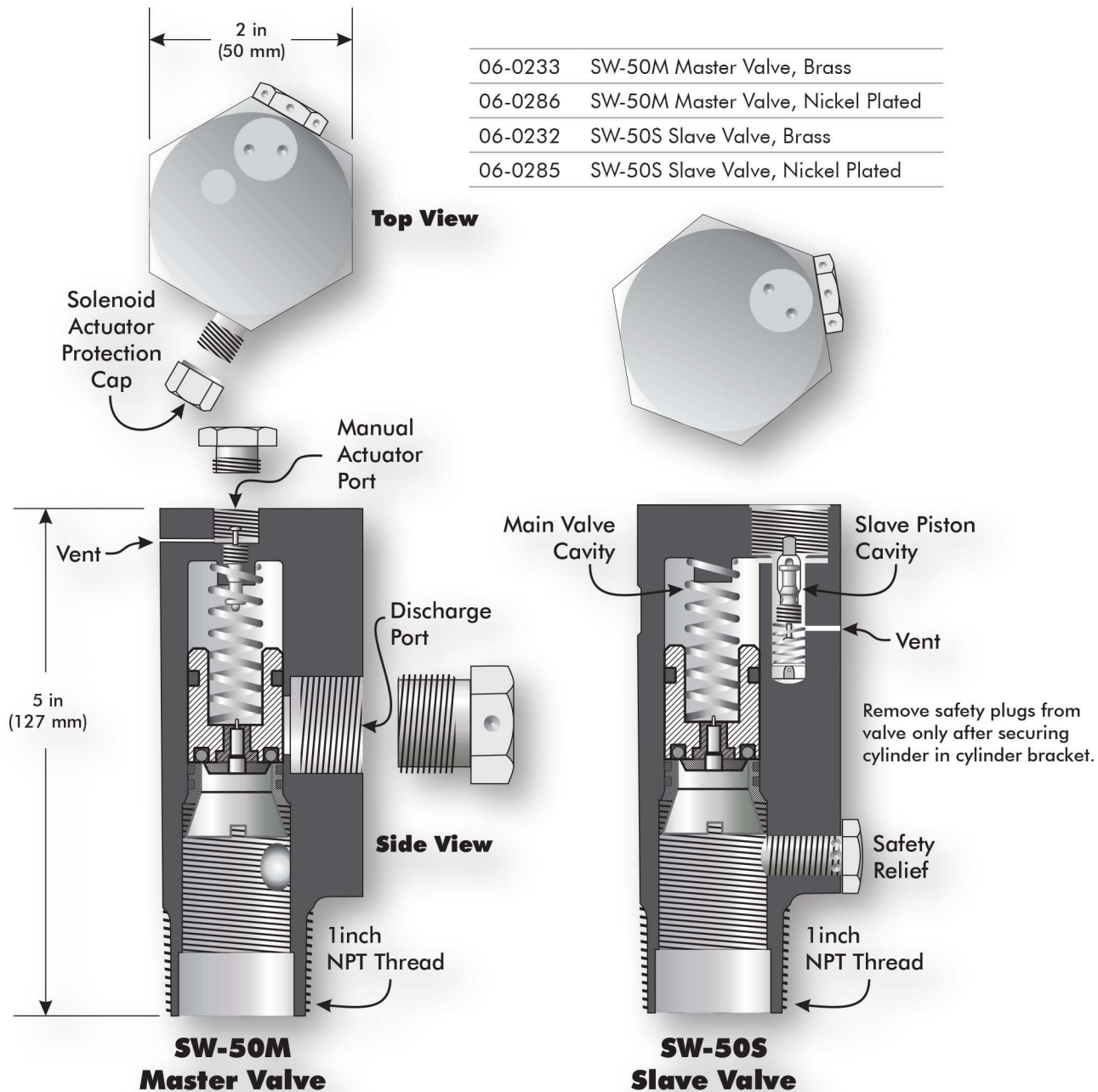




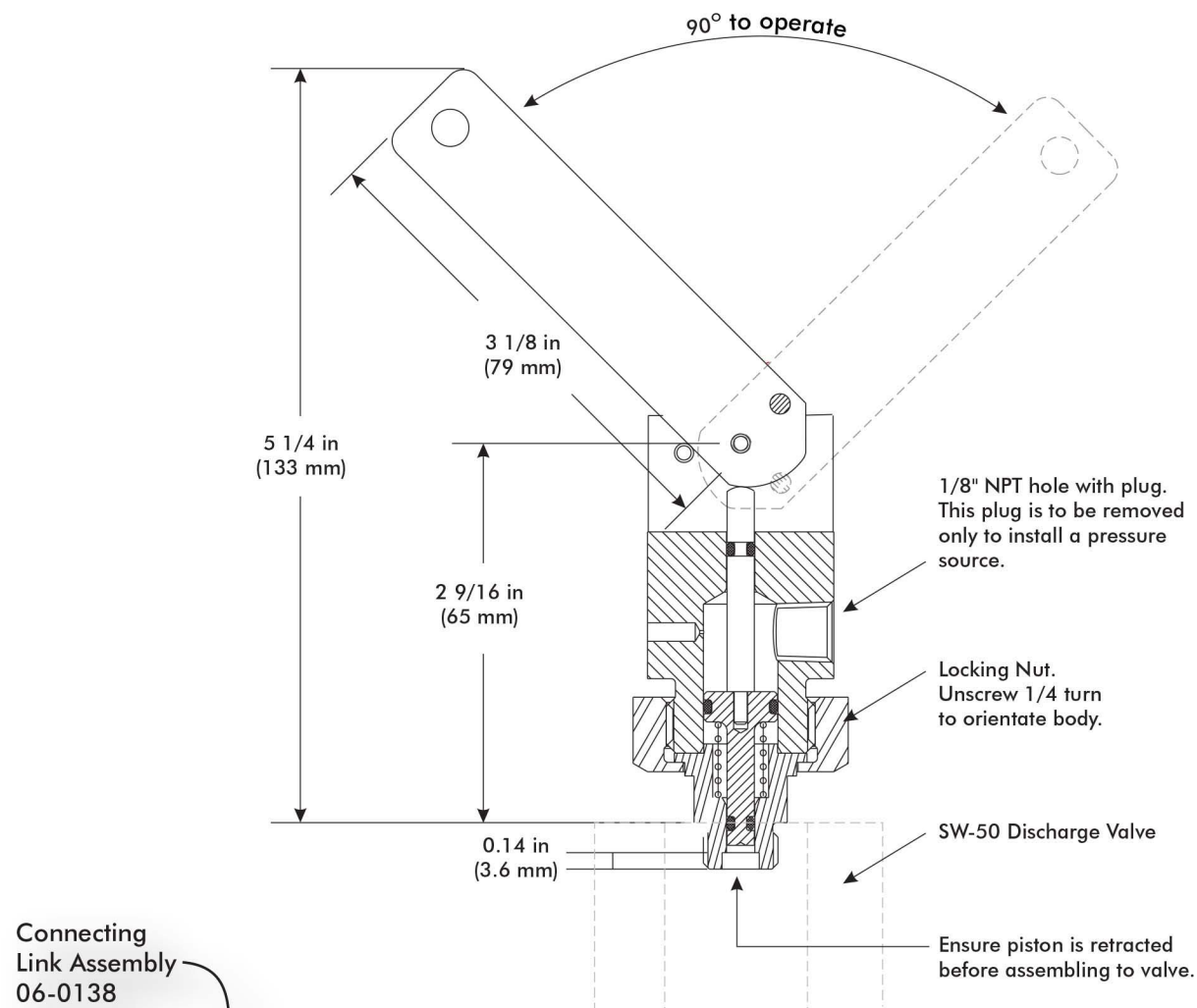
SW-50 Cylinder Valve



06-0233	SW-50M Master Valve, Brass
06-0286	SW-50M Master Valve, Nickel Plated
06-0232	SW-50S Slave Valve, Brass
06-0285	SW-50S Slave Valve, Nickel Plated

Minimum Burst Pressure	6,000 PSI (414 Bar)
Safety Relief Operating Pressure	2,650 to 3,000 PSI (182 to 207 Bar)
Equivalent Length	5 feet (1.5 m) of 1/2" Schedule 40 Black Pipe
Dimensions	5" (127 mm) high x 2" (50 mm) wide
Operating Temperature	0° F to 130° F (-18° C to 54° C)
Weight	3.5 lb. (1.6 kg)

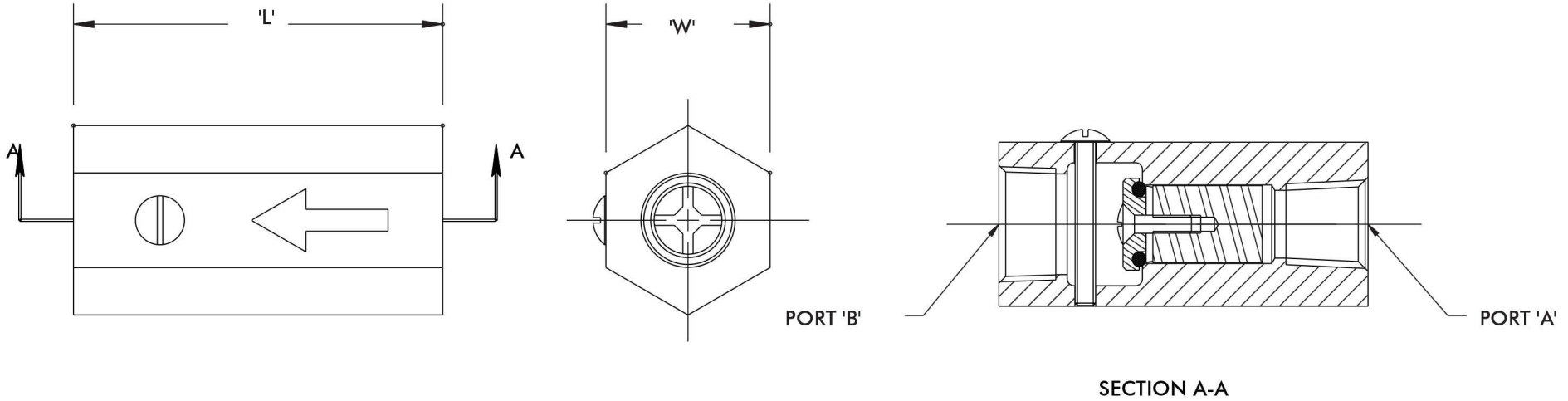
Manual/Pressure Actuator



Connecting link used for simultaneous operation of two cylinder valves. Also used for remote manual cable operation, non-tension type.

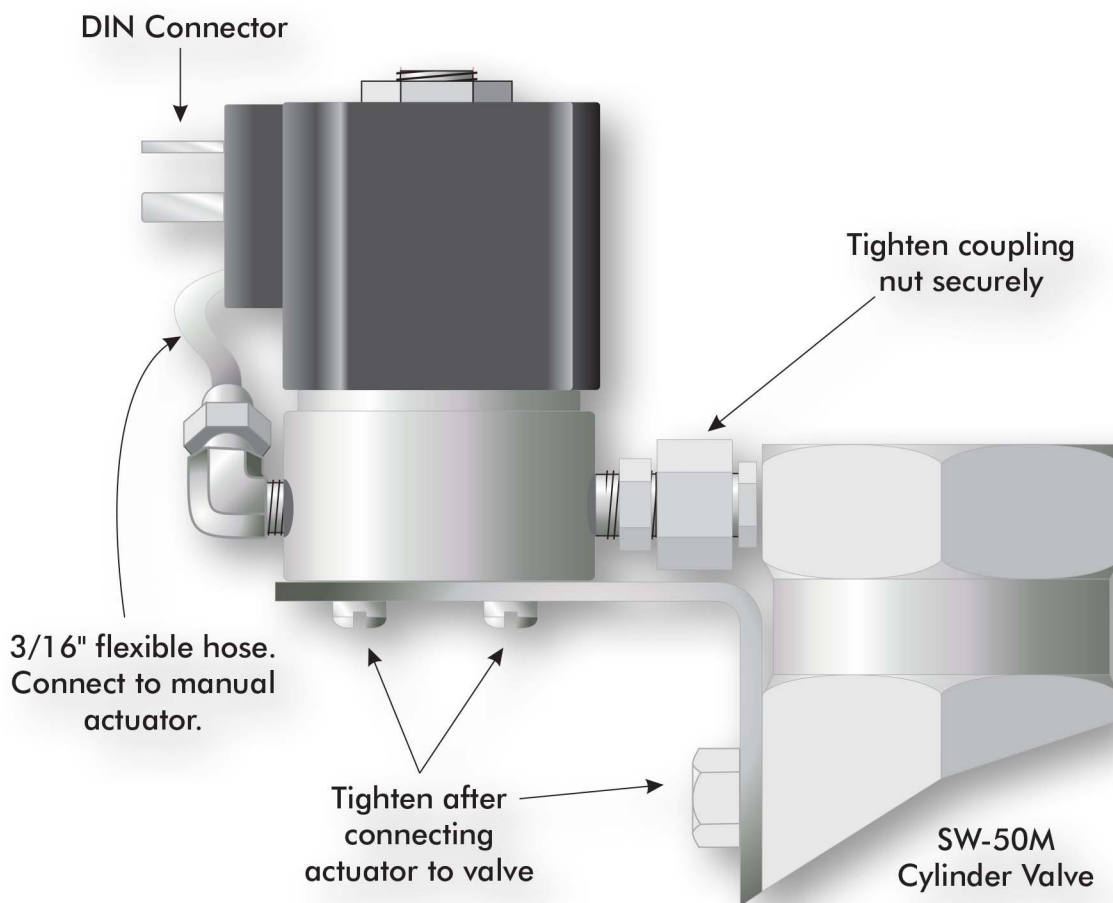
1. Install actuator only after cylinders have been secured in their brackets.
2. Before connecting actuator to cylinder valve, ensure:
 - a) (a) The pull pin is installed and secured with a seal.
 - b) (b) The piston is retracted as indicated.
3. Install the actuator to the cylinder valve, hand tighten.
4. Minimum pressure required for pressure operation:
 - For 850 psi cylinder pressure (70°): 260 psi
 - For 2,280 psi cylinder pressure (130°): 665 psi
5. When a solenoid actuator is used, discharge from solenoid valve must be connected to the pressure port of the manual actuator.

In-line Check Valves



Nominal Size (inches)	Port A (IN) NPT	Port B (OUT) NPT	Length L (inches)	Dimension W (inches) A/F	Part No.
1/2	1/2	3/4	3.38	1.50	06-0140
3/4	3/4	1	3.40	1.63	06-0328
1	1	1 1/4	3.75	2.0	06-0327
1 1/4	1 1/4	1 1/2	4.13	2.5	06-0326
1 1/2	1 1/2	2	4.55	3.0	06-0325
2	2	2 1/2	5.82	3.63	06-0323

Solenoid Actuator



Electrical Rating: 24 vdc, 10 watts.

