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500 Series
Plastic Hydraulic Control Valves

Agricultural Irrigation • Landscape Irrigation

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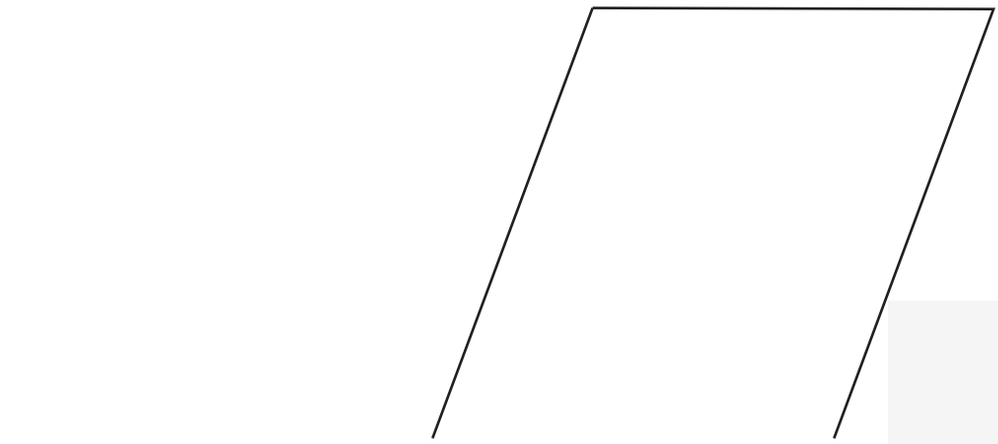

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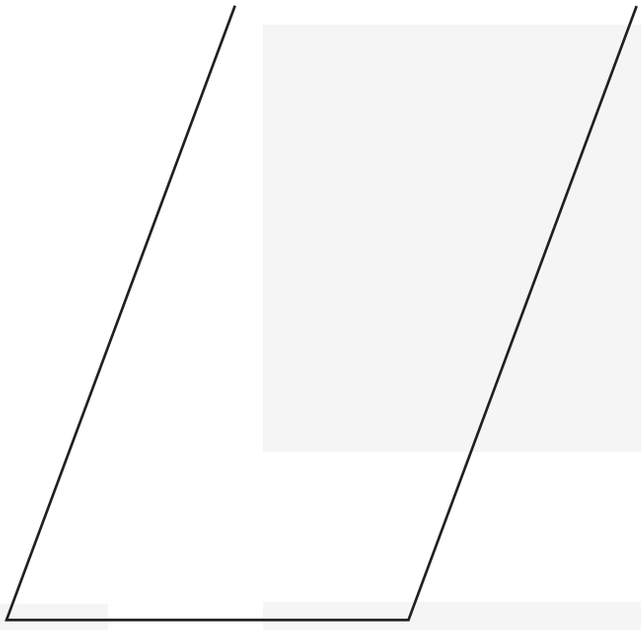

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GENERAL DESCRIPTION

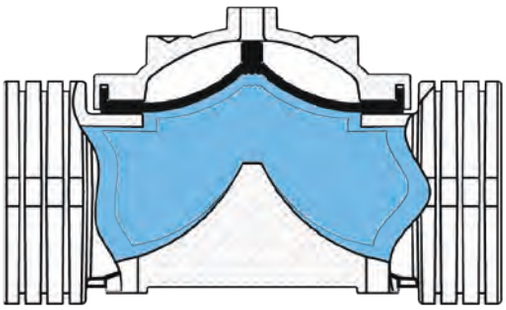
Asbiṛ 500 series valves are direct diaphragm closing automatic hydraulic control valves which work with line pressure. They ensure easy and smooth flow with minimum pressure losses thanks to excellent design of valve body and diaphragm. No wearable parts such as stem, bearing and seat exist in main valve body, valve life is much longer than other competitor valves. Only movable part of valve is the valve diaphragm. Asbiṛ 500 series hydraulic control valves are designed so that it can be used in potable water force network, agricultural irrigation, filtration, industrial applications by even an unskilled personnel.

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 Glass Reinforced Polyamide material
- Wide control application range by using different pilot valves
- Operation in both horizontal and vertical positions in application areas

OPERATING PRINCIPLES

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



A

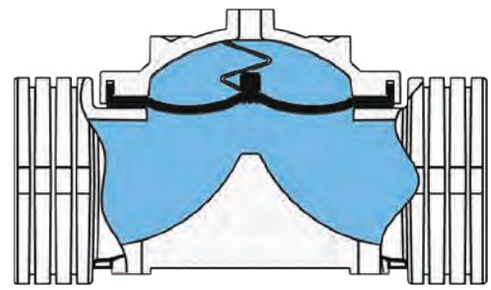
Valve Opening Mode

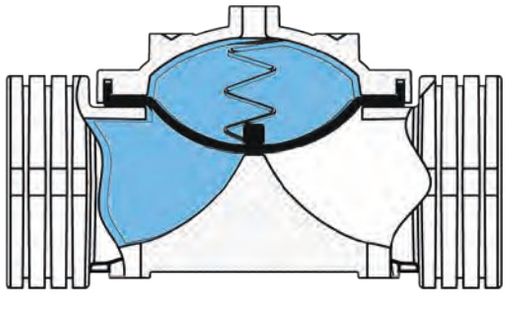
When pilot valve located on main valve being in closed position is brought into relief position, pressurized water within control chamber on main valve diaphragm is released. When line pressure (P1) reaches to a value which will overcome spring force, water carries valve to fully open position by applying a hydraulic force 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 modulation mode by controlling pressure of fluid within main valve actuator (control chamber).

