

PRESSURE REDUCING & SUSTAINING  
CONTROL VALVE  
CATALOG





**TYPHOON<sup>®</sup>**



# ABOUT US

Tayfur Water Systems, which was established by Tayfun Yazaroğlu in 2004 in Izmir. We continue our activities as "Tayfur Water Systems Machinery Engineering Industry and Trade Inc." since 2017.

Our company offers its products and experiences to the local market and international market. Tayfur Water Systems, while strengthening its recognition abroad, continues to expand its production, sales and marketing activities every day.

Our engineers and technical staff, technological infrastructure, manufacturing, sales, project-consulting, contracting and service planning meets the requirements of the sector.

Our company manufactures "TYPHOON" brand, hydraulic control valves, plastic hydraulic control valves, backwash valves, plastic backwash valves, impact-free dynamic suction cups, plastic suction cups, bottom clamps, filter reverse flushing control devices. It is progressing towards becoming a strong brand in both domestic and foreign markets by meeting the special demands of its domestic and foreign customers.

## Our Quality Policy

In order to be a leader in quality in the sales, marketing and service sector by complying with legal conditions and to comply with the requirements of Quality Management System in order to meet the needs and expectations of our customers, to continuously improve the efficiency and to not compromise the quality under any circumstances.

## Our Mission

To be a company aiming to present its synergy in the national and international market which has always taken its responsibilities, desires and expectations of our customers in a correct, reliable and timely manner; within the framework of high quality standards, transforming efficiency and competition into an advantage...

## Our Vision

To be a leading, innovative, powerful and reputable enterprise in its sector.

# Pressure Reducing and Sustaining Control Valve

## Plastic Hydraulic Control Valve

The Pressure Reducing and Sustaining Control Valve is the control valve that reduces the output pressure to the desired value by holding the input pressure. There are two pilots on the valve. The pilot in the inlet direction is the pressure stabilization pilot and fixes the inlet pressure. The other pilot ensures that the pressure reducer remains constant by reducing the pilot pressure and the output pressure to the desired value. The pressure reducing and stabilizing control valve allows the system to operate at normal values by reducing excessive flow in the downward slope direction and lowering the high pressure. The valve keeps constantly controlling the inlet pressure and outlet pressure without being influenced by the flow rate changes.

Pressure Range: PN 10

Diameters : 3/4" 1"-1 1/2" - 2" - 2 1/2" - 3"R - 3"-4"

DN80 - DN100 - DN150 Flanged



## Order Information

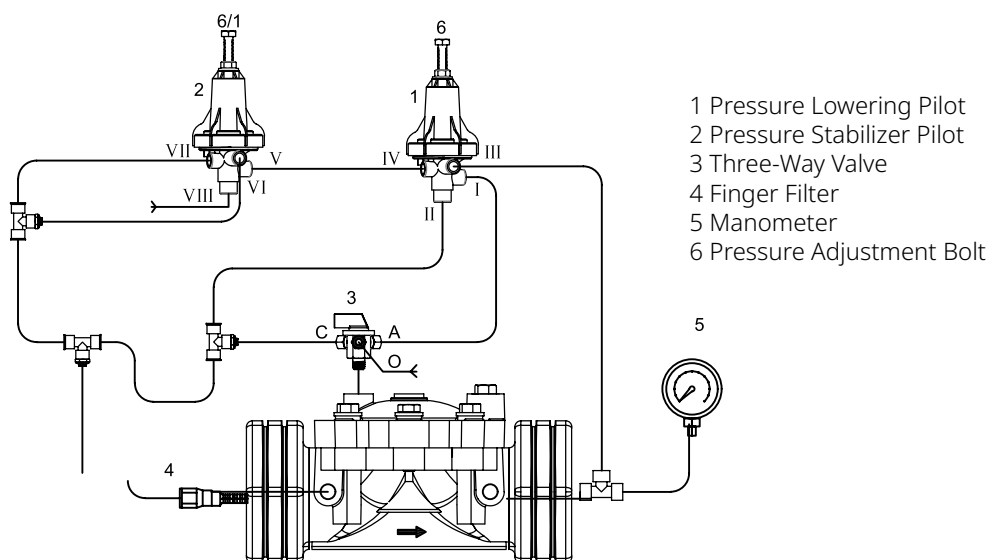
Please provide the following information in order

Maximum flow rate ..... m<sup>3</sup>/h  
Maximum mains / operating pressure ..... bar  
Main pipeline diameter ..... mm  
Valve connection type  
Maximum valve inlet pressure ..... bar  
Minimum valve inlet pressure..... bar  
Desired outlet pressure value..... bar  
Desired valve inlet pressure ..... bar



