

Vacuum Regulators and Vacuum Breakers

Cash Valve

Application: Type D-51 Vacuum Regulator

Type D-51 vacuum regulator is designed for use in systems where it is desired to maintain, automatically, a lower vacuum at the valve inlet than prevails at the source on the valve outlet.

Principle of Operation

See illustration at right. Valve inlet is connected to the system in which the lower vacuum is to be held; valve outlet is connected to source—vacuum pump for example. Spring is adjusted for correct vacuum on inlet side, assume 5" Hg. Outlet side is subjected to pump vacuum of 25" Hg. (constant or variable). Any change in controlled vacuum (5") produces valve movement to correct for that change, thus maintaining inlet vacuum within very narrow limits. No step-action, no snap-action, but full floating and automatic. Turning adjusting screw clock-wise increases vacuum setting; counter-clockwise gives reduced vacuum setting.

Application: Type D-52 Vacuum Breaker

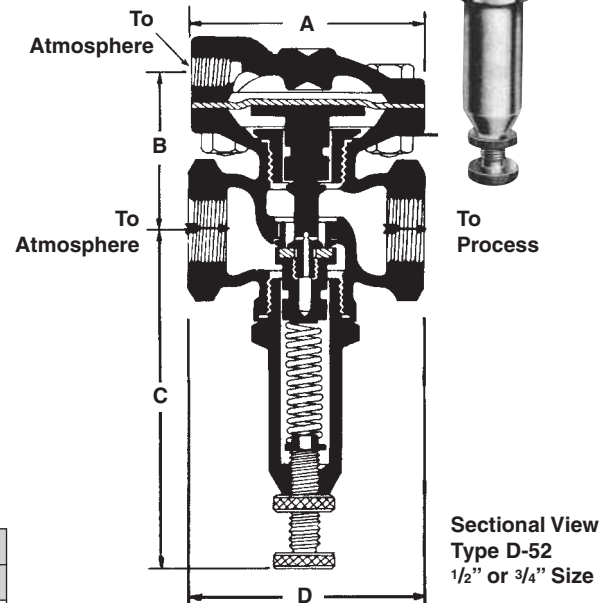
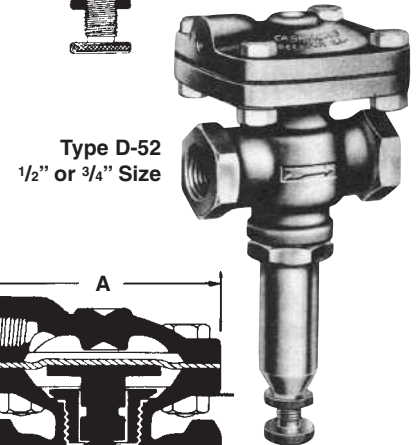
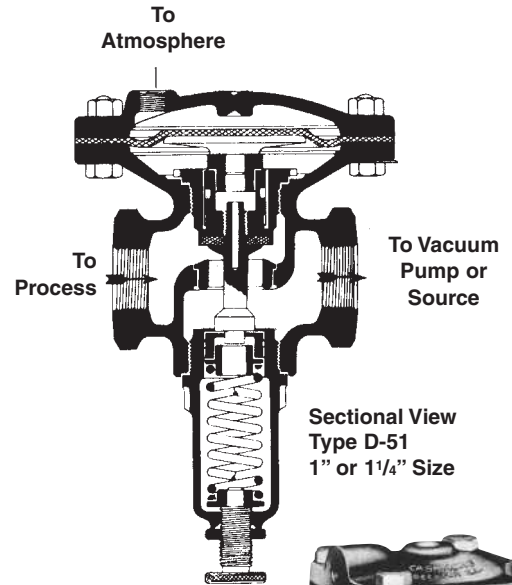
Type D-52 vacuum breaker is designed for use where a predetermined vacuum is to be accurately maintained by automatic admissions of atmosphere, (or other gases or liquids) on slight changes in vacuum conditions; or with any type of equipment in which it is desired to limit the maximum vacuum.

Principle of Operation

Per illustration at right, valve inlet is exposed to atmosphere (or to other gases or liquids being admitted); valve outlet is connected to equipment in which vacuum is to be maintained automatically. Spring force holds valve closed at desired vacuum setting. Increase in vacuum on outlet side (also effective in chamber below diaphragm) pulls diaphragm downward to increase valve opening, admitting atmosphere (or other gases or liquids) into vacuum system and "breaking" vacuum back to valve setting. Full floating, automatic action. Turning adjusting screw clockwise produces higher vacuum setting; counter-clockwise lowers vacuum setting.

Construction

All bronze, neoprene/nylon diaphragms, body seats chrome plated bronze, composition seat discs, all parts easily, inexpensively renewable (without taking valves from line); large ports, high capacity, knurled-head adjusting screw with lock nut, screwed ends, tight seating, connection above diaphragm (normally exposed to atmosphere) is 1/8" NPT on 1/2" and 3/4" sizes and 1/4" NPT on 1"-2" sizes. Available over wide range of adjustment. See spring data at right. Long, light spring provides maximum sensitivity. Install in any position. For use on any non-corrosive gases or liquids.



