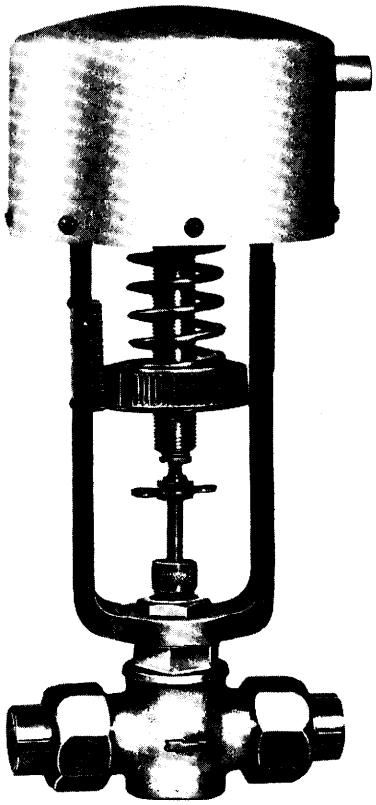

INSTRUCTIONS
FOR
INSTALLATION AND OPERATION

No. 1072-C1
VACUUM REGULATOR

No. 1072-D1
VACUUM RELIEF VALVE

Note to Installer: After installing the regulator, give this instruction folder to operating personnel or see that it is filed for future reference.

Robertshaw
Industrial Products Division
1602 Mustang Drive
Maryville, Tennessee 37801
Phone: (865) 981-3100 Fax: (865) 981-3168

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SECTION I — GENERAL INFORMATION

This regulator automatically controls the flow of the medium passing through its valve by responding to pressure changes in the system under control. The vacuum created in the line or vessel is transmitted through the feeler pipe to the Sylphon bellows in the pressure unit which, in turn, positions valve poppet to control flow of the medium through the valve. Movement of bellows is opposed by a spring to provide means for adjustment. For vacuum regulating (No. 1072-C1), the valve closes on vacuum increase (pressure decrease). For vacuum relief applications (No. 1072-D1), the valve opens on vacuum increase (pressure decrease).

SECTION II — INSTALLATION

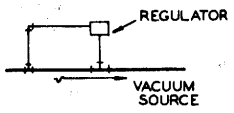
A. GENERAL

When making installation, do not remove valve from the regulator unless absolutely necessary.

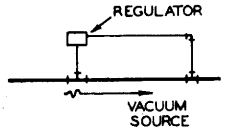
Regulator valves are sized to the demand of the system to be controlled and are frequently smaller than the vacuum source line.

All No. 1072 series regulators require a ¼" feeler line connected to the pressure element. The feeler line should run to the point in the system where the vacuum is to be controlled. (See Typical Applications).

The regulator should be installed in the vertical position with the valve below the regulator frame. Sizes 3" and larger should never be installed in the horizontal position. Install valve so flow is in direction of arrow on valve body.



Typical installation of a vacuum regulator showing feeler pipe connection. Feeler pipe is connected to the controlled vacuum side at a point where control is desired.



Typical installation of a vacuum relief valve. The feeler pipe is connected to the controlled vacuum or vacuum source side at a point where control is desired.

B. PRESSURE RANGES

Since the No. 1072-Series regulators are restricted to vacuum applications, obviously the range of pressures under control cannot vary beyond 0 psig and — 14.7 psig. The values tabulated below in the column headed "Maximum Controlled Pressure" are applicable to the corresponding valve size and type tabulated when the adjusting spring is fully expanded. Similarly, "Minimum Controlled Pressures" apply to the valve size and type indicated when the adjusting spring is fully compressed. It will be apparent that the actual adjustable range varies slightly from one valve size to another.

