

GAS POWERED SUCTION STOP VALVE

Type S9A

Port Size: 50-100mm (2" - 4")

the piston for opening and to bleed this gas pressure to the suction line for valve closing. A single-pole, double throw thermostat or relay may be used to control these two Pilot Solenoid Valves.

The S9A is not a check valve and will permit reverse flow if the downstream pressure is higher than the upstream pressure.

Principles of Operation

For opening of the S9A main valve, the Pressure Pilot Solenoid Valve is electrically energized to open (admitting high pressure gas to chamber A (Fig. 1) at the top of the power piston); simultaneously, the Bleed Pilot Solenoid Valve is electrically de-energized (preventing escape of the high pressure gas entering chamber A); thereby the pressure acting on the piston forces the main valve wide open.

For closing of the S9A main valve, the reverse actions take place. The Pressure Solenoid is electrically de-energized to close (preventing further high pressure gas from reaching chamber A at the top of the piston); simultaneously, the Bleed Solenoid is electrically energized to open (bleeding off pressure from chamber A); thereby the main valve is caused to close by the force of the valve closing spring.

Manual Opening Stem

To manually open the #2 Main Valve of the S9A Solenoid Valve, cautiously remove #10 Seal Cap and turn #2A Seat Lift Stem out until it stops. Valve cannot close now until the #2A Seat Lift Stem is once again turned in. See Fig. 1.

Installation

It is necessary that all installation personnel read and become familiar with the Refrigerating Specialties Division Refrigeration Safety Bulletin (RSB) before installing any valves.

All valves are packed for maximum protection during storage and shipment. Read the enclosed literature and save it for reference after installing the valve.

Do not remove the protective covers from the inlet and outlet of the valve until ready to install. They protect the interior from dirt and other foreign matter.

Select a location for installation where the valve will be easily accessible for adjustment and maintenance. Avoid locations where the valve may be damaged by personnel, traffic, material handling or other equipment.

Before installing the valve, check to see that all chips, scale, dirt and other foreign material are removed from the pipes. Remove the protective covers from the valve.

Type S9A valve can be mounted in any position except upside down. The remote pilot solenoids, however, must be mounted in a vertical position with the solenoid at the top.

There are some applications in which an S9A in a horizontal line will function better if installed lying on its side. For example, in a liquid overfeed suction line: The internal partitions of the valve body that separate the inlet side from the outlet side create a higher wall (or dam) which will tend to block flow of liquid refrigerant and/or oil if the valve is in an upright position instead of on its side. Especially in low temperature suction lines, where the velocities tend to be



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Purpose

The S9A valve is designed to promptly and fully open or close under conditions which make conventional solenoid valves unreliable or unsuitable, such as viscous oil conditions, location in a vertical pipeline, or where very low valve pressure drop is required.

The S9A valve is a two-position valve using condenser gas pressure acting upon a piston for opening, and a strong spring for closing. A lapped seat at the top of the piston prevents the condenser gas from leaking around the piston to the compressor suction side of the valve. A twin Pilot Solenoid Valve assembly serves to admit condenser gas pressure to

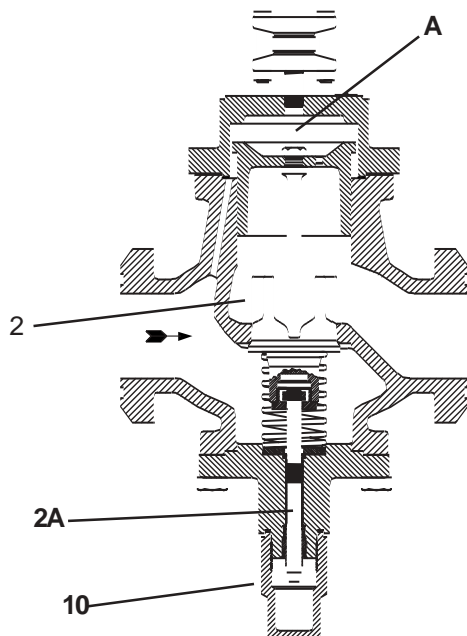


Fig 1

Refrigerating Specialties Division

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slower, an S9A lying on its side will offer less resistance to flow than one in an upright position, because the valve inlet throat will not be choked with as much liquid.

The Type S9A Main Valve Body should normally be installed with the arrow on the body pointing in the direction of normal fluid flow through the valve. However, when installed in gravity liquid or gas legs between a flooded evaporator and its surge drum, as part of a defrost control system, the arrow should always point from the evaporator to the surge drum.

