



DAVINCI TECHNICAL DATA GUIDE

AUTOMATIC VALVES

CONTROL VALVES

Ref. 180A-VI/ PN 10-16-25



Applications

Clean and pretreated water
Fire protection systems
Irrigation networks
Tank level control
Water distribution

Approvals/Standards

Pressure tests acc. to EN 12266-1 Rate A. GB/T 13927-1992
Pressure tests: Body: 1,5 x PN. Seat 1,1 x PN.
Flange connections: EN 1092-2 PN10-16-25
Face to face dimensions: EN558-1 Series 1
Manufacture according to: EN 1074-5
EU directive 2014/68/EU:
Products excluded, article 1, § 2b up to DN300. Risk Category I MoD. A from DN350 to DN600



Certificates

CE, WRAS

Range

DN50-800, PN10-16-25



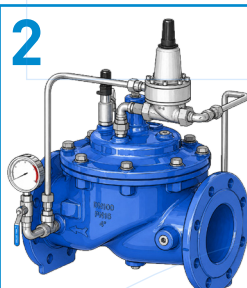
AUTOMATIC CONTROL VALVE RANGE

Overview of functions and configurations

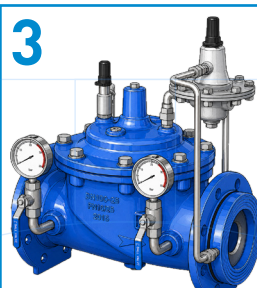
1 FLUID CONTROL



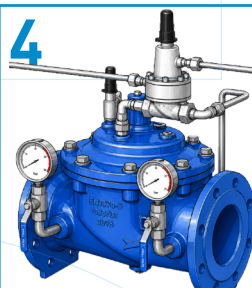
1 Pressure reducing
Maintains constant downstream pressure



2 Pressure relief
Relieves excess upstream pressure



3 Flow control
Limits flow to a preset flow rate

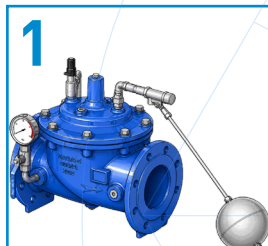


4 Pressure differential
Maintains a preset differential pressure

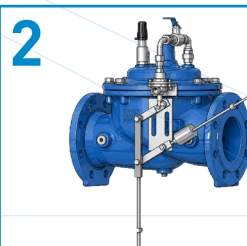


5 Pressure sustaining
Maintains minimum upstream pressure

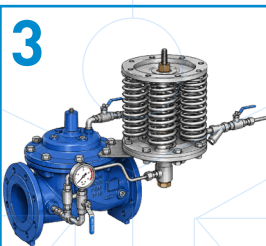
2 LEVEL CONTROL



1 Remote float
Maintains the water level in a tank



2 Bi-level control
Maintains preset tank level range

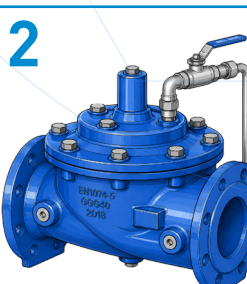


3 Altimetry
Maintains the water level in a high tank

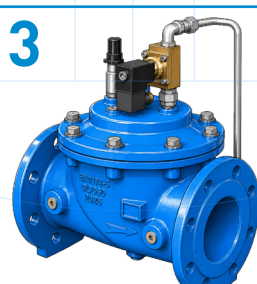
3 NETWORK PROTECTION



1 Surge anticipation
Protects against water hammer



2 Hydraulic check
Non-slam check valve with controlled closing



3 Solenoid control
Provides remote fail-safe valve control

Other functions and customized solutions are available upon request to suit specific application requirements.



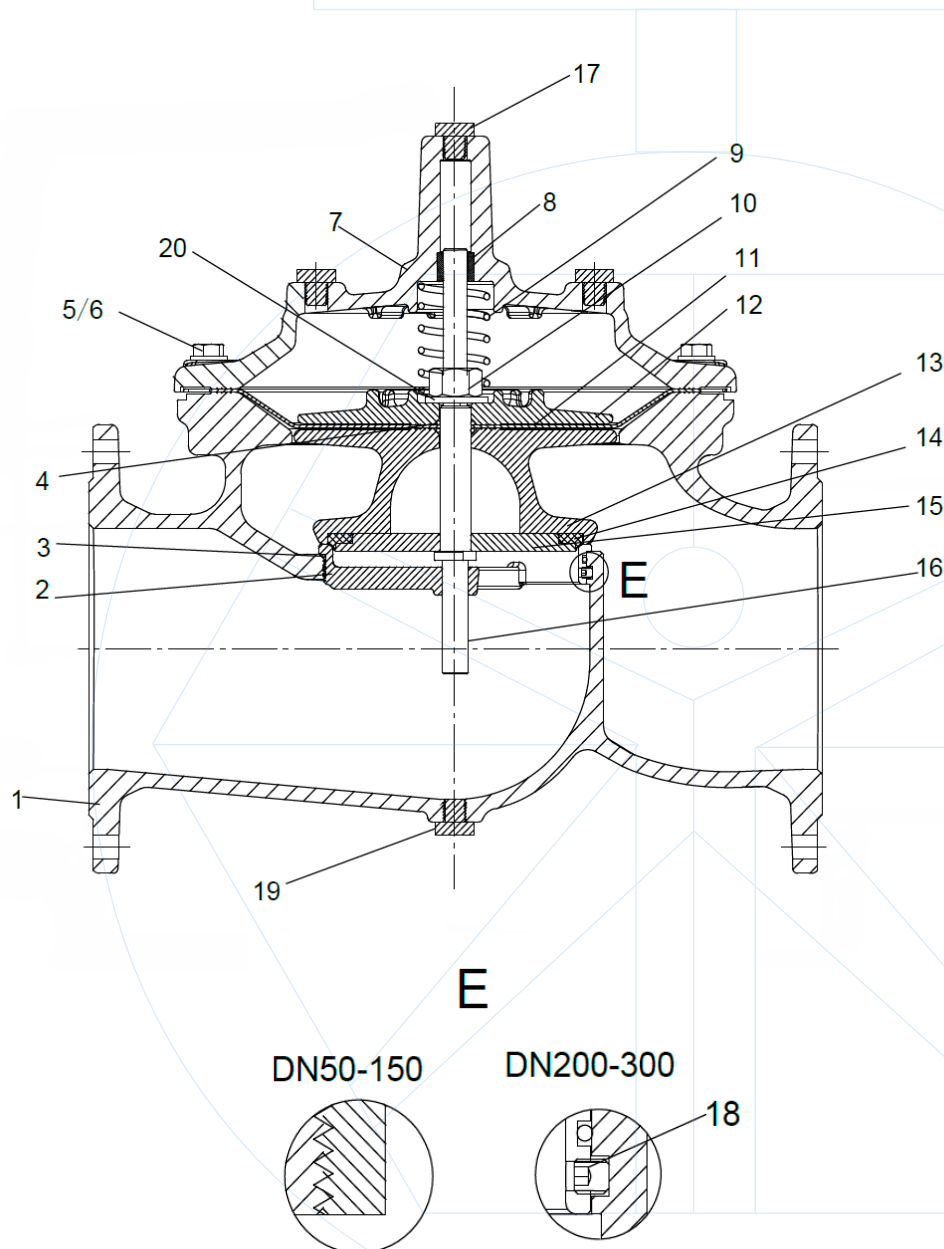
GENERAL CHARACTERISTICS

Sizes DN50 to DN800.
Piston type body.
Hydraulically operated and fully automatic.
Optional V-port trim for improved low-flow control and reduced cavitation risk.
WRAS epoxy paint 250 microns.

