, open fuel dump valves, close fire dampers or close fuel supply valves. The pressure trip is constructed of brass with two 1/4 in. NPT fittings for connection to discharge or actuation lines. The link on the pressure switch is released either pneumatically, by agent discharge pressure; or manually, by use of the pull ring. The link then releases the device which performs the auxiliary functions.

Note: Operating pressure must be a minimum of 75 psi (5.2 bar) with a maximum load of 70 lb (31.8 kg).

Shipping Assembly Part No.	Description
805156	Pressure trip

Component	Material	Thread Size/Type	Approvals
Pressure Trip	Brass	1/4 in. NPT Female	UL Listed (EX-4510); Listed for use with FM Approved systems



Pressure Test Assembly

Description

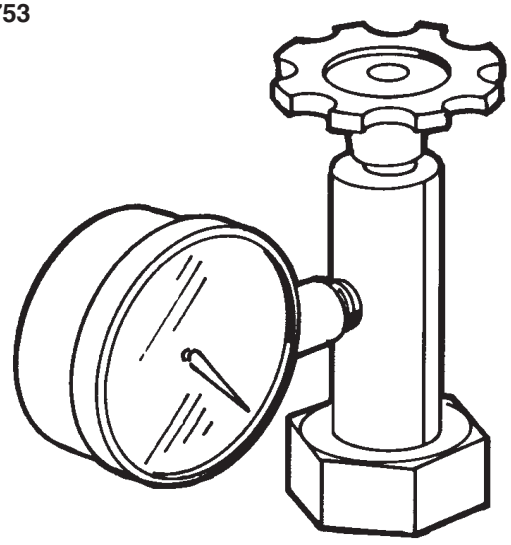
The Pressure Test Assembly, Part No. 416753 for CV-90 valves and Part No. 423923 for CV-98 valves, is required to properly perform the semi-annual pressure check per NFPA 2001. The pressure test assembly consists of a calibrated gauge, adaptor, and handwheel. The assembly is attached to the fill port of the INERGEN® valve. As the handwheel is turned in, the fill port is opened and the pressure is read on the gauge. After verifying the pressure in the cylinder, the handwheel is turned out, closing the fill port, and the assembly can be removed.

Shipping Assembly Part No.	Description
416753	Pressure Test Assembly – CV-90
423923	Pressure Test Assembly – CV-98
423657	Adaptor Convertor (converts CV-90 pressure tester to CV-98 valve)
426181	Adaptor Convertor (converts CV-98 pressure tester to CV-90 valve)

Two pressure tester convertors are also available. These convertors allow a CV-90 pressure test assembly to be used on a CV-98 valve and also a CV-98 pressure test assembly to be used on a CV-90 valve.

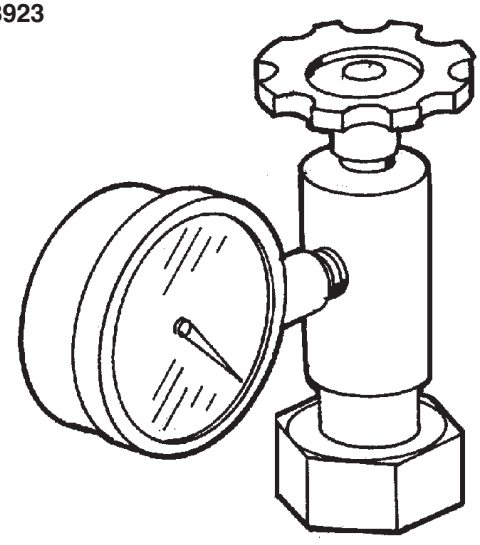
Component	Material	Approvals
Handwheel Body Adaptor Gauge	Cast Zinc Alloy Brass Brass Stainless Steel Case Laminated Safety Glass Lens	UL Listed (EX-4510); Listed for use with FM Approved systems

416753



002256

423923



003686

Pressure-Operated Siren

Description

The pressure-operated siren is used to warn personnel of a system discharge. The siren is operated with the nitrogen pressure from the pilot cylinder. The siren will operate at the start of the INERGEN system discharge and will continue through most of the discharge time. A pipe hanger or bracket must be installed within one foot of the siren.