B





C

Valve Closing Mode

When the pilot valves on the main valve transfers the upstream water pressure to valve actuator (control chamber), water in the control chamber creates a hydraulic force on the valve diaphragm. This pressure force combined with extra force applied by inner spring, ensures that valve will be closed with full tightness.

TECHNICAL SPECIFICATIONS

PRESSURE RANGE	Standard	0.7-10 bar (10-145 psi)
CONNECTION	Standard	Threaded (BSP or NPT)
		Flanged (ISO-ANSI)
HYDRAULIC CONNECTIONS	Standard	Reinforced Nylon Hydraulic Pipe
ACTUATOR TYPE	Standard	Diaphragm Closing Type with Single Control Chamber and Diaphragm Actuator

Maximum operating temperature:
60°C (140°F)

AVAILABLE MODELS

MODELS		55		57	
	FEATURES				
	CONNECTION	Threaded		Flanged	
	MATERIAL	Glass Reinforced Polyamide		Glass Reinforced Polyamide	
	BODY TYPE	Globe		Globe	
	MAXIMUM WORKING PRESSURE	10 bar (145 psi)		10 bar (145 psi)	
	AVAILABLE SIZES	inch	mm	inch	mm
		1 ½"	Ø40	4"	Ø100
		2"	Ø50		
		2 ½"	Ø65		
		3"	Ø80		
		4"	Ø100		

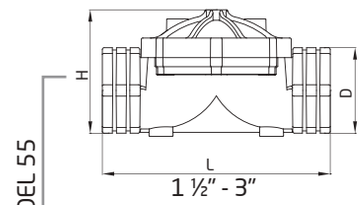

1 ½" - 3"

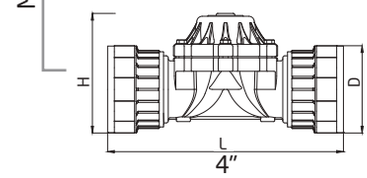

4"

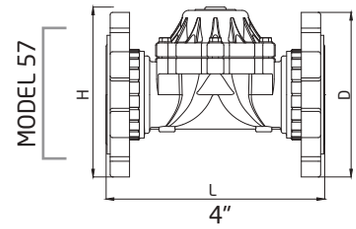

4"

DIMENSIONS

DN		D		L		H	
inch	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**
1 ½"	40	2 ½"	62	7 ⅞"	200	4 ⅜"	110
2"	50	3"	75	7 ⅞"	200	4 ⅜"	110
2 ½"	65	3 ¾"	95	9 ⅞"	250	5 ⅜"	138
3"	80	4 ¼"	109	9 ⅞"	250	5 ⅝"	145
4" (55)	100	5 ¼"	135	13 ⅞"	350	7"	180
4" (57)	100	9"	230	11"	280	9"	230