WORKING CONDITIONS

Pressure ratings: 1.0 Mpa, 1.6 Mpa and 2.5 Mpa.
Working temperature: -10°C + 80°C.
Flow media: Clean water.

MAIN VALVE COMPONENTS DN50-DN300

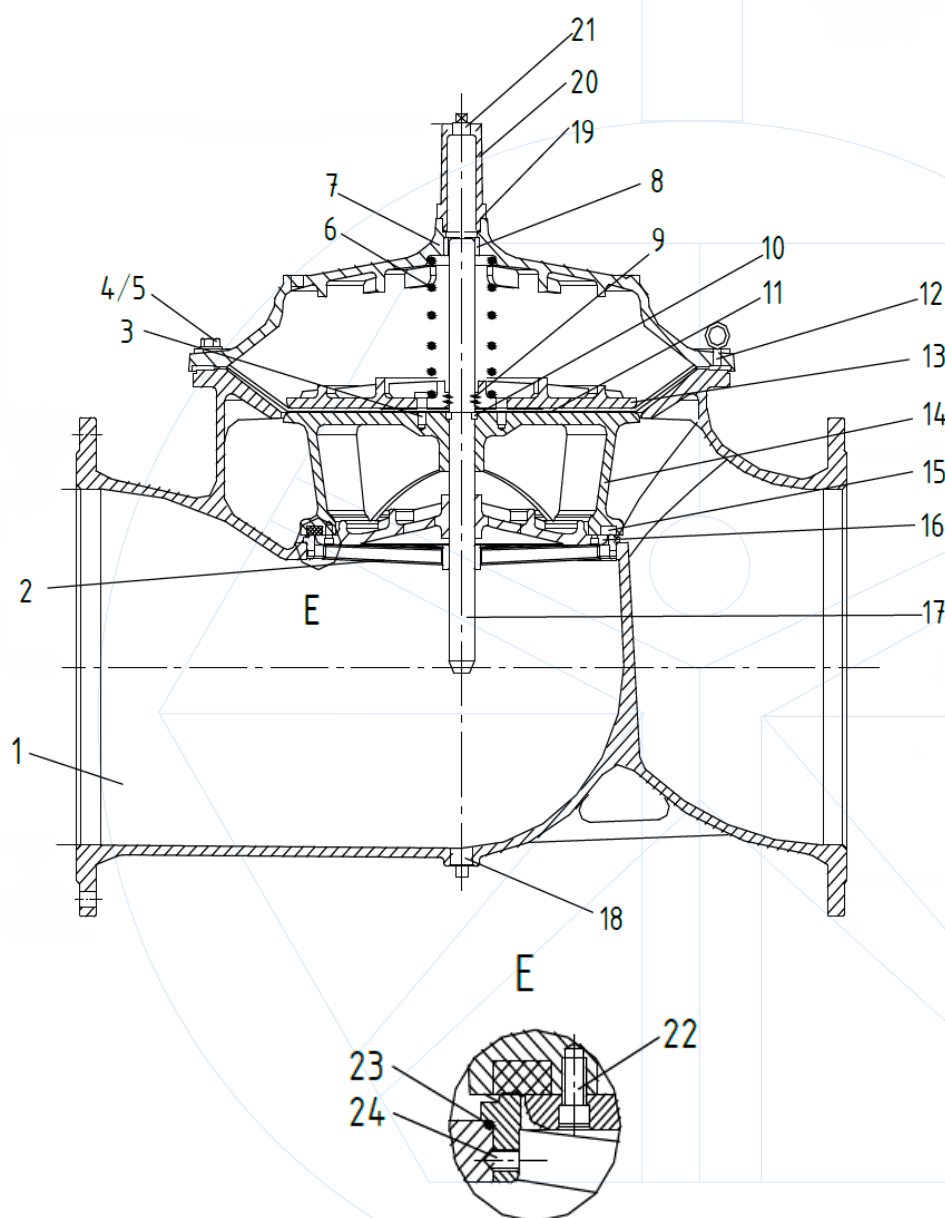


Nº	ITEM	MATERIAL
1	Body	GJS500-7
2	Seat	AISI 304 / 316
3	O-ring	NBR
4	O-ring	NBR
5	Bolt	A2 / A4
6	Washer	A2 / A4
7	Bonnet	GJS500-7
8	Bush	Brass
9	Spring	AISI 304 / 316
10	Locknut	A4
11	Diaphragm	EPDM + Nylon fabric
12	Fixing holder	GJS500-7
13	Disc holder	GJS500-7
14	Seal	EPDM
15	Seat retainer	AISI 304 / 316
16	Stem	AISI 304 / 316
17	Plug	AISI 304 / 316
18	Screw	A2 / A4
19	Plug	A2 / A4
20	Washer	A2 / A4
RAL 5015 Painting		Epoxy 250 µm

Components may be replaced with materials of equivalent or superior grade without prior notice, in accordance with our continuous improvement policy.

