

Compact Wide-Range Pressure Regulators

Installation Information

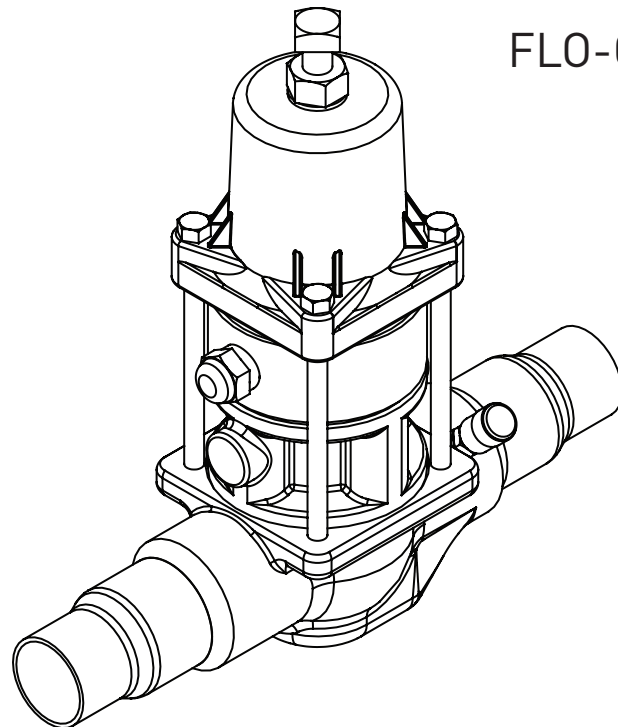
Type: A8A, A81, & A82

Port Size: 9 - 66 mm ($\frac{3}{8}$ " - $2\frac{5}{8}$ ")



Customer Value Proposition:

These ductile iron-bodied regulators, with brazed copper couplings, will modulate the flow of refrigerant vapor or liquid to maintain a constant pressure at a control point regardless of fluctuations in load, ambient conditions, or alternate diversions for flow. Models are available in combinations of connection sizes, port sizes, functions and features as designated by the model code, for application in a wide variety of control functions on industrial, commercial and air conditioning systems.



FLO-CON

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On the Types A8A, A81 and A82 Series Regulators, the proper direction of flow is designated by an arrow cast into the side of the valve body, pointing from inlet to outlet. The regulator can be mounted in a horizontal or vertical pipe line with direction of flow as described above. As with all pressure regulators, these compact regulators can control flow in this normal direction only. If a change

in system operating conditions causes the outlet pressure to rise sufficiently above the inlet pressure, the Main Valve Assembly may be blown down from its seat and reverse flow can occur. This is often accompanied by a clicking noise.

Protect the inside of the regulator from moisture, dirt, chips and solder beads during installation. These



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Port Size	Valve Body
9 mm (3/8")	A8A
15 mm (5/8")	A8A, A81
22 mm (7/8")	A8A, A81
28 mm (1-1/8")	A81
35 mm (1-3/8")	A81
42 mm (1-5/8")	A82
54 mm (2-1/8")	A82
67 mm (2-5/8")	A82

Port Size vs. Valve Body Table

Suffix	Description
B	Electric Wide Open
S	Electric Shut - off
O	Outlet or Downstream Pressure Regulator
E	Externally Equalized
L	Differential Pressure Regulator

Suffix Table

compact regulators may be soldered into the line without disassembly if reasonable precautions are taken. The flame from the soldering torch should be directed away from the valve body to avoid excessive heat build-up which could possibly damage some of the internal parts. As an additional precaution, a wet cloth should be wrapped around the regulator body to dissipate some of the heat during the soldering operation.

Adjustment

Adjustment of a regulator’s set point requires that the pressure being controlled be monitored by an accurate pressure gauge. Before making any adjustments, the Seal Nut (#2) must be loosened. In all cases where the regulator is administering a pressure condition and a solenoid feature is not overriding that function, and the flow is in the normal direction, turning the Adjusting Screw (#1) in (i.e. clockwise) will raise the set point, and turning it out (i.e. counterclockwise) will lower the set point. Depending on system responses, the gauge may reflect some delay before a change in set point actually results in a change

in the pressure being maintained. This can also sometimes be observed following the energization or de-energization of the Solenoid Features.

