Dorot
matholding group

Product Catalogue
Series 300 Valves

Series 300 Valves

Series 300 Valves
Catalogue

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Dorot Control Valves is a world leader in the development and supply of sustainable technologies and products for control and optimization of water systems.

Established in 1946, Dorot has a long tradition of providing innovative products and solutions for numerous applications in water and other fluid systems.

Our experienced team of technical experts will support you all the way to achieve your perfect control solution.

With a diversified product portfolio of advanced hydraulic control valves, air release valves and a wide range of complimentary products, Dorot offers solutions for applications in:

- Agricultural and Landscape Irrigation
- Waterworks Distribution
- Firefighting
- Other Industrial Applications such as Mining, Wastewater, Marine...

We invite you to join our family of business partners, together we can provide the best control solutions for the world's most valuable natural resource.

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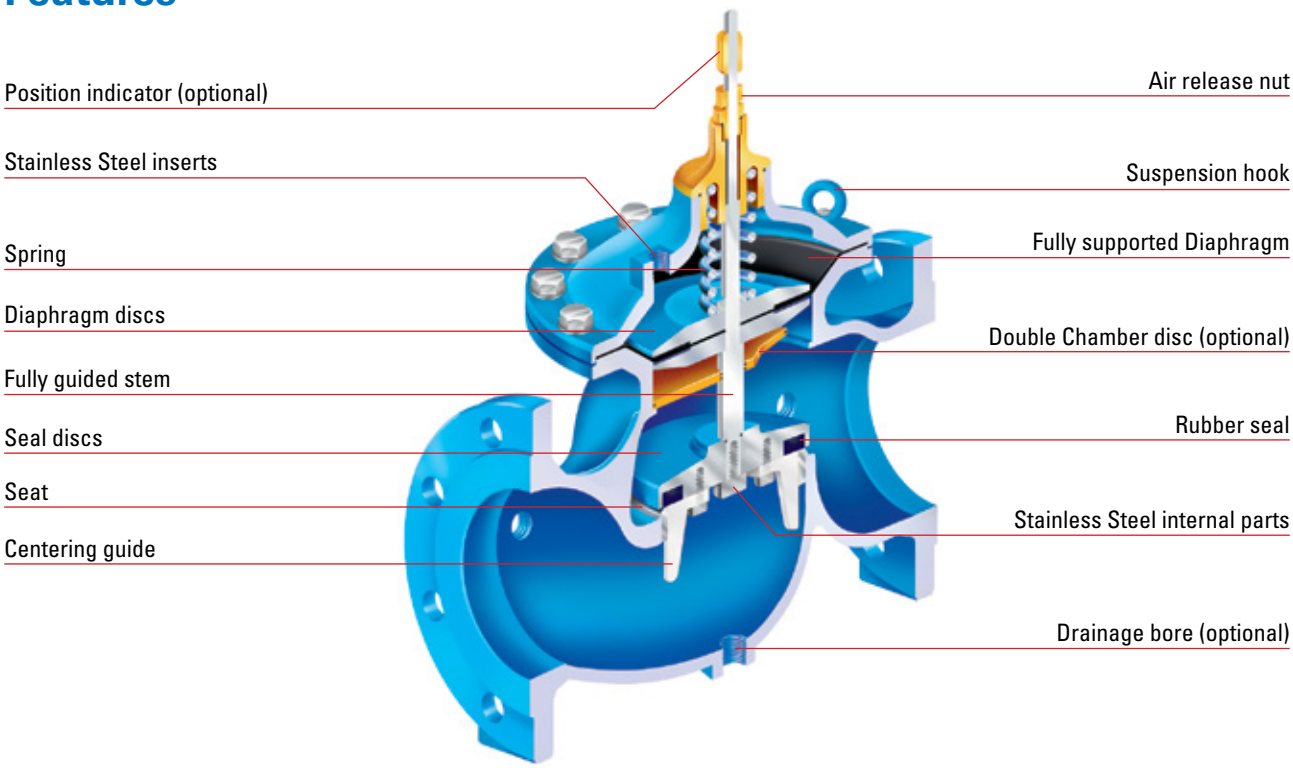
Overview

DOROT'S 300 Series, state-of-the-art automatic control valves are designed to withstand the most demanding requirements of water system control. The experts at DOROT developed this technically-advanced valve with capabilities- far beyond any other on the market.
This Engineering Data guide will asist the reader in the selection of the optimal DOROT Series 300 valve.

Features



Features of the 300 Series

- The capability to regulate near zero flow, as standard on all sizes, eleminates the need for a special low flow (throttling plug) or valve, while ensuring very low head loss in "fully open" position.
- The flange (face-to-face) dimensions suit ISO Standards.
- The valve has an internal floating shaft, allowing for frictionless operation. The unique design of the shaft provides for easy field maintenance.
- The valve has a resilient seal disc, guided by a frictionless centering device.
- The valve's body is made of Ductile Iron, withstanding both high hydraulic and mechanical stresses.
- The standard single - chamber valve provides smooth operation in sensitive regulation conditions. When required, conversion from a single to a double chambered valve is easily accomplished through the insertion of Dorot's innovative separation disc, without the need to remove the valve from the pipeline during the conversion.
- The valve is supplied with a replaceable Stainless Steel seat, which maintains excellent durability against erosion and ensures a drip-tight seal.
- During valve closure the rate slows, preventing potential damage from water hammer or surges.
- The 300 Series includes an optional valve position indicator, attached by a floating connection (ball & socket), resulting in smooth movement, with no wear or tear on the indicator seal.

