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Solutions

Diaphragm Valve ST SBM-PTV

Diaphragm valve generally refers to a valve having a diaphragm of rubber or other flexible material that opends or closes the flui passage. Diaphragm valves are used on shut-off and throttling service for liquids, slurries and vacuum/gas. The seal is achieved by a flexible membrane, usually elastomer, and possibly reinforced with a metal part. The membrane is tensed by the effect of a stem/compressor with lineal movement until contact is made against the seal of the body. The operating parts of the diaphragm valve are isolated from the flow. This makes this valve suitable for viscous flows and also hazardous, abrasive and corrosive flows as its sealing system avoids any contamination towards or from the environment. Diaphragm valves are available in a wide variety of metals, solid plastics, plastic, rubber and glass linings. They are well suited to the handling of multiple chemical applications both clear fluids as well as slurries. The diaphragm valve has an extended use for applications at low pressures and slurry fluid where most other kinds of valves corrode or become obstructed.

Straight type diaphragm valve

•The fluid passage is straight, which minimizes pressure drop and/or fluid accumulation.

•Applicable to viscose fluid, cellulose fluid, slurry, sledge and other fluids containing suspended solids.

•*Used for: Water purifying plants, terminal treatment plant, etc.*

Features:

A) Minimal Resistance to Flow
B) Consistent Leak-Tightness, even with solids in line
C) Assured purity of Line Fluid, due to the isolation of Valve Mechanism
D) Easy Maintenance
E) Glandless Construction
F) Rising Handwheel
G) Field Serviceable Bonnet Assembly
H) Low Flow Resistance
I) Fluid is isolated from operating mechanism
J) No Stuffing Box
K) Leakage Free
L) Availability of Wide Range of Elastomer Diaphragms
M) Easy to Automate
N) Variable flow direction and installation position
O) Epoxy painting
P) It is a quick opening valve.

Technical Data

1. Size range: NPS 1/2"~8"
2. Pressure ratings:150LB and 300LB
3. Working temperature: -29°~ +200°C.
4. Service Fields: Main uses for Petroleum, flammable media, Water, Air, Steam, Gas, and Oil
5. Body Material: A216 WCB
6. Trim Material: SS316
7. Seat Material: RPTFE

Performance Standard

1. Design and manufacture standard as to: API 6D
2. Face-to-face dimension standard as to: ASME B16.10
3. Flange dimension conforms as to: ASME B16.5
Finish, Flange facing : RA=3.2-6.4 Micron
4. Testing And Inspection as to: API 598
5. Pressure-temperature conforms as to: ASME B16.34
6. Fire Safe Design Conforms To: API 607 / API 6FA
7. Anti Corrosion as per NACE MR-0175(2002) requirement
8. Locking Device for safe service
9. Mounting platform conforming to ISO5211,

