

SEVO 1230 Clean Agent Cylinders

140057, 140069, 140079, 140107, 14817, 14813

Utilizing 3M™ Novec™ 1230 Fire Protection Fluid

Description

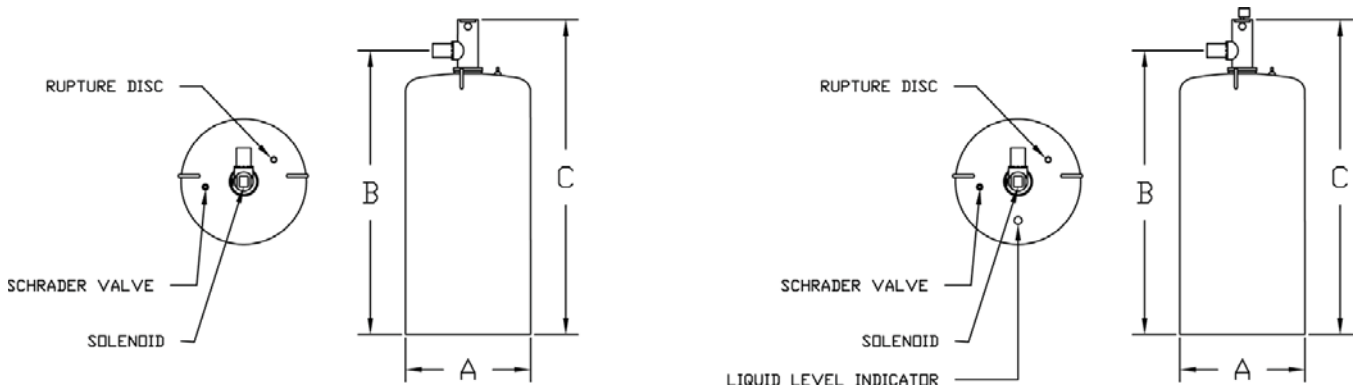
The agent storage cylinder is a steel pressure vessel manufactured, tested and stamped in accordance with DOT 4BW500 or DOT 4BA500, TC (Transport Canada).

The agent storage cylinder is designed to hold the clean agent at a normal operating pressure of 500 psi (34.5 bar) (35.2 kg/cm²) or 360 psi (25 bar) at 70°F (21.1°C).

The agent storage cylinders are suitable use at temperatures of 0°F (-17.8°C) to 130°F (54.4°C).

A rupture disc is connected to the cylinder body to serve as a pressure relief device to protect the cylinder against excessive internal pressure. The disc rupture point is in the range of 864 psi (59.5 bar) to 950 psi (65.5 bar) at 70°F (21.1°C).

The agent storage cylinders are available in sizes of 40 lb. (15 L), 76 lb. (29 L), 164 lb. (62 L), 322 lb. (122 L), 601 lb. (227 L), and 910 lb. (368 L) . Figure 2.1 shows the cylinder configurations, dimensions, fill ranges and other pertinent data.



Part No.		CV 140069	CV 140079	CV 14817	CV 140057	CV 14183	CV 140107
Cylinder Size	lbs	40	76	164	322	601	910
Volume	ft ³	0.53	1.02	2.19	4.3	8.02	13.0
	L	15	29	62	122	227	368
Diptube Diameter	in.	1 1/4	1 1/4	1 1/4	2	2 1/2	2 1/2
	mm	35.1	35.1	35.1	52.5	62.7	62.7
Valve Outlet	in.	1.0	1.0	1.25	2.5	2.5	3.0
	mm	25.4	25.4	31.75	63.5	63.5	76.2
Allowable Fill	lbs	16 - 40	31 - 76	66 - 164	129 - 322	241 - 601	390 - 910
	kg	7 - 18	14 - 34.5	30 - 74.5	58.5 - 146	109 - 272.5	177 - 442
Weight	lbs	38	52	98	220	320	448
	kg	17.2	23.6	44.5	99.8	145.1	203.2
A	in.	10 1/6	10 1/6	12 7/8	20	20	24 1/2
	mm	255.59	255.59	327	508	508	622.3
B	in	17 1/4	28 1/2	37 1/2	33 1/2	54 1/4	60 7/8
	mm	438.15	723.9	952.5	842.0	1378.0	1546.2
C	in	21 3/8	32 3/4	42 1/4	39 3/4	61	67 3/4
	mm	543	831.9	1073.2	1010	1457.33	1720.9
Optional Liquid Level Indicator		N	N	N	Y	Y	Y

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SEVO 1230 Releasing Controls

SOL 21857, SOL 21858
SOL EA45, MA 3033, PA 3000

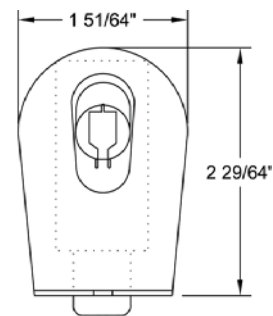
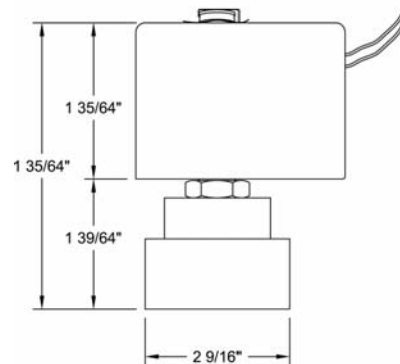
Utilizing 3M™ Novec™ 1230 Fire Protection Fluid

Electric Solenoid

SOL 21857 – 12 V.D.C. 0.76 AMP
SOL 21858 – 24 V.D.C. 0.38 AMP

Description

Electric solenoid valve is normally closed and the valve requires electrical energy to remain open. Opening the valve vents the pressure from the top of the position in the cylinder valve allowing the piston to slide upward and commence cylinder discharge. The electric solenoid valves are available in 12 V.D.C. and 24 V.D.C. The solenoid selected must be compatible with the output signal from the control unit.