### Assembly

- After connecting the 4 number finger filter to the valve Inlet, one output of the Te connection element is connected to the connection element by combining the "VI" and "VII" output of the pressure stabilizer pilot. The other output of the Te connection element is connected to the "II" output of the press stabilizer pilot and to the "C" output of the 3-way valve closed.
- The "V" output of the pressure stabilizer pilot is connected to the "IV" output of the pressure reducing pilot with the necessary connection elements.
- \* Te connection element is connected to Valve outlet • One output of the Te connection element is connected to the "III" output of the pressure reducing pilot and the other output is connected to the manometer.
- Valve rated diameter should be the same or a small rated diameter as the line diameter.
- In the direction of the arrow indicated on the valve Mount.
- Isolation valves (butterfly or sliding valve etc.) in the line Assembly of the valve.B) it is recommended to use air discharge valve, quick pressure discharge control valve (QR) and dirt retaining valves.
- \* Cavitation risk during pressure drop is dangerous for valve body. Adjust the output pressure value you want to adjust by looking at the cavitation chart or contact our company.



### Adjustment

- Turn on the pump or turn on the mains main valve and give water to the system.
- Adjust the desired input pressure value by looking at the manometer with the adjustment Bolt "6/1" on pilot valve indicated by "2". After setting the adjustment point, tighten the control nut.
- Adjust the pressure reducing pilot valve indicated by "1" by looking at the manometer through "6" on the adjustment Bolt. The manometer valve shows the output pressure value. After setting the adjustment point, tighten the control nut under the adjustment Bolt.
- When you turn both pilot valves in clockwise direction, the pressure value will increase and the pressure value will decrease when you turn it in counterclockwise direction.



# Plastic Hydraulic Control Valves

## Flanged - Threaded - Angled

TYPHOON Plastic Hydraulic Valves are automatic control valves with diaphragm working with line pressure. Hydraulic Control Valves are used in agricultural irrigation, drinking water lines, filtration and industrial areas.

TYPHOON Plastic Valves are automatic control valves with diaphragm closure working with line pressure. Valve body and diaphragm design ensure smooth flow with minimum pressure loss. Since there is no bearing, bush and shaft in the valve body, valve life is longer. The only moving part of the valve is the diaphragm.

TYPHOON Plastic Hydraulic Control Valves are used in agricultural irrigation, drinking water lines, filtration and industrial areas.



## Features

- Easy operation and maintenance with simple structure
- Lower costs
- Wide pressure range operation
- Perfect modulation even at low flow rates
- Flexible diaphragm to open and close without impact
- Fully sealed with reinforced diaphragm and internal spring
- Wide range of control applications with different pilot valves
- Ability to work in horizontal and vertical positions in application areas

# Plastic Hydraulic Control Valves

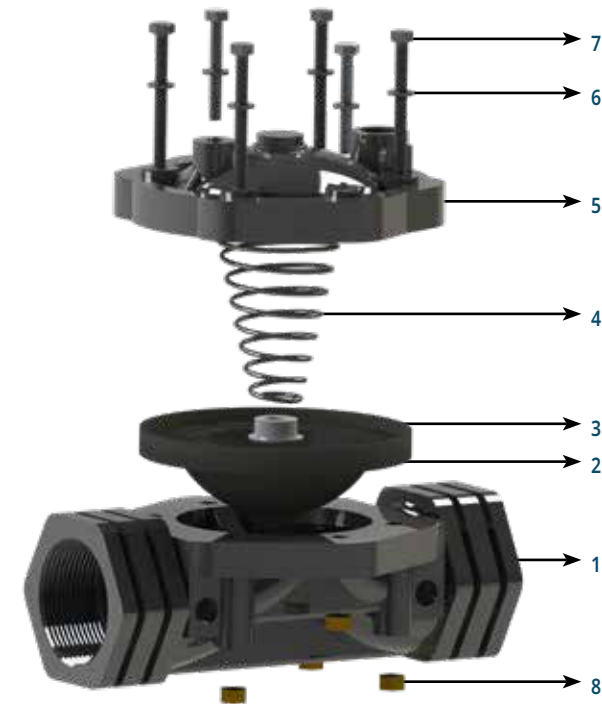
Threaded

## Main Parts

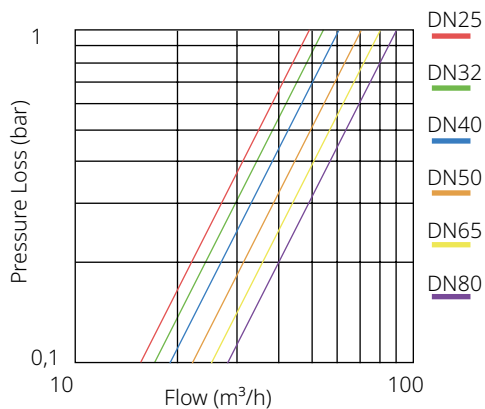
#	Material Name	Type of Material
1	Body	Glass Reinforced Polyamide
2	Diaphragm	Natural Rubber
3	Spring Seat	Polypropylene
4	Spring	SST 302
5	Cover	Glass Reinforced Polyamide
6	Washer	A2 Stainless Steel
7	Bolt	A2 Stainless Steel
8	Nut	Brass