For any Inlet Pressure Regulator, the Pressure Gauge can be connected to the Access Fitting on the Inlet side of the regulator. For an Outlet Pressure Regulator, if no system gauge is available to monitor the controlled pressure, an access fitting for the gauge will have to be incorporated into the External Equalizer. For a Differential Pressure Regulator, both upstream and remote pressure must be known before a sensible adjustment can be made. The in built Access Fitting reads only upstream pressure; the Bonnet Pressure must be measured by a second gauge.

For Inlet and Outlet Pressure Regulators: Between 0 and 6.2 Bar (90 psig), one complete turn of the Adjusting Screw will change the set point 1.4 Bar (20 psi). Between 6.2 Bar (90 psig) and 400 psig, one complete turn of the Adjusting Screw will change the set point 4.8 Bar (70 psi). For Differential Pressure Regulators, one complete turn of the Adjusting Screw will change the set point 1.4 Bar (20 psi) up to the maximum 8.4 Bar (120 psi) differential.

Caution:

Regulators with “B” features can only be adjusted with the pilot solenoid de-energized. Regulators with the “S” feature can only be adjusted with the solenoid energized.

Always re-tighten the Seal Nut once adjustment is complete.

Electrical

The Refrigerating Specialties Division molded water resistant Class “H” solenoid coil is designed for long life and powerful opening force. The standard coil housing meets NEMA 3R and 4 requirements. This sealed construction can withstand direct contact with moisture and ice. By definition, Class “H” coil construction will permit coil temperatures, as measured by resistance method,

as high as 185°C. (366°F.) Final coil temperatures are a function of both fluid and ambient temperatures. The higher fluid temperatures require lower ambient temperatures so the maximum coil temperature is not exceeded. Conversely, low fluid temperatures permit higher ambient temperatures.

A solenoid coil should never be energized except when mounted on its corresponding solenoid tube. The molded Class “H” coil is available from stock with most standard voltages. However, coils are available for other voltages and frequencies, as well as for direct current. Coils are also available as transformer type with a 6 volt secondary winding for use with the Refrigerating Specialties Division Pilot Light Assembly Model PLT-2. See Bulletin No. 60-20.

The solenoid coil must be connected to electrical lines with volts and Hertz same as stamped on coil. The supply circuits must be properly sized to give adequate voltage at the coil leads even when other electrical equipment is operating. The coil is designed to operate with line voltage from 85% to 110% of rated coil voltage. Operating with a line voltage above or below these limits may result in coil burn-out. Also, operating with line voltage below the limit will definitely result in lowering the valve’s maximum opening pressure differential. Power consumption during normal operation will be 10.2 watts or less. On transformer coils the 6 volt leads are always black.

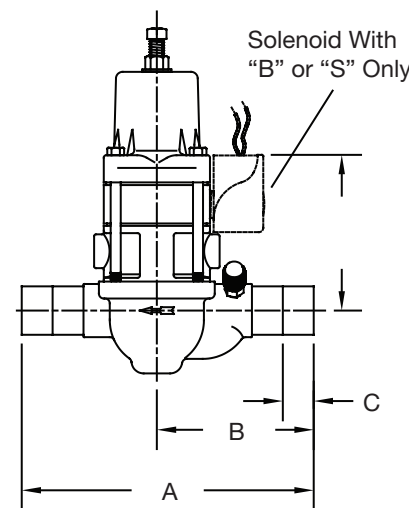
Gasket Oiling Instructions

When installing gaskets into valves, it is important to add Refrigeration Oil to them prior to installation.

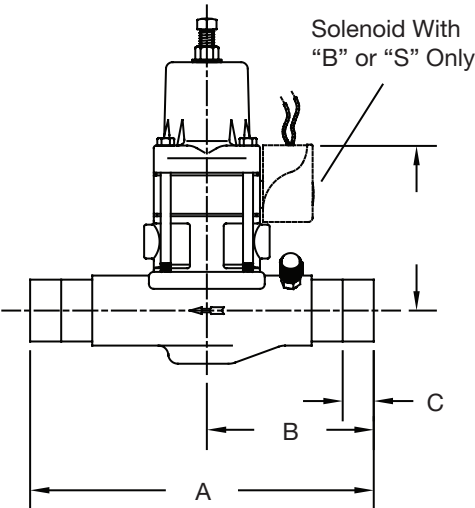
Adding oil will soften the gasket and help to reduce the possibility of leaks by filling the small voids between the gasket and the valve. This will give the gasket time to compress and form a better bond with the valve.