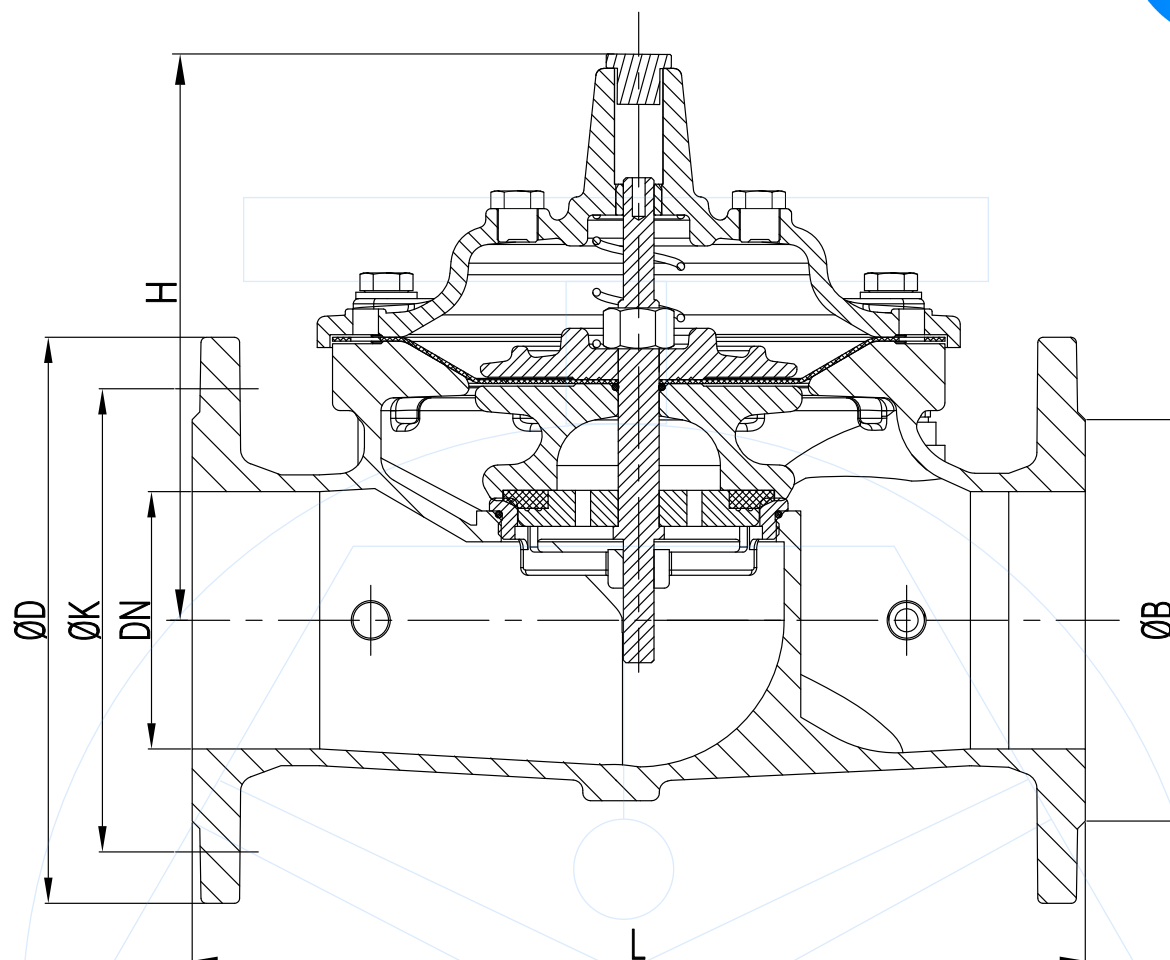


MAIN VALVE COMPONENTS DN400-DN800



Nº	ITEM	MATERIAL
1	Body	GJS500-7
2	Seat	AISI 304 / 316
3	Screw	A2 / A4
4	Screw	A2 / A4
5	Screw	A2 / A4
6	Spring	AISI 304 / 316
7	Bonnet	GJS500-7
8	Bush	Brass
9	O-ring	NBR
10	Fixing Washer	Brass
11	Diaphragm	EPDM + Nylon fabric
12	Eyebolts	Carbon steel
13	Fixing holder	GJS500-7
14	Disc holder	GJS500-7
15	Seal	EPDM
16	Seal retainer	GJS500-7
17	Stem	AISI 304 / 316
18	Plug	AISI 304 / 316
19	O-ring	NBR
20	Cap	GJS500-7
21	Plug	AISI 304 / 316
22	Bolt	A2 / A4
23	O-ring	NBR
24	Bolt	A2 / A4
RAL 5015 Painting		Epoxy 250 µm

DIMENSIONS



DN	L	H	D			K			N-d			B		
			PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
50	230	177	165			125			4-19			99		
65	290	202	185			145			4-19 8-19			118		
80	310	219	200			160			8-19 8-19			132		
100	350	243	220	235		180	190		8-19 8-23			156		
125	400	243	250	270		210	220		8-19 8-28			156		
150	480	333	285	300		240	250		8-23 8-28			211		
200	600	428	340	360		295	310	8-23	12-23	12-28		266	274	
250	730	478	405	425	350	355	370	12-23	12-28	12-31		319	330	
300	850	538	460	485	400	410	430	12-23	12-28	16-31		370	389	
400	1100	710	580	---	515	525	---	16-28	16-31	---		480	---	
450	1200	720	640	---	565	585	---	20-28	20-31	---		530	548	---
500	1250	822	715	---	620	650	---	20-28	20-34	---		582	609	---
600	1450	885	840	---	725	770	---	20-31	20-37	---		682	720	---
700	1650	910	910	---	840	840	---	24-31	24-37	---		682	720	---
800	1850	1260	1025	---	950	950	---	24-34	24-40	---		901	901	---

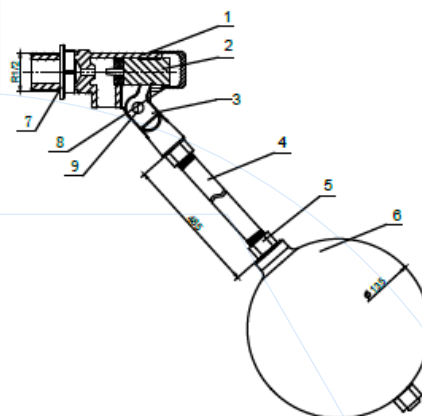
All dimensions are in millimeters.



P100 Float pilot

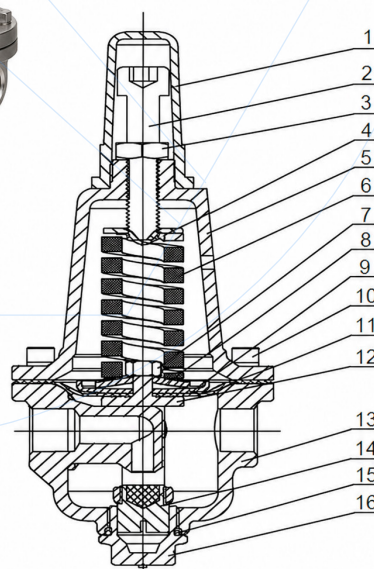


Nº	ITEM	MATERIAL
1	Body	AISI 304
2	Disc	AISI 304 + EPDM
3	Yoke	AISI 304
4	Rod	AISI 304
5	Nut	AISI 304
6	Float	AISI 304
7	Jam nut	AISI 304
8	Bonnet	AISI 304
9	Screw	AISI 304



P200 Reducing pilot

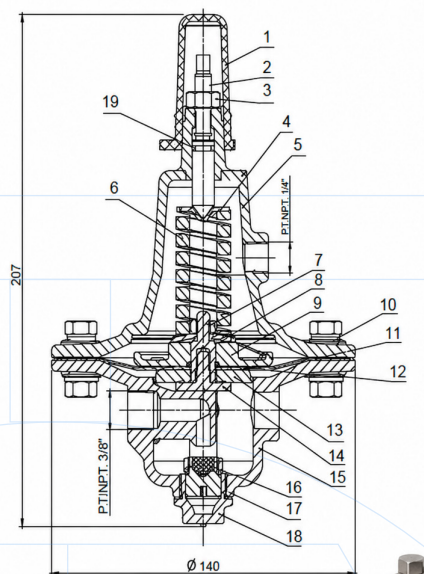
Nº	ITEM	MATERIAL
1	Cap	ABS
2	Adjusting screw	AISI 304
3	Jam nut	A2
4	Spring table	AISI 304
5	Bonnet	AISI 304
6	Spring	SiCrV
7	Nut	A2
8	Spring seat	Nickel plated steel
9	Fixing holder	AISI 304
10	Screw	A2
11	Diaphragm	EPDM + Nylon
12	Yoke	AISI 304
13	Body	AISI 304
14	Disc	AISI 304 + EPDM
15	O-ring	NBR
16	Plug	AISI 304