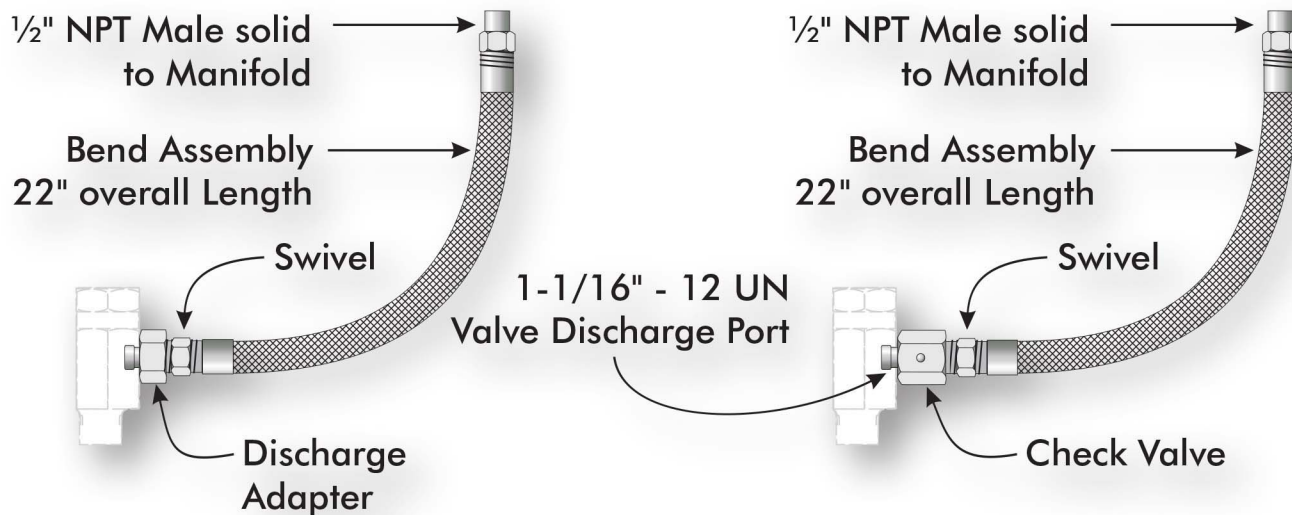
Important

1. The carbon dioxide cylinder assembly must be restrained in its bracket and discharge piping connected before solenoid actuator is connected to or disconnected from the cylinder valve.
2. The discharge from the solenoid valve must be connected to the manual actuator with the 3/16 inch flexible hose provided.

Notes

1. The solenoid valve is normally closed. It opens when energized.
2. Solenoid enclosure is a general purpose type. Drip proof, raintight and explosion-proof enclosures are available by special order.
3. Standard voltage is 24 vdc. Other voltages are available by special order.
4. The solenoid valve is designed and rated for continuous duty service.
5. Operating temperature: 0 to 130 °F (-18 to 54 °C).

Flexible Discharge Bends



**Discharge bend
with Adaptor
P/N 06-0242**

**Discharge Bend
& Check Valve
P/N 06-0237**

Use

- The discharge bend and check valve are supplied locked together as a single unit.
- The discharge bend and check valve assembly must be used whenever cylinders are manifolded together.
- The discharge bend and adaptor assembly may be used for single cylinder systems.

Hose Specification

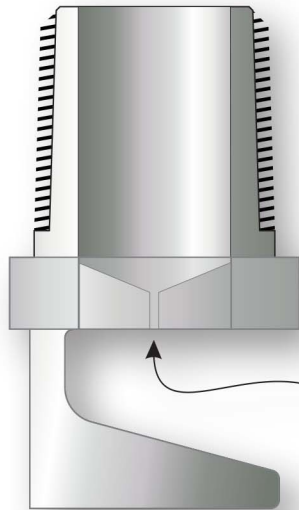
Hose Type	SAE 100R1 Type AT
Minimum Burst Pressure	5,000 PSI
Minimum Bend Radius	9.5 Inches
Equivalent Length, Discharge Bend and Check Valve	7.3 Feet (2.22 m) Of 1/2" Std Black Pipe.

Installation

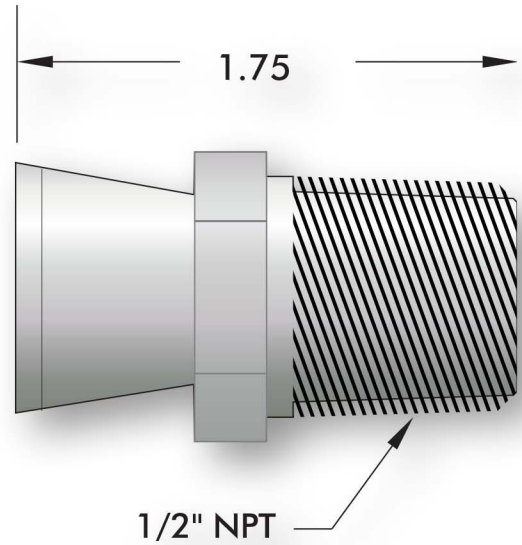
- Cylinders and manifold must be installed securely before the discharge bends are installed.
- Apply Teflon tape (pipe sealant) to the solid male 1/2" NPT pipe thread on then end of the hose.
- Screw the solid male 1/2" NPT end of the discharge bend into the manifold, wrench tight.
- Remove the safety shipping plug from the discharge port of the SW-50 cylinder valve and install the swivel end of the discharge bend assembly into the discharge port of the valve, wrench tight.



Half inch Wall Nozzle for Total Flooding Applications

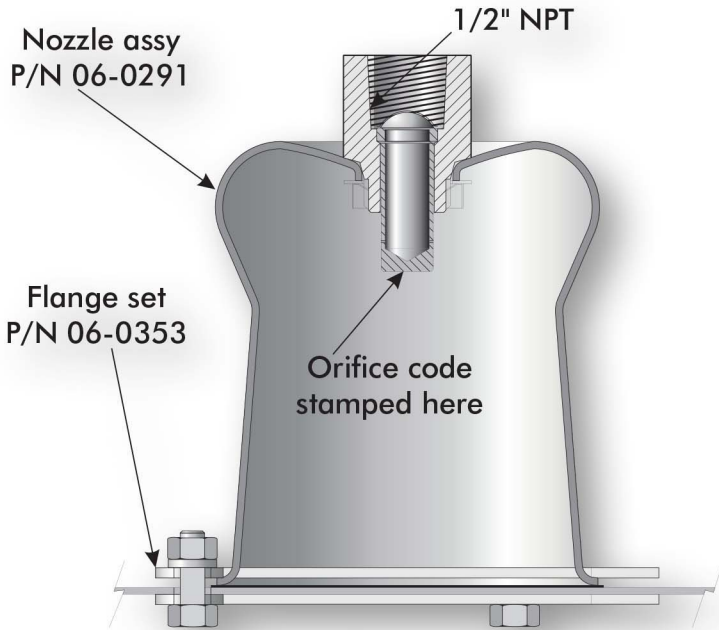


Nozzle orifice sized to suit design requirements



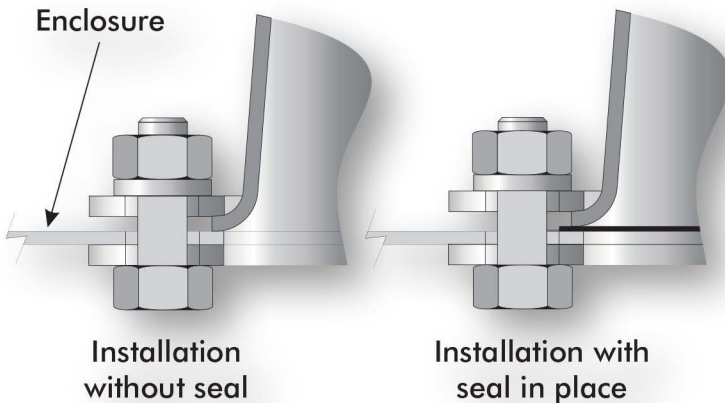


S-Type Discharge Nozzle



Performance Data

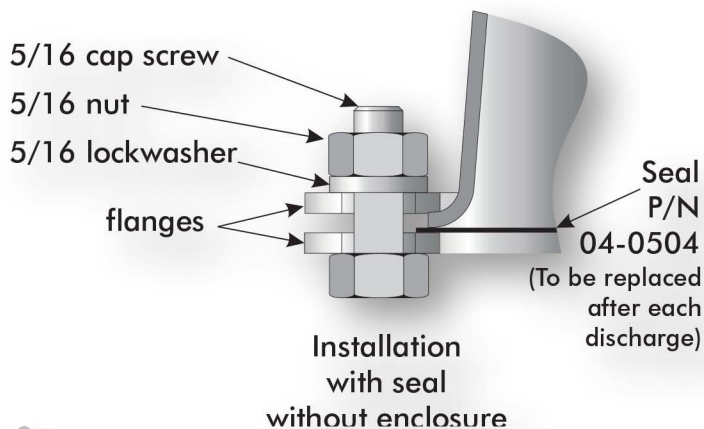
Height ft.	Flow Rate (lb per min.)	Area of Coverage (sq. ft.)
1	16	5.0
2	24	7.0
3	32	8.7
4	41	10.7
5	49	12.6
6	57	14.5
7	66	15.0
8	74	15.0



Nozzles up to and including #5 orifice are equipped with strainers.

Materials: horn - steel ni pltd
insert & body - brass
flanges - steel ni pltd

Flange set consists of two flanges, seal, 3 nuts, bolts 7 washers. Ordered as a set.

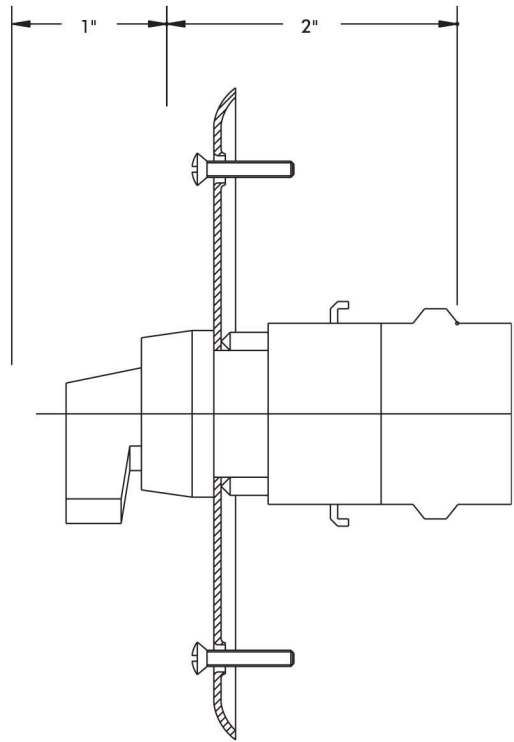
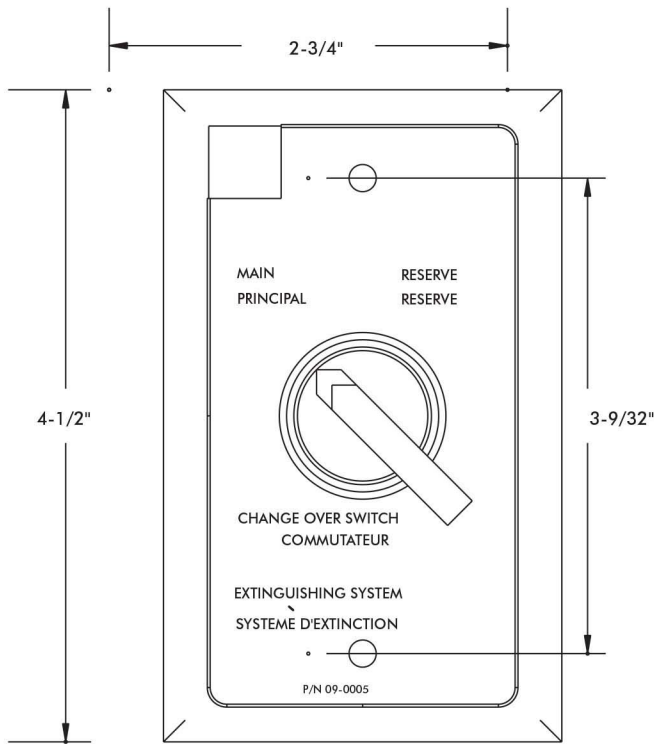


Installation

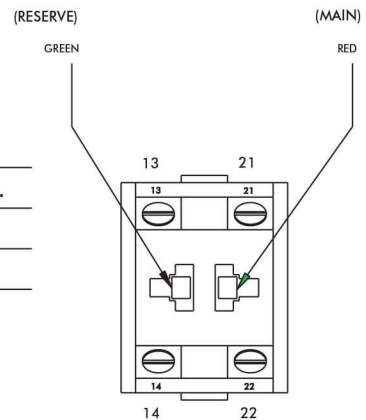
1. Cut a 3-5/8" dia. Hote in side of enclosure where shown on system drawing. Drill three 3/8" holes for cap screws using a clamping flange as a template.
2. If hazard is totally enclosed (i.e. In an air duct), cut a hand hole adjacent to nozzle for access for nut and bolt fixing. (Cover hand hole after nozzle installation.)



Changeover Switch

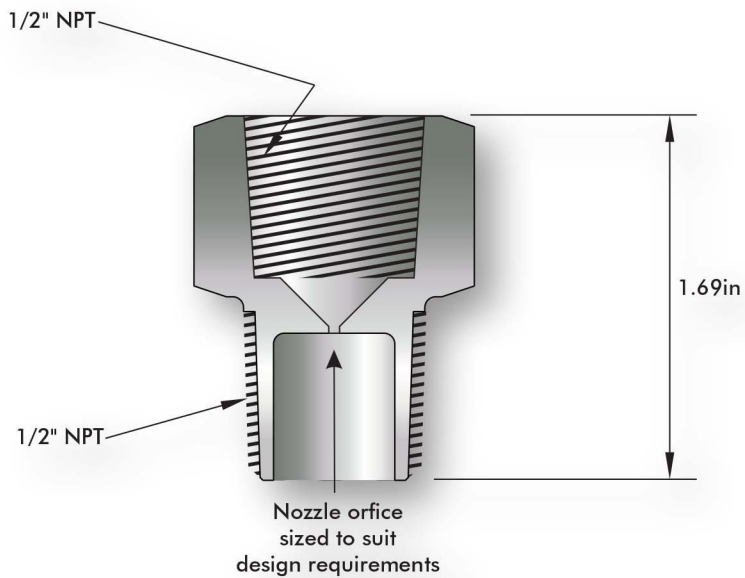
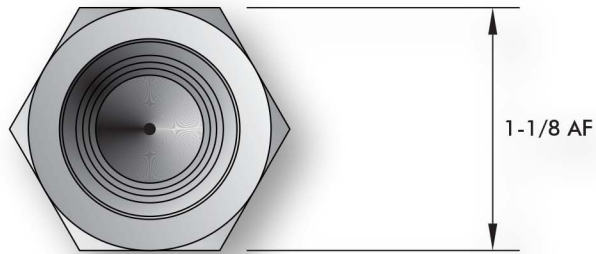


Operation	Rotate lever until it points towards the system required.
Mounting	Standard single gang extra deep box (suppued by installer).
Finish	Stainless steel plate. Black lever.
Switch rating	10 A at 24 VDC. 0.5 A at 220 VDC. 10 A at 300 VAC.
Wiring (lever pointing towards MAIN)	Terminals 21 & 22 MAIN (N.C.) Terminals 13 & 14 RESERVE (N.O.)





