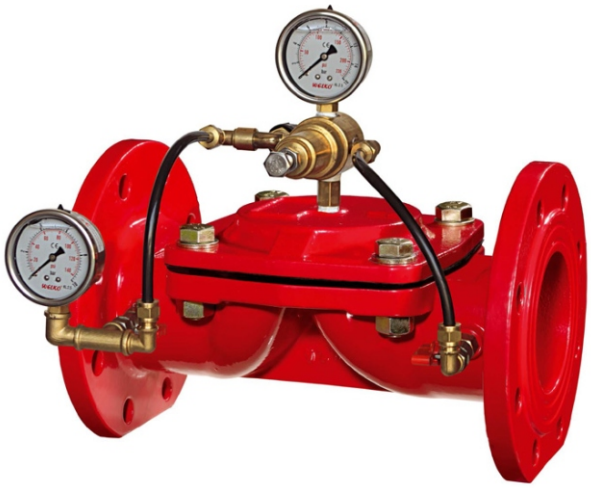
PRESSURE REDUCING CONTROL VALVE

Typhoon Series Hydraulic Control Valves are the direct diaphragm closing automatic hydraulic control valves which work with line pressure. It ensures easy and smooth flow with minimum pressure losses thanks to excellent design of valve body and diaphragm. No wearable parts such as stem, bearing and seat exist in main valve body, valve life is much longer than other competitor valves. Only movable part of valve is vale diaphragm. Typhoon Series serial hydraulic control valves are designed so that it can be used in potable water force network, agricultural irrigation, fire fighting, filtration, industrial applications by even an unskilled personal.

GENERAL FEATURES

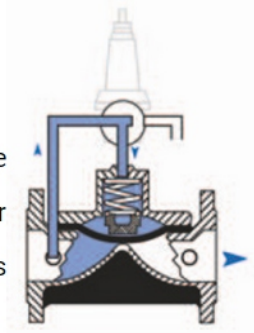


- Easy use and maintenance due to simple design
- Low cost
- Operation in wide pressure range
- Perfect modulation even in lower flow rates
- Anti-surge closing and opening with flexible diaphragm
- Full tightness thanks to reinforced diaphragm and inner spring
- Long life with epoxy-polyester coating
- Wide control application range by using different pilot valves
- Operation in both horizontal and vertical positions in application area

Working Principals

It is automatic hydraulic control valve designed for make desired modulation processes in main valve network line as full hydraulically by means of line pressure without requiring different energy sources such as electric, pneumatic on mechanic energy.

Valve Closing Mode



When pilot valves connected on main valve transport water pressure in valve upstream to valve actuator (control chamber), water creates a hydraulic power on valve diaphragm. This power formed, by combining with extra power applied by inner spring, ensures that valve will be closed as full tightness.

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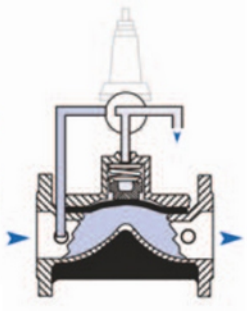
Valve Opening Mode

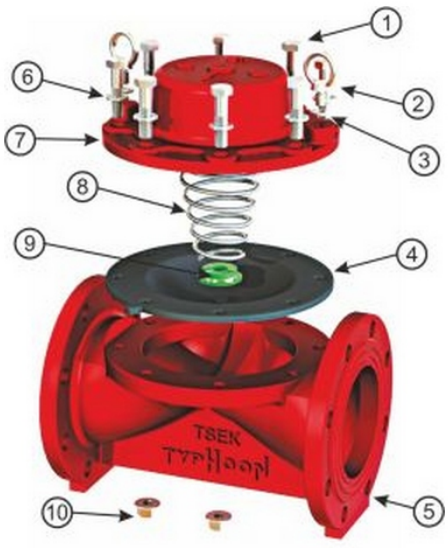


When way of pilot valve located on main valve being in closed position is brought into relief position, pressurized water within control chamber on main valve diaphragm is released. When line pressure (P1) reaches to the value which will overcome spring power, water carries valve to fully open position by applying a hydraulic power to valve diaphragm from bottom.