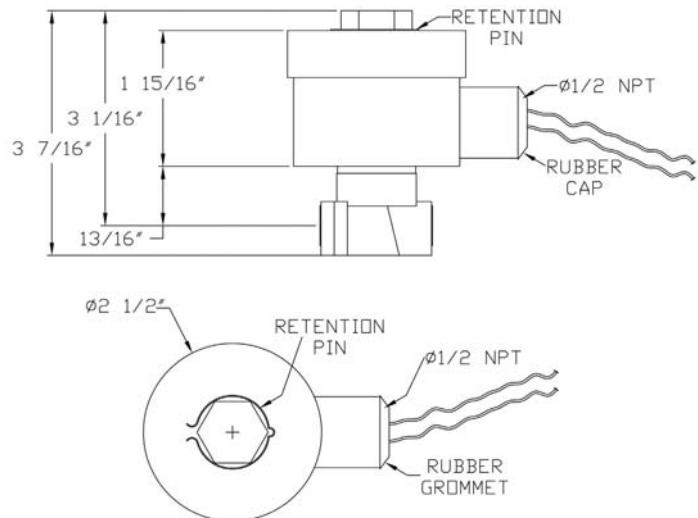


Explosion-Proof Electric Solenoid

EX-SOL 21858 – 24 V.D.C. .38 AMP

Description

Explosion-proof electric solenoid valve is normally closed and the valve requires electrical energy to remain open. Opening the valve vents the pressure from the top of the piston in the cylinder valve allowing the piston to slide upward and commence cylinder discharge. The explosion-proof electric solenoid valves are available in 24 V.D.C. The solenoid must be compatible with the output signal from the control unit.



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SEVO 1230 Releasing Controls

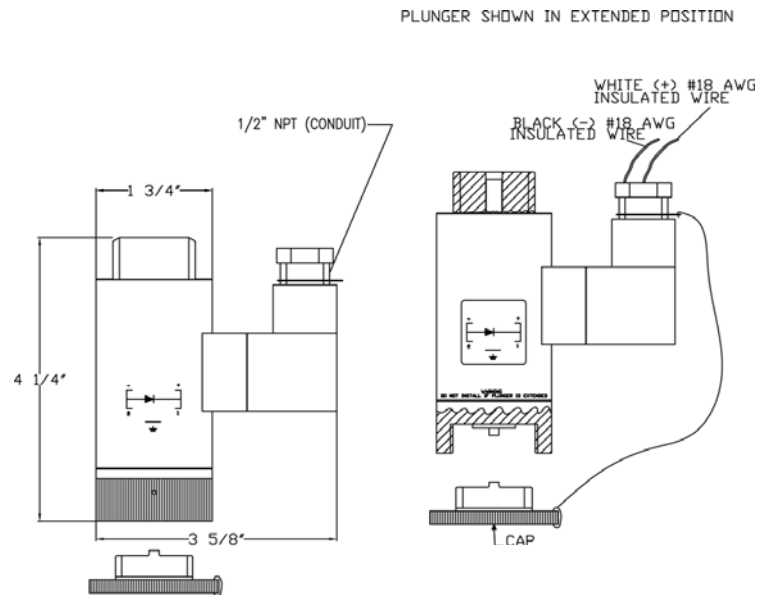
SOL 21857, SOL 21858
SOL EA45, MA 3033, PA 3000

Electric Actuator

SOL EA45 – 24 V.D.C.
0.2 AMP Continuous
0.6 AMP Firing

Description

An electrical current operates the internal solenoid activating a pin that depresses the vent valve in the top plug of the cylinder valve. Opening the valve vents the pressure from the top of the piston in the cylinder valve allowing the piston to slide upward and commence cylinder discharge. The electric solenoid actuator is available in 24 V.D.C. The solenoid actuator must be compatible with the output signal from the control unit.



Manual Actuator

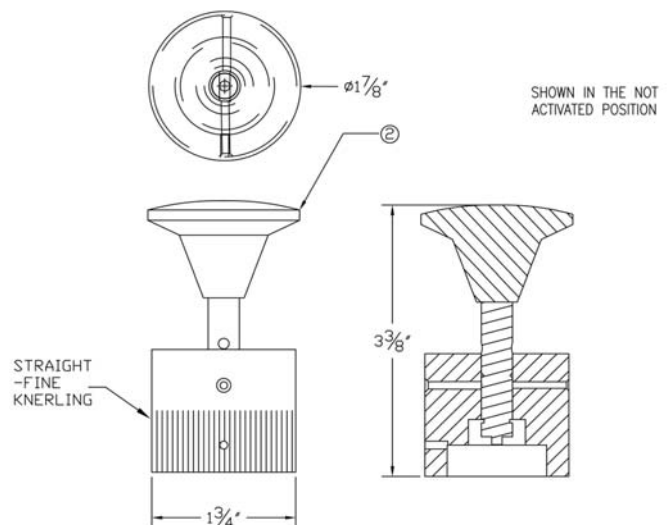
MA3033

Description

The local Manual Actuator control head features a local lever that depresses a Schrader valve thereby venting the pressure for the top of the piston in the cylinder valve. This allows the piston to slide upward and commence cylinder discharge. The manual actuator mounts directly on top of a Top Plug Adapter that mounts directly on top of the cylinder valve.