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Rubber diaphragm

DN15~20

DN25~80

≥DN100

PTFE Backed EPDM diaphragm

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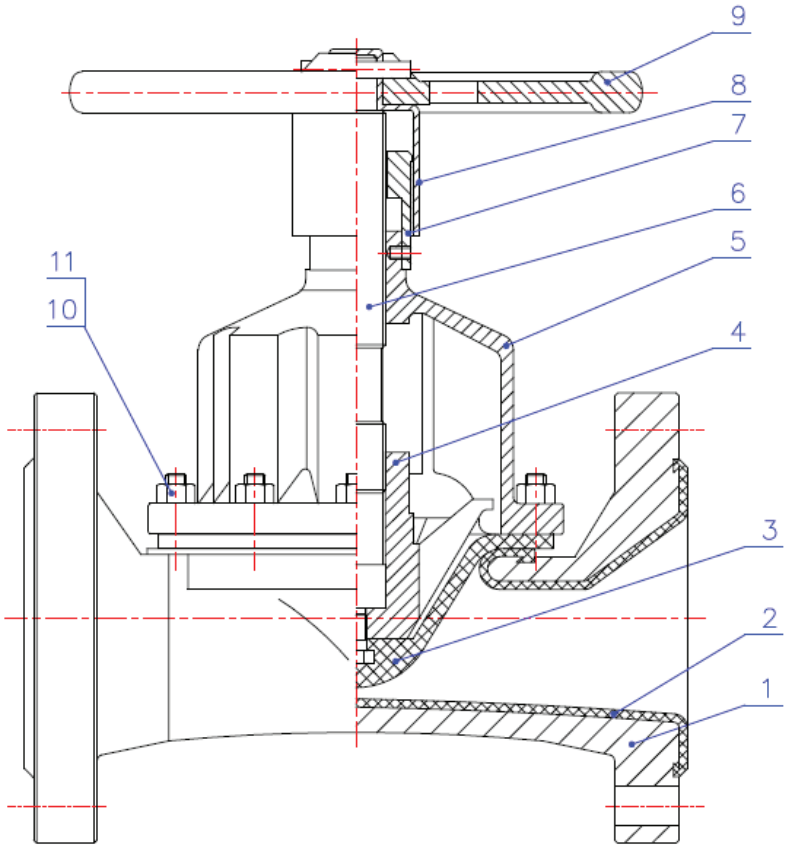
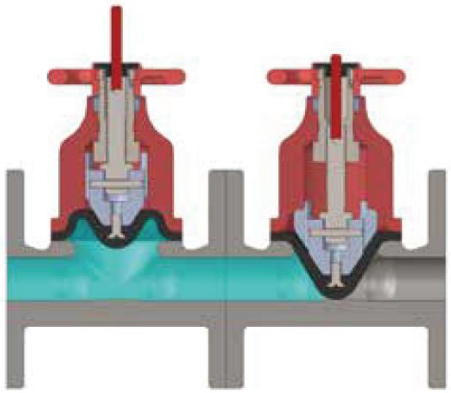
Part List:





Diaphagm Valve ST flange 150LB

No.	Part Name	Material	Standard
1.	Bolt	Ductile Iron/Carbon Steel	ASTM A536 /A216 WVB
2.	Lining	Ebonite/EPDM/PFA	USA DuPont
3.	Diaphragm	Butyl/NBR/EPDM/Viton	USA DuPont
4.	Disc	Ductile Iron	ASTM A536
5.	Bonnet	Ductile Iron/Carbon Steel	ASTM A536 /A216 WVB
6.	Stem	Ductile Iron	ASTM A536
7.	Dust cover	Aluminium alloy	ASTM /AA
8.	Handwheel Coat	Aluminium alloy	ASTM /AA
9.	Handwheel	Carbon Steel	A216 WCB
10.	Bolt	B7	ASTM A193
11.	Nut	2H	ASTM A194

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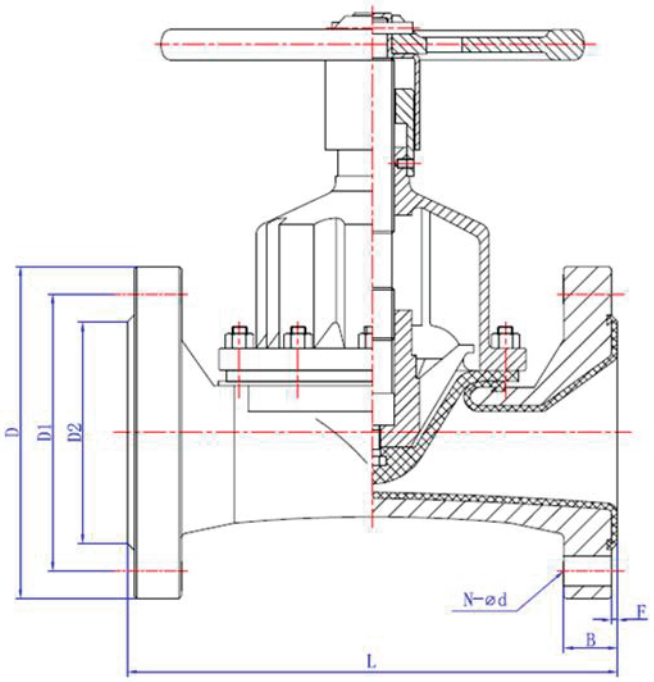

