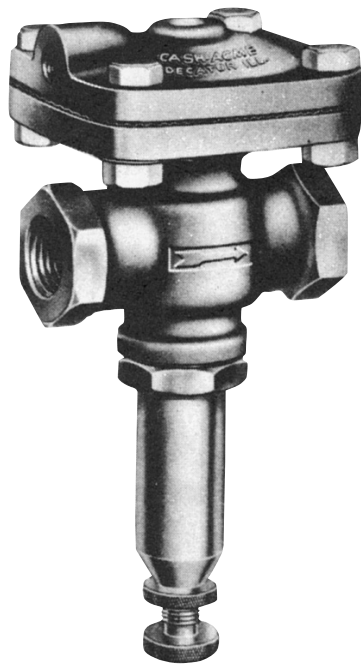




CASH VALVE™ TYPES D-51/D-52 VACUUM VALVES

Vacuum regulators and breakers to maintain system vacuum levels accurately



FEATURES

- Fully adjustable
- Choice of vacuum ranges
- Large ports
- Tight seating
- All parts easily replaceable on-line
- Long, light spring provides maximum sensitivity

GENERAL APPLICATION

Designed for regulation, where a predetermined vacuum is to be maintained accurately in a closed system or for vacuum breaking, by admitting atmosphere or other gases or liquids automatically when the vacuum level exceeds the valve setting.

TECHNICAL DATA⁽¹⁾

Sizes:	½ to 2 in. (15 to 50 mm)
Connections:	NPTF
Adjustable vacuum range:	0 to 30 in. Hg (0 to 762 mm Hg)

1. Refer to General Specifications Table in page 2 for more information.

CASH VALVE™ TYPES D-51/D-52 VACUUM VALVES

TYPES D-51 AND D-52

Types D-51 vacuum regulator and D-52 vacuum breaker for use on any non-corrosive gases or liquids.

CONSTRUCTION

All bronze body, Nitrile (NBR) diaphragms, chrome plated bronze body seats, composition seat discs; 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 NPTF (4 mm) on 1/2 and 3/4 in. (15 and 20 mm) body sizes and 1/4 NPTF (8 mm) on 1 to 2 in. (25 to 50 mm) body sizes. Available over a wide adjustment range and install in any position.

PRINCIPLES OF OPERATION

Type D-51

The valve inlet is connected to the system in which the lower vacuum is to be held; the valve outlet is connected to a source - for example, a vacuum pump. Spring is adjusted for correct vacuum on inlet side, assume 5 in. Hg (127 mm Hg). Outlet side is subjected to pump vacuum of 25 in. Hg (635 mm Hg) constant or variable. Any change in controlled vacuum (5 in. (127 mm)) produces valve movement to correct for that change, maintaining the inlet vacuum within very narrow limits. There's no step- or snap-action as it's full floating and automatic. Turning the adjusting screw clockwise increases vacuum setting; counter-clockwise gives reduced vacuum setting.

Type D-52

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

GENERAL SPECIFICATIONS

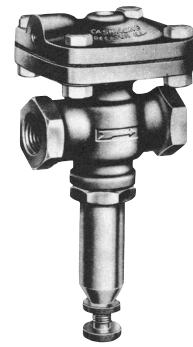
Product	Body Material	Body Service	Body Size, in. (mm)	Materials		Maximum Inlet Pressure, psi (bar)	Maximum Outlet Pressure, psi (bar)	Maximum Temperature, °F (°C)
				Diaphragm	Seat (Disc)			
D-51	Bronze	Air	1/2 to 2 (15 to 50)	NBR	NBR	250 (17.2)	15 (1.0)	32 to 180 (0 to 82)
D-52					Silicone	250 (17.2)	15 (1.0)	32 to 180 (0 to 82)

STANDARD SPRING RANGES, in. Hg (mm Hg)