Technical Specifications

Parameter	Standard	Optional
Connections	• Flanged ISO 7005 or ANSI B16 • Threaded BSP or NPT	• Flanged AS10, JIS B22, ABNT and others
Pressure range	• Model 30: 0.5 – 16 bar 7 – 250 psi • Models 31, 32: 0.5 – 25 bar 7 – 360 psi	• 0 min. press. with N.O spring assisted opening. • 0.2 bar / 3 psi min. pressure without a spring Note: both options require usage of external higher closing pressure
Max. Water Temperature	• 80°C / 180°F	• 95°C / 200°F

Materials

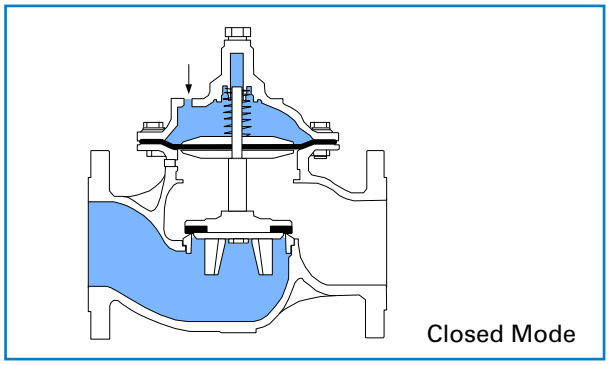
Part	Standard	Optional
Body & Cover	Ductile Iron GGG50 (ASTM A-536)	Cast Steel A-216 WCB Cast Bronze or Marine Bronze Cast SST CF8M (316) Ni Aluminum Bronze Others
Main Valve Internals	SST, Bronze and Coated Steel	SST 316, HASTELLOY, SMO, DUPLEX
Spring	SST 302	SST 316, INCONNEL
Diaphragm	Nylon fabric reinforced EPDM (WRAS and NSF approved)	NBR
Seals	EPDM	Viton
Coating	Polyester RAL 5010	FBE RAL 5010 Polyester RAL3000 (fire red) UV protected FBE RAL3000 Rilsan (Nylon) Halar
Control Trim: Fittings and control devices	Brass	SST 304 SST 316
Control Trim: Tubes	Reinforced, heavy-duty Nylon, Polypropylene	Copper SST 316

Note: The Dorot S-300 valves in all sizes, meet the USA amendment for reducing lead in drinking water marked as S.3874 dated 01.05.2010.

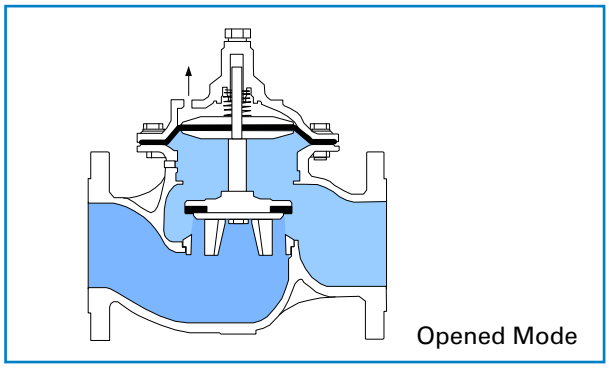
Basic Valve Operating Modes
On-Off Mode

Standard (Single Chamber) Valve

Closed Mode: The control pressure (taken from the pipeline) is applied by the control device to the control chamber (top of the diaphragm). The pipeline pressure pushes the seal to open, and the control chamber pressure forces the diaphragm to close. Since the diaphragm area is larger than the seal area, it has greater hydraulic force so the valve remains in the closed position.


Closed Mode

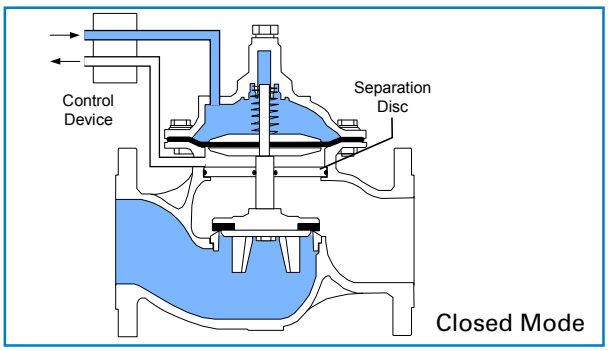
Open Mode: The control device relieves the pressure from the control chamber. The pipeline pressure forces the seal to the "open" position so that the fluid can pass through the valve. While the valve is open, outlet pressure is applied to the lower side of the diaphragm, assisting the opening.