Component	Material	Approvals
Siren	Body: Brass Grille: Steel Screen: Stainless Steel	UL EX-4510; Listed for use with FM Approved systems

The design requirements are as follows:

Maximum Pipe Length:

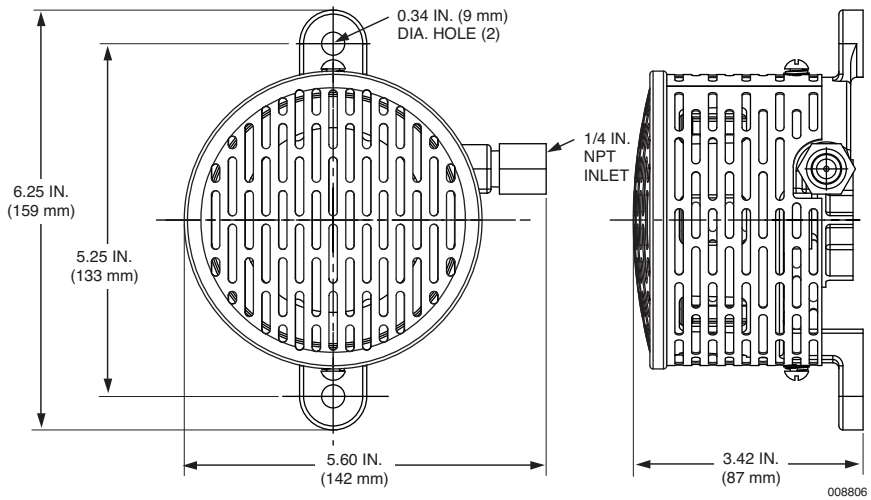
– 240 ft (73.2 m) of 3/4 in. Schedule 40 pipe