REGULATOR No. 1072-C1
(Reverse-Acting Valve, Closes on Vacuum Increase)

Valve Port Size, Inches	Valve Type	Maximum Controlled Pressure, Psig (see above)	Minimum Controlled Pressure, Psig (see above)	Pressure Differential for Full Valve Travel, Psi
¼	C	−0.9	−14.0	1.5
⅜	C	−1.1	−14.5	1.8
½	A	−1.3	−14.6	2.2
¾	A	−1.8	−14.7	2.9
1	A	−2.2	−14.7	3.7
1¼	A	−2.8	−14.7	4.3
1½	A	−3.3	−14.7	5.1
2	F	−2.2	−14.7	3.7
2½	F	−2.7	−14.7	4.3
3	F	−3.1	−14.7	5.1
4	F	−4.1	−14.7	6.6

REGULATOR No. 1072-D1
(Direct-Acting Valve, Opens on Vacuum Increase)

Valve Port Size, Inches	Valve Type	Maximum Relief Pressure, Psig	Minimum Relief Pressure, Psig	Pressure Differential for Full Valve Travel, Psi
¼	C	−0.1	−14.7	1.5
⅜	C	−0.1	−14.7	1.8
½	A	−0.1	−14.7	2.2
¾	A	−0.1	−14.7	2.9
1	A	−0.1	−14.7	3.7
1¼	A	−0.1	−14.7	4.3
1½	A	−0.1	−14.7	5.1
2	F	−0.1	−14.7	3.7
2½	F	−0.1	−14.7	4.3
3	F	−0.1	−14.7	5.1
4	F	−0.1	−14.7	6.6

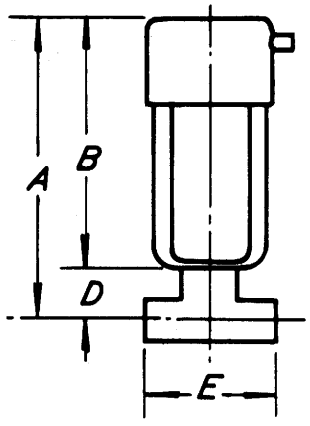
C. DIMENSIONS

Regulator No. 1072-C1

Valve Type – Closes on Vacuum Increase	C	C	A	A	A	A	A	F	F	F	F
Valve Port Size, Inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4
End Connections	½" Screwed		Screwed Malleable Iron Unions					Flanged 150 lb. ASA			
A	13¾	13¾	13¾	14¼	14¼	14 15/16	15¼	15 1/16	15 15/16	16 1/16	16 13/16
B	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16
D	1 9/16	1 9/16	1 9/16	2 1/16	2 1/16	2⅝	3 1/16	3½	3⅝	3⅞	4⅝
E	2⅞	2⅞	4¾	6 3/16	6½	7 15/16	8 1/16	7	7¾	8⅝	10¼

Regulator No. 1072-D1

Valve Type – Opens on Vacuum Increase	C	C	A	A	A	A	A	F	F	F	F
Valve Port Size, Inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4
End Connections	½" Screwed		Screwed Malleable Iron Unions					Flanged 150 lb. ASA			
A	13¾	13¾	13¾	14¼	14¼	14 15/16	15¼	16⅜	16 15/16	16 15/16	18
B	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16	12 5/16
D	1 9/16	1 9/16	1 9/16	2 1/16	2 1/16	2⅝	3 1/16	4 5/16	4¾	4¾	5 13/16
E	2⅞	2⅞	4¾	6 3/16	6½	7 15/16	8 1/16	7	7¾	8⅝	10¼



SECTION III — ADJUSTMENT

This regulator can be set to control at any pressure within the limits of the pressure range stamped on its nameplate.

After placing the regulator in service, allow several minutes to reach stable operation, then observe vacuum. If not correct, change the setting in manner directed below.

To produce increasing vacuum, (decreasing pressure), turn adjustment wheel to right (See arrow "A").

To produce decreasing vacuum (increasing pressure), turn adjusting wheel to left. (See arrow "B").

Make new settings as necessary until desired vacuum is obtained.

The regulator has a scale plate to indicate the position of the adjustment. This feature is helpful in resetting the adjustment when frequent changes are necessary. Scale graduations are not in pounds per square inch.