Opened Mode

Double Chamber Valve (Version D)

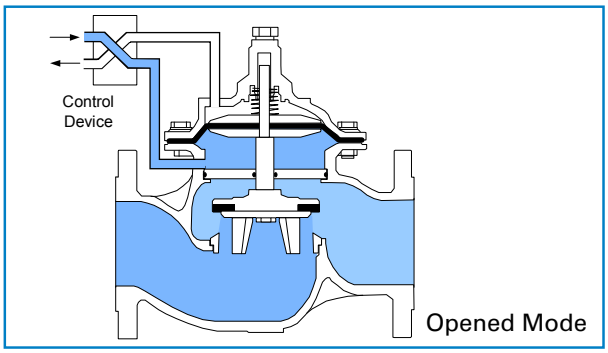
The double chamber version is created by inserting a separation disc between the diaphragm and the seal. This assembly creates a second control chamber below the diaphragm, permitting for the activation of the valve in low-pressure systems and enabling the activation faster valve response. The response to varying conditions is quick, since closure downward movement is not resisted by pressure below the diaphragm. The closure pace of the double chambered valve tends to slow toward the end of the closure procedure. This feature reduce the danger of pressure surges in short pipelines.

Closed Mode: The control pressure (taken from the pipeline or from supplementary pressure source) is applied to the top of the external diaphragm. The bottom control chamber drains. The pipeline pressure pushes the seal to open, but since the diaphragm area is larger than the seal area it creates greater hydraulic force and which forces the valve to close thus the valve closes. At this stage, the bottom chamber should be drained.



Closed Mode

Open Mode: The control device releases the pressure from the top control chamber.
The seal assembly is forced to the "open" position by the pipeline pressure, allowing flow through the valve.



Opened Mode

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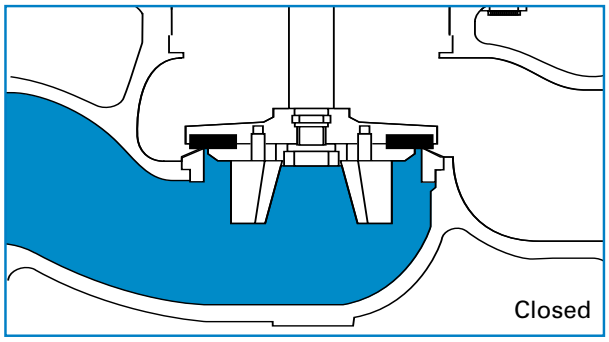
Modulating Mode

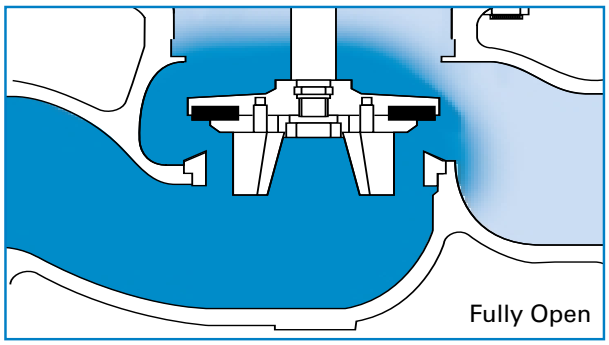
General

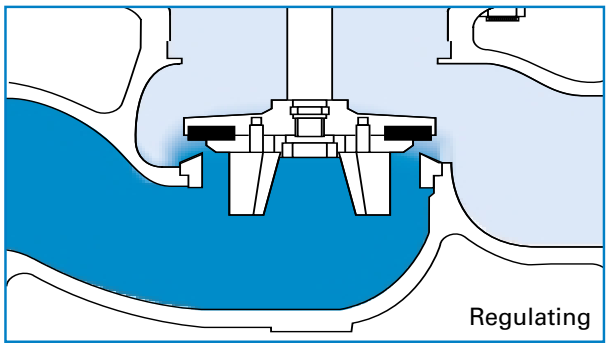
Positioning the seal a short distance (less than 1/4 of the seat diameter) from the seat, creates friction and turbulence, causing energy loss in the fluid passing through the valve. The results are:
- Reduction of pressure and flow rate.
- Increase of inlet pressure.

The position of the seal assembly is dictated by the volume of control fluid in the top control chamber, which is determined by the control device. The control device is operated by hand (manual control), by electric current (solenoid valve), or by hydraulic pressure (pilot valves, hydraulic relays). All can be used in standard (single chamber) valves as well as in double chamber valves.