Top Plug Adapter (TP 1.0):
for valves measuring 1" and 1.25"

Top Plug Adapter (TP 2.5):
is used for valves measuring 2.5" and 3"



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SEVO 1230 Releasing Controls

SOL 21857, SOL 21858
 SOL EA45, MA 3033, PA 3000

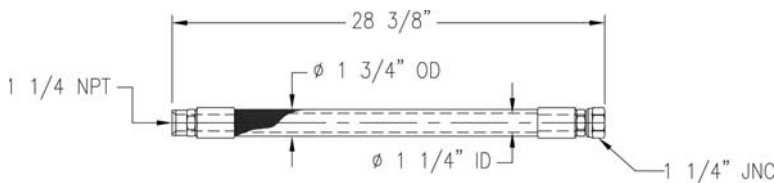
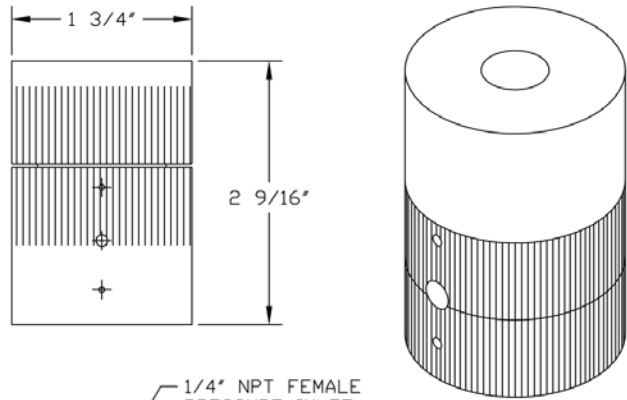
Pneumatic Actuator

PA 3000

Description

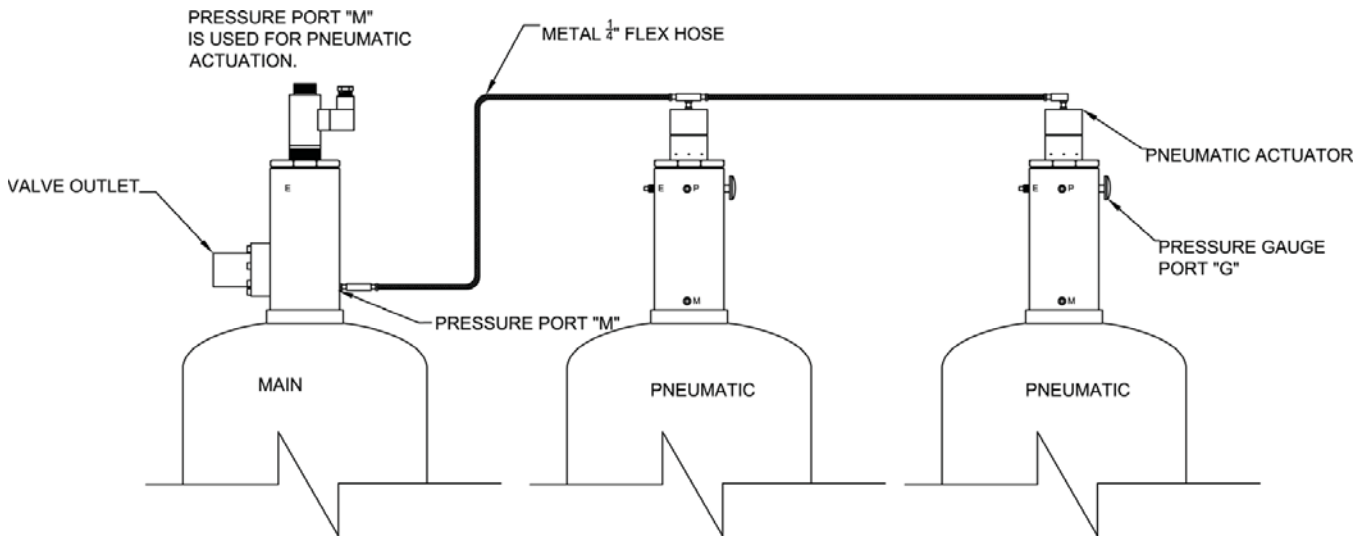
The Pneumatic Actuator Control Head features a pneumatically driven piston that depresses a check valve, releasing the pressure from the top of the piston, allowing the cylinder discharge. The pneumatic pressure required to operate the Pneumatic Actuator Control Head is obtained from the "M" port of a main cylinder that is either mechanically and/or electrically actuated. Multiple cylinders equipped with Pneumatic Actuator Control Heads can be activated from one main cylinder using 1/4" metal flex hose or 1/8" pipe. The Pneumatic Actuator Control Head mounts directly to a top plug adapter directly on top of the cylinder valve.