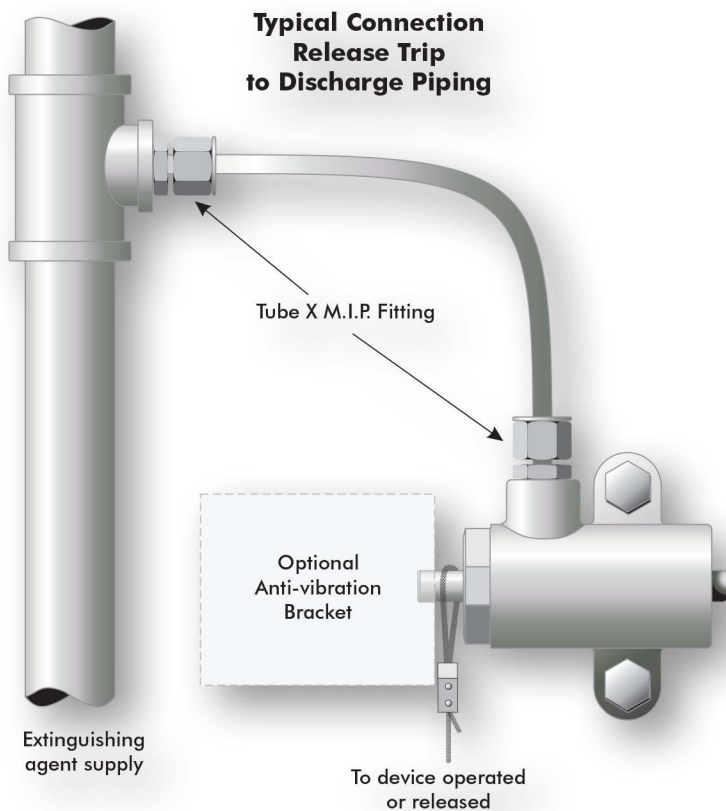
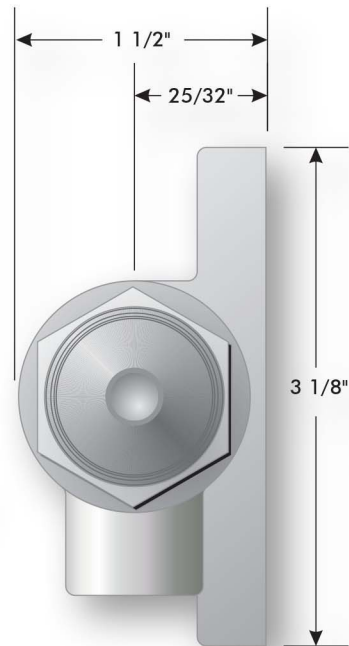
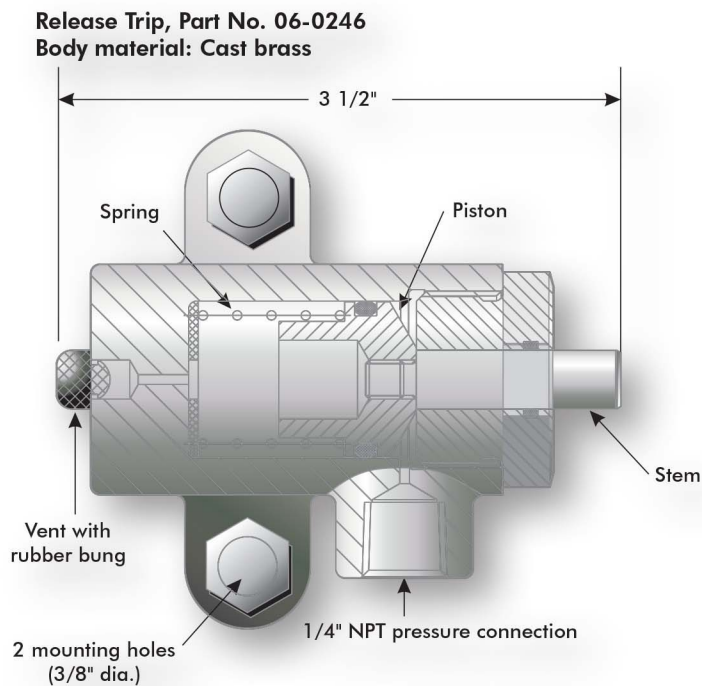
Vent Nozzle



MATERIAL: BRASS



Pressure Release Trip



Notes

These units are used to release dampers, doors, windows, louvres, to open dump valves, and to close fuel supply valves, etc. automatically when agent discharges.

The equipment to be operated must be weight or spring loaded, or be pivoted off-centre.

The pressure connection of the trip can be connected to the discharge piping of any cylinder in the system, to the rid valve pilot tubing, or to the nitrogen actuation tubing.

The maximum load that can be hung on the piston stem is 76 lb. (34 kg).

Connection can be made in 1/4" steel pipe, 1/4" or 3/16" x .032" wall soft copper tube. Swagelok, Gyrolok, or similar fittings are recommended for tube connections.

If additional release trips or pressure switches are required, install branch tees to suit.

Pressure Operated Switch

Data Sheet

Pressure Switch, Part No. 06-0247

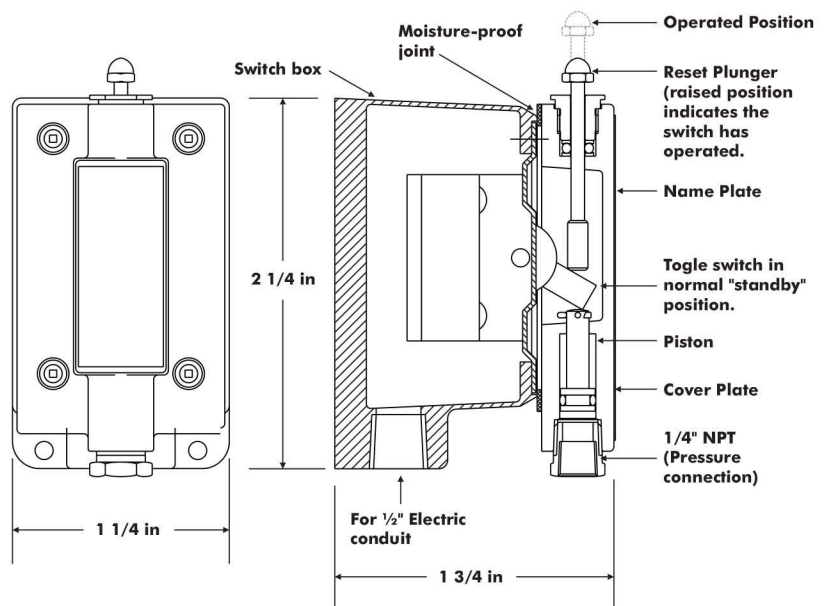
Double pole, double throw

Rating: 15 Amps, 120 Vac per pole
8 amps, 240 Vac per pole
1 HP, 120 Vac, 5 phase

Finish: Cadmium plated weatherproof enclosure

Pressure switches can be used to shut down motors, pumps, fans, or operate alarms, release doors, or provide confirmation of extinguishment system operation, etc. automatically when the extinguishing system discharges.

The pressure connection of the switch can be connected to the discharge piping of any cylinder in the system, or to the nitrogen actuation tubing, if used.



Mounting and application

The switch may be mounted in any position, but the preferred installation is with the pressure connection (gas supply line) entering from the bottom.

Installation can be made using 1/4" steel pipe and fittings. Alternately, 1/4" or 3/16" x .032" wall soft copper tubing with swagelock or equal fittings can be used.

Note: When the line load is greater than the switch rating, the switch should be used to break a relay holding coil circuit (relay supplied by others).

Testing

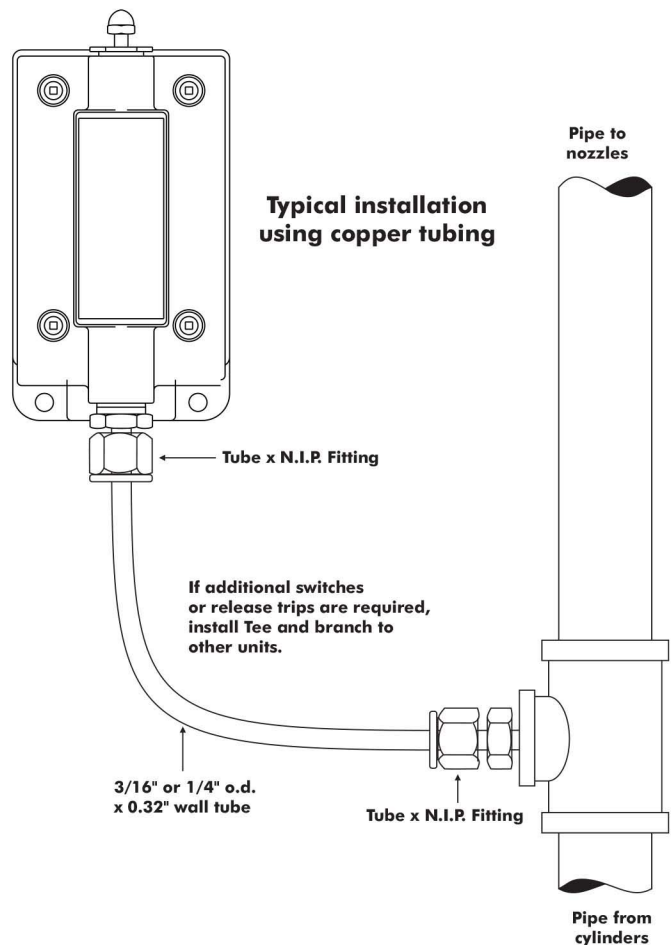
To test the circuits and to ensure auxiliary functions operate correctly:

Either..

1. Disconnect the union at the pressure connection, insert a small rod into the pressure connection of the cover plate, and push against the piston to trip the switch. Push the plunger down to reset the switch.

Or...

2. Remove the four cover screws and swing the cover away from the switch box. Manually operate the interior toggle switch. After testing, ensure the toggle is mounted in the normal standby position, then reinstall the cover plate.

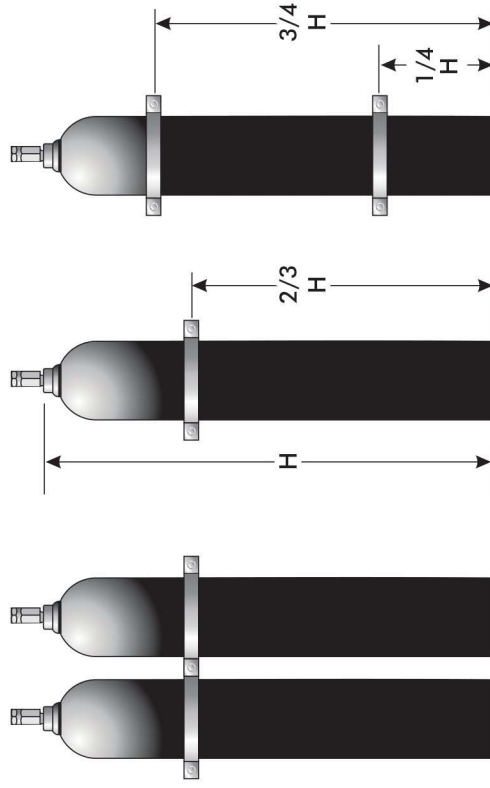
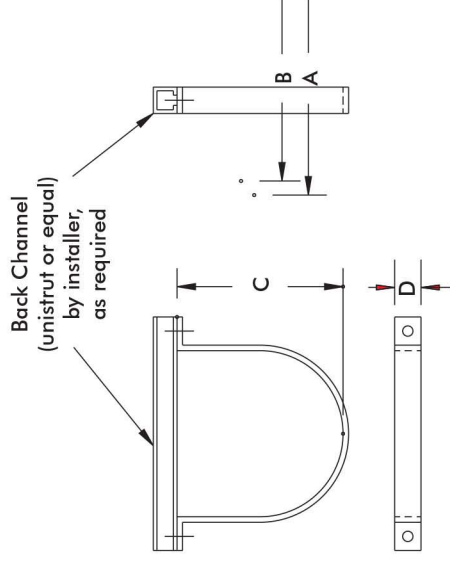
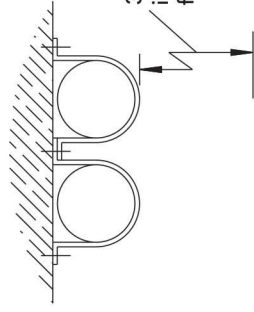


Cylinder Mounting Strap

Cylinder straps are intended to support floor mounted cylinders against a solid wall.

Only the strap is supplied by inControl Systems. All other components and mounting hardware is to be supplied by the installer to suit site conditions.

Mounting bolts must be anchored into solid structural members. Bolts must not be anchored into plaster or other facing materials.



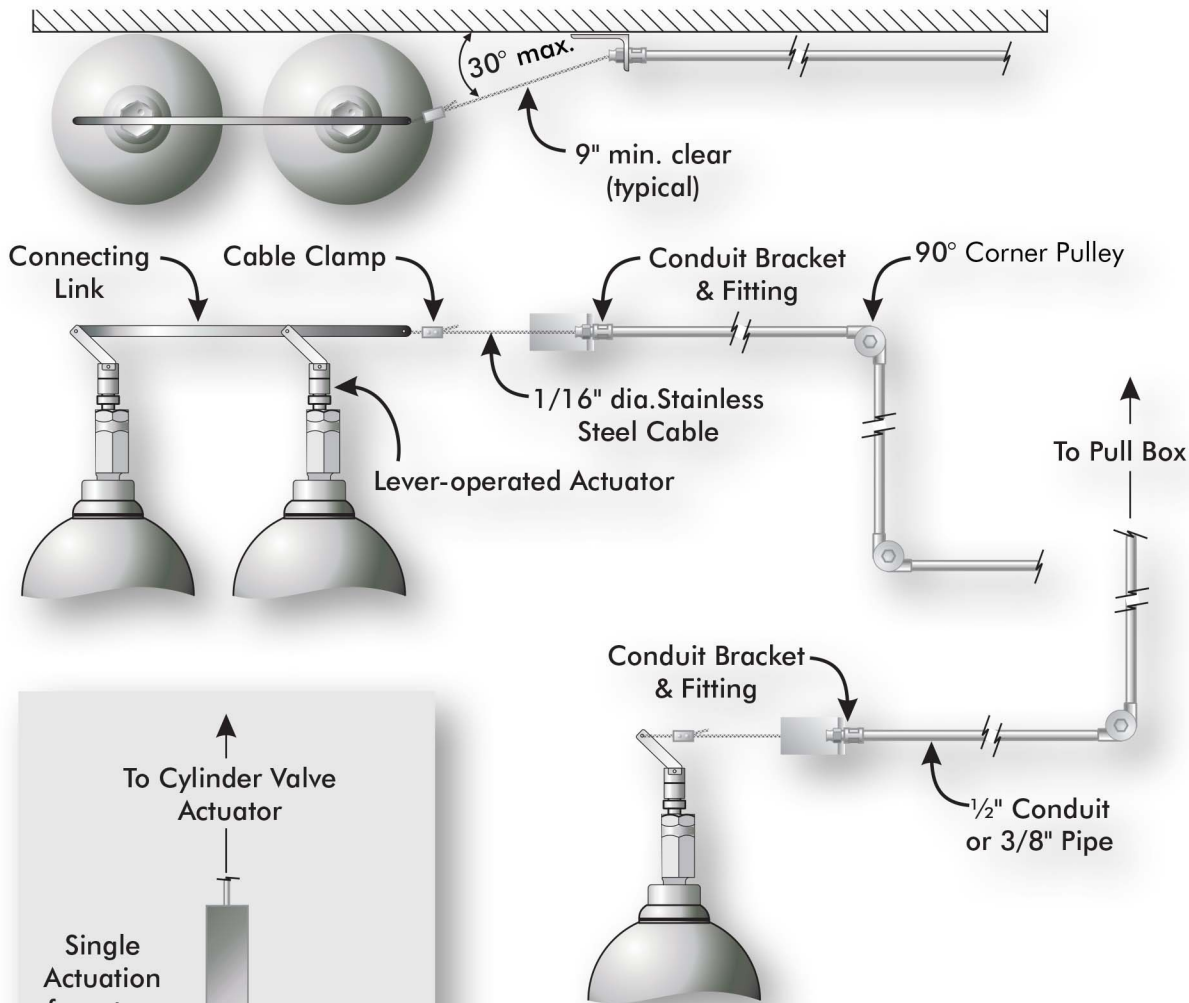
Two Cylinder Installation

Industrial Installation

Marine Installation

Part number	Cylinder dia.	Dimensions			
		A	B	C	D
04-0072	3.00	5.38	4.38	2.94	0.75
04-0073	4.26	6.63	5.62	4.19	0.75
04-0048	5.10	7.50	6.50	5.00	1.50
04-0332	6.73	10.05	8.80	6.57	1.50
04-0146	7.00	10.33	9.10	6.87	1.50
04-0049	7.10	9.50	8.50	7.00	1.50
04-0333	7.75	11.07	9.82	7.59	1.50
04-0147	9.06	12.33	11.08	8.85	1.50
04-0309	9.25	12.57	11.32	9.09	1.50
04-0201	10.00	13.33	12.08	9.85	1.50
04-0148	10.50	13.83	12.58	10.35	1.50
04-0212	12.38	15.13	14.13	12.20	1.50
04-0180	15.00	18.33	17.08	14.85	1.50
04-0227	16.00	19.33	18.08	15.85	1.50

Remote Manual Control Application



Alternatively, actuation of two separate devices (i.e.: cylinder valve and selector valve) from a single pull box.

