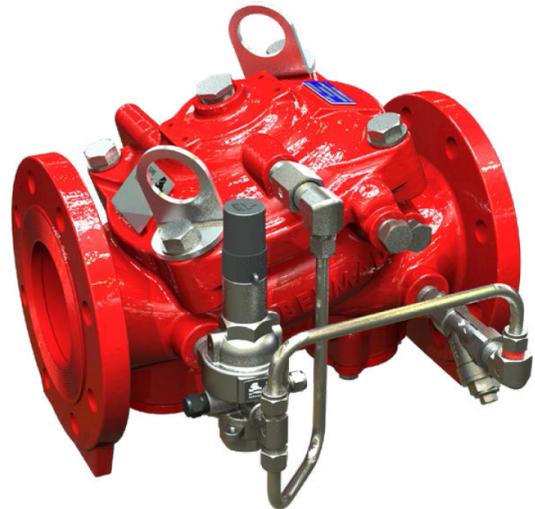


PUMP SUCTION PRESSURE CONTROL VALVE

Model FP-43T-PS

The BERMAD model 43T-PS is an elastomeric, line pressure operated pump suction head control valve, specifically designed for advanced fire protection systems and the latest industry standards. The 43T-PS is used to control and sustain pump suction pressure at the pump inlet at an adjustable preset minimum value. This ensures a continued pressure supply to systems sharing the same supply line as well as preventing cavitation damage. Due to exceptional reliability, fail safe opening, fast reaction and low head loss, the 43T-PS is highly suited for fire pump discharge pressure control applications. As an option the 43T-PS can be fitted with a valve position indicator that can include a limit switch.



Features & Benefits

- Safety and reliability
 - Low headloss design - Increased safety at reduced pressure supply
 - Time proven, simple design with a fail safe actuation
 - Single piece rugged elastomer, VRSD technology
 - Obstacle-free, uninterrupted flow path
 - No mechanical moving parts
- High performance
 - Fast, smooth stabilizing response to pressure fluctuations
 - Very high flow efficiency
 - Straight through Y type body
 - PN25/365 psi working pressure
- Specifically-designed for fire protection
 - Face-to-face length standardized to ISO 5752 EN 558-1
 - Accurate and stabilizing pressure control
- Quick and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal

Typical Applications

- Maintaining minimum suction head to a booster pump
- Over draw prevention in shared supply lines
- Prevention of pump cavitation damage

Approvals



FM Approved
Fire Pump Suction Pressure Regulating Valves - 1363
Sizes 1½" - 16"



Det Norske Veritas
Type Approval



ABS
American Bureau of Shipping
Type Approval

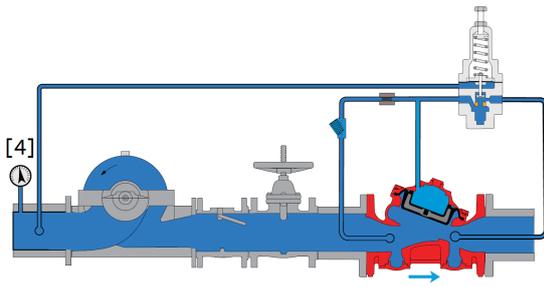


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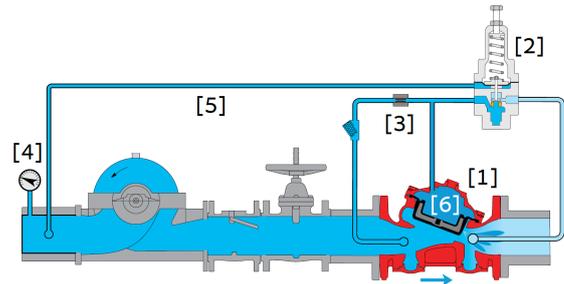
Additional Features

- Seawater compatibility
- Large control filter
- Valve position limit switches
- Opening and/or closing speed control

Operation



Valve Open (normal conditions)