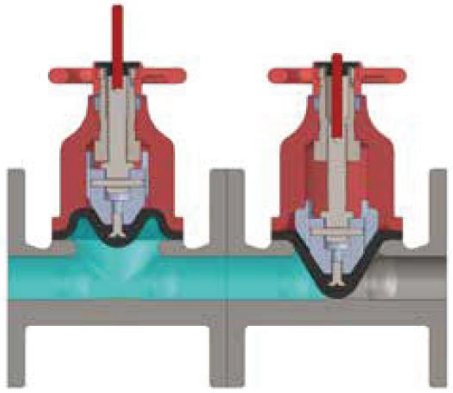

Main Dimensions:

Diaphragm Valve ST Flange 150LB

NPS	L	D	D1	D2	B	N-Φ	F	H	Weight (Kg)
1″	127	Φ110	Φ79.4	Φ51	13	4-Φ16	2	135	3.5
1 1/4″	146	Φ115	Φ88.9	Φ64	14.5	4-Φ16	2	150	5
1 1/2"	159	Φ125	Φ98.4	Φ73	16	4-Φ16	2	175	6
2"	190	Φ150	Φ120.7	Φ92	17.5	4-Φ19	2	195	8.5
2 1/2"	216	Φ180	Φ139.7	Φ105	21	4-Φ19	2	200	16
3"	254	Φ190	Φ152.4	Φ127	22.5	4-Φ19	2	255	22
4"	305	Φ230	Φ190.5	Φ157	22.5	8-Φ19	2	325	32
5"	356	Φ255	Φ215.9	Φ186	22.5	8-Φ22	2	405	43.5
6"	406	Φ280	Φ241.3	Φ216	24	8-Φ22	2	450	65
8"	521	Φ345	Φ298.5	Φ270	27	8-Φ22	2	600	112.5
6"	635	Φ405	Φ362.0	Φ324	29	12-Φ25.5	2	620	192.5
8"	749	Φ485	Φ431.8	Φ381	31	12-Φ25.5	2	680	296