HYDRAULIC PERFORMANCE CHART

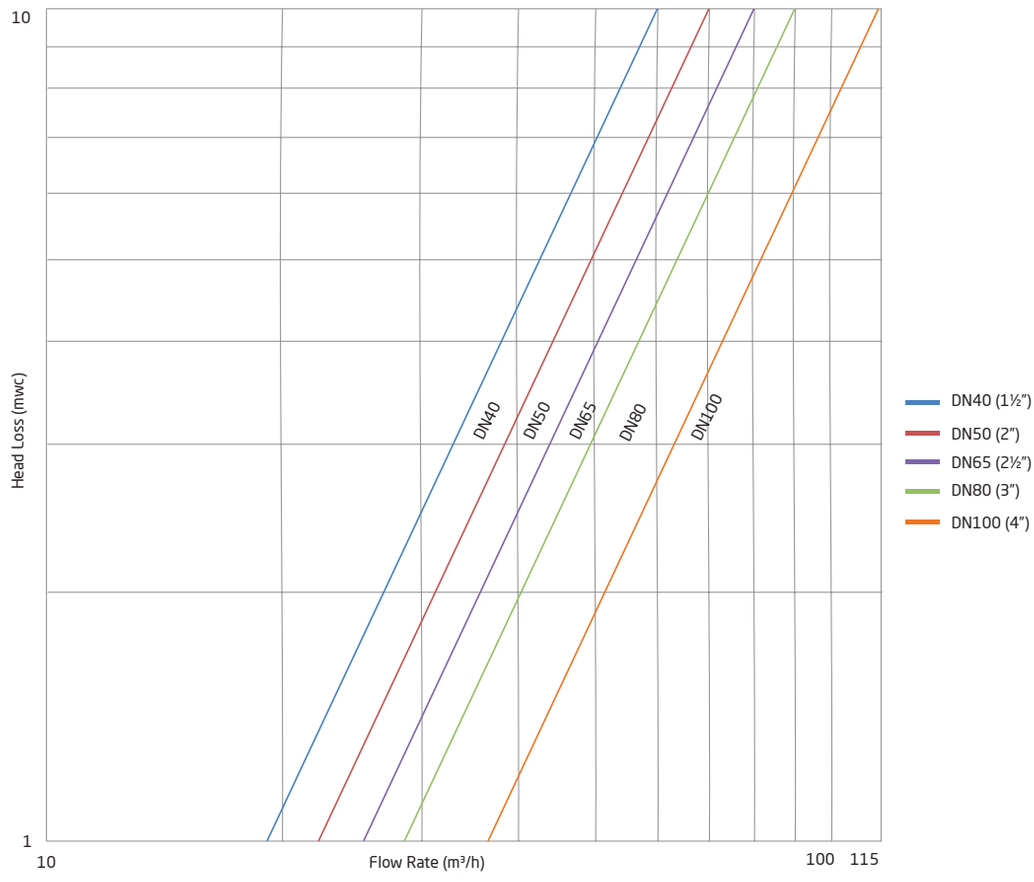
Valve Size	mm	40	50	65	80	100
	inch	1 ½"	2"	2 ½"	3"	4"
Kv	m³/h @ 1 bar	60	70	80	90	115
Cv	gpm @ 1 psi	70	85	95	105	135
Max. Flow Continuance	m³/h	30	40	65	75	100
Max. Flow Intermittent	m³/h	45	55	95	110	145

Kv: Valve Flow Coefficient (fluid passing under 1 bar pressure difference in m³/h @ 1 bar)
Cv: Valve Flow Coefficient (fluid pas sing under 1 bar pressure difference in gpm @ 1 bar)
Q : Flow Rate (m³/h, gpm)
ΔP: Head Loss (bar, psi)
G: Specific weight of water (1.0 for water)