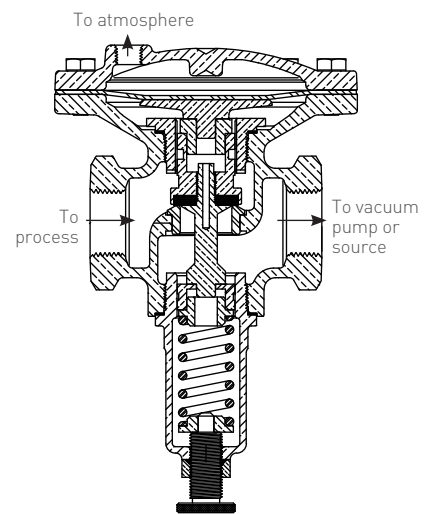
Type	Size, in. (mm)	1	2
D-51, D-52	1/2, 3/4 (15, 20)	2 to 30 (51 to 762)	---
	1, 1 1/4 (25, 32)	0 to 5 (0 to 127)	2 to 30 (51 to 762)
	1 1/2, 2 (40, 50)	0 to 10 (0 to 254)	8 to 30 (203 to 762)

DIMENSIONS

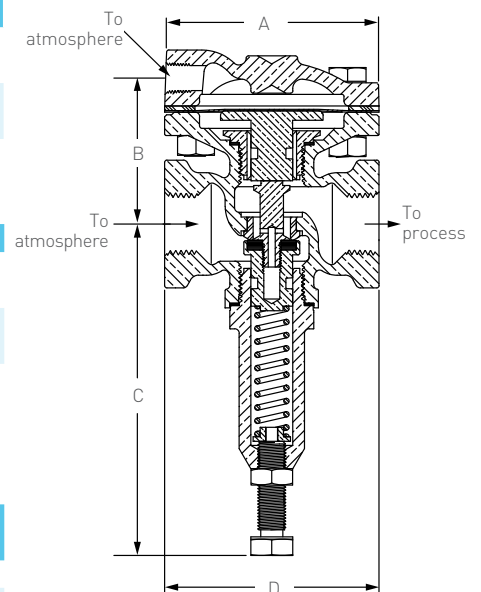
Type	Size, in. (mm)	Dimensions, in. (mm)				Shipping weight, lbs (kg)
		A	B	C	D	
D-51 / D-52	1/2, 3/4 (15, 20)	2.88 (73.2)	1.96 (49.8)	4.42 (112)	2.88 (73.2)	3 1/2 (1.59)
D-51 / D-52	1, 1 1/4 (25, 32)	5.88 (149)	3.45 (87.6)	5.62 (143)	4.50 (114)	13 (5.90)
D-51 / D-52	1 1/2, 2 (40, 50)	5.88 (149)	3.94 (100)	8.94 (227)	5.75 (146)	21 (9.53)



Type D-52
1/2 or 3/4 in. (15 or 20 mm) size



Sectional view Type D-51
1 or 1 1/4 in. (25 or 32 mm) size



Sectional view Type D-52
1/2 or 3/4 in. (15 or 20 mm) size

CASH VALVE™ TYPES D-51/D-52 VACUUM VALVES

SELECTION GUIDE

Example:	D51	C	W	S	O	S	B	01	-	E	1
Model											
D51	Type D-51 Bronze vacuum regulator										
D52	Type D-52 Bronze vacuum breaker										
Valve size											
C	½ in. (15 mm)										
F	1 ¼ in. (32 mm)										
D	¾ in. (20 mm)										
G	1 ½ in. (40 mm)										
E	1 in. (25 mm)										
H	2 in. (50 mm)										
Service											
W	Water										
A	Air										
Connection style											
S	Side inlet/Side outlet - Straight thru with NPT connections										
Seat material											
B	NBR										
S	Silicone										
Chamber style											
S	Standard										
V	Vented (Type D-52 1 and 1 ¼ in. (25 and 32 mm) only)										
Diaphragm material											
B	NBR										
Variation											
01	Diaphragm chamber connection over inlet										
02	Diaphragm chamber connection over outlet										
Design revision											
(-)	Original design										
Spring material											
E	Stainless steel										
Spring range											
	Refer to the table on page 2										

NOTE

NPTF, also referred to as 'Dryseal' thread, is designed to provide a more leak-free seal without the use of Polytetrafluoroethylene (PTFE) tape or other sealant compound. NPTF threads are interchangeable with NPT threads and are standard on all Cash Valve products.

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