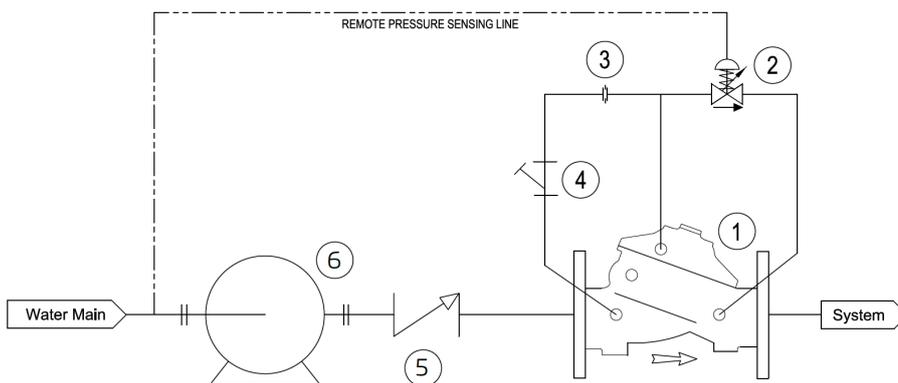


Valve Modulating (low pump supply pressure)

The BERMAD 43T-PS will remain fully open whilst the pump suction head or pressure level [4] at the pump inlet remains above the preset minimum. When pump inlet pressure falls below the preset minimum, the pilot valve [2] will sense this via the sensing line [5] and will throttle, causing upstream pressure to accumulate in the valve control chamber [6] through a restrictor [3], and thereby modulating the main valve [1].

As the valve starts to modulate, the pump suction pressure will increase. When the minimum suction pressure is returned the pilot will either cease to throttle further or modulate the main valve maintaining suction head pressure above the preset minimum.

System P&ID



Components	
1	BERMAD 400Y Water Control Valve
2	Pilot valve
3	Restriction Orifice
4	Y control filter
5	Pump check valve
6	Booster Pump

System Installation

A typical installation of the BERMAD model 43T-PS is where the valve is installed downstream of the pump with a pressure sensing line leading from the valve to the pump intake or suction pipe.

The 43T-PS is especially suited for this function, with an unobstructed straight-through flowpath, without any guides or bearings, it has an exceptionally high flow capacity. Therefore when pump suction pressure is available and above the pre-set minimum the 43T-PS will be fully open, presenting minimal pressure loss for delivering the maximum possible volume of water to the fire event.

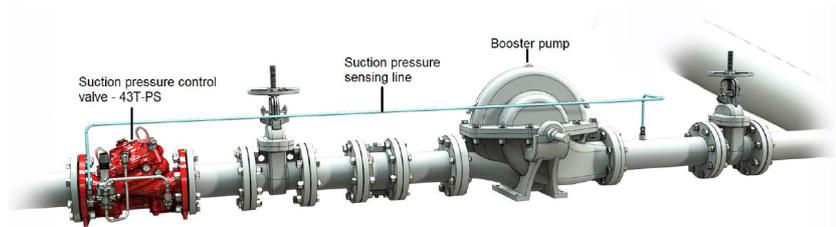


Table 1: Pressure and Recommended Flow Rates

Valve Size in. (mm)	1.5" (40)	2-2.5" (50-65)	3" (80)	4" (100)	6" (150)	8" (200)	10" (250)	12" (300)	14" (350)	16" (400)
Valve Max. Inlet pressure bar (psi)	25 (365)	21 (300)	21 (300)	21 (300)						
Pressure Setting Range bar (psi)	0.35-1.7 (5-25)									
Kv (Cv)	68 (79)	80-105 (92-121)	190 (219)	345 (398)	790 (912)	1160 (1340)	1355 (1652)	2370 (2737)	2850 (3292)	3254 (3758)
Leq m (ft) Note 1	2 (7)	4 (14)	7 (24)	8 (25)	8 (26)	13 (43)	27 (89)	55 (179)	38 (125)	66 (215)
Max. recommended flow m ³ /h (gpm)	24 (106)	56 (247)	82 (360)	145 (640)	330 (1450)	580 (2570)	910 (4000)	1360 (6000)	1635 (7198)	2170 (9555)
Pilot Valve model	3PB	3PB	3PB	3PB	3PB	3-UL	3-UL	3-HC	3-HC	3-HC

Note: (1) Valve Equivalent Length Value (Steel Pipe), for use in hydraulically calculated system.

Suggested Specifications

The valve shall be FM Approved, 365-psi/25-bar rated, with a straight-through Ytypebody.