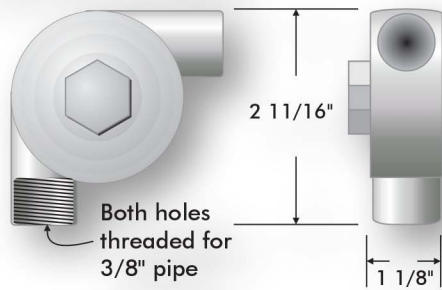
Installation Notes

1. Run cable in 1/2" EMT conduit or 3/8" diameter pipe.
2. Install a corner pulley at each change in direction of cable.
3. Covers of corner pulleys must be accessible after installation to allow removal for installation of cable.
4. Remote manual pull box should be installed three to five feet above floor level in a readily accessible location, and in the main egress from the protected space.
5. Ensure space in front of pull box will allow a straight pull of approximately nine inches.
6. Before starting to install the cable, ensure the safety pin is installed in the actuator(s). Remove the safety pin after completion of cable installation.
7. Maximum length of 1/16" stainless steel cable that can be installed is 500 feet.
8. Maximum number of pulleys that can be used:
 - a) on a single run is 15.
 - b) on a double run arrangement is 18, with a maximum of nine on any one leg.

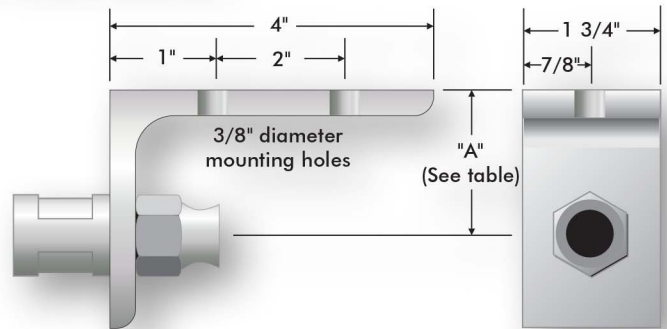


Remote Manual Control Components

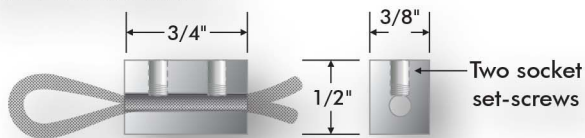
90° Corner Pulley Part No. 06-0245



Conduit Brackets

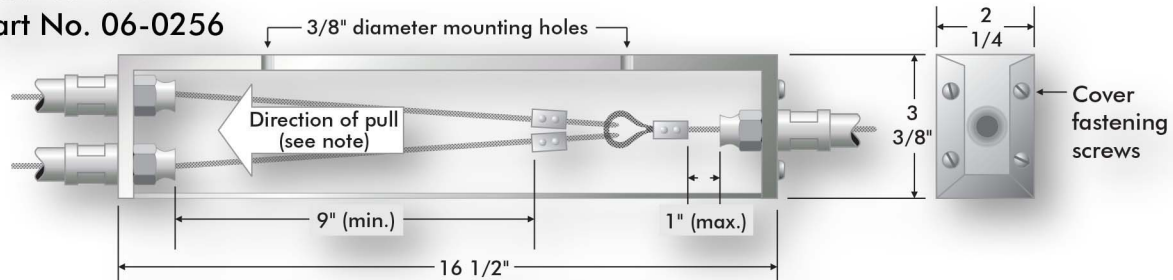


Cable Clamp Part No. 06-0012



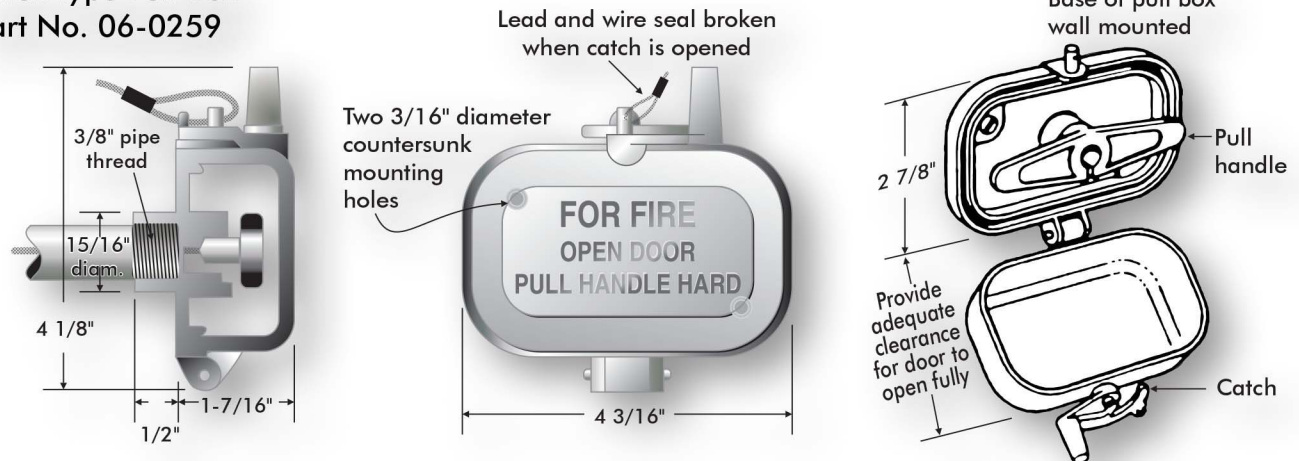
Conduit Bracket	Dimension "A"	Used on...
06-0257	1 3/4"	Small cylinders up to 20 lbs.
06-0248	2 1/2"	Large cylinders more than 50 lbs.

Dual Junction Part No. 06-0256

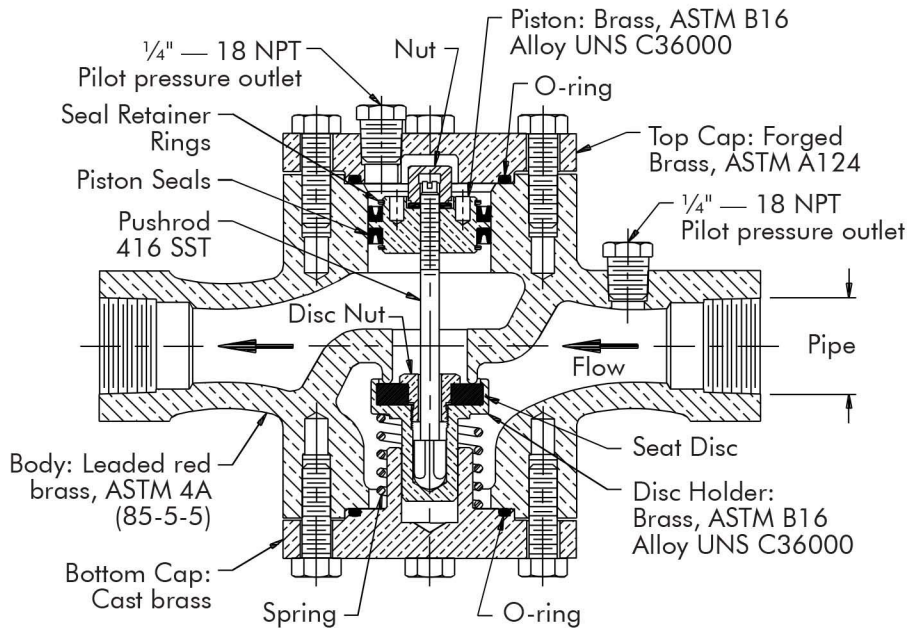


Note: to pull in the opposite direction, reverse the two boxed dimensions.

Latch Type Pull Box Part No. 06-0259



Selector Valves



Description

Selector or directional valves allow the use of a single group of cylinders to protect multiple areas or hazards. These valves act as blocking devices directing the flow of CO₂ to the protected space. Valve sizes range from 1/2" (13 mm) to 4" (102 mm) outlet sizes.

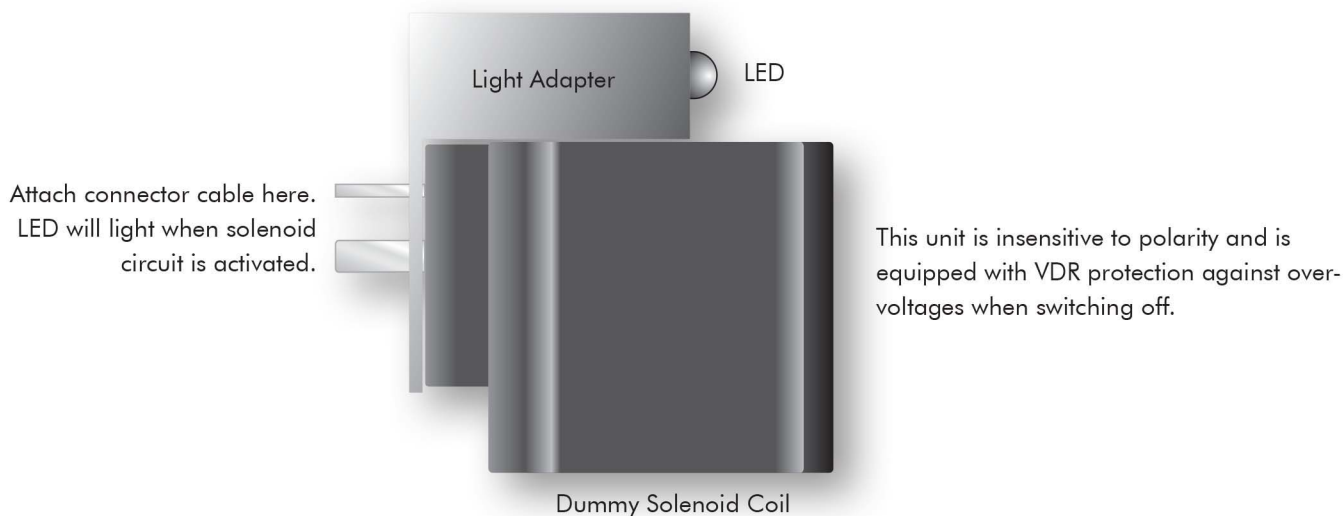
Valves are provided with a screwed inlet and outlet connection. 3" and 4" valves have a flanged connection on both.

Ordering Information

30610047	Selector Valve, 1/2 inch (13 mm), screwed
30610048	Selector Valve, 3/4 inch (19 mm), screwed
10610371	Selector Valve, 1 inch (25 mm), screwed
10610369	Selector Valve, 1 1/2 inch (38 mm), screwed
10610370	Selector Valve, 2 inch (51 mm), screwed
10610733	Selector Valve, 3 inch (76 mm), flanged
10610734	Selector Valve, 4 inch (102 mm), flanged
20480482	Actuation Kit for Selector Valves with manual actuation.
06-0347	Selector/Stop Valve, 1/2-3/4" brass, R1 type

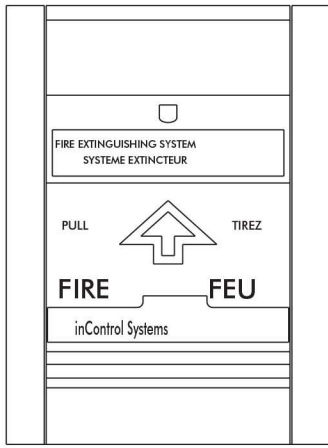


Test Unit, 24 VDC Solenoid Valve

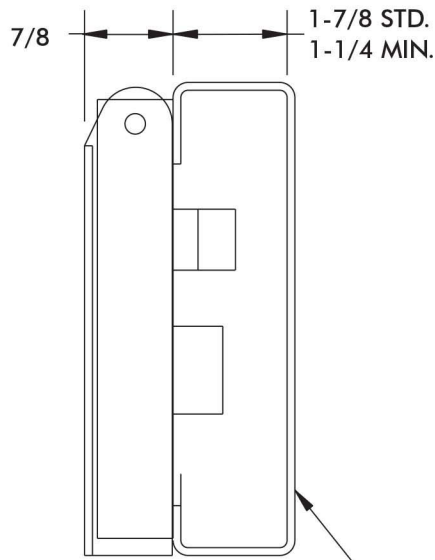




Manual Station with Uvex Cover

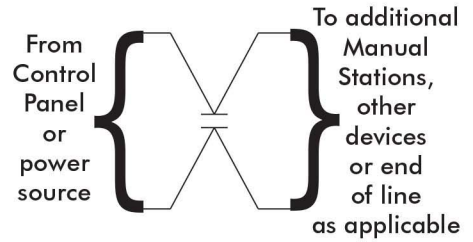


Manual Station



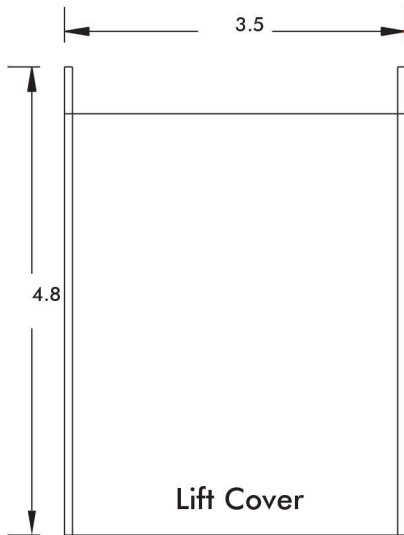
Surface Box
P/N 05-0020
(optional)

Contact arrangement with
Manual Station in
"Normal" position



Note

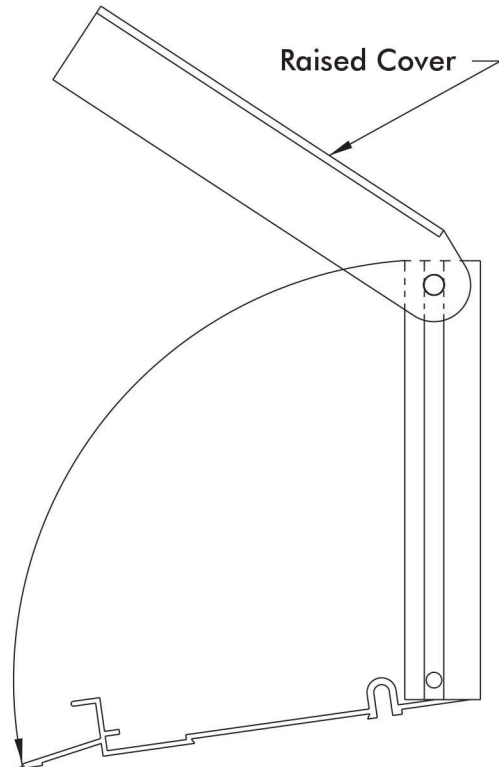
For connection details and end-of-line value where applicable, refer to control panel wiring data.