Modulating mode in standard (single chamber) valves

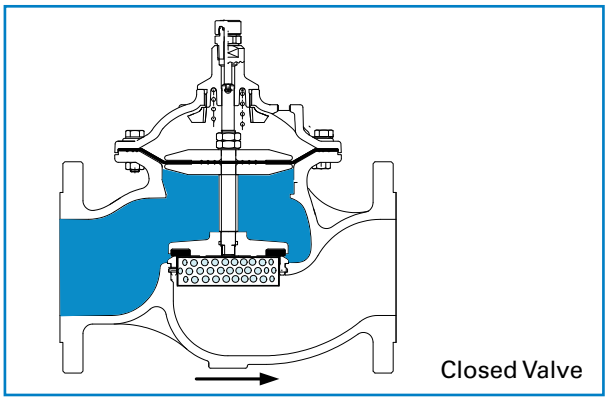


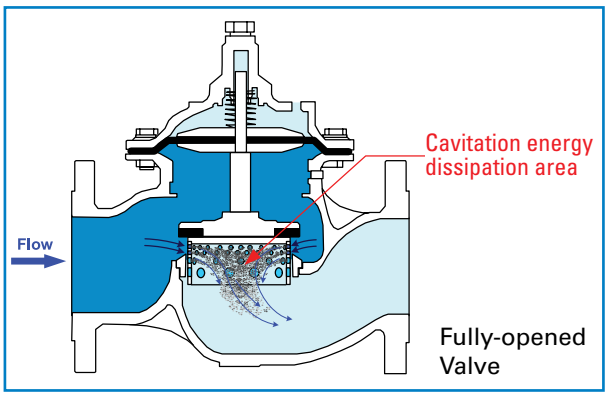




Regulation at high pressures difference

The S-300 has exceptional resistance to damages, caused by cavitation conditions. This feature was certified by extensive tests, carried by an independent laboratories in US and Europe. The operation limits, as found in these tests, can be calculated for any specific location- using a simple computer program (supplied on request). For operation conditions that exceed the safe limit- a special Cavitation-Free valve can be supplied. This version, marked by the suffix "F" (example 30F-3 is a cavitation-free, 80mm / 3" valve), can operate at any pressure differential without being ruined by it. The internal structure includes a Stainless Steel, perforated cylinder, that is connected below the standard seal disc and moving freely inside the seat. The valve is assembled to generate "over the seat" flow, so the water stream enters the cylinder from its external side and emerges through the internal side. The energy is dissipated by the high-velocity, turbulent flow through the exposed holes above the seat (due to varying trim position). The pressure recovery, that is the cause of cavitation damage, happens now inside the cylinder and not adjacent to the body wall. As the SST material is highly- resistant to cavitation- it is not damaged.

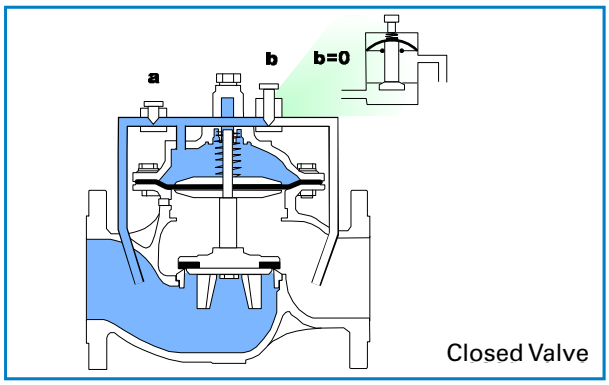




2-Way Control Device

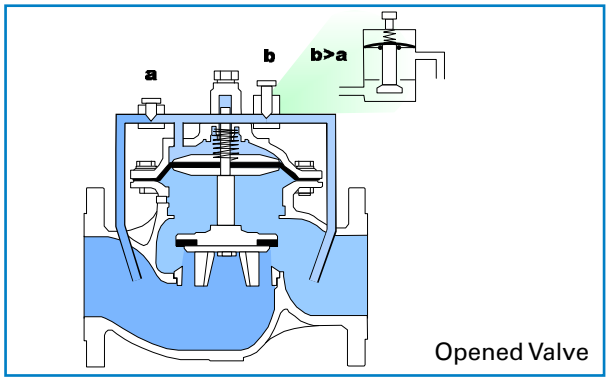
The 2-way control device is assembled on a control circuit, connecting upstream to downstream through the control chamber.
There are two restrictors assembled in this circuit:
(a) A nozzle or a needle valve, at a fixed opening.
(b) A modulating device (pilot), whose passage may vary from complete closure (b=o) to a fully open size (when b>a).
The volume of the control media in the chamber is determined by the relative passages (a) and (b), or, in fact, by the opening of (b), as (a) is fixed.

Closed Mode: Pilot (b) senses a downstream pressure higher than the set-point and closes passage (b). Through passage (a) the upstream water flows directly into the upper part of the control chamber, forcing the diaphragm to close the valve.



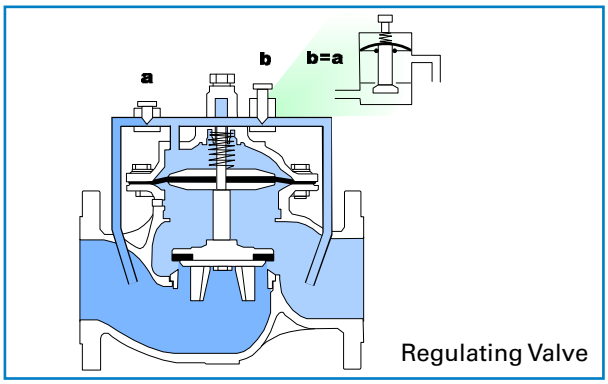
Closed Valve

Open Mode: Pilot (b) senses a downstream pressure lower than the set-point, and fully opens passage (b), larger than (a). All the water from the upstream flows through (a) and (b), directly to the downstream, allowing water from the upper part of the control chamber to partially drain until the pressure in the chamber equals the downstream pressure.
Pressure in the upper part of the control chamber is decreased and the upstream water pressure forces the seal disc to rise (opening the valve).