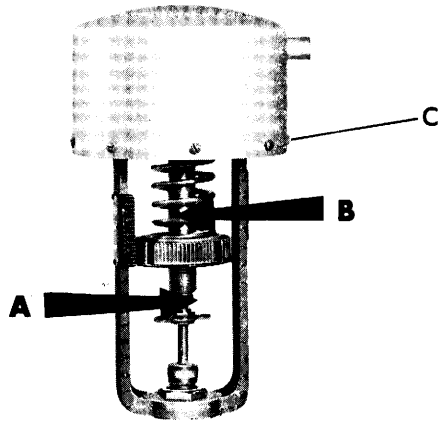


Fig. 1

SECTION IV — MAINTENANCE

A. PACKING

Valve stem packing nut should be kept only finger tight. If valve stem packing must be replaced follow steps below. (See Fig. 2).

1. Remove lock pin.
2. Remove lock nut and separate control from valve.
3. Remove packing nut and packing gland.
4. Remove bonnet from valve.
5. Remove packing, spring plate and spring.
6. Clean out packing box with a clean rag or soft paper.
7. Wipe off stem with clean rag. DO NOT attempt to polish. If stem is scratched or nicked around packing area, it should be replaced.
8. Replace bonnet on valve.
9. Carefully place new packing in packing box. If chevron packing is not available, in an emergency, repack with a good grade of graphited string packing. Put a small amount of good packing lubricant in the stuffing box repacking. This packing, however, should be replaced with teflon chevron packing as soon as possible.
10. Replace packing gland.
11. Replace packing nut and tighten.
12. Connect valve to control and tighten lock nut.
13. Insert lock pin.

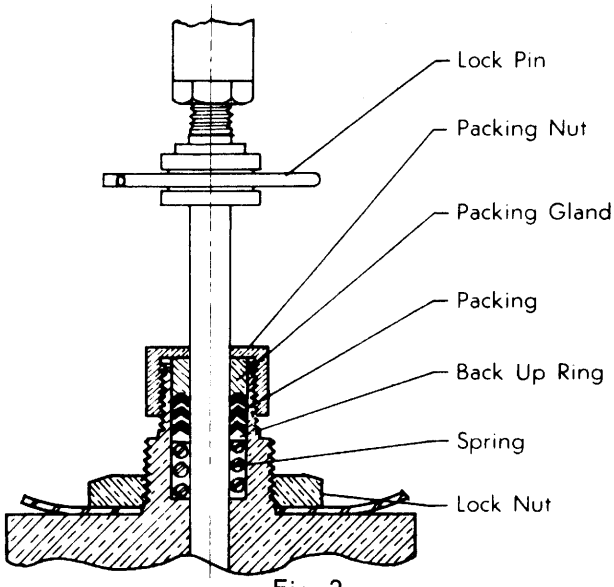


Fig. 2

B. PRESSURE ELEMENT

The pressure element consists of bellows and cup and is not repairable. In event of damage the complete unit must be replaced.

To remove pressure element follow steps listed below.

(1) Turn adjusting wheel to left (see arrow B, Fig. 1) until adjusting wheel is all the way down.

(2) Remove screws "C" (Fig. 1) and lift off element.

(3) To install element reverse the above operations.

C. REMOVING OR INSTALLING VALVE

(1) Remove lock pin (Fig. 2). (Do not disturb lock nut connecting regulator stem to connector).

(2) Remove lock nut (Fig. 2) and lift regulator frame off valve body.

(3) Remove valve from line.

(4) To install valve, reverse the above operations.

D. REFACING VALVE SEAT

Under certain conditions the valve seat may be lapped with the valve poppet. However, this should be done only by an experienced person. If the valve poppet or insert is badly scored it should be replaced.

If possible, the valve should be returned, freight or express charges prepaid to the factory for any needed repair or parts.