Type	Size	Dimensions				Ship. WT. Pounds
		A	B	C	D	
D-51 or D-52	1/2" & 3/4"	27/8"	1 15/16"	4 3/8"	27/8"	3 1/2
D-51 or D-52	1" & 1 1/4"	5 7/8"	3 1/2"	5 3/4"	4 1/2"	13
D-51 or D-52	1 1/2" & 2"	5 7/8"	4"	9"	5 3/4"	21

Type D-51 & D-52 Spring Data		
Size	Spring No.	Adj. Range
1/2" & 3/4"	#4985	2-30" Hg.
	#8191	0- 5" Hg.
1" & 1 1/4"	#6682	2-30" Hg.
	#14090	0-10" Hg.
1 1/2" & 2"	#14089	8-30" Hg.

How To Order

Specify Cash Valve Type D-51 vacuum regulator or type D-52 vacuum breaker. State vacuum range desired, factory setting, pipe size and fluid or gas to be controlled (approximately flow rate helpful).

Miniature Vacuum Regulators and Vacuum Breakers

Application: Type A-31VR

The Cash Valve Type A31-VR is a small vacuum regulator for close control of low capacity systems. It is suitable for surgical equipment, manufacturing processes and many other applications calling for accurate and sensitive vacuum regulation.

Principle of Operation

The illustration at left shows three connections. The vacuum source is connected to the bottom. One of the side connections is for a vacuum gauge and may be easily plugged when a gauge is not used. The other side port is connected to the system in which the vacuum is being controlled. With the pressure screw adjusted for a desired vacuum setting, the Type A31-VR automatically throttles or regulates the vacuum source to maintain desired vacuum in the system. To lower the valve setting turn the pressure screw clockwise/counter-clockwise for a higher setting.

Construction

The Type A31-VR is furnished with forged brass body with silicone seat and neoprene diaphragm. One side port and bottom port are 1/4" I.P.S.; side gauge connection is 1/8" I.P.S. When desired, external valve surfaces can be chrome plated and polished. Adjustable ranges are 0" - 15" Hg and 10" - 30" Hg.

How to Order

Specify Cash Valve Type A31-VR vacuum regulator and state factory setting and fluid or gas being handled. Also state capacity requirements/approximate if not definite.

Type	Size	Dimensions			Ship. WT. Pounds
		A	B	C	
A-31VR	1/4" x 1/4" x 1/8" - all I.P.	2 1/4"	2 5/8"	1/2"	1 1/8

Application: Type FRM-V

The Cash Valve Type FRM-V is a small sized vacuum breaker for controlling vacuum in a system by regulating the admission of atmosphere. The valve features full adjustability by means of a top adjusting screw.

Principle of Operation

In the illustration at left valve outlet is connected to a system or vessel in which vacuum is to be regulated. Valve inlet is open to atmosphere. A drilled passage through the seat disc communicates the valve outlet with the spring chamber. Thus, system vacuum is effective above the diaphragm. When the vacuum pull exceeds the pressure spring setting the diaphragm is lifted, opening the seat to admit atmosphere through the valve inlet. In this manner the system vacuum is accurately controlled by regulating the admission of atmosphere. The adjusting screw is turned clockwise for a higher setting and counter-clockwise for a lower setting.

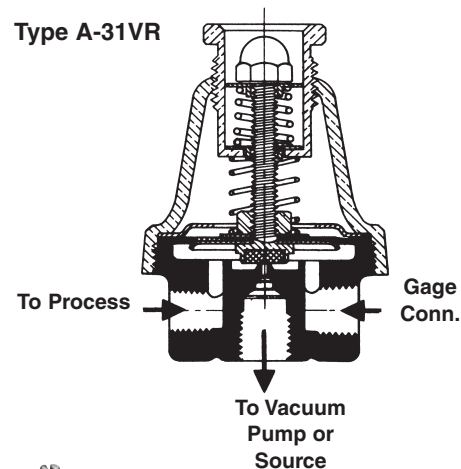
Construction

The Type FRM-V has forged brass body, stainless steel valve seat, stainless steel valve disc, stainless steel or rustproofed steel pressure spring and neoprene or phosphor bronze diaphragms. Adjustable spring range 0" to 30" Hg Vacuum with rubber diaphragm, 5" to 30" Hg Vacuum with metal diaphragms.

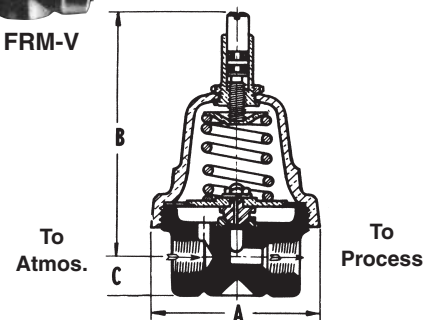
Type	Size	Dimensions			Ship. WT. Pounds
		A	B	C	
FRM-V	1/8" x 1/8" I.P.	3 3/16"	3 3/8"	1/2"	1 1/8
FRM-V	1/4" x 1/4" I.P.	3 3/16"	3 3/8"	1/2"	1 1/8
FRM-V	3/8" x 3/8" I.P.	3 3/16"	3 3/8"	1/2"	1 1/8



Type A-31VR



Type FRM-V



How To Order

Specify Cash Valve Type FRM-V vacuum breaker and state pipe size, factory setting and fluid or gas to be controlled. Stating the approximate required flow is helpful in proper sizing.

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