## Model

Connection	Threaded	
Material	Glass Reinforced Polyamide	
Body	Globe	
Available Diameters	inch	mm
	3/4	25
	1	32
	1½	40
	2	50
	2½	65
	3R	80
Max. Operating Pressure	10 Bar	



## Pressure Loss Chart

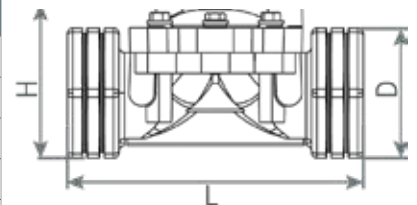


## Hydraulic Performance

	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
Valve Diameter	¾	25	1	32	1½	40	2	50	2½	65	3R	80
Kv m³/h@1bar	50		55		60		70		80		90	
Cv gmp@1psi	56		66		69		81		92		104	

## Dimensions and Weights

DN		D		L		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	Kg
¾	20	1,73	44	5,51	140	2,36	62,50	0,66	0,30
1	25	1,73	44	5,51	140	2,36	62,50	0,66	0,30
1½	40	2,48	63	7,91	201	4,28	100,00	2,54	1,15
2	50	2,95	75	8,07	211	4,33	105,50	2,65	1,20
2½	65	3,66	93	8,64	219	4,64	112,50	3,09	1,40
3	80	4,33	110	8,78	223	4,88	124,50	3,42	1,55



$$K_v(C_v) = Q \cdot \sqrt{G/\Delta P}$$

**Kv** : Valve flow coefficient ( flow rate at 1 bar pressure loss m³/h @ 1 bar)  
**Cv** : Valve flow coefficient (flow in pressure loss of 1 psi GPM @ 1 psi)  
**Q** : Flow (m³/h, gpm)

**Cv** = 1,155Kv  
**ΔP** : Pressure Loss (bar, psi)  
**G** : The specific gravity of water(Water=1.0)

# Plastic Hydraulic Control Valves

## Flanged - Threaded



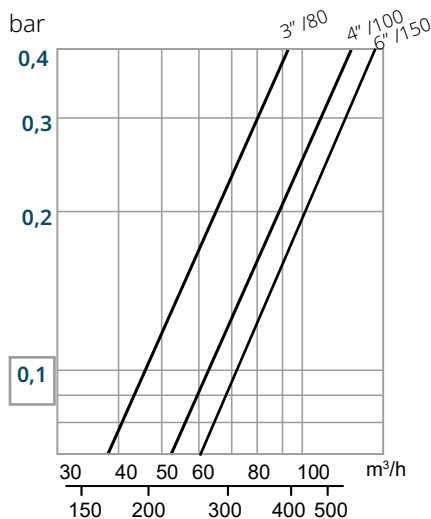
## Main Parts

#	Material Name	Type of Material
1	Body	Glass Reinforced Polyamide
2	Flange Adapter	Glass Reinforced Polyamide
3	Flange	Glass Reinforced Polyamide
4	Diaphragm	Natural Rubber
5	Spring Seat	Polypropylene
6	Spring	SST302
7	Cover	Glass Reinforced Polyamide
8	Bolt	8.8 Coated Steel
9	Nut	8.8 Coated Steel
10	Rondela	8.8 Coated Steel

## Model

Connection	Flanged - Threaded	
Material	Glass Reinforced Polyamide	
Body	Globe	
Available Diameters	inch	mm
	3	80
	4	100
	6	150 (Flanged)
Max. Operating Pressure	10 Bar	

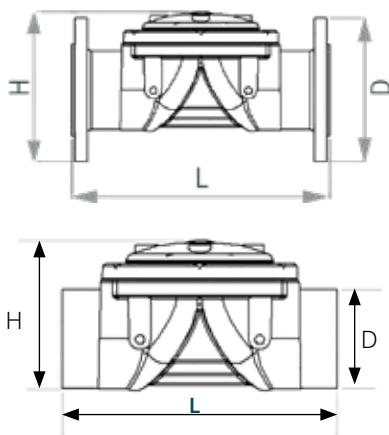
## Pressure Loss Chart



## Hydraulic Performance

	inch	mm	inch	mm	inch	mm
Valve Diameter	3	80	4	100	6	150
Kv m³ / h @1bar	166		208		220	
Cv gmp @1psi	193		242		260	