– 430 ft (131.1 m) of 1/2 in. Schedule 40 pipe

– 675 ft (205.7 m) of 3/8 in. Schedule 40 pipe

- Maximum Sirens: 5
- Maximum Elbows: 30

Shipping Assembly Part No.	Description
437616	Pressure-operated siren



Time Delay Assembly

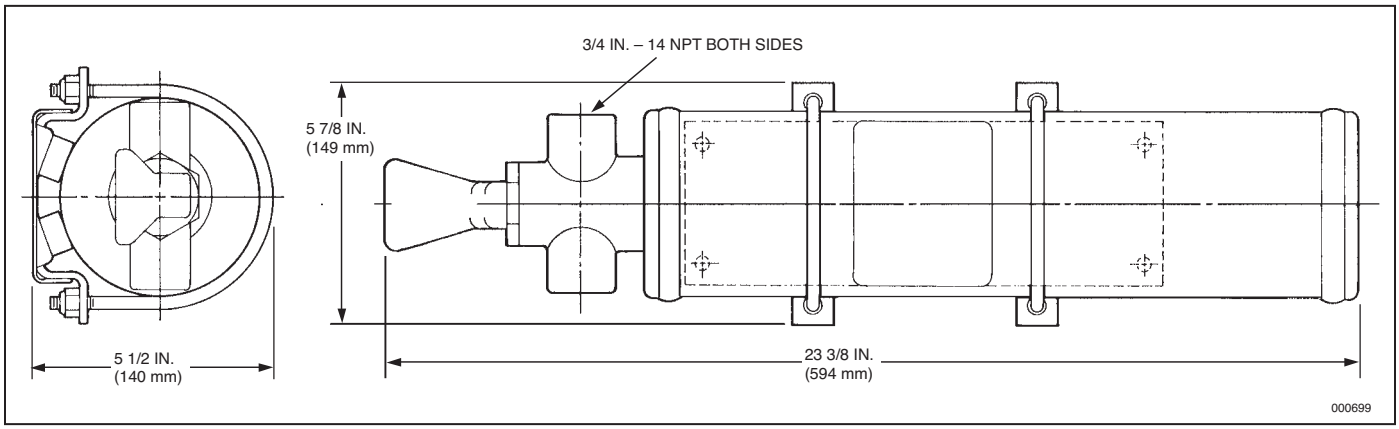
Description

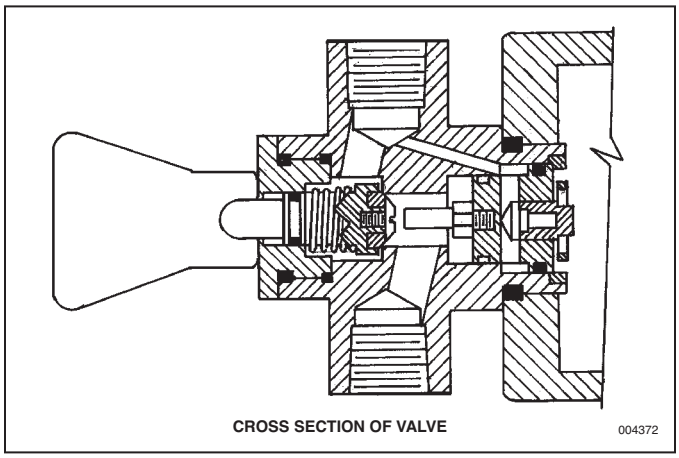
In some applications, the system discharge must be delayed for a short time following actuation. This is usually in areas where it is necessary to evacuate personnel prior to discharge. A manual release is incorporated on the time delay valve to allow instant override of the time delay. The length of delay is factory set and is not adjustable.

The time delay assembly uses INERGEN® pressure to power the factory-set delay mechanism. Install the assembly in the discharge piping, either directly after the control (pilot) cylinder or further along the piping. The assembly is reversible to accommodate right and left hand configurations and will operate in any mounting orientation. After the discharge is complete, pressure in the assembly slowly returns to normal and closes the time delay valve.

Shipping Assembly Part No.	Description
426170	60 Second time delay
854169	30 Second time delay

Component	Material	Approvals
Valve	Brass	UL Listed (EX-4510)
Accumulator	Steel (Sch. 80 Pipe)	