Opened Valve

Regulating Mode: The pilot is set to the required downstream pressure. The pilot senses when the downstream pressure reaches the required value causing passage (b) to equal passage (a) b=a. Now, water that flows through the control loop passes from (a) through (b) and into the downstream.
The control media in the upper part of the control chamber is now steady, keeping the diaphragm and seal in a fixed position. Any change in the downstream pressure will change the b=a balance. This change adds or drains water from the control chamber, thus opening or closing the main valve until it reaches the balanced regulating position b=a once again.



Regulating Valve

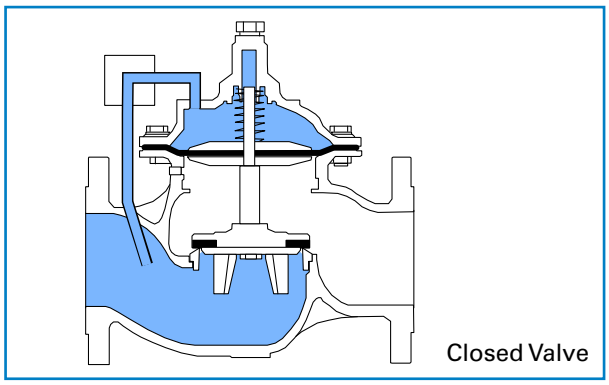
The 2-way control device provides sensitive, accurate, and constant modulating, control of the main valve. The main valve does not fully open, as the control device prevents total draining of the control chamber.
The 2-way control device is standard in most pressure
regulating valves.

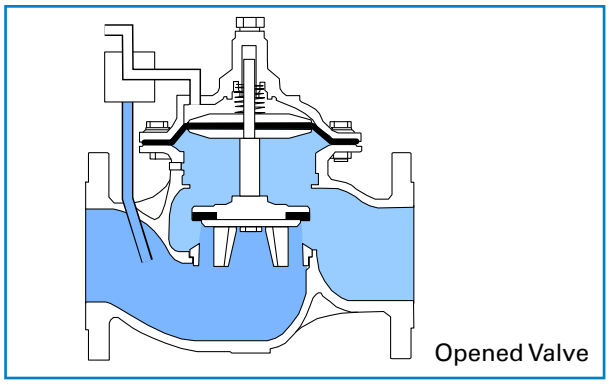
3-Way Control Device

The 3-way control device is a small selector valve which:

1. Permits passage of the control media into the main valve control chamber (initiating the "closing" procedure), or
2. Permits drainage of the control media from the control chamber to the atmosphere (initiating the "opening" procedure).

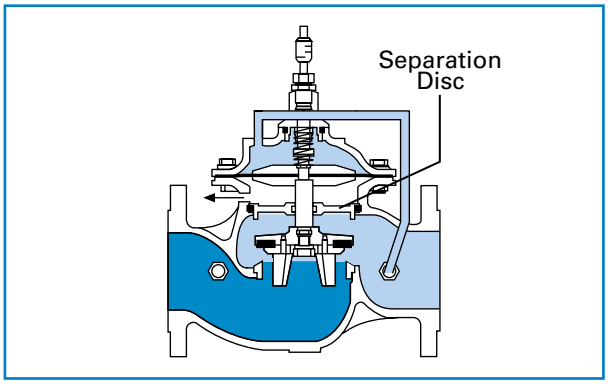
Some of the 3-way control devices have a third mode as well, which prevents inflow or outflow from the control chamber, so that the main valve remains fixed when the device is in this mode.
The 3-way mode is used in on-off valves or when the regulating valve is fully open, in order to obtain specific operating conditions. Once in position, there is no water flow through the control chamber.
The 3-way control circuit may open the main valve entirely, creating minimum head loss.
The 3-way control device must be used when external media (not pipeline water) is used to control the valve, or when the control media is dirty or abrasive.