## Dimensions and Weights



DN		D		L		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	Kg
3	80	7,87	200	14,57	370	8,66	220	14,52	6,60
4	100	9,00	227	14,57	370	9,17	233	16,28	7,40
6	150	11,02	280	15,55	395	10,43	265	16,76	7,6

DN		D		L		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	Kg
3	80	4,72	120	11,58	294	7,05	179	10,25	4,65
4	100	4,72	120	13,23	336	7,28	185	9,70	4,40

$$K_v(C_v) = Q \cdot \sqrt{G/\Delta P}$$

**Kv** : Valve flow coefficient ( flow rate at 1 bar pressure loss m³/h @ 1 bar)

**Cv** : Valve flow coefficient (flow in pressure loss of 1 psi GPM @ 1 psi)

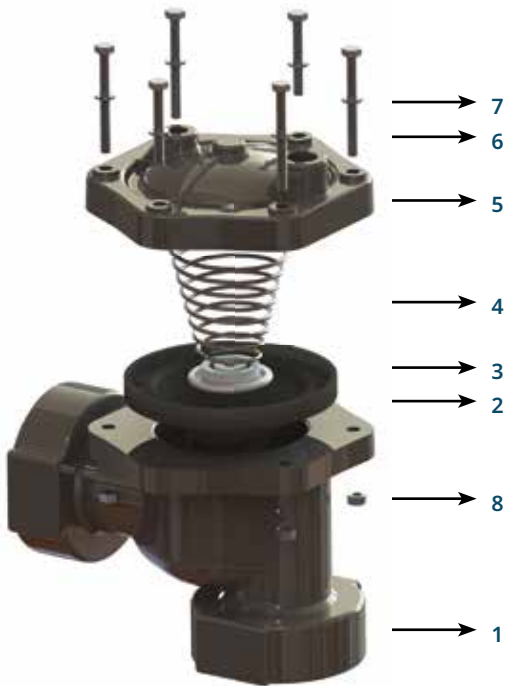
**Q** : Flow (m³/h, gpm)

**Cv** = 1,155Kv

**ΔP** : Pressure Loss (bar, psi)

**G** : The specific gravity of water(Water=1.0)





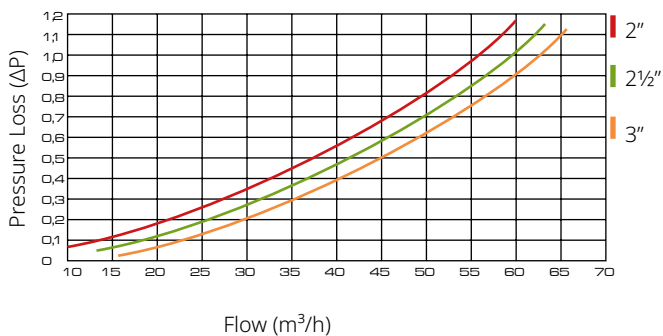
## Main Parts

#	Material Name	Type of Material
1	Body	Glass Reinforced Polyamide
2	Diaphragm	Natural Rubber
3	Spring Seat	Polypropylene
4	Spring	SST 302
5	Cover	Glass Reinforced Polyamide
6	Bolt	A2 Stainless Steel
7	Washer	A2 Stainless Steel
8	Nut	Brass

## Model

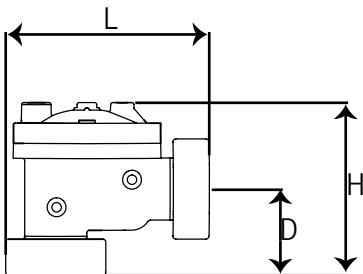
Connection	Threaded	
Material	Glass Reinforced Polyamide	
Body	Angled Globe	
Available Diameters	inch	mm
	2	50
	2½	65
	3R	80
Max. Operating Pressure	10 Bar	

## Pressure Loss Chart



## Hydraulic Performance

	inch	mm	inch	mm	inch	mm
Valve Diameter	2	50	2½	65	3R	80
Kv m³ / h @1bar	51,0		56,0		66,0	
Cv gpm @1psi	58,9		64,7		76,2	



## Dimensions and Weights

DN		D		L		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	Kg
2	50	3,4	86	8	203	6,77	172	2,86	1,30
2½	65	3,4	86	8	203	6,77	172	2,86	1,20
3R	80	3,4	86	8	203	6,77	172	2,86	1,06