ALL PARTS ARE CYLINDRICAL



DRAWING SHOWN IN NOT ACTIVATED POSITION

Multiple Pneumatic Actuator Configuration

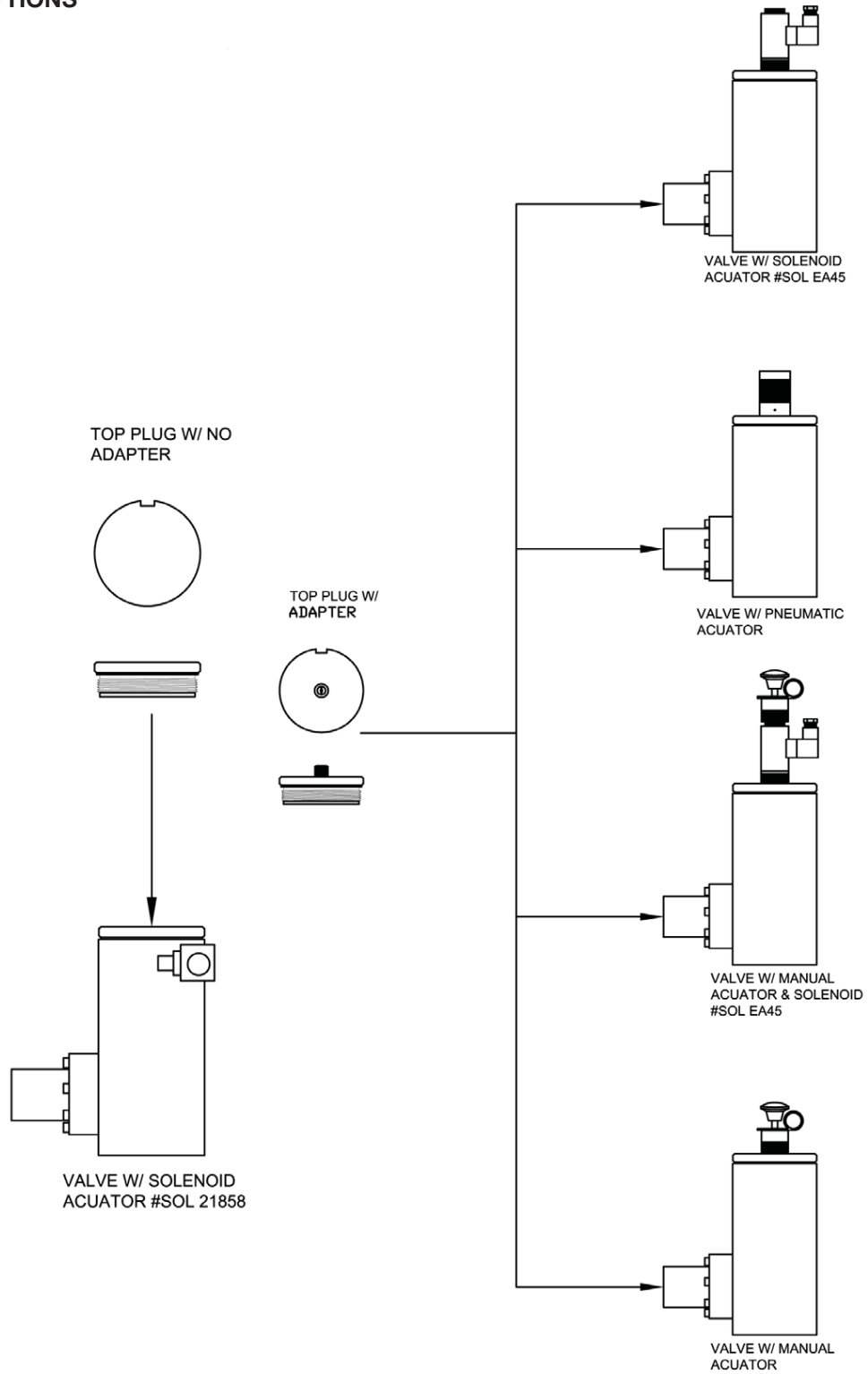


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SEVO 1230 Releasing Controls

SOL 21857, SOL 21858
SOL EA45, MA 3033, PA 3000

ACTUATOR OPTIONS



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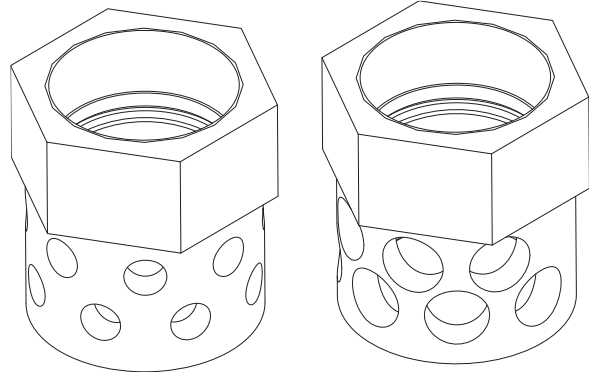
SEVO 1230 Nozzles

N-180-xx-xx-xxx
N-360-xx-xx-xxx

Utilizing 3M™ Novec™ 1230 Fire Protection Fluid

Description

The nozzle controls the flow and distribution in the protected area. Five nozzle sizes are available in aluminum: 1/2", 1", 1 1/2", 2", and 2 1/2". Each nozzle is available with a 360° 16 port (central) or 180° 9 or 7 port (sidewall) discharge pattern. The 9 port nozzles may only be used with FM approved systems.