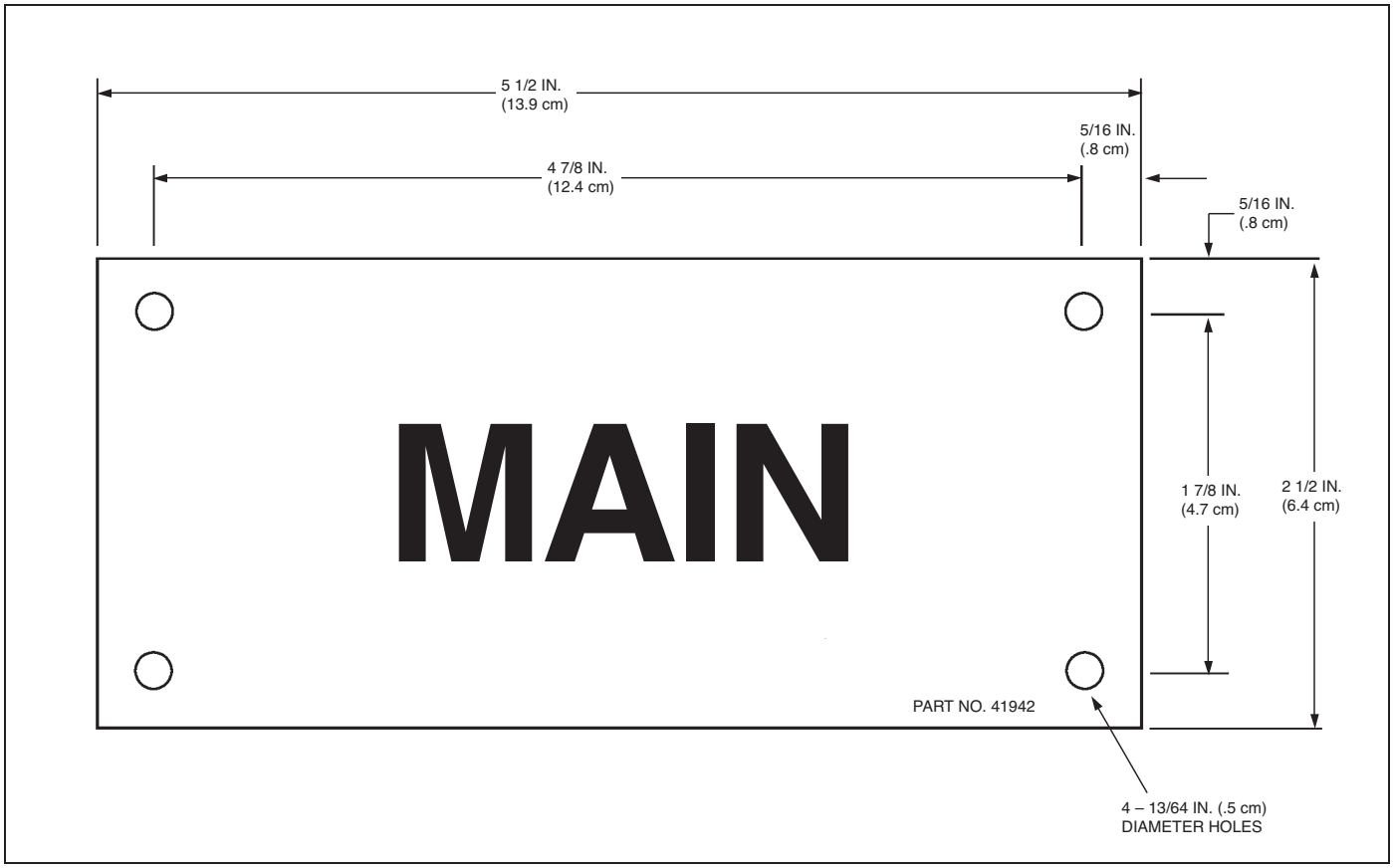
Nameplate – MAIN

Description

The "MAIN" nameplate is available for labeling components and/or remote pull stations to distinguish them from reserve system components. The nameplate is furnished with four mounting holes for ease of installation.

Shipping Assembly Part No.	Description
841942	Nameplate – MAIN

Component	Material	Mounting Hole Size	Approvals
Nameplate	Aluminum	13/64 in. (.52 cm)	UL Listed (EX-4510); Listed for use with FM Approved systems