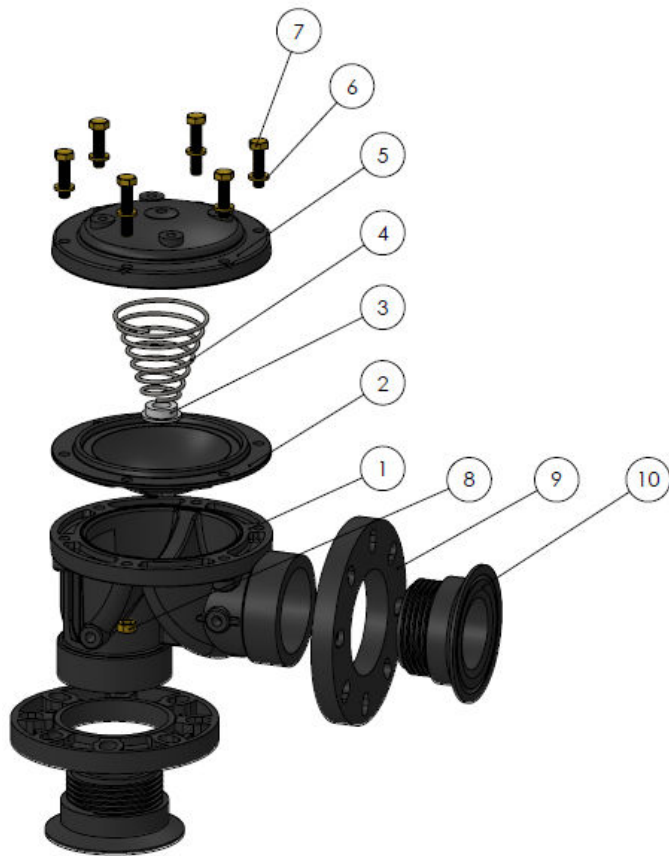
$$Kv(Cv) = Q \cdot \sqrt{G/\Delta P}$$

**Kv** : Valve flow coefficient ( flow rate at 1 bar pressure loss m³/h @ 1 bar)  
**Cv** : Valve flow coefficient (flow in pressure loss of 1 psi GPM @ 1 psi)  
**Q** : Flow (m³/h, gpm)

**Cv** = 1,155Kv  
**ΔP** : Pressure Loss (bar, psi)  
**G** : The specific gravity of water(Water=1.0)

# Plastic Hydraulic Control Valves

## Angled Flanged - Threaded

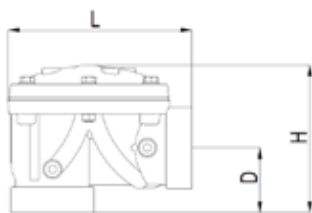


### Main Parts

#	Material Name	Type of Material
1	Body	Glass Reinforced Polyamide
2	Diaphragm	Naturel Rubber
3	Spring Wedge	Polypropylene
4	Spring	SST 302
5	Cover	Glass Reinforced Polyamide
6	Washer	8.8 Coated Steel
7	Bolt	8.8 Coated Steel
8	Nut	8.8 Coated Steel
9	Flange	Glass Reinforced Polyamide
10	Adapter	Glass Reinforced Polyamide

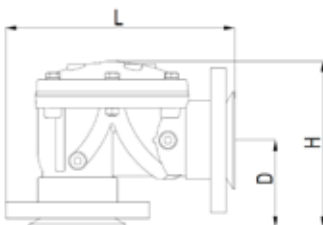
### Model

Connection	Flanged - Threaded	
Material	Glass Reinforced Polyamide	
Body	Globe	
Available Diameters	inch	mm
	3	80
	4	100
	6	150
Max. Operating Pressure	10 Bar	



### Dimensions and Weights

DN		D		L		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	Kg
3	80	3,9	99	10,9	277	8,78	223	11,13	5,05
4	100	3,9	99	10,9	277	8,78	223	10,8	4,90



DN		D		L		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	Kg
3	80	5,08	129	13,42	341	9,96	253	15,43	7
4	100	5,35	136	14,84	377	10,28	261	17,19	7,8
6	150	6,38	162	16,18	411	11,14	283	17,64	8

$$K_v(C_v) = Q \cdot \sqrt{G/\Delta P}$$

**K<sub>v</sub>** : Valve flow coefficient ( flow rate at 1 bar pressure loss m<sup>3</sup>/h @ 1 bar)

**C<sub>v</sub>** : Valve flow coefficient (flow in pressure loss of 1 psi GPM @ 1 psi)

**Q** : Flow (m<sup>3</sup>/h, gpm)

**C<sub>v</sub>** = 1,155K<sub>v</sub>

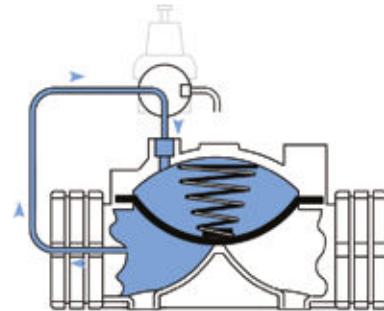
**ΔP** : Pressure Loss (bar, psi)

**G** : The specific gravity of water(Water=1.0)

It is a fully automatic hydraulic control valve designed to perform the hydraulically desired modulation processes with the line pressure without the need for different energy sources such as electricity, pneumatic or mechanical in the main valve mains line.