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

Cv=1,155 Kv

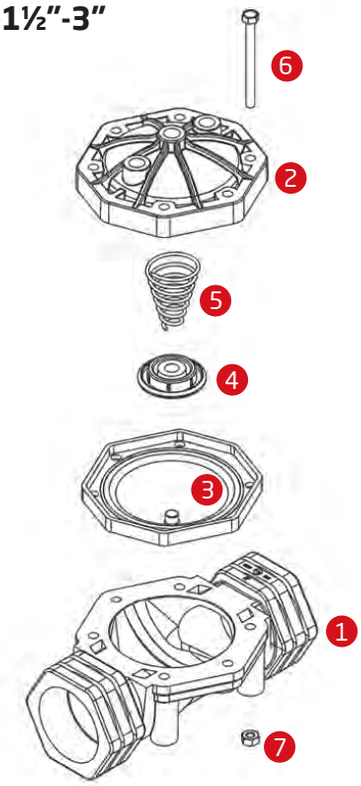
HEAD LOSS CHART



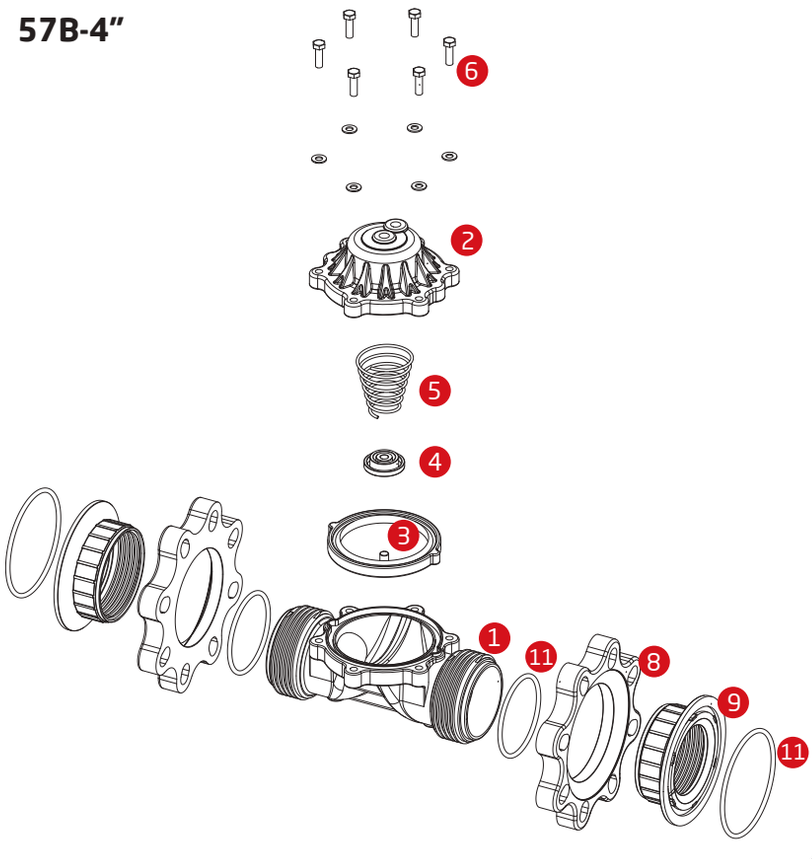
MAIN PARTS

	NO	PART NAME	MATERIAL
MAIN PARTS	1	Body	Glass Reinforced Polyamide
	2	Bonnet	Glass Reinforced Polyamide
	3	Diaphragm	Natural Rubber
	4	Spring Thrust Ring	Glass Reinforced Polyamide
	5	Spring	SST302
	6	Bolt	SST304
	7	Nut	Brass
	8	Flange	Glass Reinforced Polyamide
	9	Flange Adapter	Glass Reinforced Polyamide
	10	Thread Adapter	Glass Reinforced Polyamide
	11	O-ring	NBR

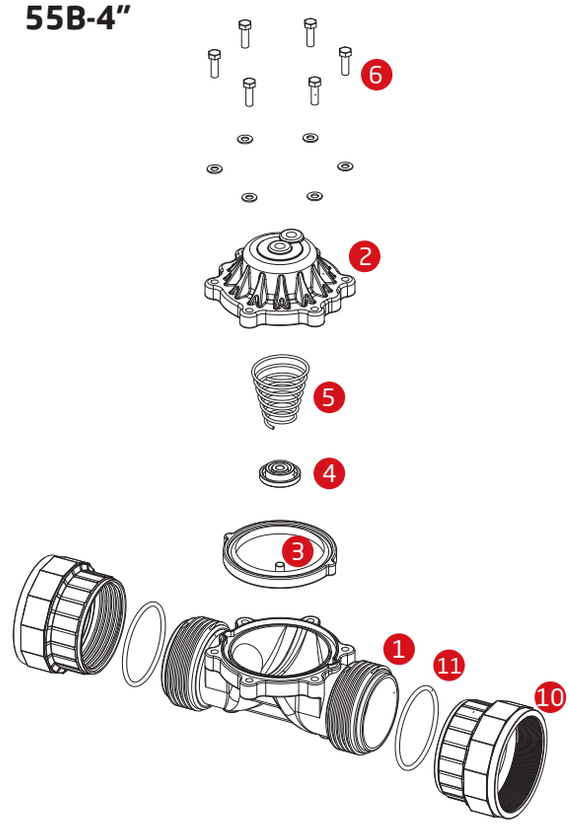
55B-1½"-3"



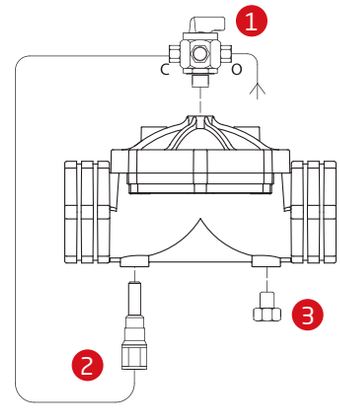
57B-4"



55B-4"



M **MANUAL** CONTROL VALVE



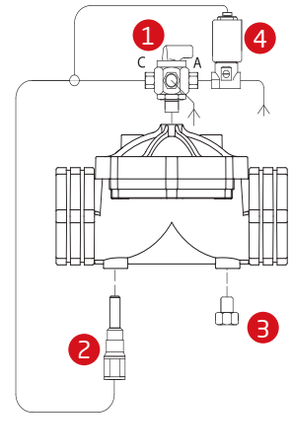
DESCRIPTION

Asbir "M" model valve is the hydraulic control valve operated by line pressure and designed to ensure opening/closing process by means of a 3-way selector valve. Minimum opening pressure of valve is 0.7 bar. Thanks to its flexible diaphragm, it makes easy and fast control process in high pressure applications and is closed as fully tight without causing surge. It may be used in different applications by adding different pilot valves on its main body.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. In-line Finger Filter
3. Plug