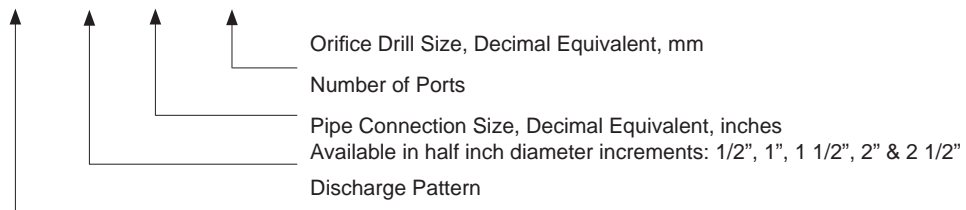


Pre-engineered Nozzles					
Cylinder Size	Type	Nozzle Size	Orifice Area	Drill Size	Part No.
40 lb	Sidewall	1"	0.1963	0.1890	N180-1.0-0.1963 402
40 lb	Central	1"	0.1963	0.1250	N360-1.0-0.1963 401
76 lb	Sidewall	1"	0.4418	0.2835	N180-1.0-0.4418 402
76 lb	Central	1"	0.4418	0.1875	N360-1.0-0.4418 401
164 lb	Sidewall	1.5"	0.7854	0.3780	N180-1.5-0.7854 404
164 lb	Central	1.5"	0.7854	0.2500	N360-1.5-0.7854 403
322 lb	Sidewall	2.0"	1.4849	0.5197	N180-2.0-1.4849 406
322 lb	Central	2.0"	1.4849	0.3437	N360-2.0-1.4849 405
601 lb	Sidewall	2.0"	1.1075	0.4880	N180-2.0-1.1075 406
601 lb	Central	2.0"	1.1075	0.2969	N360-2.0-1.1075 405
910 lb	Sidewall	2.0"	2.0739	0.6088	N180-2.0-2.0739 406
910 lb	Central	2.0"	2.0739	0.4207	N360-2.0-2.0739 405

Engineered Nozzles			
Type	Nozzle Size	No. of Ports	Part No.
Sidewall	1/2"	7	N180-0.5-7-xx
Central	1/2"	16	N360-0.5-16-xx
Sidewall	1"	7	N180-1.0-7-xx
Central	1"	16	N360-1.0-16-xx
Sidewall	1.5"	7	N180-1.5-7-xx
Central	1.5"	16	N360-1.5-16-xx
Sidewall	2.0"	7	N180-2.0-7-xx
Central	2.0"	16	N360-2.0-16-xx
Sidewall	2.5"	7	N180-2.5-7-xx
Central	2.5"	16	N360-2.5-16-xx



Engineered Nozzles					
* Nozzle size is determined based on Hydraulic Flow Calculation					
N	180	x.x	xx	xxxx	
N	360	x.x	xx	xxxx	



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Technical Data Sheet

SEVO 1230 LIQUID LEVEL INDICATOR

LL-30020-1, LL-30020-2

Utilizing 3M™ Novec™ 1230 Fire Protection Fluid

Description

The SEVO 1230 LL-30020 Series Liquid Level Indicator is a simple, manually operated device, which provides means to determine the fluid level in a vertically mounted cylinder. Use of this device allows for the content of fluid to be determined without removing cylinder from its bracketing and piping for weighing.

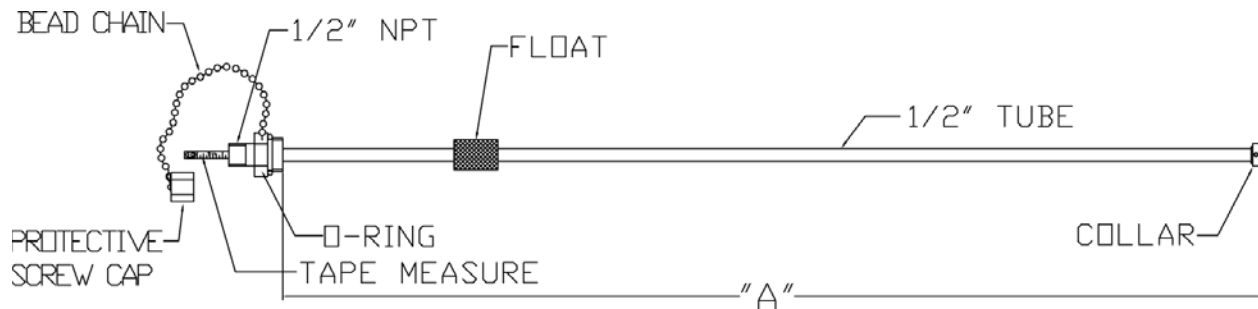
Operation

A magnet equipped float moves with the fluid level along the stem. Level is obtained by removing protective cap and pulling out the calibrated tape until magnet interlock with float is felt. The weight is determined by converting the level measurement into a weight amount using the conversion tables. The operating temperature range is 32°F to 120°F (0° - 50° C).