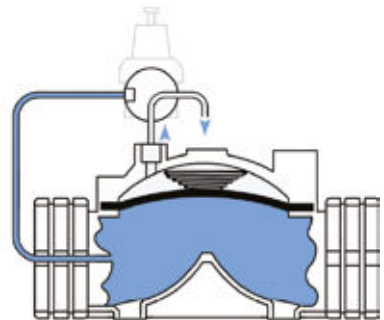
### Valve Closing Mode

Pilot valves connected to the main valve create a hydraulic force on the valve diaphragm when the water pressure at the valve inlet reaches the actuator actuator (control reservoir) of the valve. This hydraulic force that is created combines the diaphragm of the valve with the extra force exerted by the internal spring to ensure a tight seal.



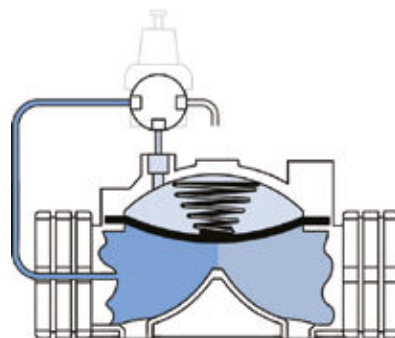
### Valve Opening Mode

When the path of the pilot valve on the main valve in the closed position is set to the discharge position, the pressurized water in the control chamber on the diaphragm of the main valve is discharged. When the line pressure reaches the spring force, the valve diaphragm applies a hydraulic force to the diaphragm to bring the valve into the full open position.



### Modulation Mode

The pilot valves that connect the actuator to the main valve allow the main valve to operate in the modulated position. The valve in the actuator of the main valve (control reservoir), according to the flow quantity or pressure conditions to be adjusted, ensures that the fluid continuously operates in the modulated position by controlling the pressure.



# Y Type

## Plastic Hydraulic Control Valve

TYPHOON Y Type Plastic Automatic Hydraulic Control Valves are designed in "Y" body model type, with high modulation capacity, to work with minimum pressure loss, cavitation and noise under difficult working conditions with high pressure differences.

TYPHOON Y Type Plastic Automatic Hydraulic Control Valves are close the flap with double chamber diaphragm actuator. It has double control chamber as standard. It can be used as a single chamber without using an extra control chamber. Through to the valve shaft, which is rigidly mounted on the valve body, it operates in a controlled and properly opens and closes fully sealed without causing impact.

TYPHOON Y Type Plastic Automatic Hydraulic Control Valves provide maximum performance under difficult conditions with glass reinforced nylon body structure. It is easy to assemble and disassemble with its simple and reliable structure. It has high chemical and corrosion resistance.

TYPHOON Y Type Automatic Hydraulic Control Valves can be obtained by adding various control equipments to the Basic valve body and valves that can make different tasks.



## Features

- Easy to use and maintain with its simple structure
- Lower costs
- Working in wide pressure range
- Perfect modulation even at low flow rates
- Impact-free opening and closing with flexible diaphragm
- Fully sealing with reinforced diaphragm and inner spring
- High diaphragm resistance
- Wide control application area with different pilot mounts
- Ability to work in horizontal and vertical positions

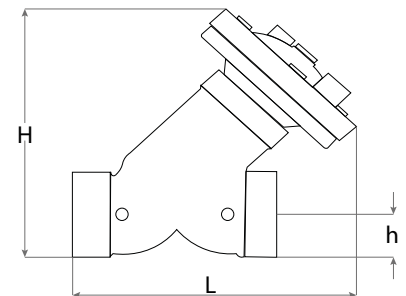
## Order Information

Please provide the following information in order

Maximum flow rate ..... m<sup>3</sup>/h  
Maximum mains / operating pressure ..... bar  
Main pipeline diameter ..... mm  
Valve connection type