EL **SOLENOID** CONTROLLED VALVE



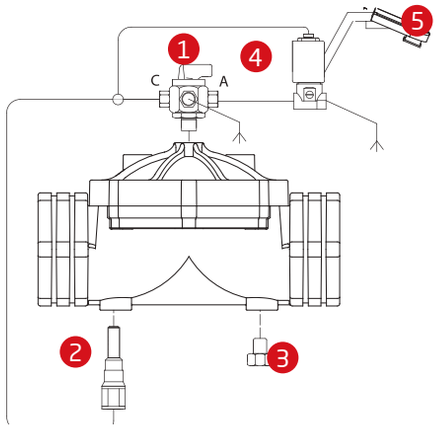
DESCRIPTION

Asbir "EL" model valve is the hydraulic control valve operated by line pressure and designed to ensure opening/closing process by means of built in 3-way solenoid pilot valve controlled remotely with electric signal. Electric signal for solenoid pilot valve is ensured by means of a control device, time relay, main switch and PLC control units etc. Opening/Closing process may be realized easily thanks to manual control on solenoid pilot valve. Depending on requirements. 24V AC 50Hz/60Hz or 12V DC, 9V Latch and 12V DC Latch normally open (N.O.) or normally closed (N.C.) solenoids coils may be used on main valve.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. In-line Finger Filter
3. Plug
4. Solenoid Pilot Valve

ELECTRIC CONTROL VALVE + CONTROL DEVICE (1 OUTLET) EL/C



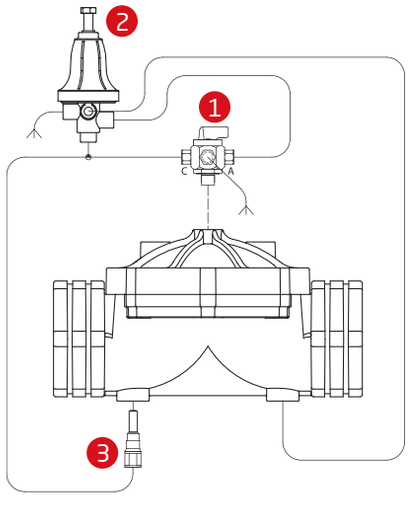
DESCRIPTION

Asbir "EL/C" model valve is the hydraulic control valve operated by line pressure and designed to ensure opening/closing process by means of built in solenoid pilot valve controlled remotely with electric signal at required time or required duration. Electric signal for solenoid pilot valve is ensured by means of a control device, time relay, main switch and PLC control units etc. Opening/Closing process may be realized easily thanks to manual control on solenoid pilot valve. Depending on requirements. The controller irrigates in cycles, during a window of time according to your needs.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. In-line Finger Filter
3. Plug
4. Solenoid Pilot Valve
5. Controller

PRESSURE REDUCING CONTROL VALVE PR



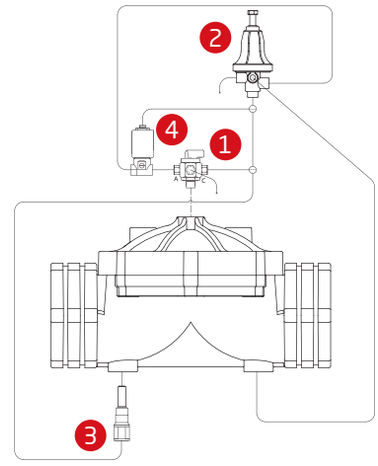
DESCRIPTION

Asbir "PR" model pressure reducer control valve is the hydraulic control valve which reduces high upstream pressure value to desired lower pressure value by means of built-in pressure reducing pilot valves. Pressure reducer control valve controls downstream pressure value continuously and maintains it constant without being affected from flow rate and upstream pressure values. When no flow exists in the system, it closes itself automatically. When valve upstream pressure value, it is opened fully by itself. Valve may be used in vertical or horizontal positions in the system.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. Plastic Pilot
3. In-line Finger Filter

PREL SOLENOID CONTROLLED PRESSURE REDUCING VALVE



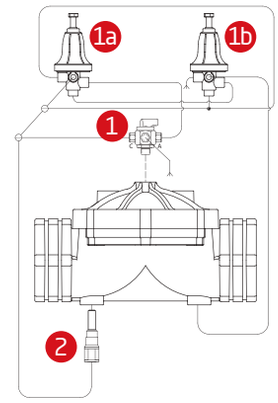
DESCRIPTION

Asbir "PREL" model pressure reducing valve is the hydraulic control valve which reduces high upstream pressure value into desired lower pressure value. Control of main valve is achieved by means of built-in solenoid pilot valves. Electric signal for solenoid pilot valves is ensured by means of a control device, time relay, main switch and PLC control units etc. Automated control may be easily ensured by this way in application systems.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. Plastic Pilot
3. In-line Finger Filter
4. Solenoid Pilot Valve