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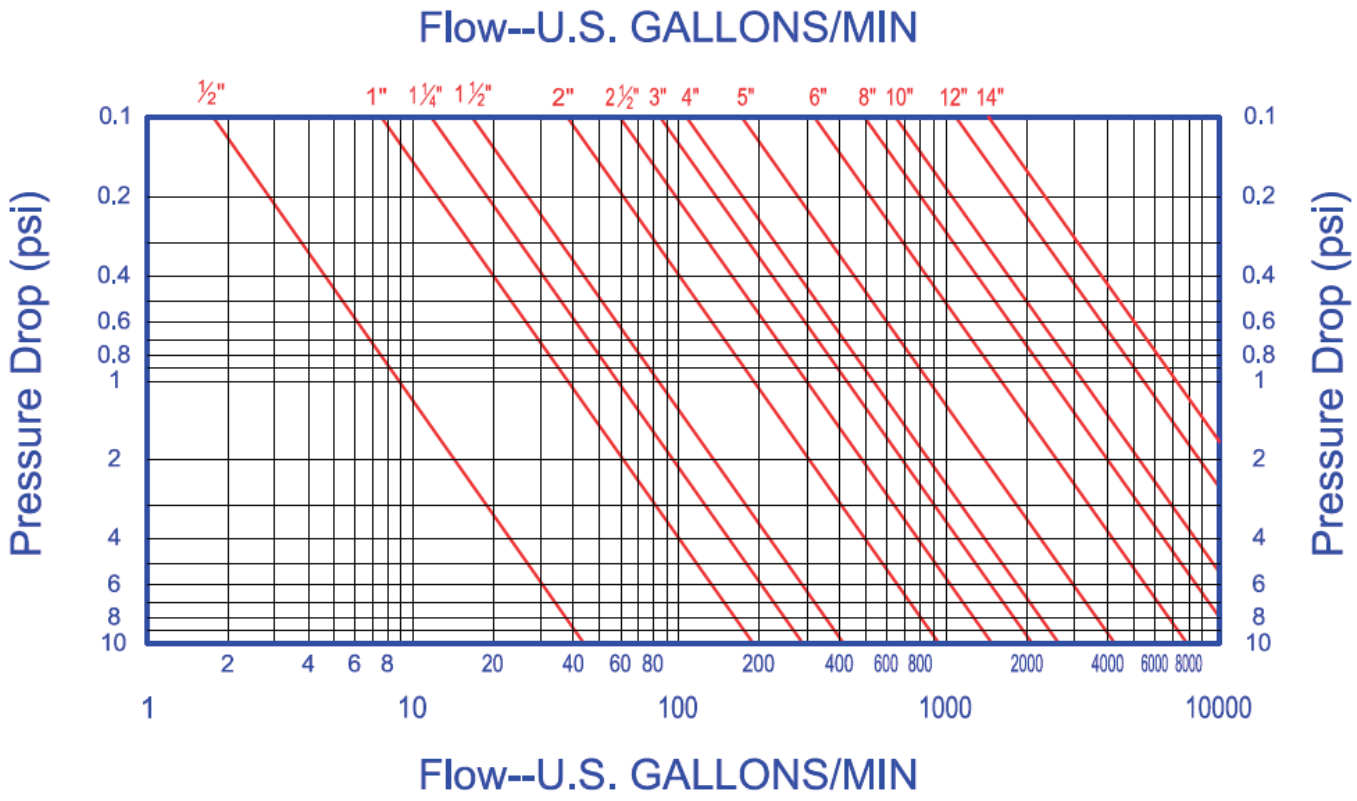
SBM-PTV Engineering Data

Flow of coefficiente -- Cv-- of Straight type diaphragm valve

By definition the vave flow coefficient Cv is the number of gallons per minute of water which will pass through a given flow restriction a pressure drop 1 ps



The selection of Diaphragm material

Material	Size		Temperature		Applications
	Inches	mm	°F	°C	
Butyl Rubber	0.5-14	15-350	-22 to 134	-30 to 90	Acids and alkalis
Nitril Rubber	0.5-14	15-350	14 to 134	-10 to 90	Oils, fats and fuels
Neoprene	0.5-14	15-350	-4 to 134	-20 to 90	Oils, greases, air and radioactive fluids
Natural/Synthetic Rubber	0.5-14	15-350	-40 to 134	-40 to 90	Abrasives, brewing and dilute mineral acids
White Natural Rubber	0.5-5	15-125	-31 to 134	-35 to 90	Foods and phar,aceuti cals
White Butyl	0.5-6	15-150	-22 to 212	-30 to 100	Natural color, food, plastics and pharmacauticals
Viton	0.5-14	15-350	41 to 284	5 to 140	Hydrocarbon, acids, sulfide and chlorine applications
Hypalon	0.5-14	15-350	32 to 134	0 to 90	Acid and ozone resistant
Butyl rubber	0.5-14	15-350	-4 to 248	-20 to 120	Hot water and intermittent steam services, sugar refining

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ORDERING CODE:

Example: 1000LT-222-1-200

Ball Valve, SS316 CF8M Body, SS316 CF8M ball and stem, RPTFE Seat, NPT Thread, Size 2”

Available Body Material Code:

SS304 CF8 Stainless Steel: 1

SS316 CF8M Stainless Steel: 2

SS316L CF3M Stainless Steel: 3

Available Ball and Stem Material:

SS304 CF8 Stainless

Steel: 1 SS316 CF8M

Stainless Steel: 2 SS316L

CF3M Stainless Steel: 3

Available End Code:

Female NPT Thread: 1

Female BSP Thread: 2

Available Seat Material Code:

PTFE: 1

RPTFE: 2