Lift Cover

Clear UVEX Cover

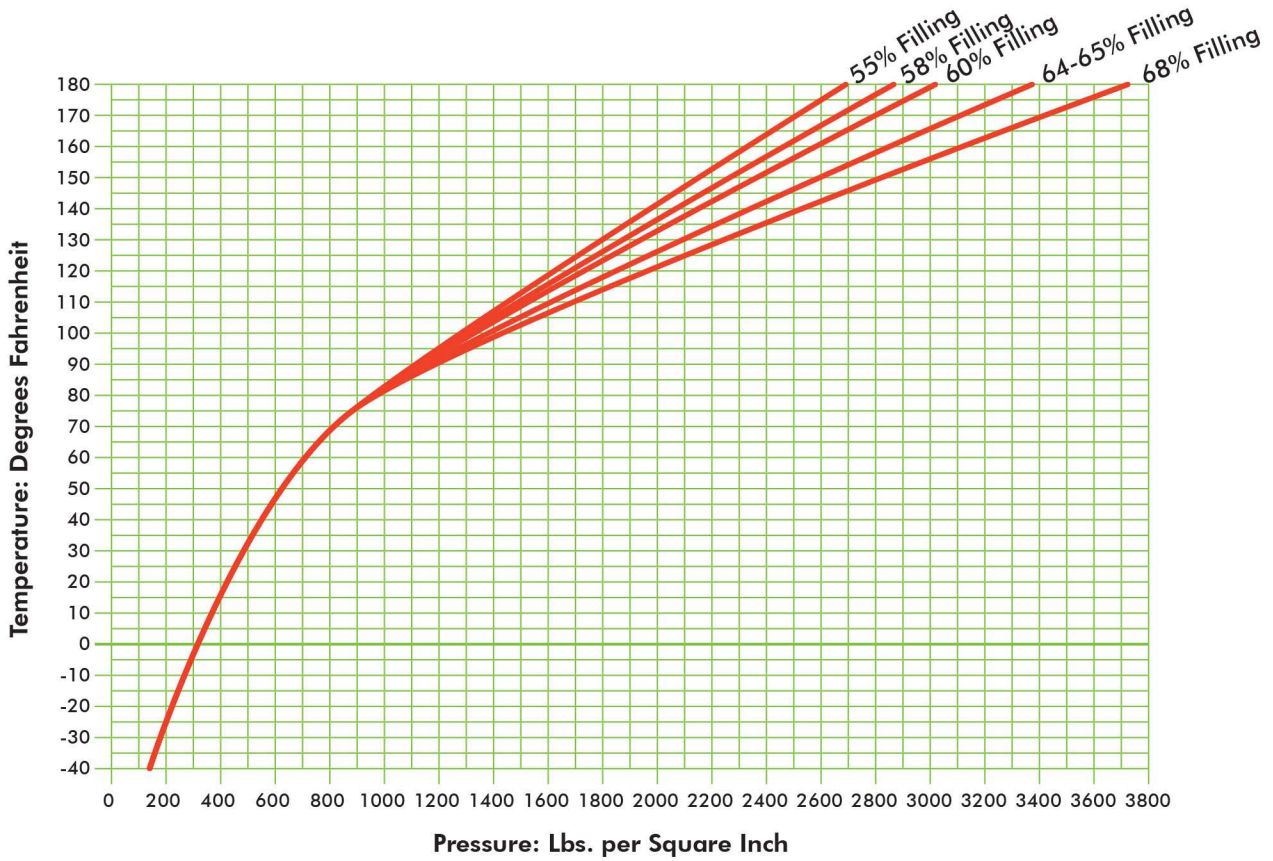
To operate
raise UVEX cover.
Pull down front face
of Manual Station.



- Operation: Once pulled, the operating lever remains down and cannot be reset without a special tool.
- Mounting: semi flush - single gang
- Finish: red enamel
- Switch rating: 1 amp @ 30 VDC
- Part No.: 09-0003



CO₂ Pressure/Temperature Curve



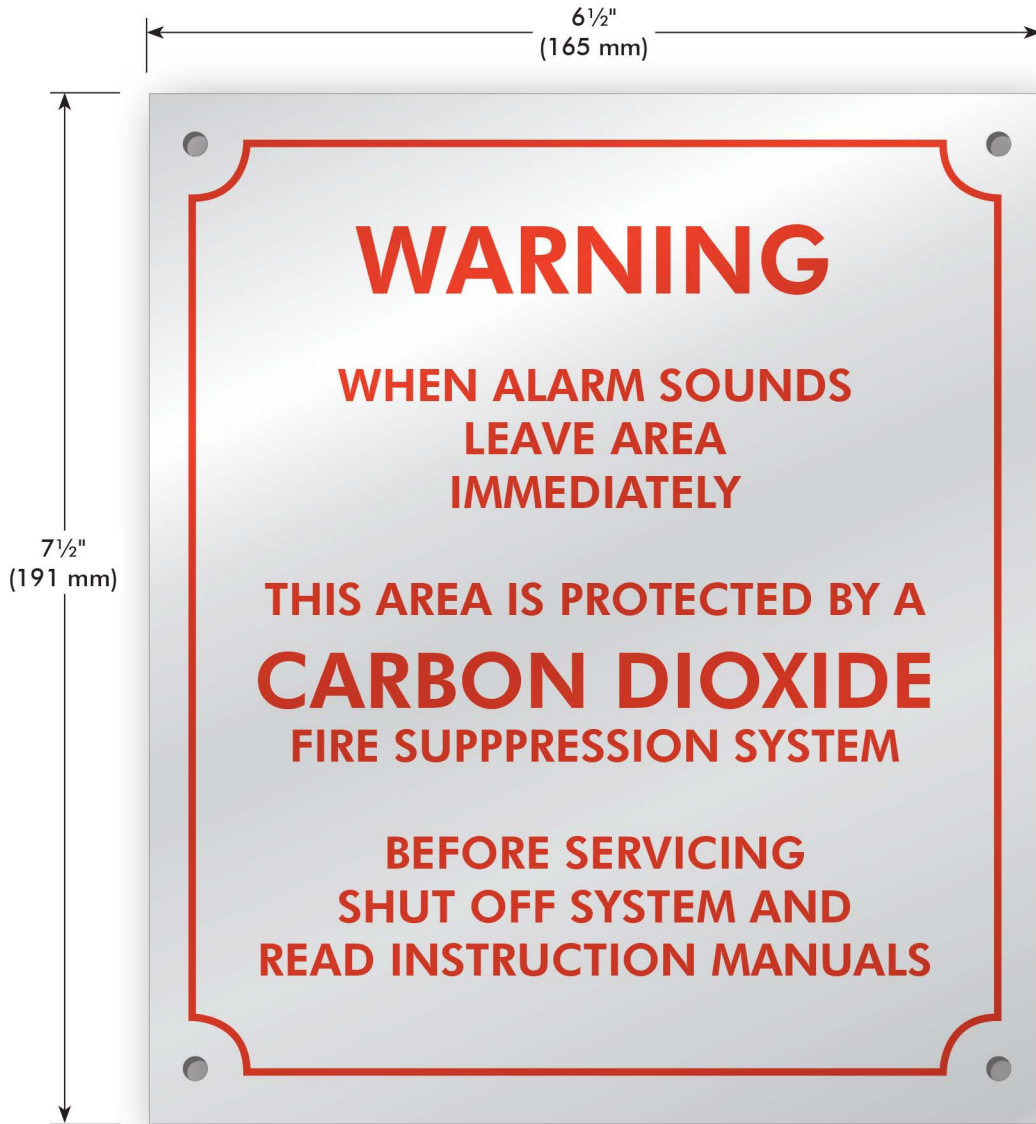
This curve shows the pressure in carbon dioxide cylinders at various temperatures when filled to a percentage of their water capacity.

In general, cylinders should not be filled to more than 68% or less than 60% of their water capacity. Cylinders currently supplied by inControl fire are filled to 68% of their water capacity.

$$\text{Percent filling} = \frac{\text{Lb. CO}_2 \text{ in cylinder}}{\text{Lb. water capacity of cylinder}} \times 100$$



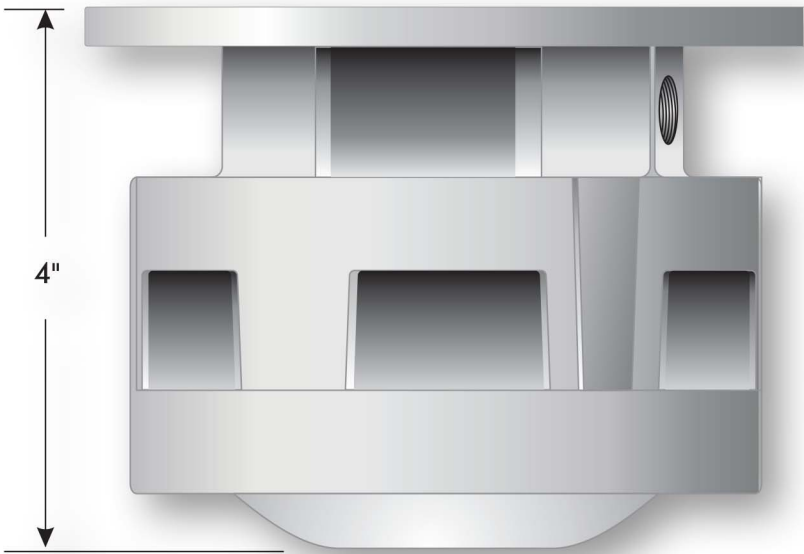
Door Warning Sign



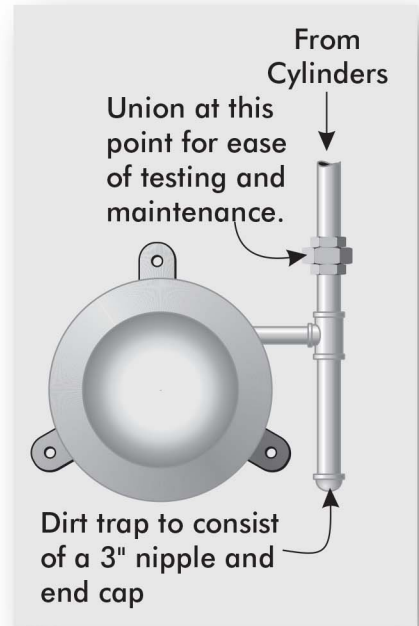
Part Number 12-0050
Material: Aluminum
Red lettering on natural background



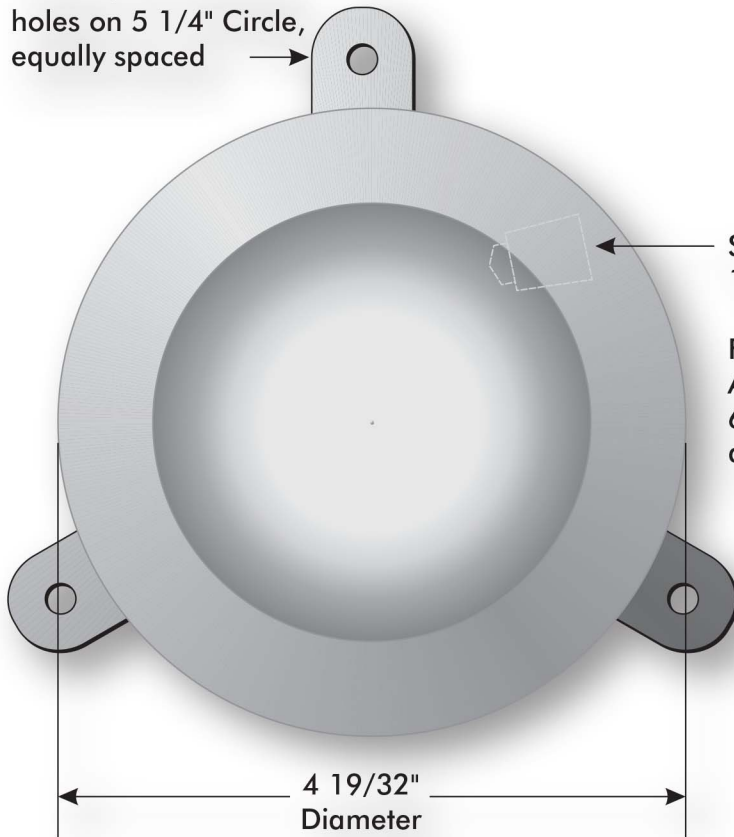
Gas Operated Siren



Decibel Rating (at 10 Feet)
 98 dB at 350 PSIG
 86 dB at 100 PSIG



Three 3/16" diameter holes on 5 1/4" Circle, equally spaced



Material

Housing & Impeller:
 Aluminum

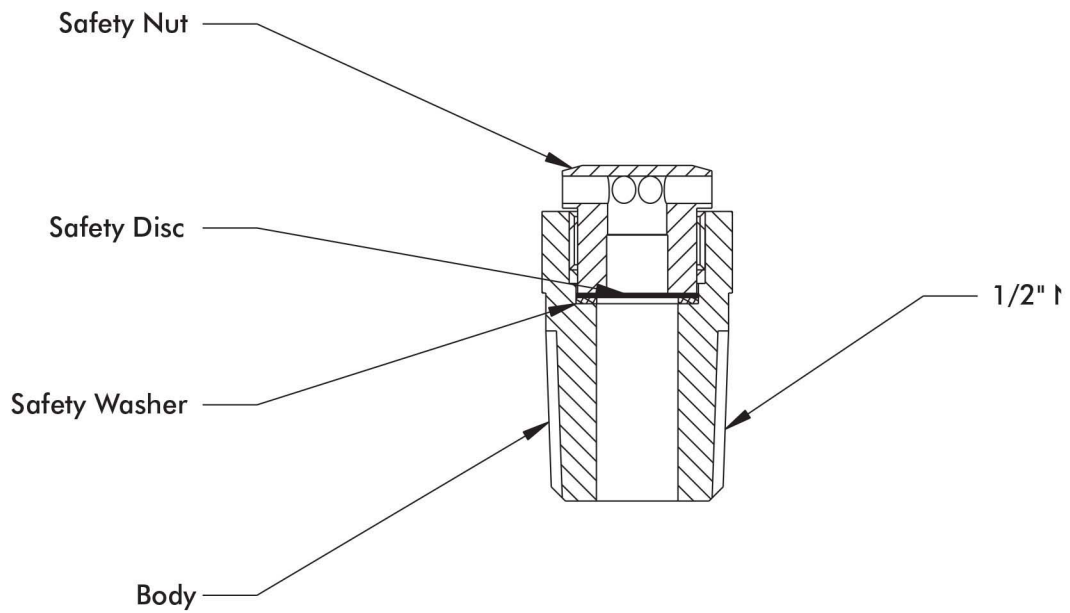
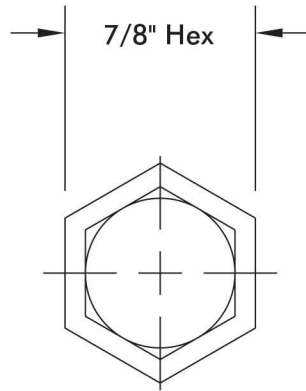
Cover:
 Steel painted red