Coat the surface of the gasket. Do not soak it in oil.

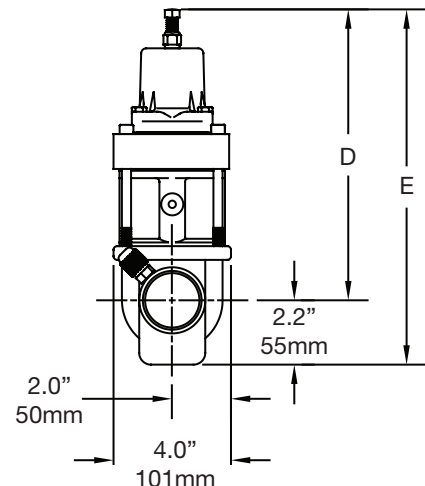
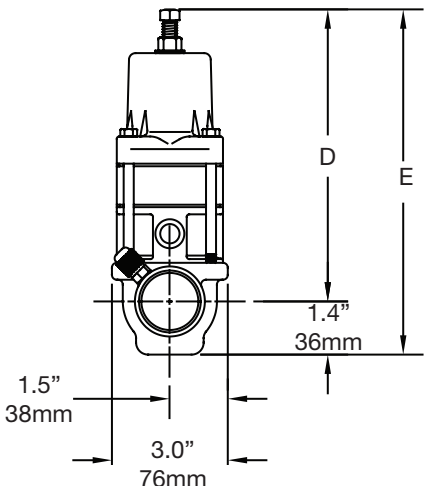
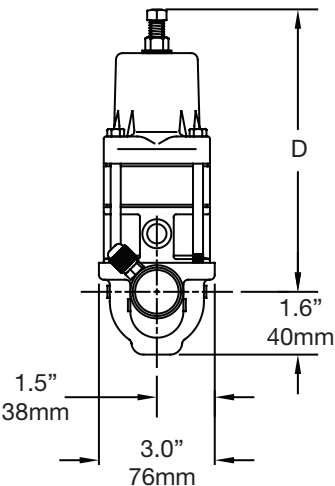
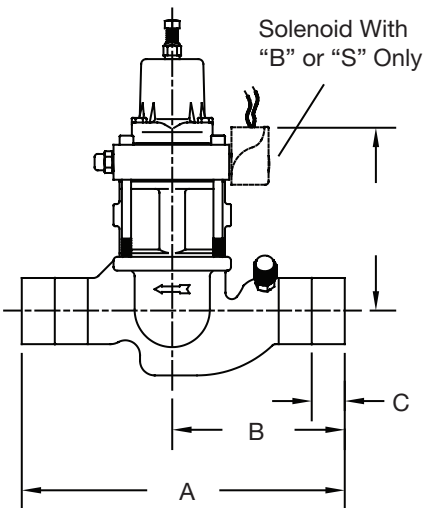
Type: A8A



Type: A81



Type: A82



A8A, A81, & A82 External Dimensions

Connection Size		A8A			A81				A82		
		15 mm (5/8")	22 mm (7/8")	28 mm (1-1/8")	28 mm (1-1/8")	35 mm (1-3/8")	42 mm (1-5/8")	54 mm (2-1/8")	42 mm (1-5/8")	54 mm (2-1/8")	67 mm (2-5/8")
A	inch	7.2	7.5	8.0	8.9	9.4	9.9	11.1	11	12	13.5
A	mm	18.3	190	203	226	239	251	282	279	305	343
B	inch	3.9	4.0	4.3	4.5	4.7	5.0	5.6	5.9	6.4	7.1
B	mm	99	102	109	114	119	127	142	149	162	181
C	inch	0.6	0.8	1.0	1.0	1.0	1.1	1.2	1.1	1.4	1.7
C	mm	15	20	25	25	25	28	30	28	36	44