If valve is to be lapped, remove regulator from valve (see REMOVING VALVE) remove bonnet, and place a small amount of (extremely fine) grinding compound or a graphited paste made by mixing

fine flecks of graphite with engine oil. Apply this to the valve insert face. In lapping, every effort should be made to avoid scoring or grooving the contact faces. Wipe poppet and insert thoroughly with a clean rag after each operation.

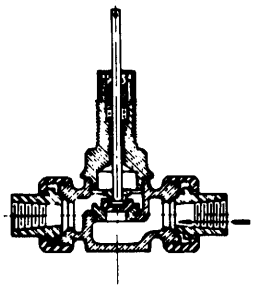
Use light pressure in lapping even to the extent of holding up part of the weight of the poppet as it is rotated. Frequently lift off poppet to check surface.

Heavy pressures cause the grains to become embeeded in the material and will produce deep grooves or scores.

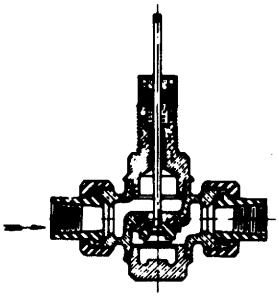
When seating face of poppet is smooth, grooves or lapping scores in seating face of insert, if not too deep, do not particularly harm or in some cases seem to assist in getting a quick seat. Wipe away all compound from the valve poppet and inserts.

IF VALVE IS TO BE TAKEN APART TO REPAIR OR REPLACE PARTS, SPECIAL INSTRUCTIONS SHOULD BE REQUESTED FROM THE FACTORY FOR THE PARTICULAR VALVE INVOLVED.

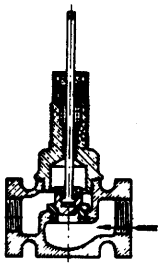
SECTION V — VALVE TYPES



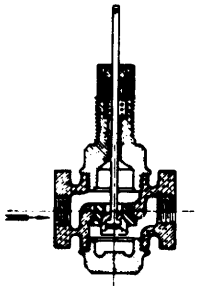
Type "A" Valve
Direct Acting



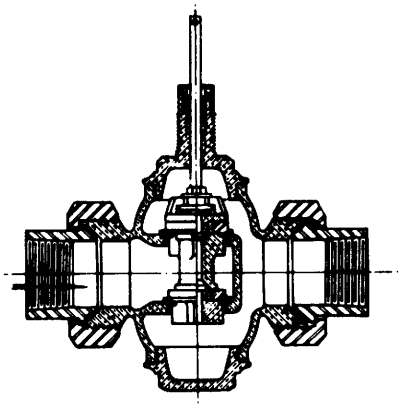
Type "A" Valve
Reverse Acting



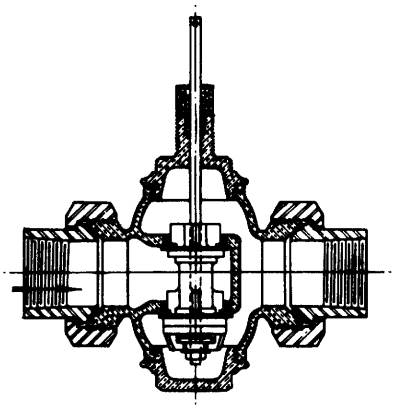
Type "C" Valve
Direct Acting



Type "C" Valve
Reverse Acting



Type "F" Valve
Direct Acting



Type "F" Valve
Reverse Acting

Robertshaw
Industrial Products Division

U.S.A and Canada
Robertshaw Industrial Products Division
1602 Mustang Drive
Maryville, Tennessee 37801
Telephone: (865) 981-3100 Fax: (865) 981-3168
http://www.robertshaw.thomasregister.com
http://www.robertshawindustrial.com

Exports
Invensys Appliance Controls
2809 Emerywood Parkway
P.O. Box 26544
Richmond, Virginia 23261-6544
Telephone: (804) 756-6500 Fax: (804) 756-6561

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