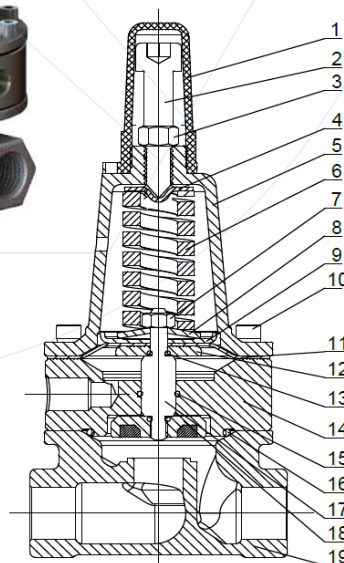
P400 Flow control pilot

Nº	ITEM	MATERIAL
1	Cap	ABS
2	Adjusting screw	AISI 304
3	Jam nut	A2
4	Spring table	AISI 304
5	Bonnet	AISI 304
6	Spring	SiCrV
7	Nut	A2
8	Spring seat	Nickel plated steel
9	Fixing holder	AISI 304
10	Screw	A2
11	Diaphragm	EPDM + Nylon
12	O-ring	NBR
13	Washer	AISI 304
14	Stem	AISI 304
15	Body	AISI 304
16	Disc	AISI 304 + EPDM
17	O-ring	NBR
18	Plug	AISI 304
19	O-ring	NBR



P500 Pressure relief / sustaining pilot

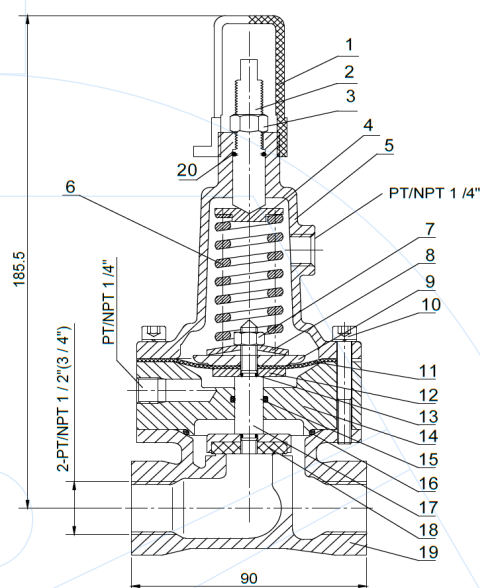
Nº	ITEM	MATERIAL
1	Cap	ABS
2	Adjusting screw	AISI 304
3	Jam nut	A2
4	Spring table	AISI 304
5	Bonnet	AISI 304
6	Spring	SiCrV
7	Nut	A2
8	Spring seat	Nickel plated steel
9	Fixing holder	AISI 304
10	Screw	A2
11	Diaphragm	EPDM + Nylon
12	Gasket	AISI 304
13	O-ring	NBR
14	Internal body	AISI 304
15	O-ring	NBR
16	O-ring	NBR
17	Stem	AISI 304
18	Disc	AISI 304 + EPDM
19	Body	AISI 304





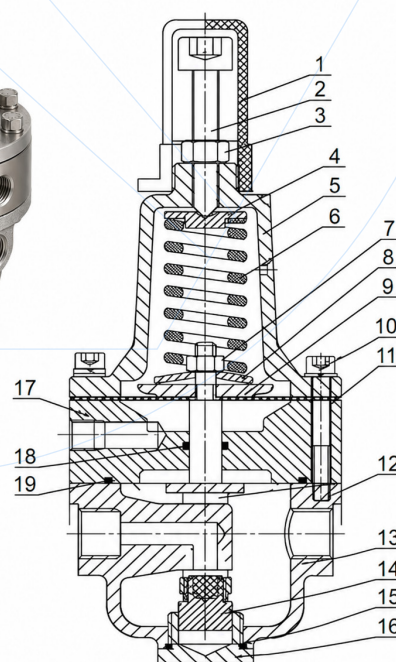
P800 Differential pressure pilot

Nº	ITEM	MATERIAL
1	Cap	ABS
2	Adjusting screw	AISI 304
3	Jam nut	A2
4	Spring table	AISI 304
5	Bonnet	AISI 304
6	Spring	SiCrV
7	Nut	A2
8	Spring seat	Nickel plated steel
9	Fixing holder	AISI 304
10	Screw	A2
11	Diaphragm	EPDM + Nylon
12	Washer	AISI 304
13	O-ring	NBR
14	Internal body	AISI 304
15	O-ring	NBR
16	O-ring	NBR
17	Disc	AISI 304 + EPDM
18	Body	AISI 304
19	O-ring	NBR



P20A Surge anticipation pilot

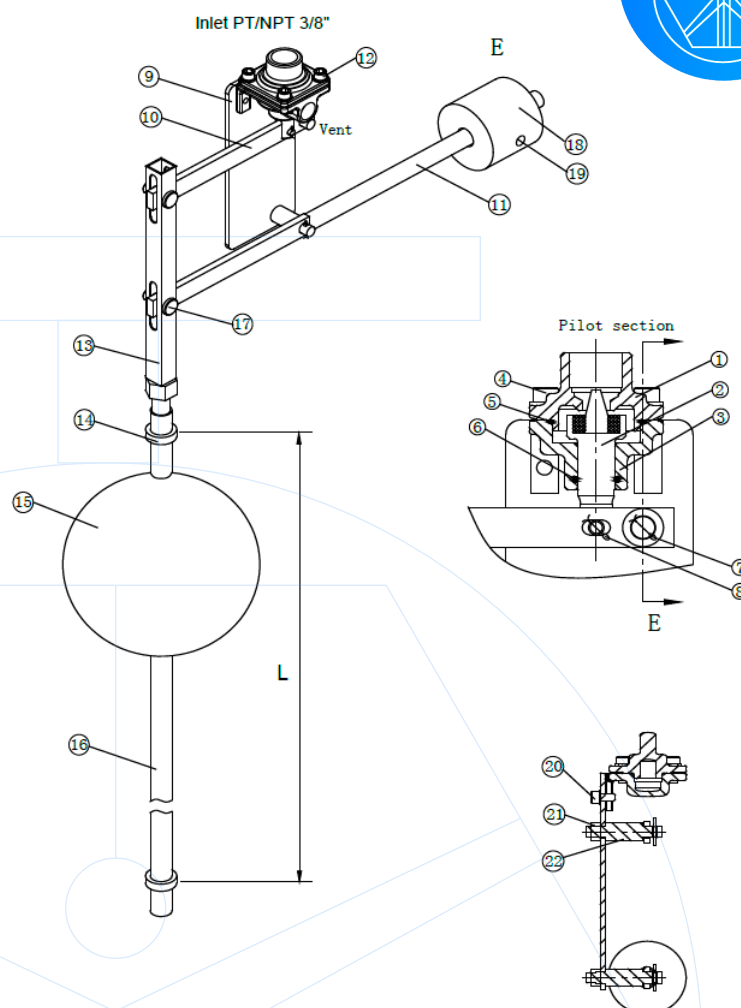
Nº	ITEM	MATERIAL
1	Cap	ABS
2	Adjusting screw	AISI 304
3	Jam nut	A2
4	Spring table	AISI 304
5	Bonnet	AISI 304
6	Spring	SiCrV
7	Nut	A2
8	Spring seat	Nickel plated steel
9	Fixing holder	AISI 304
10	Screw	A2
11	Diaphragm	EPDM + Nylon
12	Yoke	AISI 304
13	Body	AISI 304
14	Disc	AISI 304 + EPDM
15	O-ring	NBR
16	Plug	AISI 304
17	Internal body	AISI 304
18	O-ring	NBR
19	O-ring	NBR