PRPS PRESSURE REDUCING AND SUSTAINING CONTROL VALVE



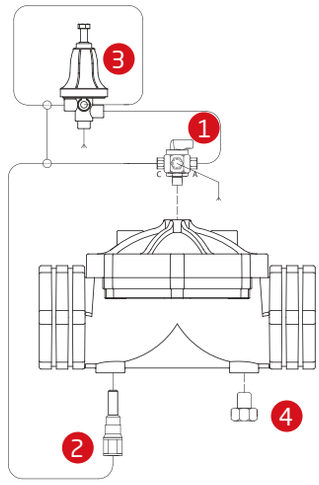
DESCRIPTION

Asbir "PRPS" model pressure reducing/sustaining hydraulic control valve reduces valve downstream pressure to desired value by sustaining upstream pressure. Two pilot valves exist on valve. Pilot valve on upstream side is the pressure sustaining pilot valve and sustains upstream pressure. Other pilot valve is pressure reducing pilot valve and keeps downstream pressure constant by reducing it to desired value. Reducing/sustaining control valve pumps fluid downwards; it ensures that system works within normal values by regulating over flow and high pressure in pumping systems. It controls upstream and downstream pressure continuously and keeps them within constant values.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. In-line Finger Filter
- 1a Plastic Pressure Sustaining Pilot
- 1b Plastic Pressure Reducing Pilot

QUICK PRESSURE RELIEF QR
CONTROL VALVE



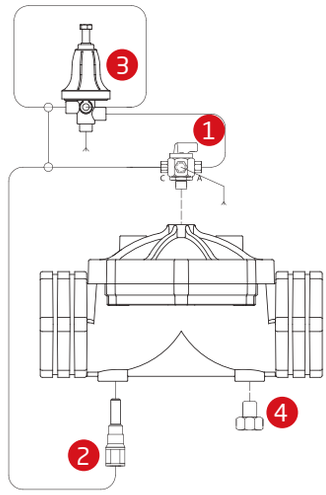
DESCRIPTION

Asbir "QR" model quick pressure relief valve is the safety control valve designed to protect system by releasing pressure surges in water network elevation lines to atmosphere quickly, which are caused by sudden changes in water speed due to pumps put into/out of service. When network pressure exceeds set point, valve opens by itself quickly and protects system by releasing over pressure. When line pressure decreases to normal level, it is closed slowly and automatically as fully tight without causing surge.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. In-line Finger Filter
3. Plastic Pilot
4. Plug

PRESSURE SUSTAINING PS
CONTROL VALVE



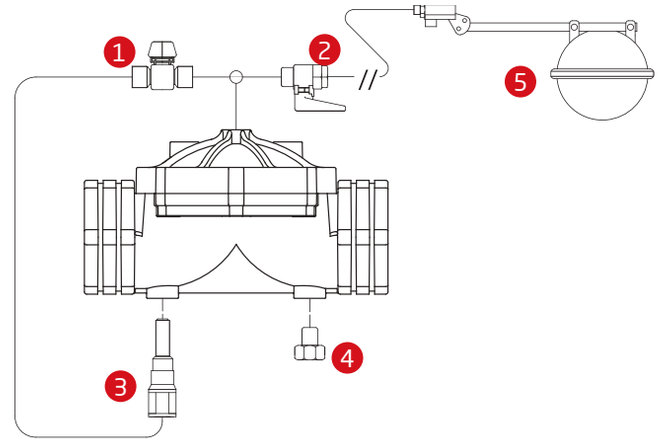
DESCRIPTION

Asbir "PS" model pressure sustaining hydraulic control valve maintains valve upstream pressure value constant. Valve is opened when line pressure reaches the preset pressure level. It ensures that pump motor within pumping systems will start without load. It also prevents positive pressure waves caused by pump during start-up. Valve controls upstream pressure value continuously and keeps it at a constant value without being affected from changes in flow rate. When no flow exists, it closed by itself fully tight.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. In-line Finger Filter
3. Plastic Pilot
4. Plug

FL FLOAT LEVEL CONTROL VALVE



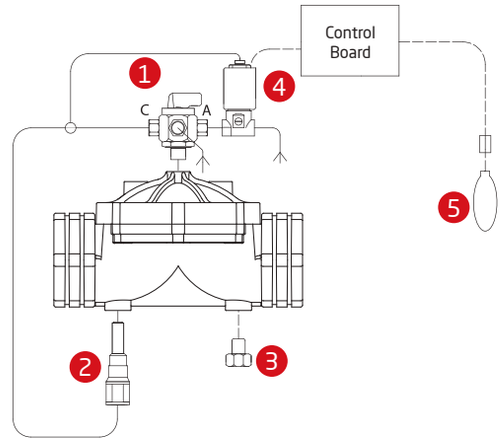
DESCRIPTION

Asbir "FL" model float level control valve is the hydraulic control valve designed to control water level in reservoirs and tanks continuously. Main valve is controlled by 2-way modulating type float pilot valve or manually. Main valve mounted on upstream of a reservoir or tank is closed as fully sealed without causing surge when water level reaches to maximum level. Valve opening/closing speed may be adjusted. It may be used in the system by mounting in horizontal or vertical orientations.