Supply port
 1/4" NPT

Flow required:
 Approximately
 6 1/2 lb./min
 at 350 PSIG

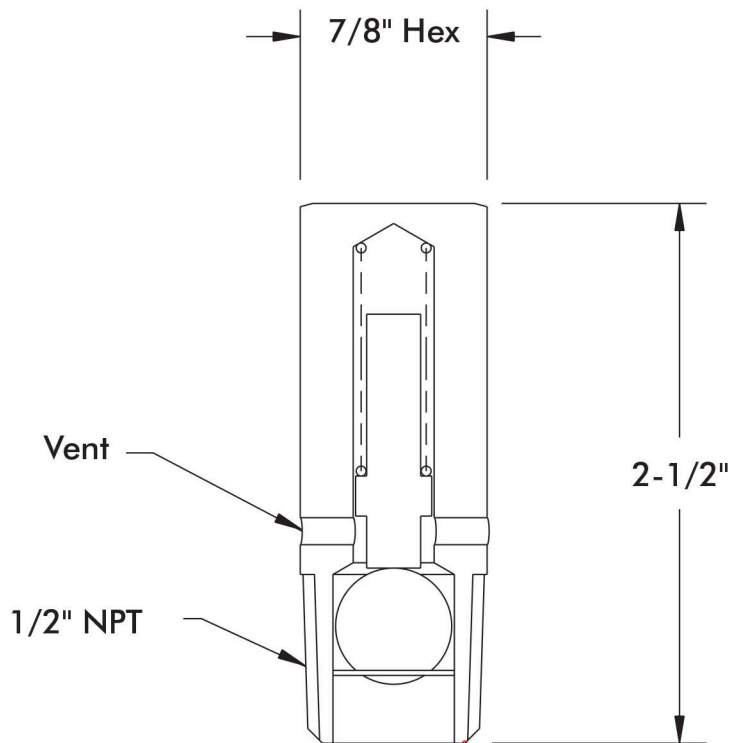


Half-inch Header Safety



Bursting Pressure
2650 to 3000 PSI

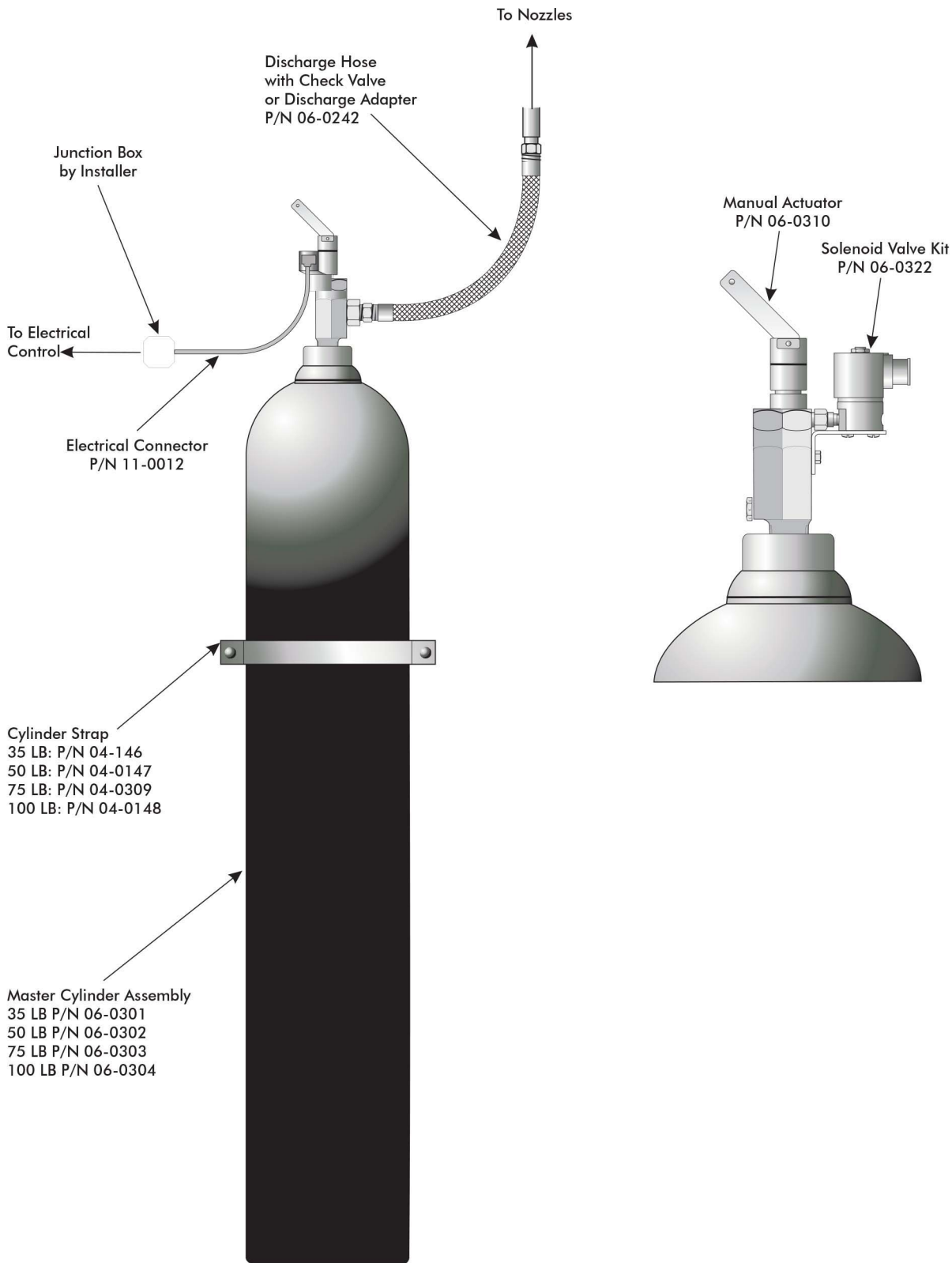
Bleeder Valve

**Part no. 04-0343**

This bleeder valve is installed in main and reserve cylinder manifolds to vent accidental check valve leakage during discharge of one cylinder bank. If unvented, accumulated leakage pressure could cause actuation of the other cylinder bank. The valve closes when manifold pressure reaches approximately 20 PSIG to prevent agent loss under normal discharge conditions.