Modulation Mode

Pilot valves which are connected to main valve actuator ensure that main valve works in modulated mode. According to flow rate or pressure conditions, it ensures that main valve works in modulated mode by controlling pressure of fluid within main valve actuator (control chamber)

MAIN PARTS & TECHNICAL SPECIFICATIONS



Main Parts

NO.	Part Name	Material
1	Screw	EN ISO 4014
2	Eye_Bolt	DIN 444
3	Washer	EN ISO 7091
4	Diaphragm	Cloth Reinforced Natural Rubber
5	Body	EN GJL-250 GG25
6	Washer	EN ISO 7091
7	Cover	EN GJL-250 GG25
8	Spring	AISI-302
9	Spring Thrust Ring	Polyamide
10	Bolt Nut	DIN EN ISO 4032

Technical Specifications

Pressure Rating	Standard	0,7 - 16 bar (10 - 240 psi)
	Low Pressure Range	0,5 - 10 bar (7,5 - 160 psi)
	High Pressure Range	0,7 - 25 bar (10 - 360 psi)
Temparature	Min. Operating Temperature	- 10 °C (14 °F) DIN 2401/2
	Max. Operating Temperature	80 °C (176 °F) DIN 2401/2
Connection	Flanged	DIN 2501, ISO 7005 - 2
	Threaded	ISO (BSP) , ANSI (NPT)
	Grooved End	Victaulic
Coating	Standard	Epoxy
	Optional	Polyester
Hydraulic Connections	Standard	Reinforced Nylon (Air Brake) Hydraulic Pipe SAEJ 844
	Optional	Copper DIN 1057
Actuator Type	Diaphragm Closing Type with Single Control Chamber and Diaphragm Actuator	

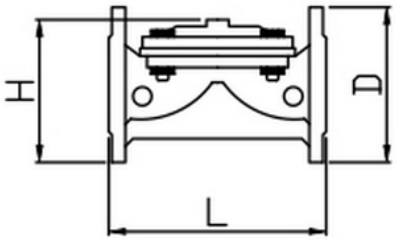
PRESSURE REDUCING CONTROL VALVE

MODELS, DIMENSIONS AND WEIGHTS

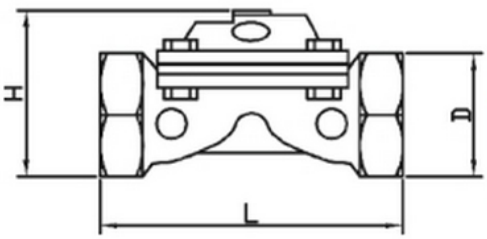
Models

Materials	10		11	
				
Connection	Flanged		Threaded	
Material	GG 25		GGG 40	
Body	Globe			
Operating Pressure	PN 10 - PN 16 - PN 25			
Available Diameters	inch	mm	inch	mm
	2	50	2	50
	2 1/2	65	2 1/2	65
	323	80*50	323	80*50
	3	80	3	80
	4	100		
	5	125		
	6	150		
	8	200		
	10	250		
	12	300		

Dimensions And Weights



DN		D		L		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	kg
2	50	6,49	165	8,7	220	5,9	150	18,7	8,5
2 1/2	65	7,28	185	8,7	220	6,1	155	22,2	11
3	80	7,87	200	11,2	283	6,7	172	46,2	21
4	100	8,66	220	13,2	335	7	180	51,7	24
5	125	9,84	250	14,7	372	7,87	200	61,6	28
6	150	11,2	285	15,6	395	12	305	119	54
8	200	13,3	340	18,2	460	15	383	238	108
10	250	15,5	395	21,5	545	17,5	445	290	132
12	300	17,5	445	23	582	19,6	495	385	175



DN		D		L		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	kg
2	50	3,3	85	7,3	185	4,1	105	11,4	5,2
2 1/2	65	3,7	95	8,1	227	4,1	105	14,3	6,5
3	80	4,3	110	12,6	320	4,9	125	28,6	13

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SIZE		DIAPHRAGM		PRESSURE RANGE	
inch	mm	Tipi	No	mSS	psi
2	50	Low Pressure	# 03	4-100	6-160
323	80*50*80	Standard	# 05	7-160	10-230
		High Pressure	# 07	10-250	15-360
21/2	65	Low Pressure	# 03	4-100	6-160
		Standard	# 05	7-160	10-230
		High Pressure	# 07	10-250	15-360
3	80	Low Pressure	# 13	4-100	6-160
		Standard	# 15	7-160	10-230
		High Pressure	# 17	10-250	15-360
4	100	Low Pressure	# 13	4-100	6-160
		Standard	# 15	7-160	10-230
		High Pressure	# 17	10-250	15-360
5	125	Low Pressure	# 13	4-100	6-160
		Standard	# 15	7-160	10-230
		High Pressure	# 17	10-250	15-360
6	150	Low Pressure	# 23	4-100	6-160
		Standard	# 25	7-160	10-230
		High Pressure	# 27	10-250	15-360
8	200	Low Pressure	# 33	4-100	6-160
		Standard	# 35	7-160	10-230
		High Pressure	# 37	10-250	15-360
10	250	Low Pressure	# 43	4-100	6-160
		Standard	# 45	7-160	10-230
		High Pressure	# 47	10-250	15-360
12	300	Low Pressure	# 33	4-100	6-160
		Standard	# 35	7-160	10-230
		High Pressure	# 37	10-250	15-360