Closed Valve

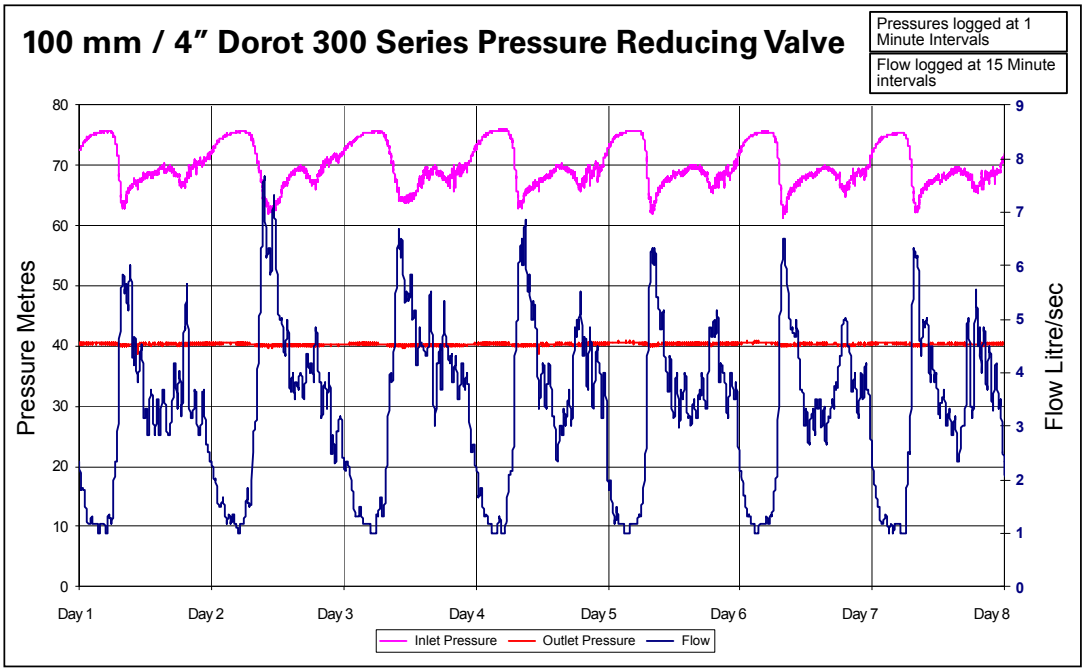

Opened Valve

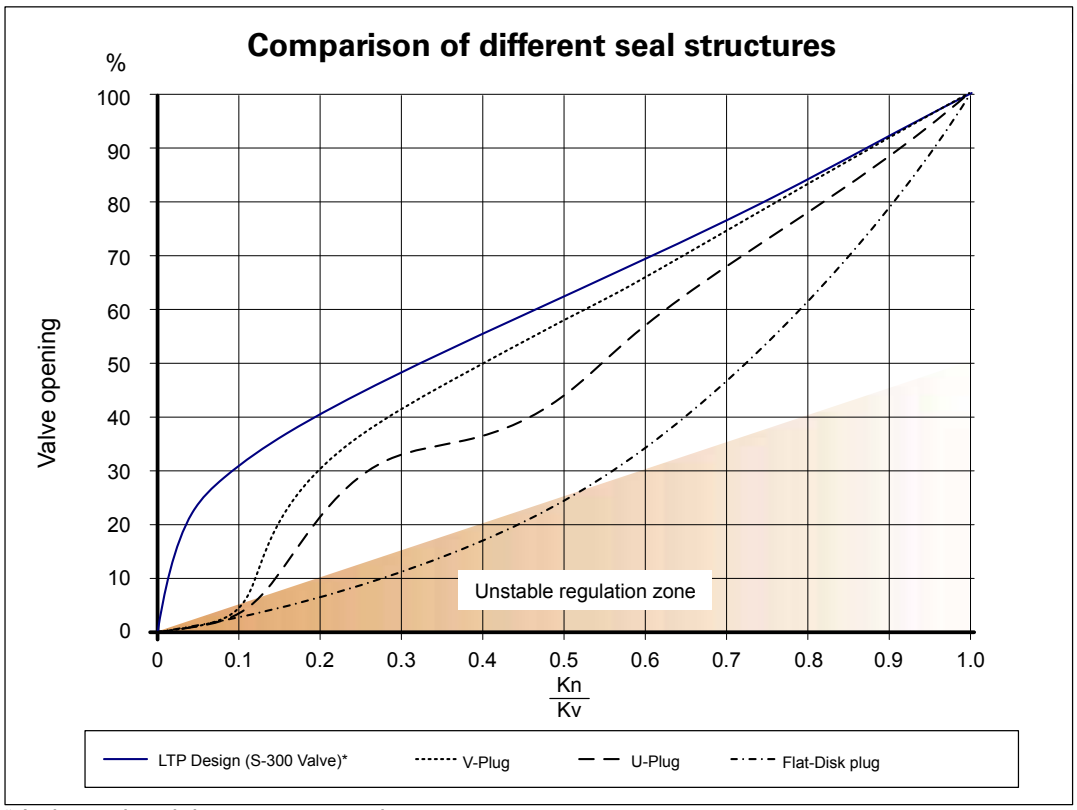
Proportional Pressure Reducer

The proportional pressure reducer is a valve that has a control chamber permanently connected to the downstream.
This valve must be a double chamber [D] type.
The balance of hydraulic forces created between the high pressure on the small seal area, and the lower downstream pressure on the larger diaphragm area, causes a fixed ratio of inlet/outlet pressure of approximately 3:1.
No other control device is needed.