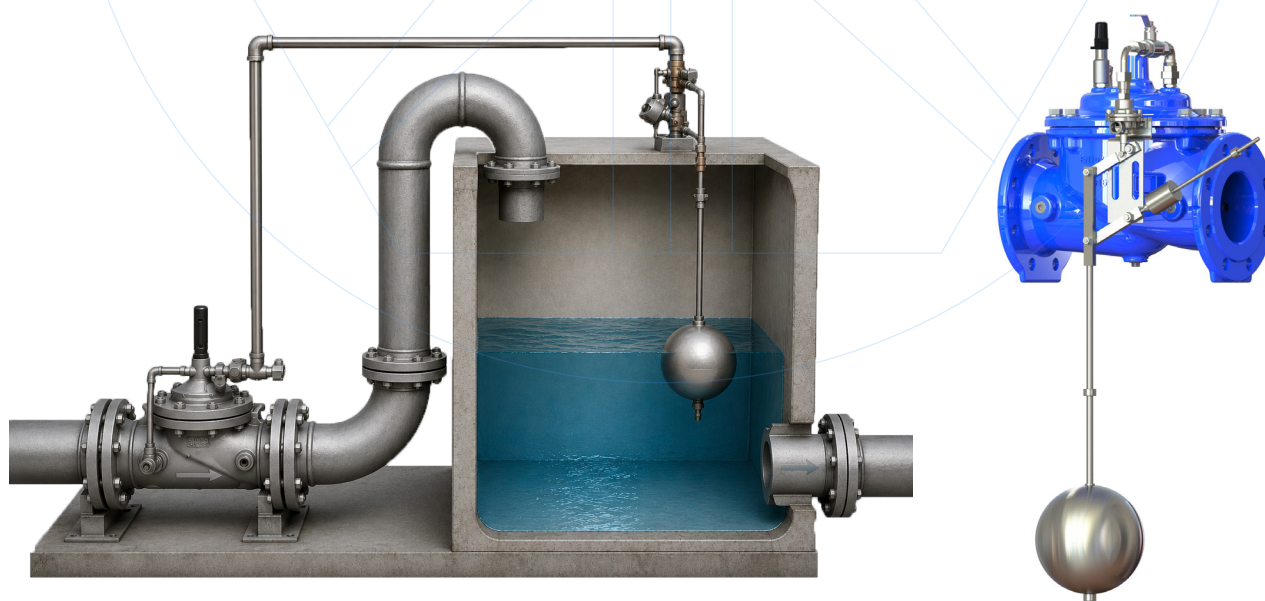
Bi-level pilot

Nº	ITEM	MATERIAL
1	Bonnet	AISI 304
2	Disc	AISI 304 + EPDM
3	Body	AISI 304
4	Bolt + washer	AISI 304
5	O-ring	NBR
6	O-ring	NBR
7	Split pin	AISI 304
8	Split pin	AISI 304
9	Plate	AISI 304
10	Bar 1	AISI 304
11	Bar 2	AISI 304
12	Screw	AISI 304
13	Upper rod	AISI 304
14	Stop collar	AISI 304
15	Float	AISI 304
16	Lower rod	AISI 304
17	Pin roll & split pin	AISI 304
18	Weight	AISI 304
19	Set screw	AISI 304
20	Nut + washer	AISI 304
21	Nut	AISI 304
22	Roller	AISI 304



BI-LEVEL REMOTE PILOT CONTROL

The bi-level float control valve is a hydraulically operated valve designed to maintain the water level between two preset limits. It opens when the water level falls to the preset low level and closes when the preset high level is reached.



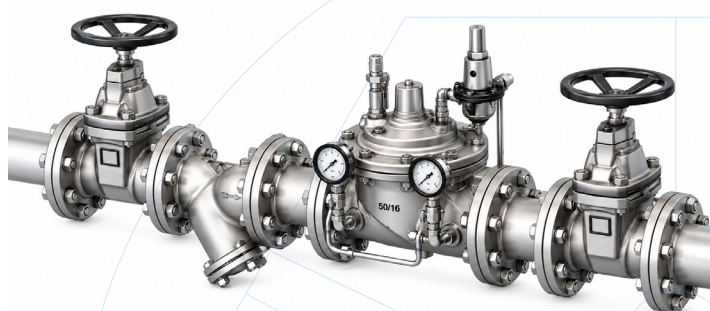
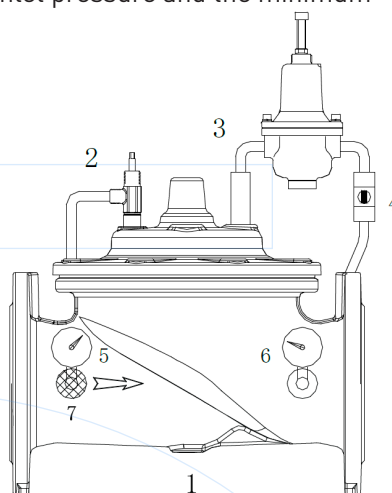
PRESSURE REDUCING

The pressure-reducing valve maintains a constant downstream pressure regardless of variations in upstream pressure and flow demand, provided that sufficient inlet pressure and the minimum operating differential are available.



PRESSURE REDUCING CONFIGURATION

1. Main valve.
2. Needle valve.
3. P200 pilot.
4. Ball valve.
5. Inlet pressure gauge.
6. Outlet pressure gauge.
7. Ball valve.