## Dimensions and Weights

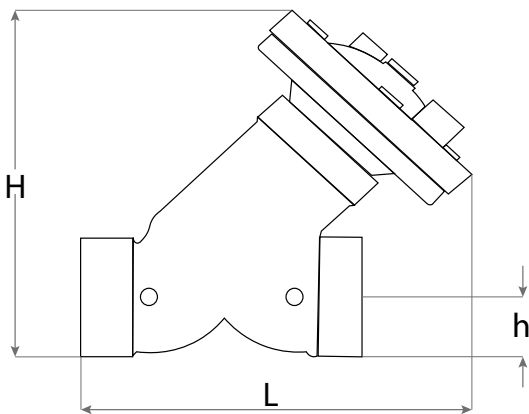
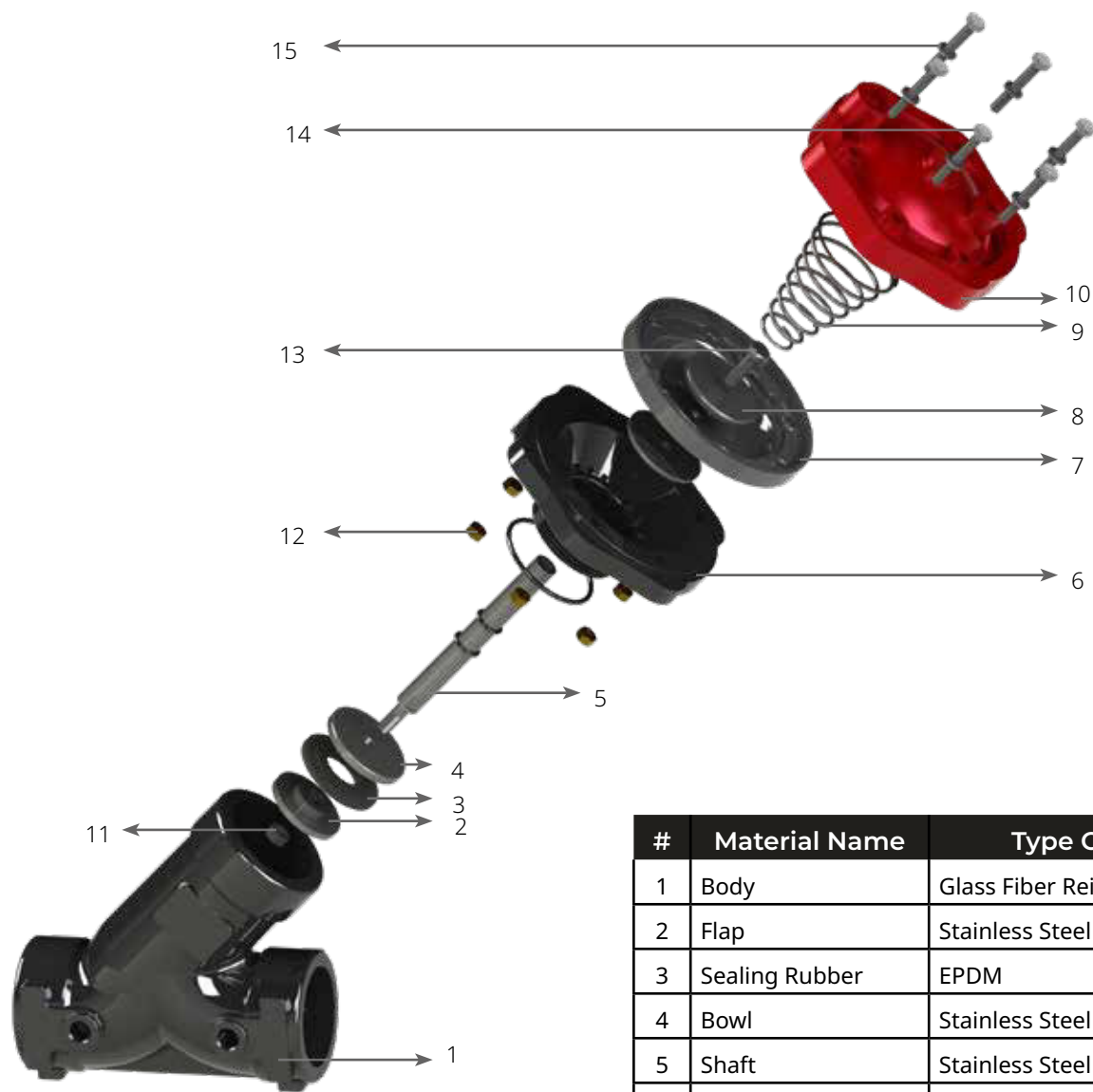
DN		L		h		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	Kg
2	50	6,49	165	1,49	38	8,86	225	3,86	1,75
¾	20	5,31	135	1,02	26	5,23	133	2,09	0,95
1	25	5,31	135	1,02	26	5,23	133	2,20	1
1¼	32	5,31	135	1,14	29	5,23	133	2,31	1,05
1½	40	8,78	165	1,49	38	8,86	225	3,86	1,75
2	50	6,49	165	1,49	38	8,86	255	3,86	1,75