The valve shall have an unobstructed flow path, with no stem guide or supporting ribs.

The main valve shall have no mechanical moving parts, and the actuation shall utilize a single-piece diaphragm assembly of VRSD technology.

The valve shall be coated internally and externally with UV protection. Optional: C5-VH grade of ISO-12944 standard against corrosive conditions.

Removing the valve cover for full inspection and maintenance shall be in-line and not require removal of the control trim.

The deluge valve and control trim shall be pre-assembled and hydraulically tested by a UL/FM and ISO 9000, 9001 certified factory.

Technical Data

Available Sizes:

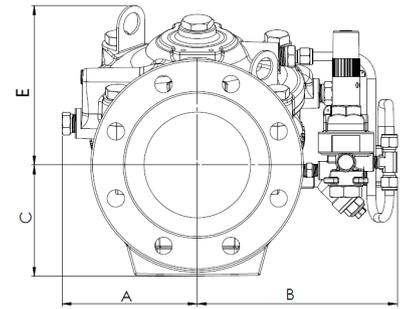
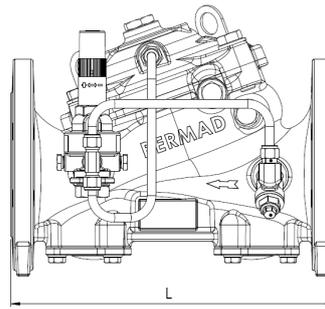
Flanged- 1½, 2, 2½, 3, 4, 6, 8, 10, 12, 14 & 16"
Grooved- 1½, 2, 2½, 3, 4, 6, 8 & 10"

Pressure Rating:

ANSI#150 - 17.2 bar | 250 psi
ANSI#300 - 1½" to 10" - 25 bar | 365 psi
ANSI#300 - 12" to 16" - 20 bar | 300 psi
Grooved - 25 bar | 365 psi
Setting range: 0.3 - 1.7 bar | 5 - 25 psi

Elastomer:

HTNR - Fabric Reinforced High Temperature Compound - See engineering data



Valve Size	L #150 mm in	L Grooved mm in	L #300 mm in	A mm in	B mm in	C mm in	∅D in	E mm in	F mm in	G mm in	Weight #150 kg lb	Weight #300 kg lb
DN40 1½"	230 9.1	230 9.1	230 9.1	77.5 3	155 6.1	64 2.5	-	120 4.7	-	-	18 40	19 45
DN50 2"	230 9.1	230 9.1	238 9.4	77.5 3	155 6.1	77 3	-	120 4.7	-	-	18 40	19 45
DN65 2½"	235 9.3	235 9.3	241 9.5	82 3.3	187 7.4	92 3.6	-	146 5.8	-	-	23 50	25 54
DN80 3"	310 12.2	310 12.2	326 12.8	100 4	251 9.9	106 4.2	-	146 5.8	-	-	34 75	38 165
DN100 4"	350 13.8	320 12.6	368 14.5	115 4.5	266 10.5	121 4.8	-	158 6.2	-	-	44 96	51 112
DN150 6"	480 18.9	480 18.9	506 19.9	140 5.5	372 14.7	140 5.5	-	228 9	-	-	87 192	107 235
DN200 8"	600 23.6	600 23.6	626 24.6	172 6.8	490 19.3	172 6.8	-	295 11.7	-	-	150 331	170 374
DN250 10"	730 28.7	730 28.7	730 28.7	204 8	490 19.3	204 8	-	296 11.7	-	-	180 397	116 255
DN300 12"	850 33.5	-	888 35	242 9.5	656 25.8	247 9.7	-	441 13.4	-	-	323 712	373 821
DN350 14"	980 38.6	-	980 38.6	242 9.5	656 25.8	272 10.7	-	441 17.4	-	-	356 784	428 942
DN400 16"	1100 43.3	-	1100 43.3	242 9.5	656 25.8	316 12.4	-	415 16.3	-	-	403 886	523 1151

IMPORTANT: Dimensions for the trim envelope or extents refer to a horizontal orientation and may vary with specific component positioning - Apart from the "L" dimension, allow a tolerance of at least ±15%

Valve Code Designations