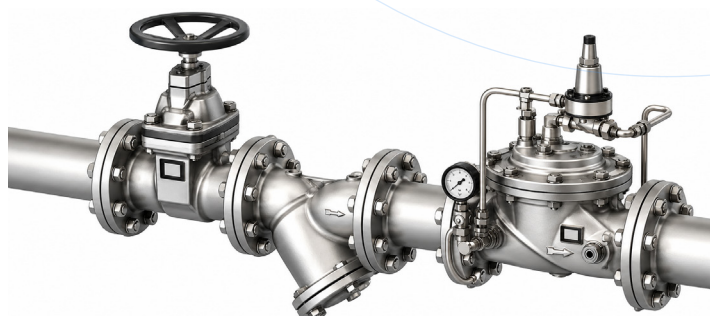
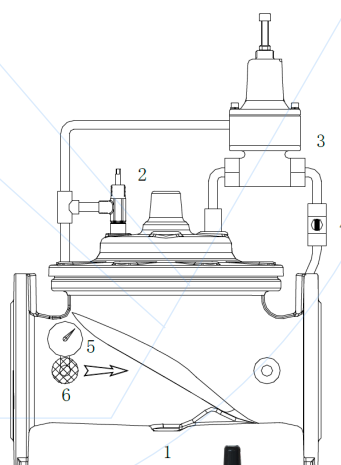


PRESSURE RELIEF / SUSTAINING

In pressure-relief service, the valve opens when the upstream pressure exceeds the preset value, relieving excess system pressure. In pressure-sustaining service, it maintains a minimum upstream pressure by modulating toward the closed position whenever downstream demand could cause the upstream pressure to fall below the preset value.

PRESSURE RELIEF/ SUSTAINING CONFIGURATION

1. Main valve.
2. Needle valve.
3. P500 pilot.
4. Ball valve.
5. Inlet pressure gauge.
6. Strainer



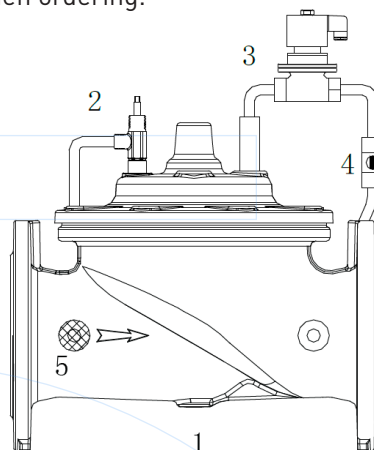


SOLENOID CONTROL

The solenoid control valve provides remote electrical opening and closing of the main valve. Depending on the selected pilot circuit, the valve can be configured as energized-to-open or energized-to-close. The required fail-safe position must be specified when ordering.

SOLENOID CONFIGURATION

1. Main valve.
2. Needle valve.
3. Solenoid.
4. Ball valve.
5. Strainer



Available configurations:

1. 2-way solenoid-energized to open the valve.
2. 2-way solenoid-energized to close the valve.
3. 4-way solenoid configurations are available on request for special service conditions.

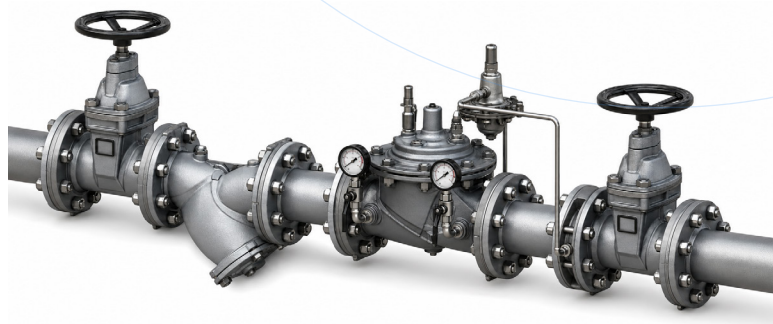
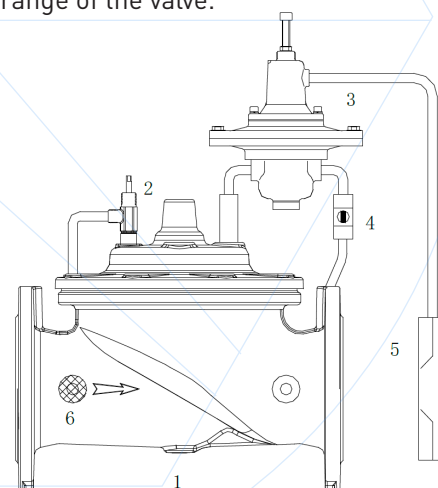


FLOW CONTROL

The flow control valve limits and regulates the flow rate to a preset value, compensating automatically for variations in upstream and downstream pressure within the operating range of the valve.

FLOW CONTROL CONFIGURATION

1. Main Valve
2. Needle Valve
3. P400 pilot
4. Ball Valve
5. Differential-pressure orifice kit
6. Strainer



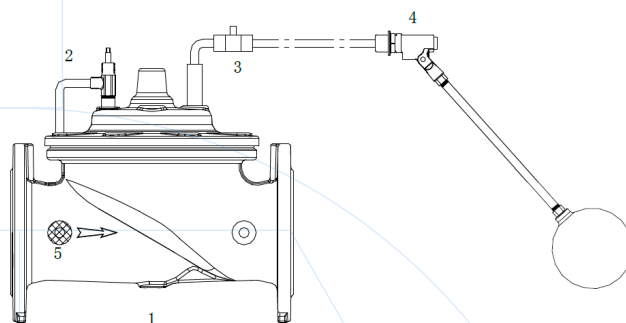
REMOTE FLOAT LEVEL CONTROL

The remote float level control valve maintains a preset water level in a tank or reservoir. When the water level falls, the main valve opens and remains open until the preset high level is restored, at which point it closes. The float pilot is installed at the tank and connected hydraulically to the main valve, which may be installed remotely.



REMOTE FLOAT CONFIGURATION

1. Main Valve
2. Needle Valve
3. Ball Valve
4. P100 pilot
5. Strainer



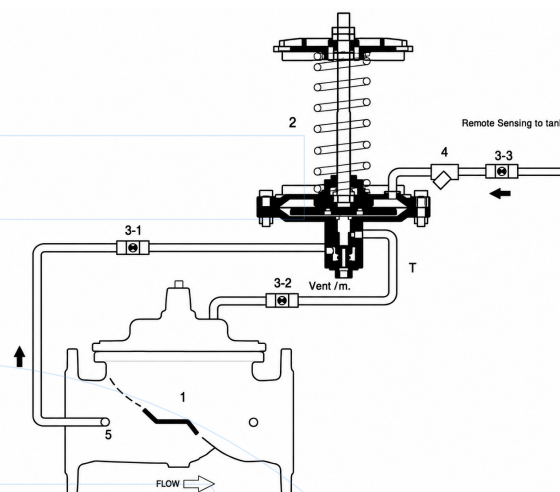
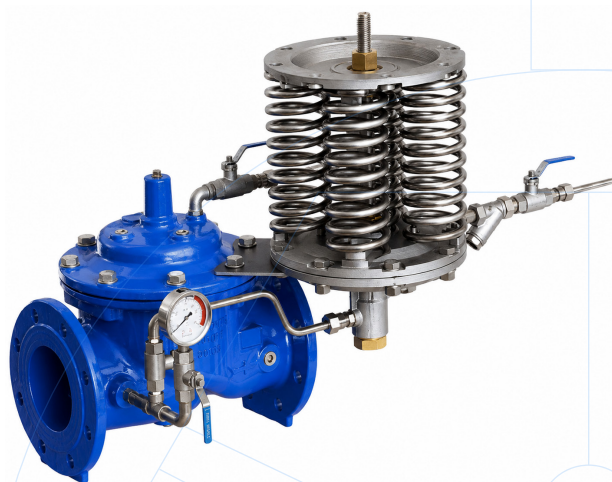


ALTITUDE CONTROL

The altitude control valve is designed to maintain a predetermined water level in an elevated storage tank. The valve automatically closes when the tank reaches the preset maximum level and reopens as the water level decreases.