Specifications

The fluid-storage cylinders of 322 lb. (122 L) capacity or larger shall provide a reliable means for determining weight during normal routine service. The liquid level indicator shall not require additional space when cylinder is installed. Using the LLI shall not require shutting down clean agent system or interrupting fire protection. The LLI shall be capable of field installation with a standard wrench when cylinder is uncharged. The LLI shall be of flexible tape design, allowing use in confined spaces.

Part Number	Cylinder Size (lb)	Cylinder Size (L)	Dimension A
LL-30020-1	322	122	21 5/8"
LL-30020-2	601/910	227/368	41 1/2"



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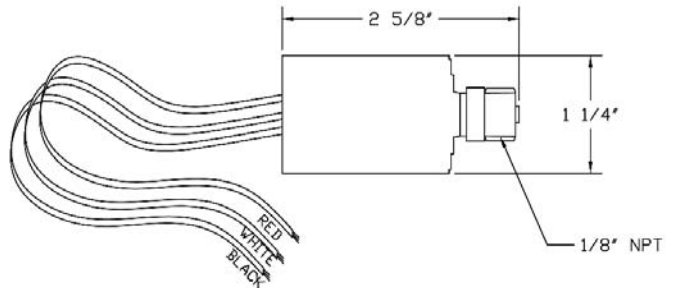
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Discharge Pressure Switch

PS 37

Description

The operation pressure switch is used to provide a means of detecting system activation. Upon activation of the cylinder valve, the operation pressure switches contacts transfer to indicate discharge or to perform disconnect/activation required during system operation.



Characteristics

- 0.125 – 27 NPT male thread
- 58+ psig actuation pressure
- 40+ psig release pressure temperature -65°F
- 250 proof pressure
- 5,000 burst pressure
- Contacts – silver – 20 amps 120VAC / 240 VAC PS37
- Normally open/Normally closed –
 - Normally Open: Red
 - Normally Closed: Black
 - Common: White

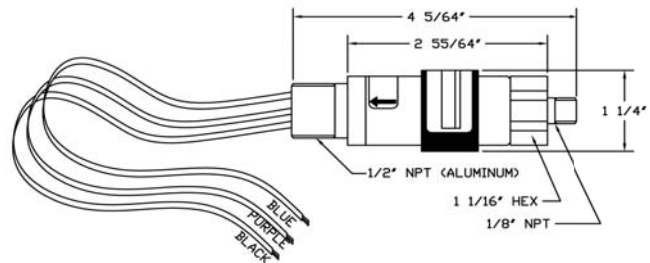


Low Pressure Switch

PS 10-500

Description

The pressure switch monitors the pressure within the SEVO 1230 cylinder should a loss of the nitrogen occur. The pressure switch contacts transfer indicating a problem. The low pressure switch is normally wired into a supervisory circuit to give a trouble signal upon activation.



Characteristics

- 0.125 – 27 NPT male thread 430 + 10 psig actuation pressure
- Temperature -65°F to 275°F 600 psig proof pressure 5,000 burst pressure
- Contacts – Silver 2AMP28VDC 375 VA – 120 VAC Pilot Duty
- Normally closed: Black
- Normally open: Blue
- Common: Violet



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SEVO 1230 Check Valves

78FP1.0, 78FP1.25, 78FP2.5, 78FP3.0

Utilizing 3M™ Novec™ 1230 Fire Protection Fluid

Description

Check Valves are used when two or more agent storage cylinders are manifolded together with one common discharge piping configuration. Their purpose is to prevent loss of agent in the event that any of the agent storage cylinders are not connected to the manifold at time of system discharge.

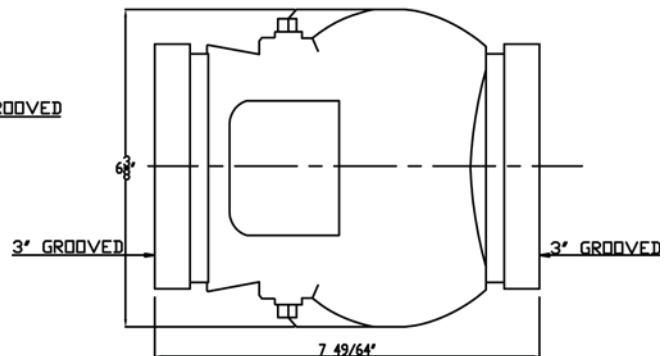
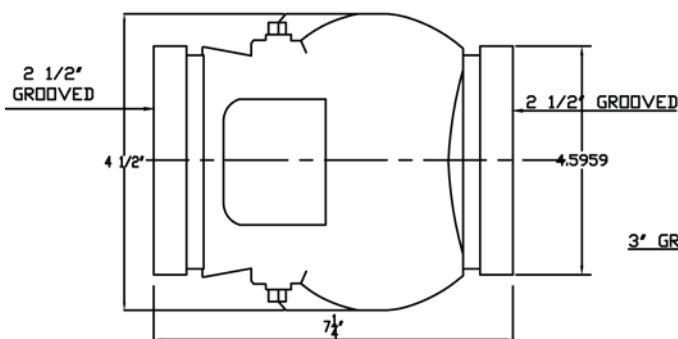
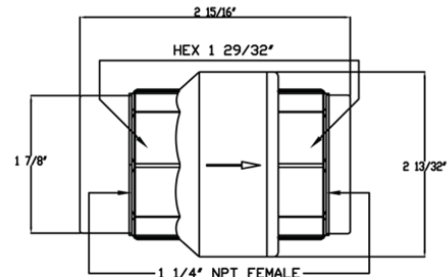
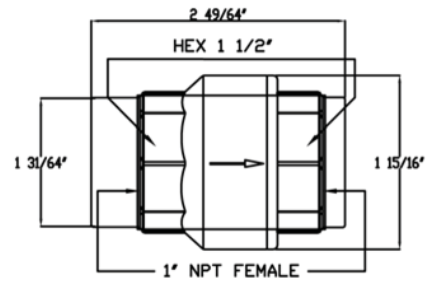
In a full open position the 78FP rubber faced swing clapper is held tightly against the valve body, out of the flow stream, to provide maximum flow area and prevention of clapper flutter. The clapper design produces quick, non-slam closure before flow reversal can occur, which provides a leak free sealing of back pressures as low as 1 psi (0.07 bar) equivalent to 28" water head. (Figure 2.11b)