CONTROL SYSTEM COMPONENTS

1. Needle Valve
2. Ball Valve
3. In-line Finger Filter
4. Plug
5. Float

FLEL ELECTRIC FLOAT LEVEL CONTROL VALVE



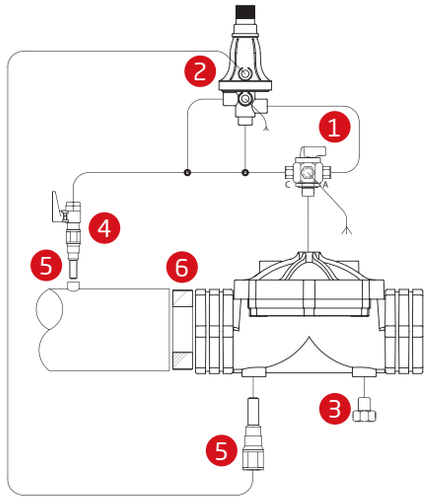
DESCRIPTION

Asbir "FLEL" model electrical float level control valve is the hydraulic control valve designed to control water level continuously by means of electrical float placed in reservoirs and tanks. Electrical float sends signal to solenoid coil on main valve when water level decreases below set level. Main valve is opened and ensures that tank or reservoir will be filled permanently. When water reaches maximum level, electrical float sends signal to solenoid coil again and main valve is closed as full sealed. Valve may be used in the system by mounting horizontal or vertical positions.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. In-line Finger Filter
3. Plug
4. Solenoid Pilot Valve
5. Electric Float Switch

FLOW RATE CONTROL VALVE FR



DESCRIPTION

Asbir "FR" model flow rate control valve is designed to limit desired flow rate. The orifice on main valve upstream creates pressure difference and 3/way differential pressure set pilot mounted in control chamber of valve senses this pressure difference and ensures that main valve opens in desired flow rate. Valve thereby limits desired flow rate automatically and keeps it fixed. It eliminates over flow by preventing excessive flow during reverse washing in filtration systems.

CONTROL SYSTEM COMPONENTS

1. 3- way selector valve
2. Plastic Pilot
3. Plug
4. Ball Valve
5. In-line Finger Filter
6. Orifice Plate

PLASTIC AIR VALVE PAV

DESCRIPTION

Asbir "PAV" model has been designed for an efficient discharge of large air volumes from small water network systems, filters, tanks, and other devices where trapped air may impair the system's operation. The valve is appropriate for:

- Expelling the air at high flow velocity during the initial filling of the systems
- Introducing air when the pipe drains, maintaining atmospheric pressures in the pipe, preventing collapse and cavitation damage to the conduits
- Relieving the entrained air from the water, while the network is pressurized

SPECIFICATIONS

- The valve, with its unique Y-shaped duct, allows the discharge and the introduction of air. Its aerodynamic performance is superior to competitor valves of the same diameter.
- The aerodynamic design of the float provides air flow at a very high velocity.
- The valve design contains a very limited number of parts, allowing easy dismantling for maintenance.
- The float does not close before the water has reached the valve.

Automatic Air Valve: ½", ¾", 1", 2"
Kinetic Air Valve: ¾", 1", 2"
Conection Standards: Threaded (BSP or NPT)

HYDRAULIC CONTROL VALVES

800 SERIES

Asbir 800 series automatic hydraulic control valves are designed in the "Y" body model type so as to show maximum resistance to cavitation under minimum head loss in high flow rates. Asbir 800 series automatic hydraulic control valves are double-chamber diaphragm actuated and disc closed type. Valve has a standard double control chamber.

Available Sizes: 2" (50 mm) - 16" (400 mm)
Available Connection Types: Flanged
Available Pressure Norms: PN16 - PN25 - PN40

600 SERIES

Asbir 600 series 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.

Available Sizes: 1½" (40 mm) - 12" (300 mm)
Available Connection Types: Threaded, Flanged, Grooved End
Available Pressure Norms: PN10 - PN16 - PN25




BACK FLUSHING VALVES

Backflushing control valves are the 3-way control valves which are operated by line pressure or an external pneumatic pressure. Valve works in filtration and back flushing mode as coordinated with filter elements in the system.

Available Sizes: 2" (50 mm) - 4" (100 mm)
Available Connection Types: Threaded, Flanged, Grooved End

AIR COMBINATION VALVE

AIR COMBINATION VALVES - AAV SERIES

Asbir AAV Series Automatic Air Release Valves are the valves that operate with line pressure. Asbir AAV Series Automatic Air Release Valves are the air valves that provide the venting of the air during filling and preventing of vacuum by taking air into the installation during emptying, releasing of the air that accumulates in the installation during active operation with the help of pressure and that operates in automatic manner.

Available Sizes: 2" (50 mm) - 8" (200 mm)
Available Connection Types: Flanged

MECHANICAL VALVES

RESILIENT SEATED GATE VALVES-F4

Valve is closed or opened by moving wedge upward or downward via threaded stem mounted in the body. Wedge is rubber coated and It is not used as a check valve and flow rate adjustments.