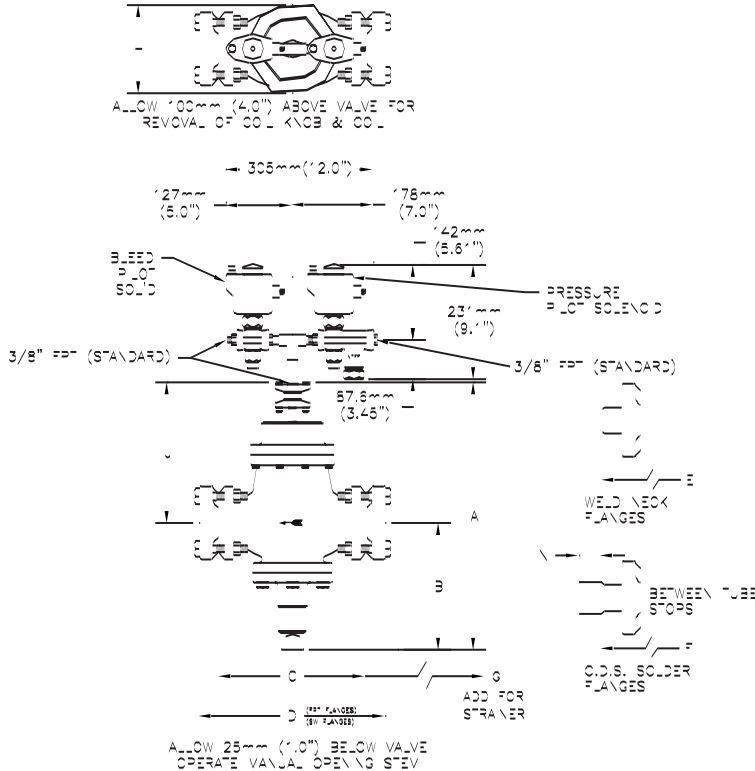
The Pilot Solenoid Valve assembly may be located anywhere within approximately 8 meters (25 feet) of the Main Valve Body, provided pipe connections are extended to the Main Valve Body as well as to condenser gas and compressor suction lines. The standard Pilot Solenoid Valve assembly is built for

installation on top of the Main Valve Body; therefore, remote or altered location of the Pilot Solenoid Valve assembly requires slight revisions in the field to the 3/8" pilot valve assembly piping.

After installation, check the valve and the welded joints for external leaks with refrigerant or other appropriate gas before putting the system into operation.

If the valve is to be insulated, be sure to allow access to the manual opening stem and strainer. Do not insulate the coil and coil housing.

Connect the solenoid lead wires to an electrical supply source as indicated on the valve coil. The power source must be capable of supplying full, constant voltage. The wires, to which the solenoid leads are connected, must be of the proper gauge.



DIMENSIONAL DATA (See Fig. 2)

PORT SIZE		50mm (2")				65mm (2-1/2")		75mm (3")		100mm (4")	
DIMENSION											
A	MM	429				455		570		615	
	INCH	16.9				17.9		22.4		24.2	
B	MM	175				180		269		292	
	INCH	6.9				7.1		10.6		11.5	
C	MM	251				251		311		366	
	INCH	9.9				9.9		12.2		14.4	
D (FPT, SW)	MM	307				331		389		450	
	INCH	12.1				13.0		15.3		17.7	
E (WN)	CONN.	1-1/2		2		2-1/2		3		4	
	MM	364		371		401		478		571	
	INCH	14.3		14.6		15.8		18.8		22.5	
F (ODS)	CONN.	1-5/8	2-1/8	2-5/8	2-5/8	3-1/8	3-1/8	3-5/8	4-1/8		
	MM	358	338	358	348	389	414	432	503		
	INCH	14.1	13.3	14.1	13.7	15.3	16.3	17	19.8		
G	MM	251				314		314		363	
	INCH	9.9				12.4		12.4		14.3	
H	MM	140				159		176		222	
	INCH	5.5				6.2		7.0		8.8	
J	MM	254				274		300		323	
	INCH	10.0				10.8		11.8		12.7	
N (ODS)	CONN.	1-5/8	2-1/8	2-5/8	2-5/8	3-1/8	3-1/8	3-5/8	4-1/8		
	MM	28	33	38	38	43	43	48	55		
	INCH	1.1	1.3	1.5	1.5	1.7	1.7	1.9	2.2		
P (SW)	MM	15				25		29		32	
	INCH	0.60				1.0		1.10		1.3	