Hydraulic Performance

Valve Size	mm	50	65	80-50-80	80	100	125	150	200	200	300
	inch	2	2 1/2	323	3	4	5	6	8	10	12
Kv	m^3/h @ 1 bar	88	88	88	174	187	187	419	1139	1698	2276
Cv	gpm @ 1 psi	102	102	102	201	216	216	484	1316	1961	2629

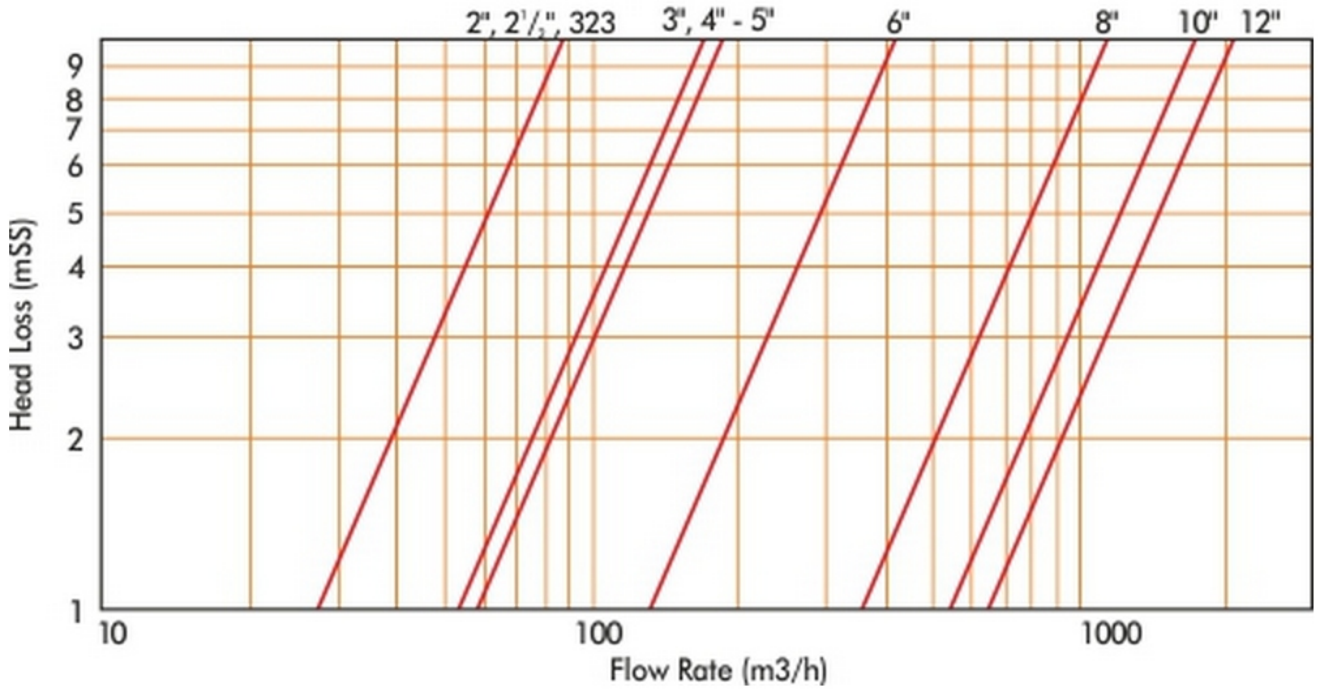
$$Kv,(Cv)=Q.\sqrt{\frac{G}{\Delta P}}$$

$$Cv=1,155Kv$$

Kv: Valve Flow Coefficient (fluid passing in 1 bar pressure lose in m3/h and 1 bar)
Cv: Valve Flow Coefficient (fluid passing in 1 bar pressure lose in gpm and 1 psi)
Q: Flow Rate (m3/h, gpm)
ΔP: Head Loss (bar, psi)
G: Specific weight of water (1.0)

PRESSURE REDUCING CONTROL VALVE

Head Loss Chart



Cavitation Chart