TANK ALTIMETRY CONFIGURATION

1. Main valve.
2. Altimetry pilot
3. Ball valves.
4. Strainer.
5. Control tubing.

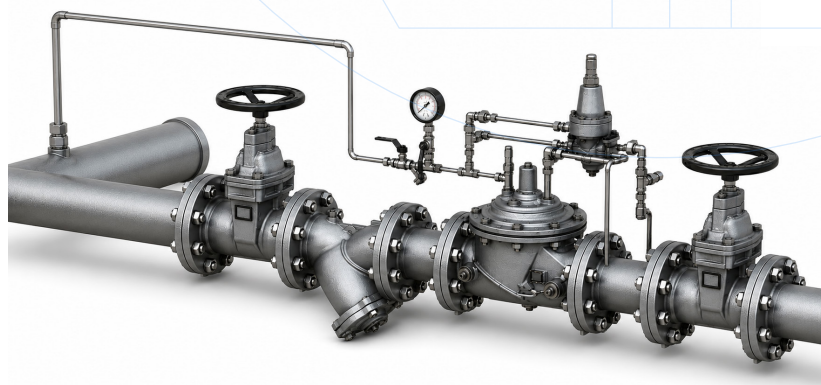
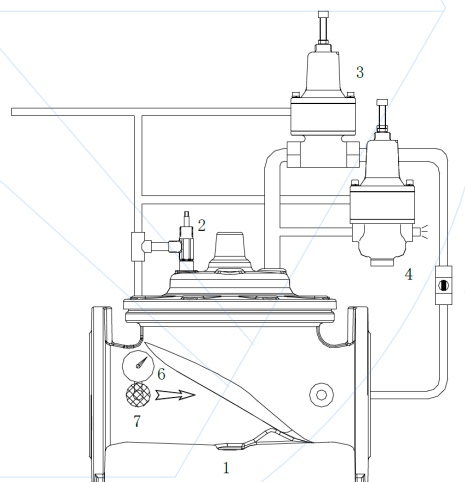


SURGE ANTICIPATION

The surge-anticipation valve senses the initial pressure drop caused by a sudden pump stoppage and opens in advance of the returning high-pressure wave. It then relieves excessive system pressure and closes gradually, helping to reduce pressure surges and water hammer.

SURGE ANTICIPATION CONFIGURATION

1. Main Valve
2. Needle Valve
3. P500 pilot.
4. P20A pilot.
5. Ball valve
6. Inlet pressure gauge (optional)
7. Strainer



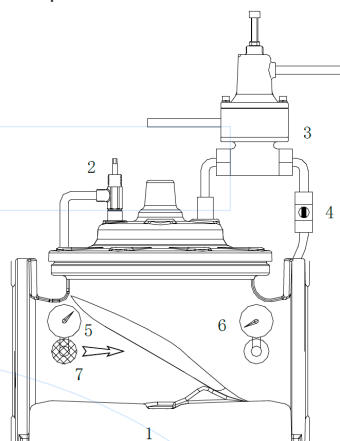


PRESSURE DIFFERENTIAL CONTROL

The differential pressure control valve maintains a preset pressure differential between two sensing points. The valve modulates automatically in response to variations in system demand, helping to stabilize pump operation or maintain the required differential pressure across the network.

PRESSURE DIFFERENTIAL CONFIGURATION

1. Main valve.
2. Needle valve.
3. P800 pilot.
4. Ball valve.
5. Inlet pressure gauge.
6. Outlet pressure gauge.
7. Strainer

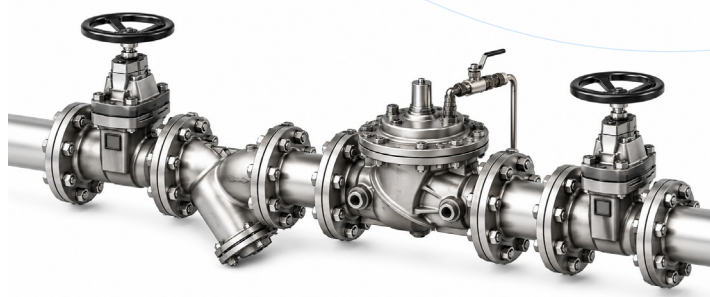
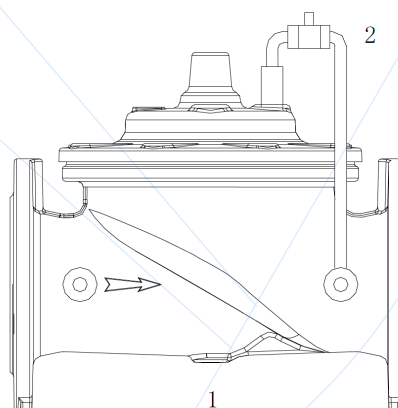


HYDRAULIC CHECK VALVE - CONTROLLED CLOSING

The controlled check valve prevents reverse flow while providing adjustable opening and closing speeds. Its hydraulically controlled closing action reduces the risk of valve slam, pressure surges and water hammer.

HYDRAULIC CHECK CONFIGURATION

1. Main valve.
2. Ball valve.





MULTI-FUNCTION CONFIGURATIONS

Two or more pilots can be combined on one main valve to control multiple system parameters. Common configurations include:

PRESSURE CONTROL AND FLOW CONTROL

This hydraulically operated control valve combines pressure-reducing and flow-regulating functions. It automatically modulates the main valve opening to maintain the downstream pressure at a preset value while simultaneously limiting the flow rate to the required setting. The valve operates independently of variations in upstream pressure or system demand, protecting the downstream network from excessive pressure and preventing flow from exceeding the specified maximum rate.



PRESSURE REDUCING AND SUSTAINING VALVE

This valve maintains a preset downstream pressure while simultaneously sustaining a minimum upstream pressure. It modulates or closes as required to prevent downstream demand from reducing the upstream pressure below the preset value.