Available Sizes: 2" (50 mm) - 24" (600 mm)
Available Connection Types: Flanged

STRAINERS

Strainer is the installation equipment which separates dirt, sediments and various foreign substances which may exist in the fluid (cold water, hot water, superheated water and steam) physically thanksto its filter and prevent them to damage other equipment in installation. Strainers are used to protect equipments such as pumps, water counters and automatic check valves form foreign matters by being mounted on intake side of this equipment.

Available Sizes: 2" (50 mm) - 16" (400 mm)
Available Connection Types: Flanged

CHECK VALVES

Swing check valve permits that water passes toward flow direction and prevents water flow in counter direction. It is manufactured in such a way that it will be closed by its own weight or by a weight mechanism. It is used in especially pumping plants to prevent back flow in case pump becomes out of service. It may be used in hot and cold water plants and with each kind of acid free gases and liquids.

Available Sizes: 2" (50 mm) - 8" (200 mm)
Available Connection Types: Flanged

ALARM CHECK VALVES

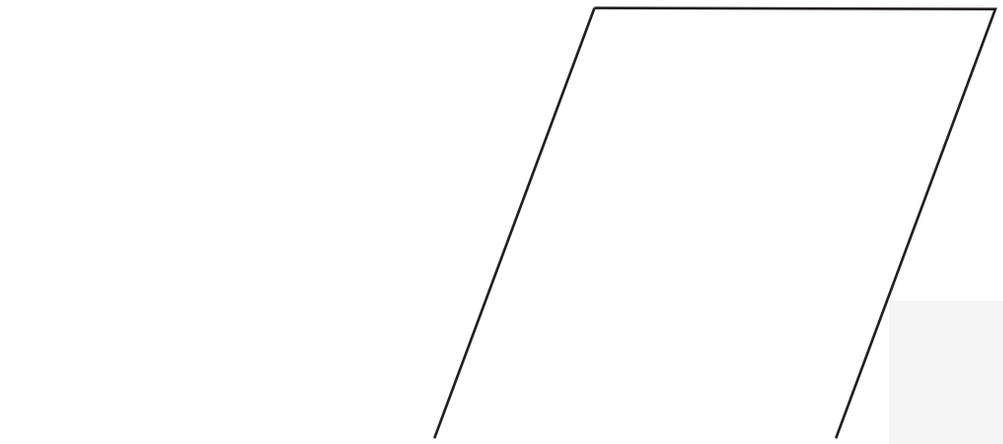
Asbir FCV Alarm Check Valve is designed for wet applications where the water has no the danger of frost. The pressurized water which is inside of the pipe-line is discharged by sprinklers because of fire situation. When the discharged pressurized water system is supporting continuously, retard chamber is being full. Then, the pressure switch on the retard chamber is actuated. The pressure switch sends alarm information to fire warning system or the automation system. After the pressure switch is actuated, the water is delivered to the gong and releases a mechanical alarm.

Available Sizes: 2½" (65 mm) - 8" (200 mm)
Available Connection Types: Flanged

OS&Y GATE VALVES - NRS GATE VALVES

OS&Y Valve is a type of gate valve which is able to follow the opening/closing position by moving the stem up&down movement, is able to follow electronically the movement by adding a monitoring key, and full open position does not disrupt the flow. OS&Y Valve generates low head loss according to butterfly valves. Valve is closed or opened by moving wedge upward or downward via threaded stem mounted in the body. Wedge is rubber coated and It is not used as a check valve and flow rate adjustments.

Available Sizes: 2" (50 mm) - 8" (200 mm)
Available Connection Types: Flanged



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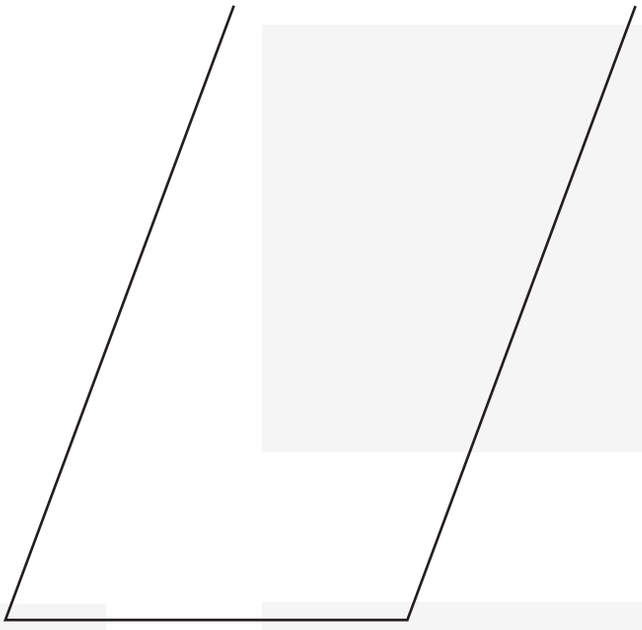

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