Pressure Rating

1" through 3" 78FP Check Valves have a maximum working pressure of 500 psi (34.5 bar).

Installation

The 78FP UL/FM Check Valves may be installed vertically or horizontally. For the vertical direction, the flow direction must be upwards. In a horizontal installation the Hinge Pin is to be located on top. Proper installation and maintenance in accordance to Gruvlok specifications, as well as being in compliance with the applicable standards of the National Fire Protection Association.



* UL/ULC Approval only for 2 1/2" & 3" Check Valves

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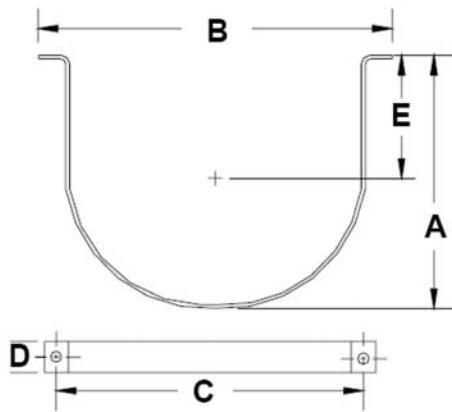
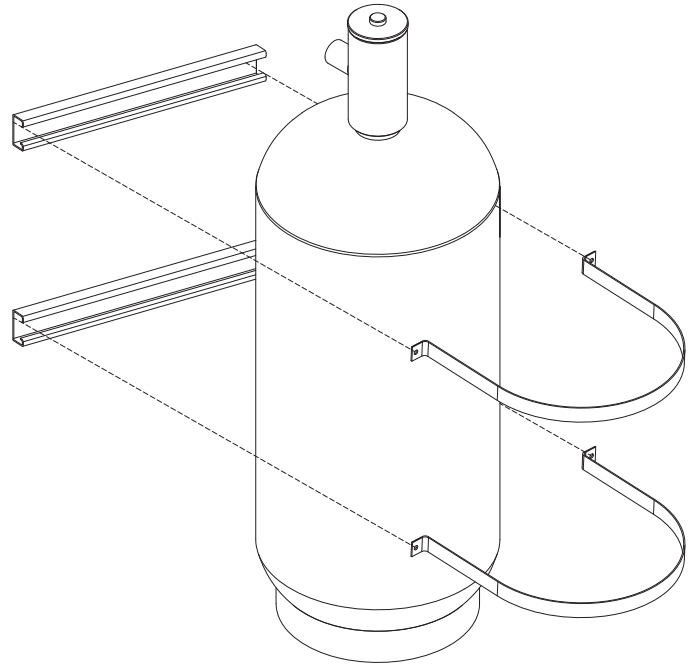
SEVO 1230 Cylinder Straps

ST 10100, ST 10200, ST 10600, ST 10900

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Description

The mounting bracket provides a means to securely attach the cylinder to a wall or Unistrut frame channel. They cylinder brackets are manufactured of stainless steel band formed to the radii of the cylinders with flanges for bolting to continuous slot metal framing channel (12 gauge steel with corrosion-resistant paint or galvanized 1100 H Unistrut.) The channel bracket is to be provided by the installer. The cylinder bracket must be secured to a solid surface that will withstand the cylinder load with the cylinder weight floor supported. This precaution is necessary for the bracket to safely support the weight of the cylinder and the reaction force during discharge of the FK-5-1-12. All cylinders must be mounted in a vertical position and rest firmly on the floor or mounting surface.



Note:

If one bracket is required, it must be centered on the cylinder.

If two brackets are required, they must be spaced evenly over the height of the cylinder at one-third and two-third measurements from the floor.