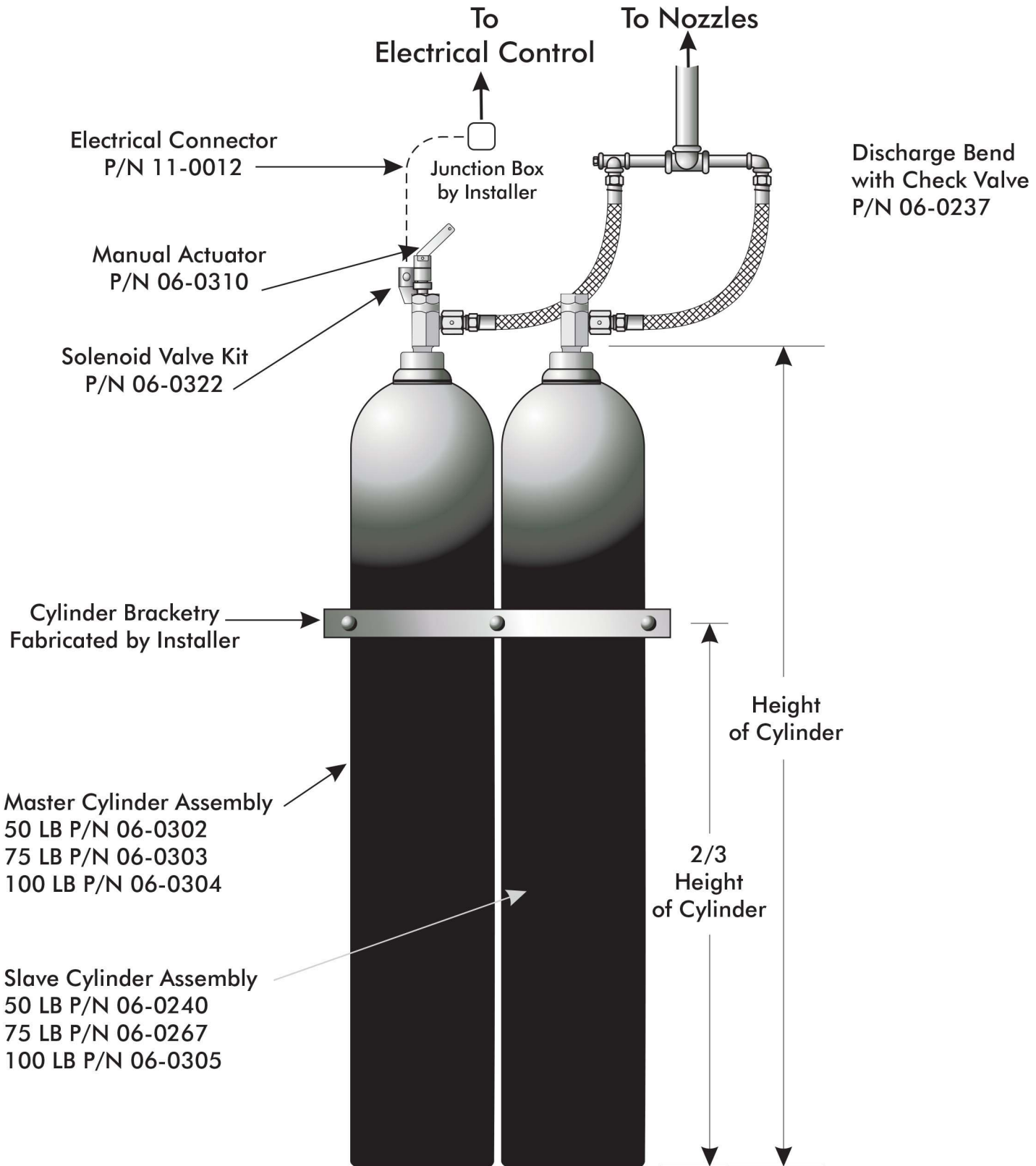


Typical Single-Cylinder Installation

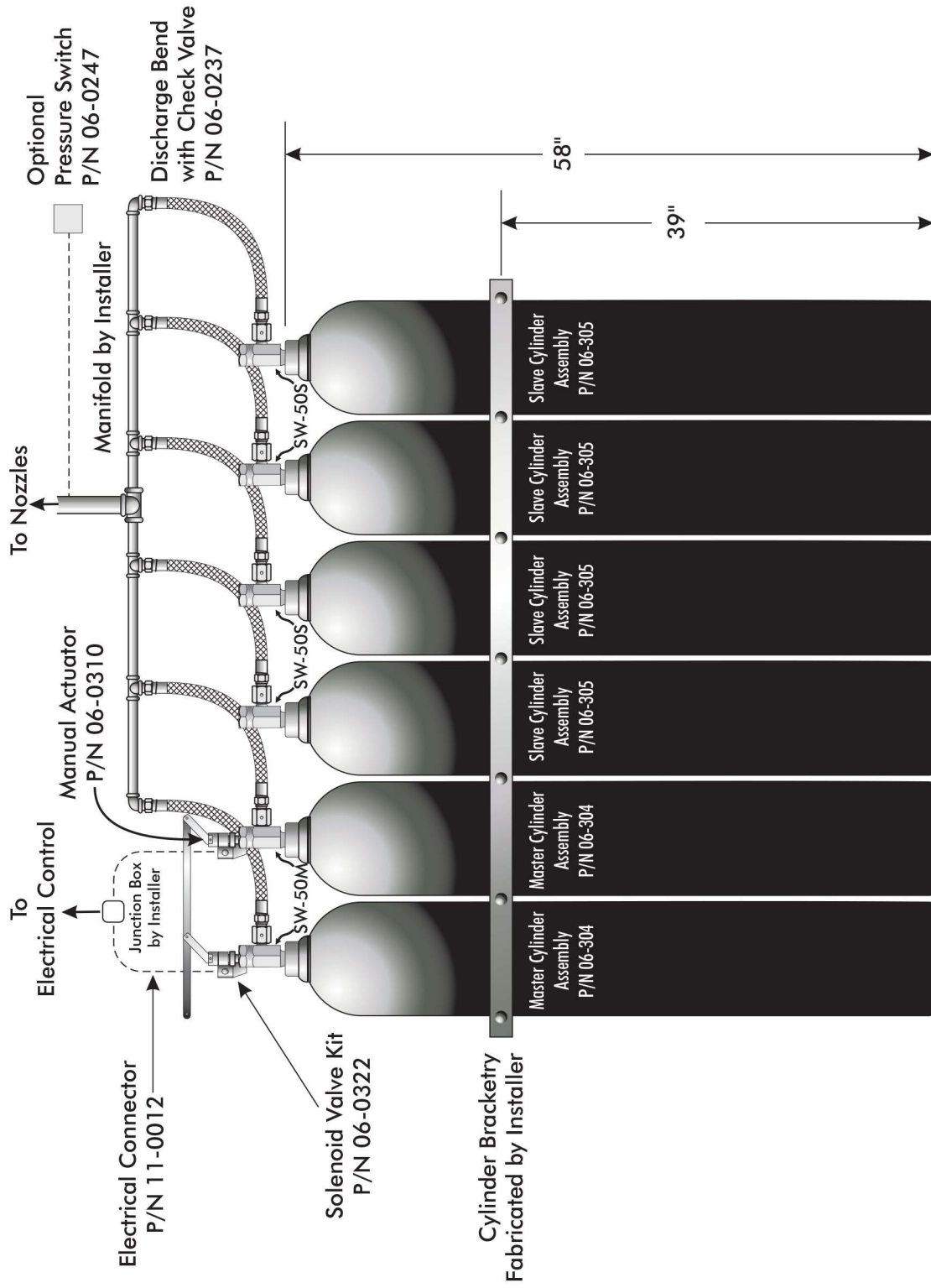




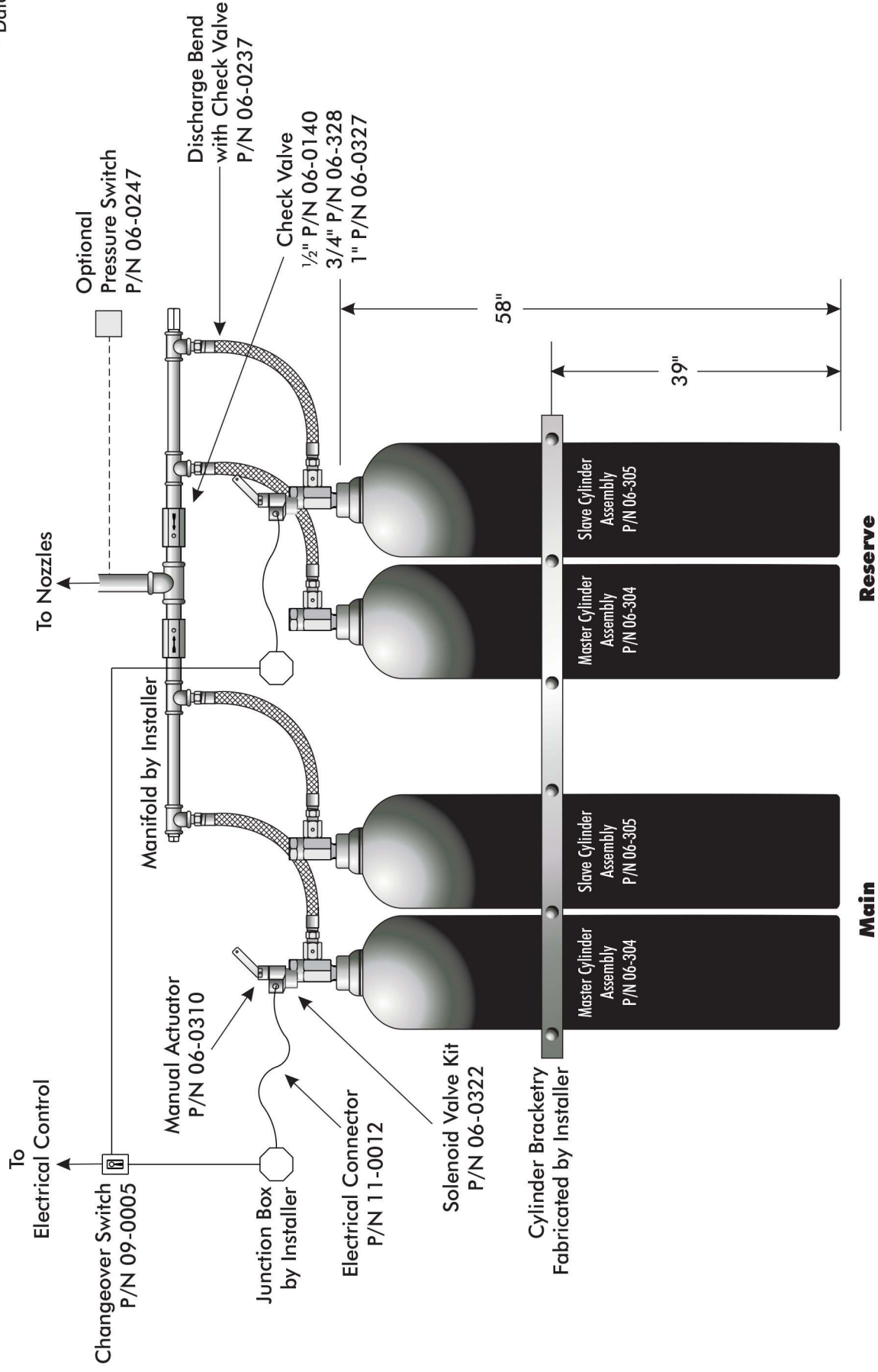
Typical Two-Cylinder Installation



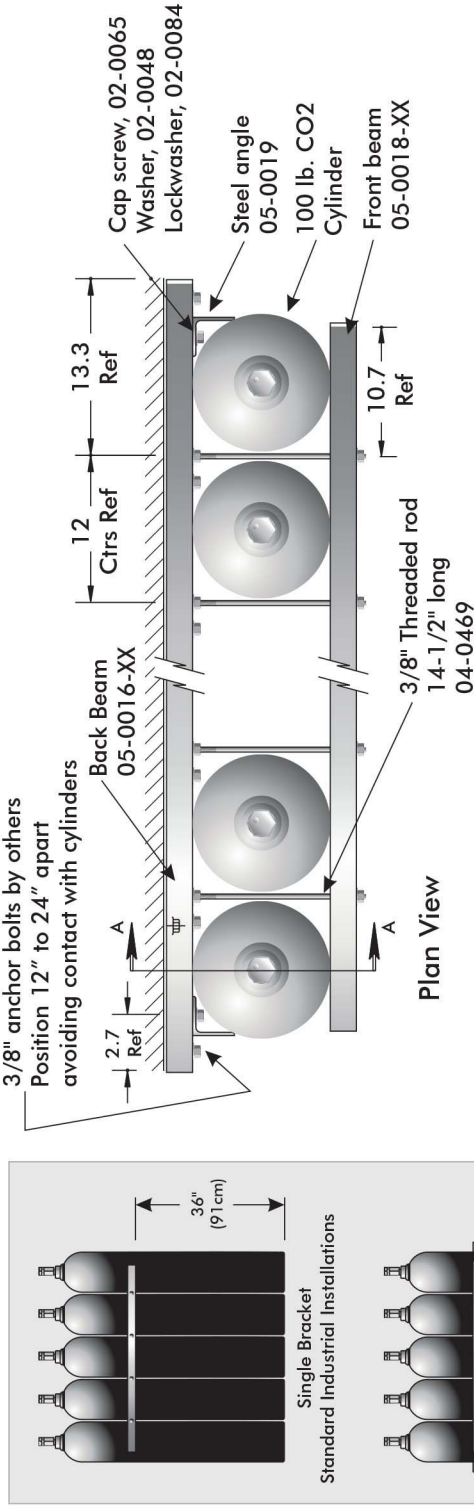
Typical Assembly, 100 lb. Cylinders



Typical Main and Reserve Cylinder Installation

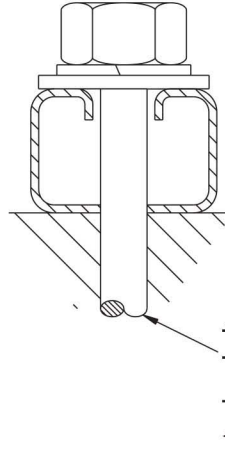
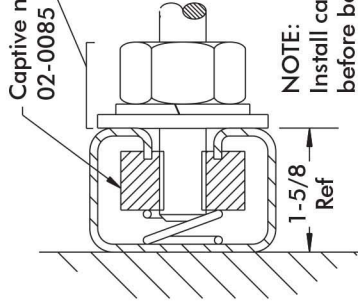


Typical Bracketing, Single Bank 100 lb. Cylinders



No. of pieces required for single bank set-up										
No. of cylinders	2	3	4	5	6	7	8	9	10	
Rod, 14-1/2", 04-0469	1	2	3	4	5	6	7	8	9	
Angle, 05-0019	2	2	2	2	2	2	2	2	2	
Captive nut, 02-0085	3	4	5	6	7	8	9	10	11	
Plain nut, 02-0047	2	3	6	8	10	12	14	16	18	
Plain washer, 02-0048	4	6	8	10	12	14	16	18	20	
Lockwasher, 02-0084	4	6	8	10	12	14	16	18	20	
Cap screw, 02-0065	2	2	2	2	2	2	2	2	2	

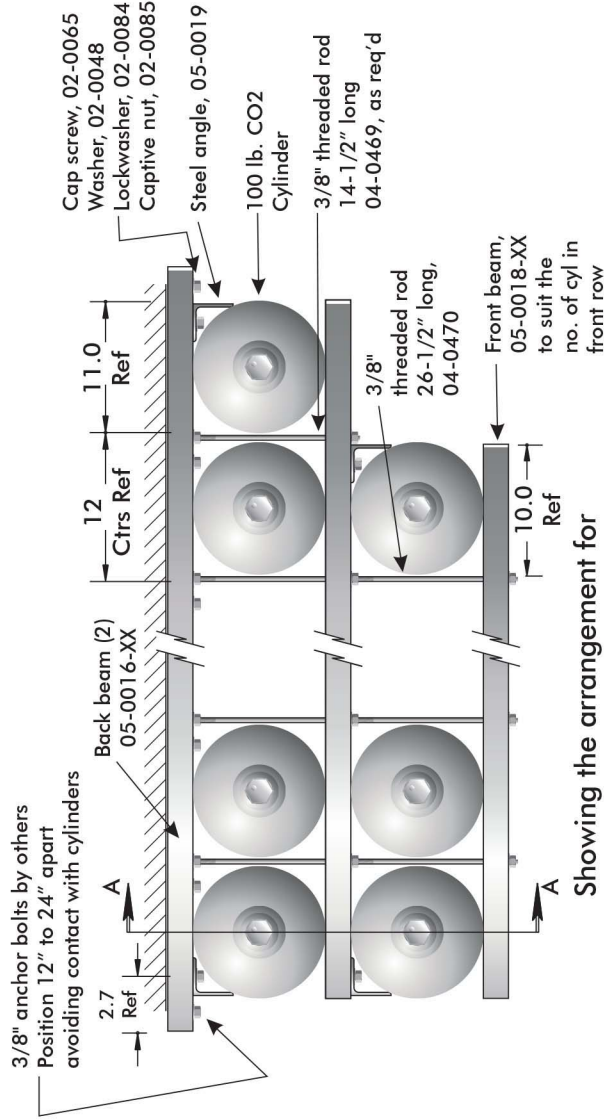
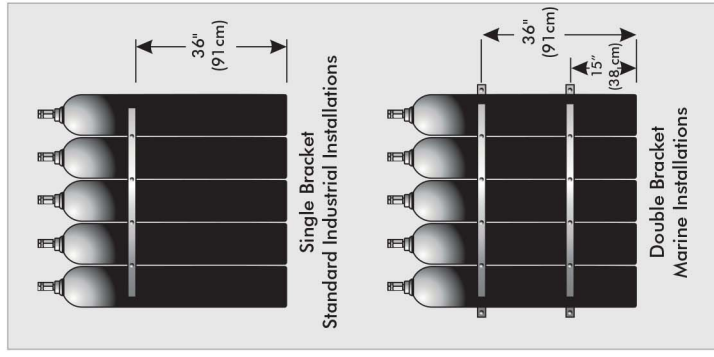
Washer, 02-0048
Lockwasher, 02-0084
Nut, 02-0047



Notes

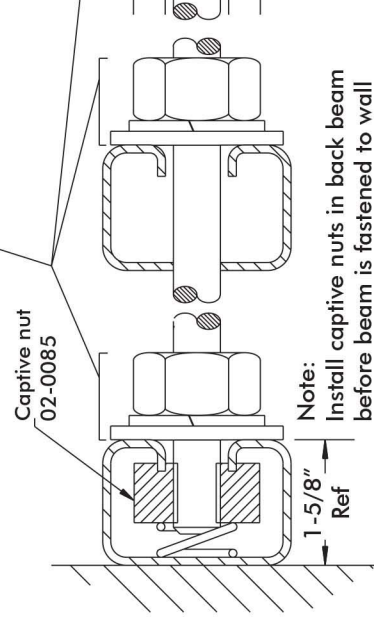
1. XX of beam part no. indicates the number of cylinders.
2. Design is based upon the use of 1-5/8" technistrut beams and components, or similar.

Typical Bracketing, Double Bank 100 lb. Cylinders

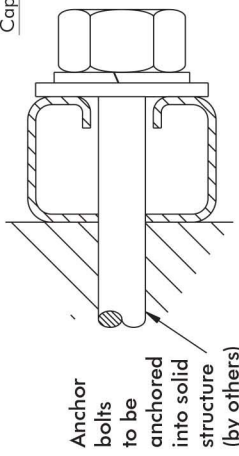


Showing the arrangement for an odd number of cylinders

Hardware required for two bank set-up												
Total no. of cylinders	4	5	6	7	8	9	10	11	12			
Rod, 14-1/2", 04-0469	0	1	0	1	0	1	0	1	0	1	0	1
Rod, 26-1/2", 04-0470	1	1	2	2	3	3	4	4	4	5		
Angle, 05-0019	4	4	4	4	4	4	4	4	4	4		
Captive nut, 02-0085	5	6	6	7	7	8	8	9	9			
Plain nut, 02-0047	3	5	6	8	9	11	12	14	15			
Plain washer, 02-0048	7	9	10	12	13	15	16	18	19			
Lockwasher, 02-0084	7	9	10	12	13	15	16	18	19			
Cap screw, 02-0065	4	4	4	4	4	4	4	4	4			



Section A-A

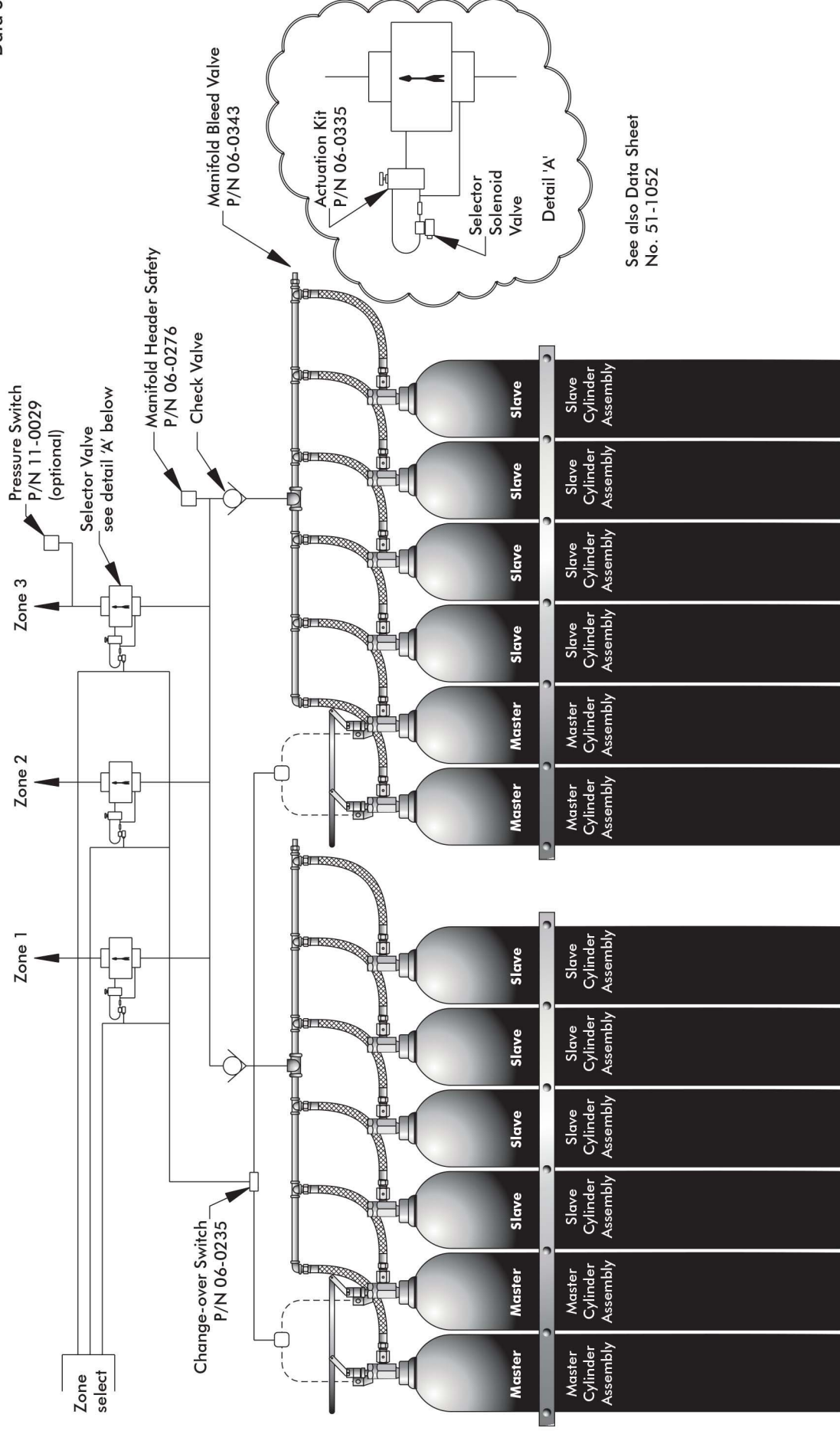


Typical wall fastening

Notes

- See 51-1054 for single bank.
- XX of the part no. for the two back beams indicates the number of cylinders between them.
- XX of the part no. for the front beam indicates the number of cylinders contained by the beam.
- Design is based upon the use of 1-5/8" technistrut beams and components, or similar.
- Part no. for the complete module is 51-1055-XX, where XX represents the total no. of cylinders.