Typical Pressure Reducing Performance Chart





* Independent laboratory report data source

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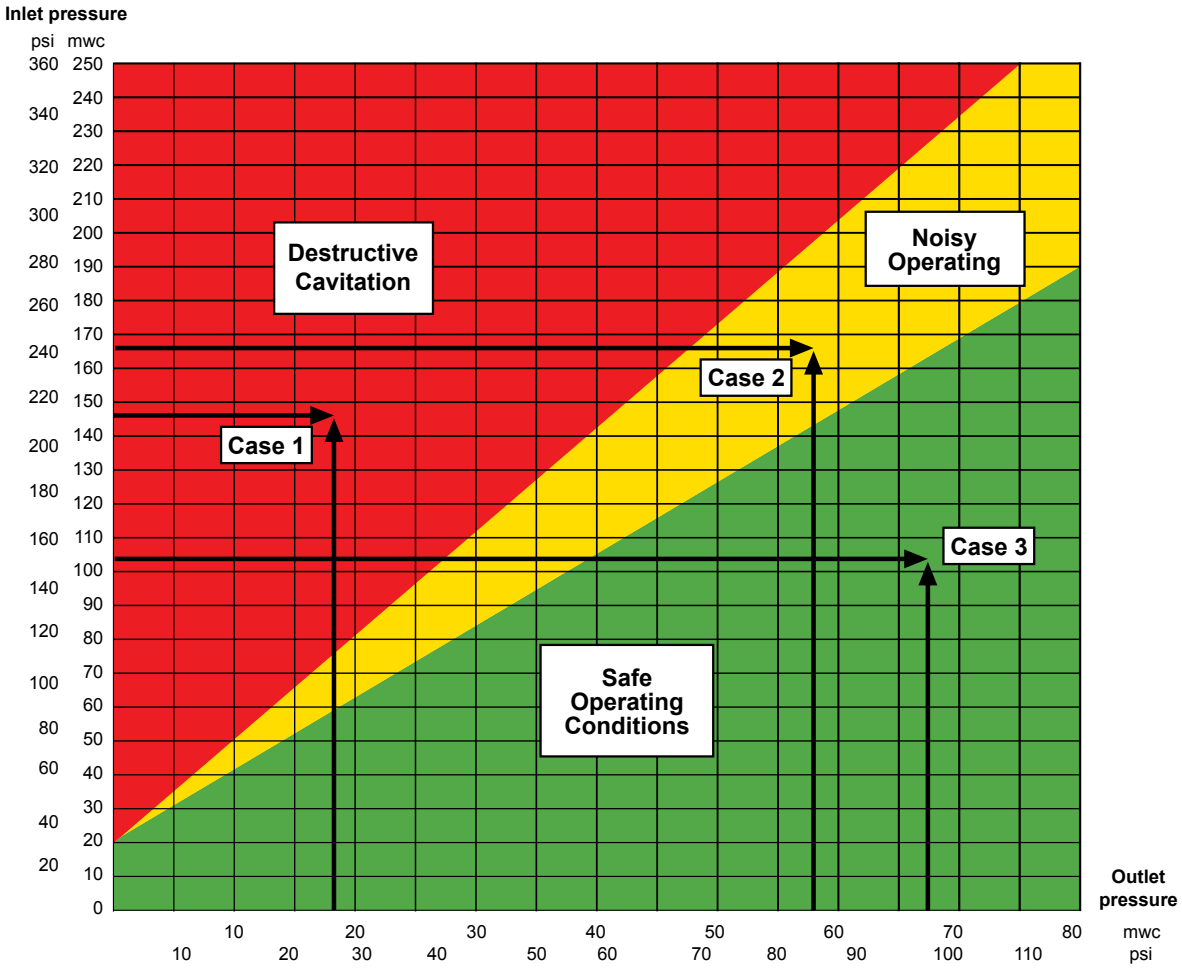
Cavitation Data



Cavitation Chart

Limits of operating conditions
The chart above sets the safe limits for valves that are supposed to operate at a considerable pressure differential.
Such conditions generate noise and possible cavitation damages to the valve body.
How to use the chart:
i. Determine the maximal dynamic pressure that may be applied in the inlet of the valve.
ii. Draw an horizontal line from the pressure scale at the left side of the chart
iii. Find the requested outlet pressure in the pressure scale at the bottom of the chart.
iv. Draw an upward line at this point.
v. The intersection of the two lines defines the cavitation characteristics of the valve operation.
- In the case that it falls in the RED zone (case I)- the valve may be damaged in a fairly short time.
- In the case that it falls in the YELLOW zone (case II)- the valve may generate a noise that exceeds 80db.
- In the case that the intersection is within the GREEN zone (case III)- the valve will perform safely and quietly

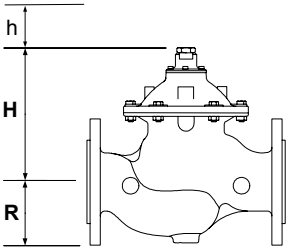
General remark: The cavitation and noise data are based on tests done by the Utah State University, US, and Delft Hydraulic Laboratories, Holland.

