



500 Series Valves

Hydraulically-Operated, Diaphragm-Actuated Valves



General Information

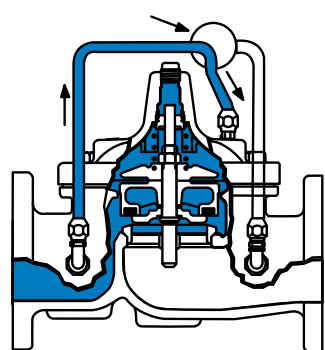
The Basic 500 Series Valve is a hydraulically-operated, diaphragm-actuated valve available in globe or angle patterns, a full range of sizes and various materials.

It consists of three major components: a body, a cover and a diaphragm assembly. The diaphragm assembly is the only moving part. When pressure is applied above the diaphragm, a synthetic rubber disc, contained on three and one half sides by a disc retainer and disc guide, forms a seal with the valve seat. At the same time, the diaphragm assembly forms a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure.

The Basic 500 Series Valve's rugged simplicity of design and packless construction assure a long life of dependable, trouble-free operation. Should the diaphragm become damaged, the valve closes tight providing "fail safe" operation. A versatile valve, the Basic 500 Series Valve is used in many types of piping systems requiring remote control, pressure regulation, solenoid operation, rate of flow control, liquid level control, or check valve operation.

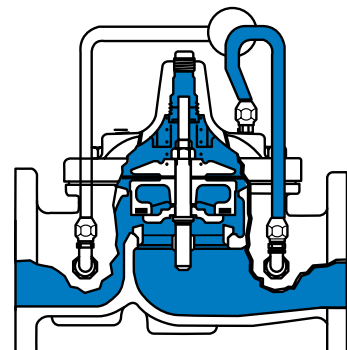


Principles of Operation



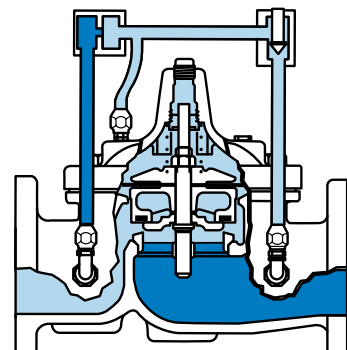
Tight Closing Operation

When pressure from the valve inlet (or an equivalent independent operating pressure) is applied to the diaphragm chamber, the valve closes drip-tight.



Full Open Operation

When pressure in the diaphragm chamber is relieved to zone of lower pressure (usually atmosphere), the line pressure (5 psi min.) at the valve inlet opens the valve.



Modulating Action

The valve modulates when diaphragm chamber pressure is held at an intermediate point between inlet and discharge pressure. With the use of a “modulating control” which reacts to line pressure changes, the pressure above the diaphragm is varied, allowing the valve to throttle and compensate for the change.

Flow Direction

The flow through the valve can be in one of two directions. When flow is “up-and-over the seat,” it is in “normal” flow and the valve will fail in the open position. When flow is “over the seat-and down,” it is in “reverse” flow and the valve will fail in the closed position.

C_v Factor

The C_v Factor is defined as the number of gallons per minute of water at 60° F which will flow at a one pound per square inch differential.

C _v Factor	2"	3"	4"	6"	8"
Globe	54	115	200	440	771
Angle	62	139	240	541	990



Specifications

Sizes

Globe & Angle
2, 3, 4, 6, and 8" flanged, grooved

Pressure Ratings

Ductile Iron: 250-PSI maximum
Cast Steel: 285-PSI maximum
Ductile Iron: 400-PSI maximum
Cast Steel: 400-PSI maximum

Temperature Range

-40 to +180° F, (light petroleum product)

End Details

Flanged
Ductile Iron, 150 & 300 ANSI B16.42
Cast Steel, 150 & 300 ANSI B16.5

Grooved

Ductile Iron and Cast Steel

Materials of Construction

Body & Cover
Ductile Iron ASTM A-536
Cast Steel ASTM A216-WCB

Valve Trim
Stainless Steel 303

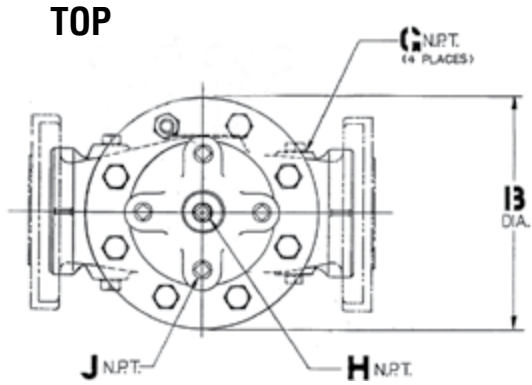
Rubber Parts
Buna-N® Synthetic rubber
Viton®

Other materials available on special order



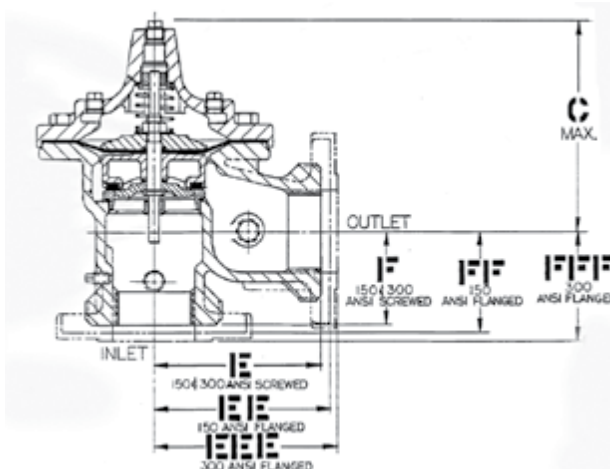
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Dimensions



	2"	3"	4"	6"	8"
A	9.38	12.50	-----	-----	-----
AA	9.38	12.00	15.00	20.00	25.38
AAA	10.00	13.25	15.62	21.00	26.38
B Dia.	6.62	9.12	11.50	15.75	20.00
C Max.	6.50	8.19	10.62	13.38	16.00
C-1 Max	5.75	7.25	9.31	12.12	14.62
D	1.50	2.06	3.19	4.31	5.31
D-1	2.50	3.12	4.25	6.00	7.56
E	4.75	6.25	-----	-----	-----
EE	4.75	6.00	7.50	10.00	12.75
EEE	5.00	6.38	7.88	10.50	13.25
F	3.25	4.50	-----	-----	-----
FF	3.25	4.00	5.00	6.00	8.00
FFF	3.50	4.38	5.31	6.50	8.50
G NPT	3/8"	1/2"	3/4"	3/4"	1"
H NPT	1/2"	1/2"	3/4"	3/4"	1"
J NPT	1/2"	1/2"	3/4"	3/4"	1"

SIDE (Angle)



SIDE (Globe)