Working Temperature: Maximum 80°C

Working Pressure: Maximum 12 Bar

Plastic Hydraulic Control Valve



#	Material Name	Type Of Material
1	Body	Glass Fiber Reinforced Polyamide
2	Flap	Stainless Steel
3	Sealing Rubber	EPDM
4	Bowl	Stainless Steel
5	Shaft	Stainless Steel
6	Bottom Cover	Glass Fiber Reinforced Polyamide
7	Diaphragm	Natural Rubber
8	Diaphragm Support	Stainless Steel
9	Spring	Stainless Steel
10	Top Cover	Glass Fiber Reinforced Polyamide
11	Nut	Stainless Steel
12	Nut	Brass
13	Bolt	Stainless Steel
14	Bolt	Stainless Steel
15	Washer	Stainless Steel

Dimensions and Weights

DN		L		h		H		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	Lbs	Kg
2	50	6,49	165	1,49	38	8,86	225	3,86	1,75

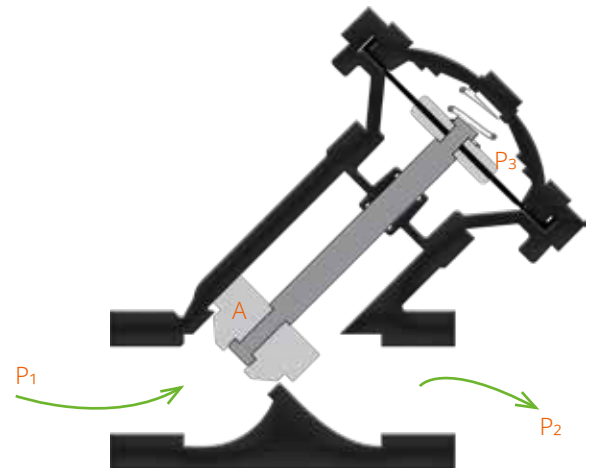
## Plastic Hydraulic Control Valve

### Working Principles

They are automatic control valves with double chamber diaphragm actuators, which are used to perform hydraulically desired operations with line pressure without the need for energy sources in the network line.

P<sub>1</sub>: Inlet Pressure  
P<sub>2</sub>: Outlet Pressure  
P<sub>3</sub>: Actuator Pressure

P<sub>spring</sub>: Spring Force  
A: The Valve's Influence



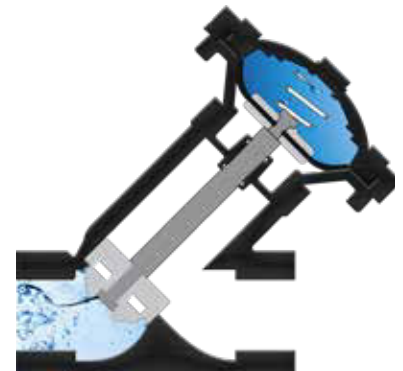
### Valve Closing Mode

When the pilots on the main control valve bring the inlet pressure (P<sub>1</sub>) above the diaphragm, the water creates hydraulic force. Though to this force, the valve flap fits into the body bushing and ensures the valve to be closed in a fully sealed manner.

If the forces are examined in closing mode ;

$$P_3 \times 3A + P_{\text{Spring}} > P_1 \times A$$

Inequality is achieved. If there is no external influence on the area indicated by the P<sub>3</sub> pressure, the P<sub>3</sub> pressure will be equal to the maximum P<sub>1</sub> pressure.



### Valve Opening Mode

The inlet pressure of the main control valve is provided to open the valve by overcoming the spring force that helps the closing process and the force created by the pressure P<sub>3</sub> on the diaphragm.

If the forces are examined in opening mode ;

$$P_1 \times A > P_{\text{Spring}} + P_3 \times 3A$$

Inequality is achieved. As the area indicated by the pressure P<sub>3</sub> is evacuated, the differential pressure becomes 0. Thus, P<sub>1</sub>xA force is overcome by spring force and the valve is opened. Spring force determines the minimum opening pressure that enables the valve to open.



### Modulation Mode

The pilots on the main control valve constantly control the pressure of the fluid and enable it to operate in modulation mode.

If the forces are examined in modulation mode ;

$$P_1 \times A + P_2 \times 3A = P_3 \times 3A + P_{\text{Spring}} + P_2 \times A$$

Equality is achieved. The pilot valve, which enables the valve to operate in modulation mode, regulates the pressures of P<sub>2</sub> and P<sub>3</sub>, providing force equality. Thus, the valve operates in modulation mode.















**Her  
Fabrika** Bir  
Kaledir\*

*H. Otatürk*



\*Every factory is a fortress

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