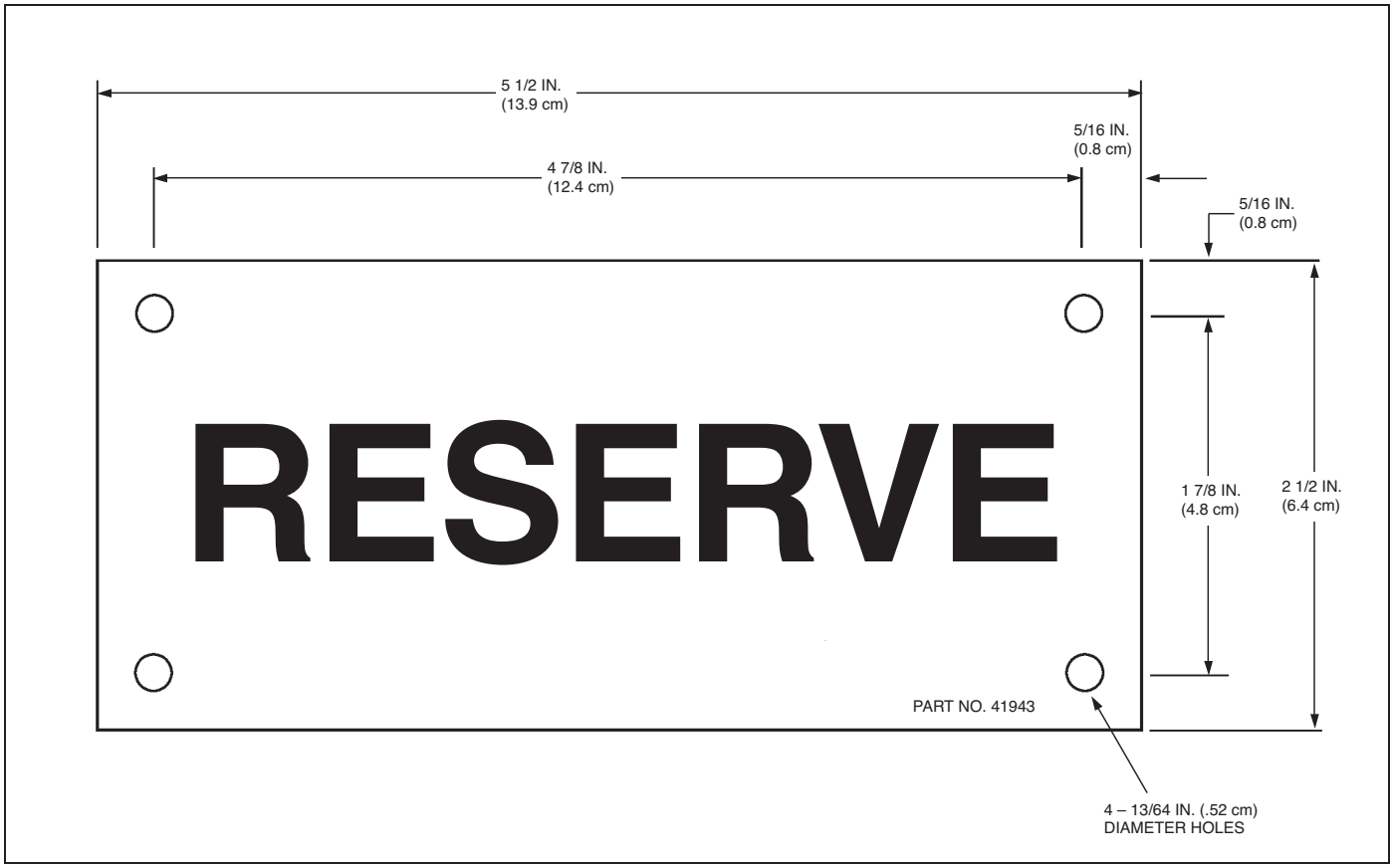
Nameplate – RESERVE

Description

The "RESERVE" nameplate is available for labeling components and/or remote pull stations to distinguish them from main system components. The nameplate is furnished with four mounting holes for ease of installation.

Shipping Assembly Part No.	Description
841943	Nameplate – RESERVE

Component	Material	Mounting Hole Size	Approvals
Nameplate	Aluminum	13/64 in. (.52 cm)	UL Listed (EX-4510); Listed for use with FM Approved systems



Warning Plate – Inside Room With Alarm

Description

The warning plate is available for mounting inside the hazard area to warn the personnel to vacate the hazard area when the alarm sounds. The warning plate is furnished with four mounting holes for ease of installation. The plate is constructed of aluminum.

Shipping Assembly Part No.	Description
416265	Warning Plate – inside room with alarm

Component	Material	Mounting Hole Size	Approvals
Warning Plate	Aluminum	1/4 in. (.64 cm)	UL Listed (EX-4510); Listed for use with FM Approved systems

Warning Plate – Outside Room Without Alarm

Description

The warning plate is available for mounting outside the hazard area to warn the personnel that the space is protected by an INERGEN® system and no one should enter after a discharge without being properly protected. The warning plate is furnished with four mounting holes for ease of installation.

Shipping Assembly Part No.	Description
416266	Warning Plate – outside room

Component	Material	Mounting Hole Size	Approvals
Warning Plate	Aluminum	7/32 in. (.56 cm)	UL Listed (EX-4510); Listed for use with FM Approved systems