Part Number	Brackets Required	Cylinder Size (lb)	Dimensions (inches)				
			A	B	C	D	E
ST10100	1	40 & 76	9.9	12.3	11.3	1.4	4.8
ST10200	1	164	12.7	15	14	1.4	6.5
ST10600	1	322	22.3	19.9	21.3	1.4	9.8
ST10600	2	601	22.3	19.9	21.3	1.4	9.8
ST10900	2	910	24	27	26	1.63	12.25

Part Number	Brackets Required	Cylinder Size (L)	Dimensions (mm)				
			A	B	C	D	E
ST10100	1	15 & 29	250.83	304.8	279.4	35.56	125.22
ST10200	1	62	322.58	381	355.6	35.56	165.1
ST10600	1	122	514.35	606.55	571.5	35.56	254
ST10600	2	227	514.35	606.55	571.5	35.56	254
ST10900	2	368	609.6	682.24	657.1	41.4	311.25

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SEVO 1230 Flexible Discharge Hose

FH30898, FH30899, FH30900, FH30901

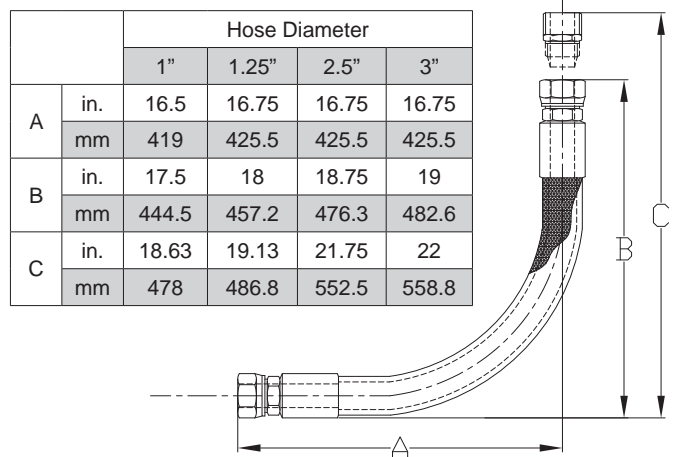
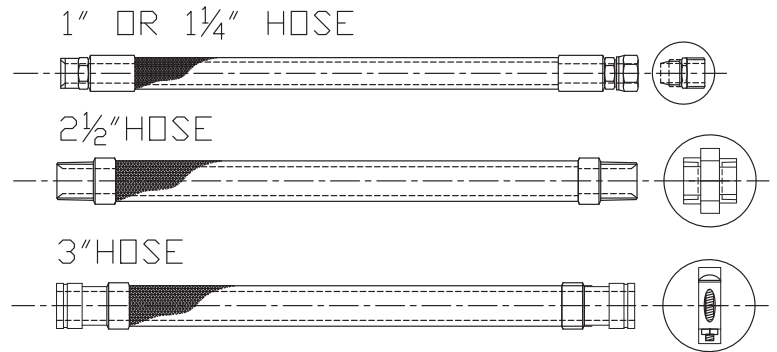
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Description

Flex hoses are used to connect the agent storage containers to the manifold in multiple cylinder arrangements. Each 1" and 1.25" diameter hose is constructed of high pressure hydraulic rubber and with the 2.5" diameter, a stainless steel corrugated inner core with a stainless steel outer braid. All three sizes are fitted with male NPT threads on both ends.

The recommended assembly configuration is to install a flex hose to the cylinder valve discharge outlet, then install to the check valve, with the check valve connected to the appropriate fitting in the manifold. Note: the flex hose is to be installed forming a 90° bend and attaching to the check valve. No bends of the flex hose in excess of the figure shown to the right are to be used at the installation.

Cylinder Size		Hose Diameter	Hose Length	
LB	L	In.	In.	mm
40	15	1"	28"	711
76	29	1"	28"	711
164	62	1.25"	28"	711
322	122	2.5"	29"	736
601	227	2.5"	29"	736
910	368	3"	30"	762



		Hose Diameter			
		1"	1.25"	2.5"	3"
A	in.	16.5	16.75	16.75	16.75
	mm	419	425.5	425.5	425.5
B	in.	17.5	18	18.75	19
	mm	444.5	457.2	476.3	482.6
C	in.	18.63	19.13	21.75	22
	mm	478	486.8	552.5	558.8

Flexible Discharge Hose								
Size (in.)	Type	Material	Coupling	Connection to Manifold	Connection to Valve	Working Pressure	Bursting Pressure	Min / Max Temp
1"	100 R1 Wire H104 20 Hose	R1 21RE Neoprene, Steel Chromated Couplings	Female Swivel Coupling 1"	1" JIC Adapter / 1" NPT Male	Fixed Male Coupling 1" NPT	625 psi 43 bar	2500 psi 172.4 bar	-40 / -212° F -40 / 100° C
1 1/4"	100 R1 Wire H104 20 Hose	R1 21RE Neoprene, Steel Chromated Couplings	Female Swivel Coupling 1 1/4"	1 1/4" JIC Adapter / 1 1/4" NPT Male	Fixed Male Coupling 1 1/4" NPT	625 psi 43 bar	2500 psi 172.4 bar	-40 / 212° F -40 / 100° C
2 1/2"	Corrugated Stainless Steel Hose	Single Stainless Steel Band	Welded Male Couplings 2 1/2" NPT Both Sides	2 1/2" Male NPT	2 1/2" NPT Union	619 psi 42.7 bar	1857 psi 128 bar	-40 / 1000° F -40 / 437.8° C
3"	Corrugated Stainless Steel Hose	Single Stainless Steel Band	Welded Male Couplings 2 1/2" NPT Both Sides	3" Grooved Fitting	3" Grooved Fitting	820 psi 56.5 bar	2460 psi 169.6 bar	-40 / 1000° F -40 / 437.8° C



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