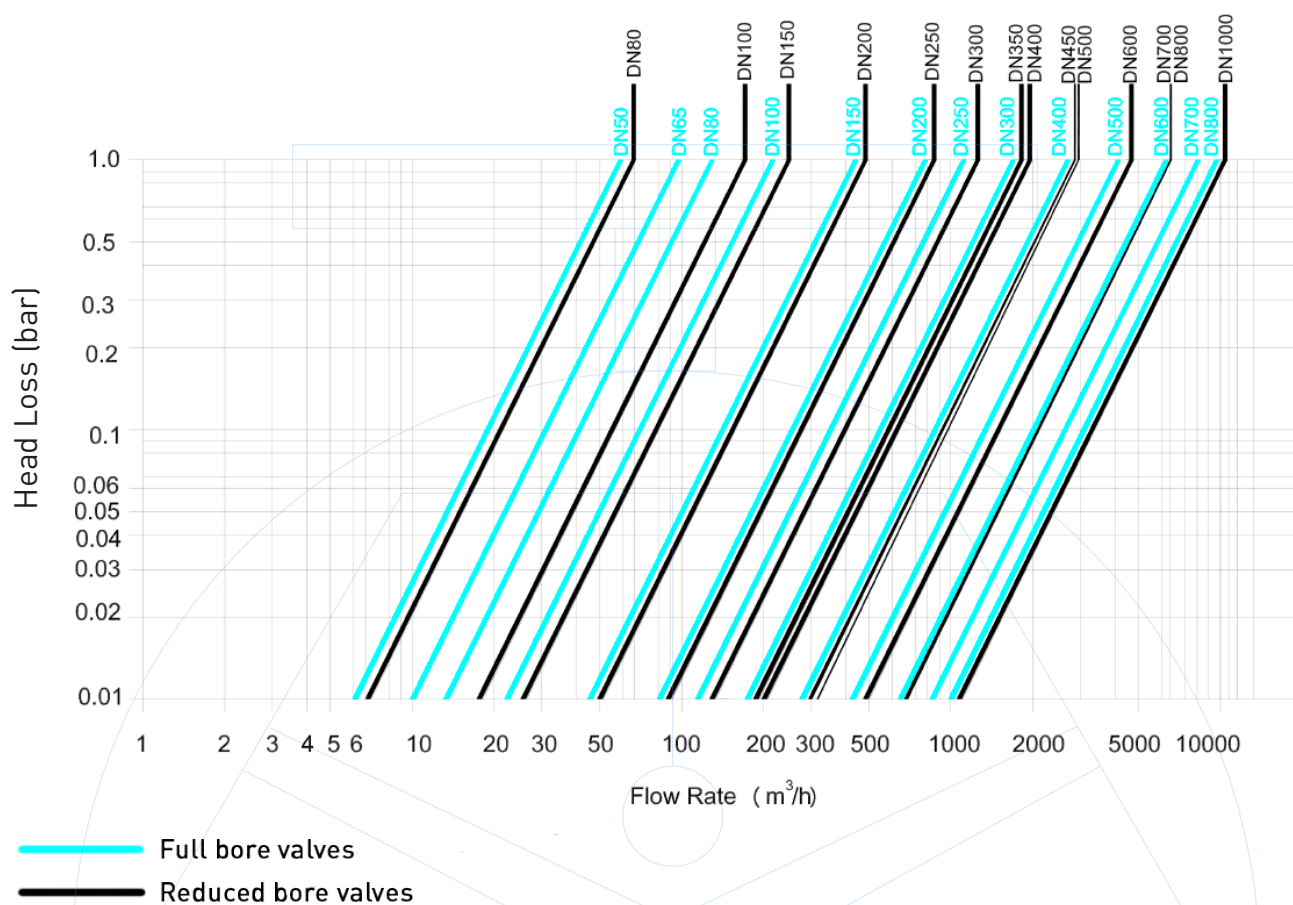


PRESSURE REDUCING WITH LOW PRESSURE BY-PASS

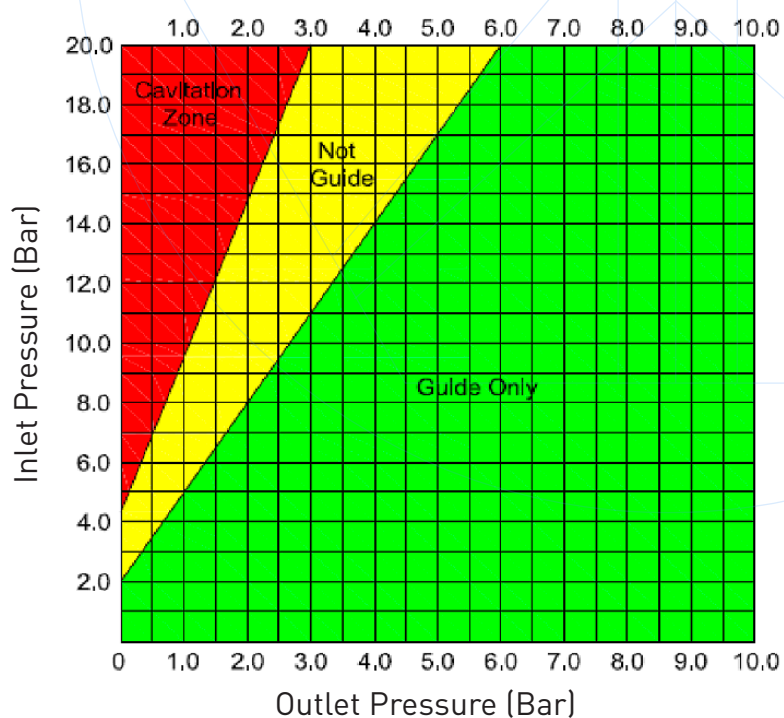
This valve automatically reduces and maintains the downstream pressure at a preset value under normal operating conditions. When the inlet pressure falls below the main valve's operating range, the low-pressure by-pass opens automatically, allowing continuous flow with minimal pressure loss and ensuring uninterrupted downstream supply.



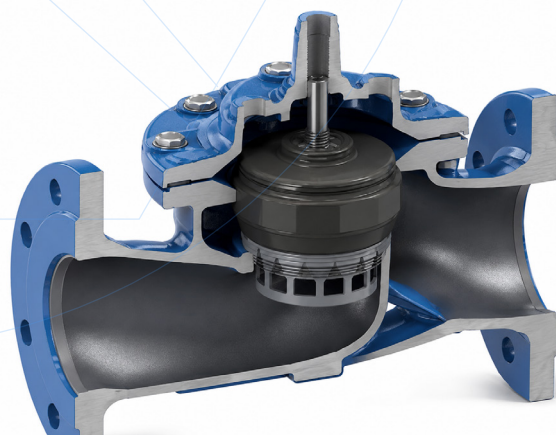
FLOW CHARACTERISTICS



CAVITATION FOR PRESSURE REDUCING VALVES



For low flow rate applications, a V-port trim is available. The V-port trim reduces the effective flow area, allowing the valve to operate at a higher opening while minimizing the risk of cavitation.



A V-port trim is required when operating in the yellow area of the chart.

Operation in the red zone is not recommended. Consult Davinci Valves for a specific valve selection or anti-cavitation solution.



CONTACT US

DAVINCI VALVES ORDER REQUEST

Ref. 180A-VI / PN 10-16-25



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