A8A Valve Function	Connection Size			
	D		E	
	inch	mm	inch	mm
A8A	8.0	203	9.0	239
S, B	8.0	203	9.4	239
L	8.6	218	10.0	254
BL	8.6	218	10.0	254
OE, OES	8.4	213	9.8	249

A81 Valve Function	Connection Size			
	D		E	
	inch	mm	inch	mm
A81	8.0	201	9.4	239
S, B	8.0	201	9.4	239
L	8.6	218	10.0	254
BL	8.6	218	10.0	254
OE, OES	8.4	213	9.8	249

A82 Valve Function	Connection Size			
	D		E	
	inch	mm	inch	mm
A82	10.2	260	12.2	310
S, B	10.1	260	12.2	310
L	10.4	264	12.4	315
BL	10.4	264	12.4	315
OE	10.5	267	12.5	318

A8A, A81, & A82 Dimension Tables

The solenoid features can be designated for these inlet pressure regulators by adding the appropriate suffix:

Valve	Description	Typical Applications
A8-S	Inlet Pressure Regulator with Electric Shut-off	Evaporator Pressure Regulator Defrost Relief Regulator
A8-B	Inlet Pressure Regulator with Electric Wide Opening	Head Pressure Control Heat Reclaim
A8-L	Differential Pressure Regulator	Liquid Main Pressure Control Heat Reclaim
A8-BL	Differential Pressure Regulator with Electric Wide Opening	Oil Return Liquid Overfeed Control
A8-OE	Outlet Pressure Regulator Externally Equalized	Crankcase Pressure Regulator Receiver Pressure Control
A8-OES	Outlet Pressure Regulator Externally Equalized with Electrical Shut-off	Heat Reclaim

A8 Valve with Suffix Description Table

Safe Operation (See Bulletin RSBCV)

People doing any work on a refrigeration system must be qualified and completely familiar with the system and the Refrigerating Specialties Division valves involved, or all other precautions will be meaningless. This includes reading and understanding pertinent Refrigerating Specialties Division Product Bulletins and Safety Bulletin RSB prior to installation or servicing work.

Where cold refrigerant liquid lines are used, it is necessary that certain precautions be taken to avoid damage which could result from liquid expansion. Temperature increase in a piping section full of solid liquid will cause high pressure due to the expanding liquid which can possibly rupture a gasket, pipe or valve. All hand valves isolating such sections should be marked, warning against accidental closing, and must not be closed until the liquid is removed. Check valves must never be installed upstream of solenoid valves, or regulators with electric shut-off, nor should hand valves upstream of solenoid valves or downstream of check valves be closed until the liquid has been removed.

It is advisable to properly install relief devices in any section where liquid expansion could take place. Avoid all piping or control arrangements which might produce thermal or pressure shock.

For the protection of people and products, all refrigerant must be removed from the section to be worked on before a valve, strainer, or other device is opened or removed. Flanges with ODS connections are not suitable for ammonia service.

Warranty

All Refrigerating Specialties products are under warranty against defects in workmanship and materials for a period of one year from date of shipment from factory. This warranty is in force only when products are properly installed, field assembled, maintained, and operated in use and service as specifically stated in Refrigerating Specialties Catalogs or Bulletins for normal refrigeration applications, unless otherwise approved in writing by the Refrigerating Specialties Division. Defective products, or parts thereof returned to the

factory with transportation charges prepaid and found to be defective by factory inspection, will be replaced or repaired at Refrigerating Specialties option, free of charge, F.O.B. factory. Warranty does not cover products which have been altered, or repaired in the field, damaged in transit, or have suffered accidents, misuse, or abuse. Products disabled by dirt or other foreign substances will not be considered defective.

The express warranty set forth above constitutes the only warranty applicable to Refrigerating Specialties products, and is in lieu of all other warranties, expressed or implied, written including any warranty of merchantability, or fitness for a particular purpose. In no event is Refrigerating Specialties responsible for any consequential damages of any nature whatsoever. No employee, agent, dealer or other person is authorized to give any warranties on behalf of Refrigerating Specialties, nor to assume, for Refrigerating Specialties, any other liability in connection with any of its products.