Typical Joint System with Main and Reserve CO₂ Supply

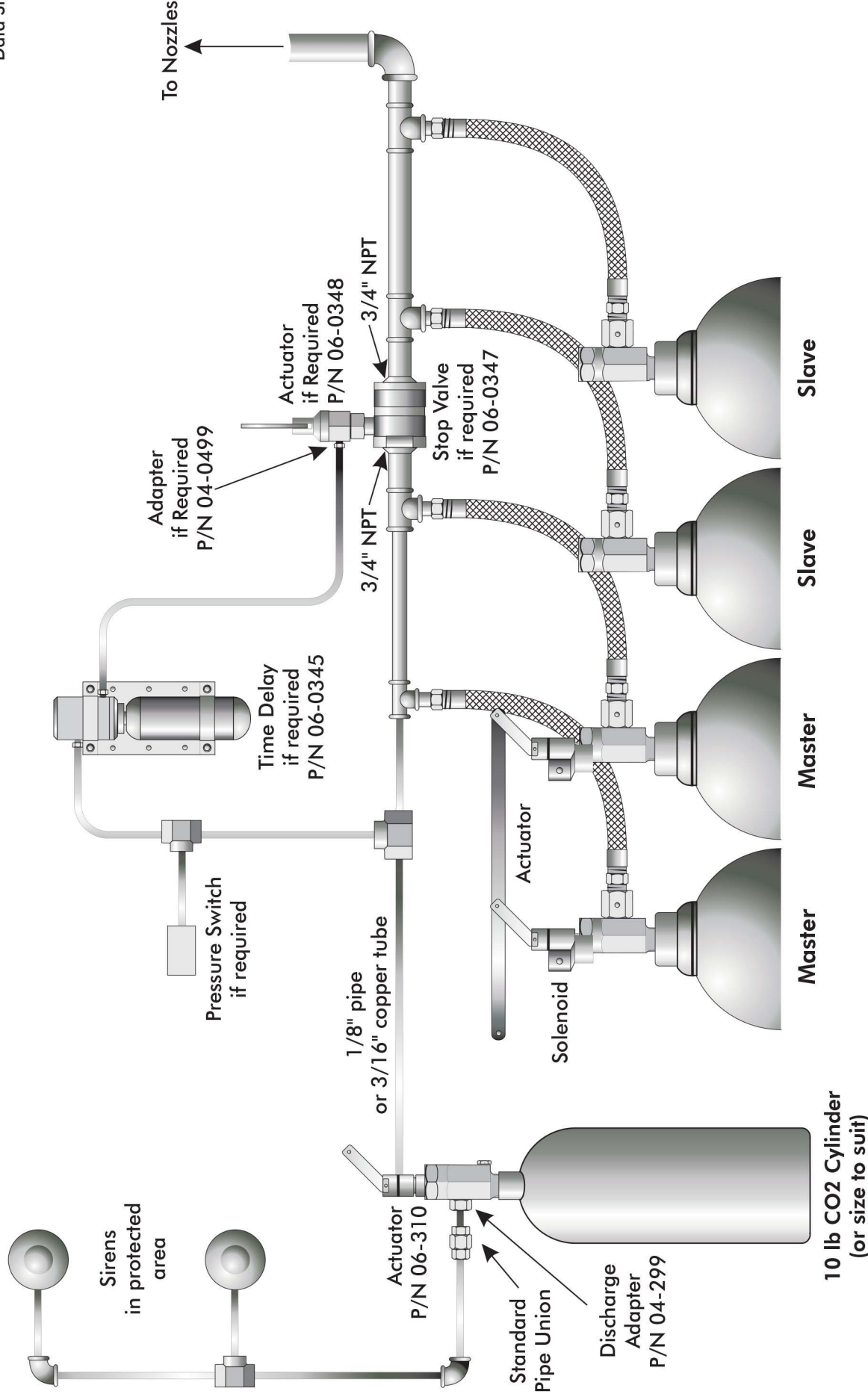


See also Data Sheet No. 51-1052

Main CO₂ Supply

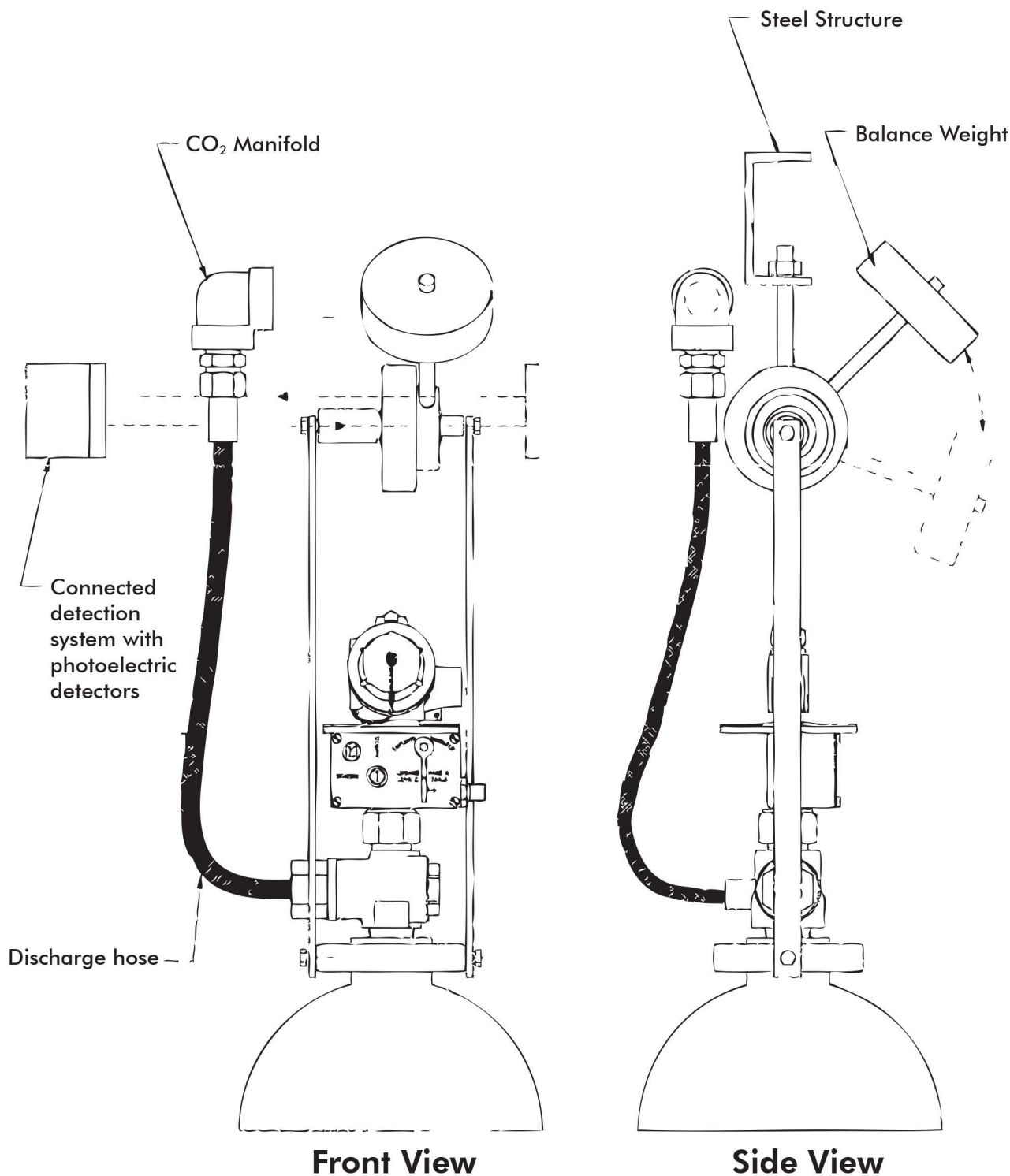
Reserve CO₂ Supply

Typical Installation with Gas Operated Sirens





Cylinder Weighing System



Switch for Cylinder Weighing System

Optical Polarized Retroreflective Type

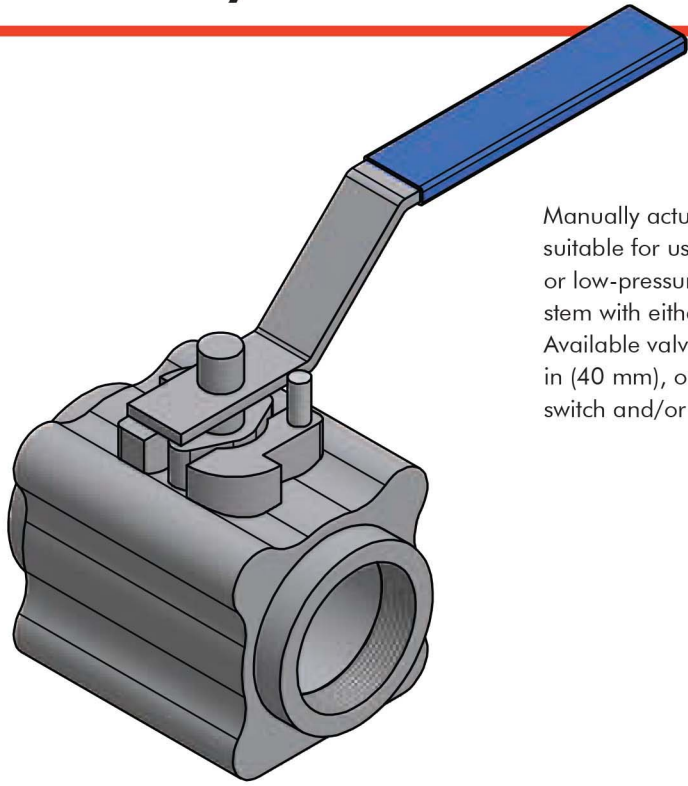
Specifications

Model	E3G-R13-G	E3G-R17-G	E3G-MR13-G	E3G-MR19T-G
Connection	Cable	M12 connector	Terminal block	
Light source	Red LED (100 nm)			
Supply voltage	10 to 30 VDC \pm 10 % (ripple (p-p) below 10 %)		12 to 240 VDC \pm 10 % 24 to 240 VAC \pm 10 %	
Current consumption	50 mA max.		—	
Power consumption	—		2 W max.	
Detecting distance range	100 m (500 mm) *(with E39-R2)			
Response time	1 ms max.		30 ms max.	
Output system	Light - ON Dark - ON (selectable)			
	NPN/PNP (selectable)		Contact 1c	
Control output	100 mA max. open collector output Residual output voltage: NPN output - 1.2 V max. PNP output - 2.0 V max.		Relay output AC 250 V max. 3 A DC 30 V max. 3 A	
Timer function	-		-	
Circuit protection	Reverse power connection protection. Load short-circuit protection. Mutual interference protection.		Mutual interference protection.	
Ambient operating temperature	Operation: -25 to +55 °C (no freezing) Storage: -30 to +70 °C (no freezing)			
Ambient Operating humidity	Operation: 35 to 85 % RH Storage: 35 to 95 % RH			
Protective design	IEC60529 Standard IP67			
Case material	Case: PBT. Cover: PMMA			

*Setting distance from sensor to reflector is more than 500 mm.

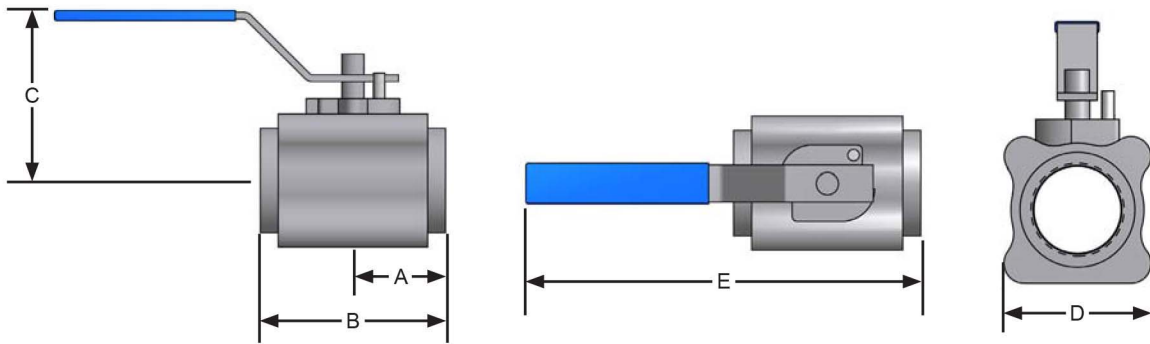


Manually Actuated Ball Valve



Manually actuated ball valves have ANSI Class 600 pressure ratings suitable for use as lockout/isolation valves in FM-200® and high-pressure or low-pressure carbon dioxide systems. They have a stainless steel ball and stem with either a coated carbon steel or stainless steel body as specified. Available valves sizes are 1/2 in (15 mm), 3/4 in (20 mm), 1 in (25 mm), 1 1/2 in (40 mm), or 2 in (50 mm). Each valve may be fitted with an optional limit switch and/or stem extension.

Dimensions



Valve Size		A		B		C		D		E	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/2	15	1.29	33	2.59	66	2.36	60	2.06	52	5	127
3/4	20	1.5	38	3.01	76	2.52	64	2.25	57	5	127
1	25	1.85	47	3.69	94	3.29	84	2.59	66	7.5	191
1 1/2	40	2.29	58	4.58	116	4.27	108	3.33	85	8.25	210
2	50	2.55	65	5.11	130	4.46	113	3.66	93	8.25	210