Dimensions & Weights

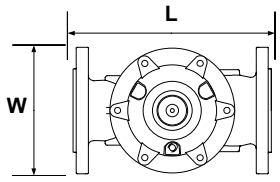
Models 30 (16 bar rated valves) / 31 (25 bar rated valves)

Globe Flanged Type

Valve Size	40 (1½")		50 (2")		65 (2½")		80 (3")		100 (4")		150 (6")		200 (8")		250 (10")	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
L	230	9 1/16	230	9 1/16	290	11 3/8	310	12 3/16	350	13 3/4	480	18 7/8	600	23 5/8	730	28 3/4
L (ANSI#300)	230	9 1/16	235	2 3/16	292	12 1/2	345	13 1/2	400	15 11/16	525	20 5/8	605	23 13/16	790	31 1/8
H	185	7 5/16	185	7 5/16	185	7 5/16	230	9 1/16	240	9 7/16	330	13	390	15 3/8	520	20 1/2
h**	140	5 1/2	140	5 1/2	140	5 1/2	170	6 11/16	180	7	230	9	300	11 13/16	390	15 1/4
W	153	6	170	6 11/16	185	7 3/16	200	7 7/8	235	9 1/4	330	13	415	16 5/16	525	20 11/16
R	82.5	3 1/4	82.5	3 1/4	92.5	3 5/8	100	3 15/16	110	4 5/16	142.5	5 5/8	172.5	6 3/4	205	8 1/16
Weight Kg/lbs*	12 / 26		12 / 26		13 / 29		22 / 49		37 / 82		80 / 176		157 / 346		245 / 540	
Vol.control chamber lit/gal	0.1 / 0.02		0.1 / 0.02		0.1 / 0.02		0.3 / 0.08		0.7 / 0.2		1.5 / 0.4		4.3 / 1.1		9.7 / 2.6	

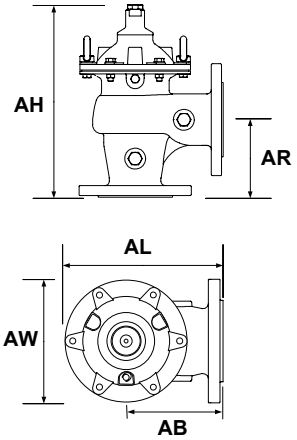


Valve Size	300 (12")		350 (14")		400 (16")		450 (18")		500 (20")		600 (24")		700 (28")		800 (32")	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
L	850	33 7/16	980	38 9/16	1100	43 5/16	1200	47 1/4	1250	49 3/16	1450	57 1/16	1650	64 15/16	1850	72 7/8
L (ANSI#300)	910	35 13/16	980	38 9/16	1100	43 5/16	1200	47 1/4	1250	49 3/16	1450	57 1/16	1650	64 15/16	1850	72 7/8
H	635	25	635	25	855	33 5/8	855	33 5/8	855	33 5/8	1574	61 15/16	1675	65 15/16	1675	65 15/16
h**	450	17 11/16	450	17 11/16	590	23 1/4	600	23 5/8	600	23 5/8	740	29 1/8	860	33 7/8	860	33 7/8
W	610	24	610	24	850	33 7/16	850	33 7/16	850	33 7/16	1100	43 5/16	1100	43 5/16	1090	42 15/16
R	230	9	272	10 11/16	290	11 7/16	310	12 3/16	357.5	14 1/16	490	19 5/16	498	19 5/8	603	23 3/4
Weight Kg/lbs*	405 / 893		510 / 1124		822 / 1812		945 / 2083		980 / 2160		1950 / 4299		2070 / 4560		2600 / 5730	
Vol.control chamber lit/gal	18.6 / 4.9		18.6 / 4.9		50 / 13.2		50 / 13.2		50 / 13.2		84 / 22.2		84 / 22.2		84 / 22.2	



Angle Type

Valve Size	50 (2")		80 (3")		100 (4")		150 (6")		200 (8")		250 (10")	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
AL	208	8 3/16	250	9 13/16	295	11 1/16	405	16	505	19 7/8	585	23
AH	240	9 7/16	415	16 5/16	445	17 1/2	570	22 7/16	635	25	832	32 3/4
AW	170	6 11/16	200	7 7/8	235	9 1/4	330	13	415	16 5/16	495	19 1/2
AR	107	4 3/16	138	5 7/16	147	5 13/16	180	7 1/16	302	11 7/8	338	13 5/16
AB	125	4 15/16	150	5 7/8	173	6 13/16	240	9 7/16	300	11 13/16	338	13 5/16
Weight kg/lbs*	12 / 26		20 / 44		37 / 81		76 / 167		150 / 330		234 / 550	

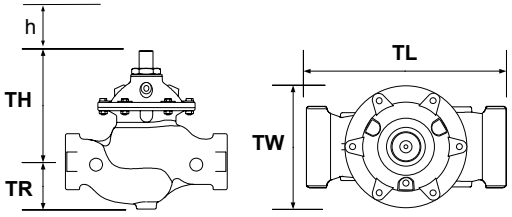


* Approximate shipping Weight (PN 25)
** h = Minimal required maintenance space

End Connections (for PN16 or PN25)
ISO 2084, 2441, 5752 ANSI B16, AS2129, JIS B22

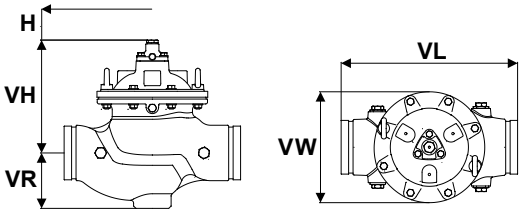
Globe Threaded Type

Valve Size	40 (1½") TH		50 (2") TH	
	mm	inch	inch	mm
TL	215	8 7/16	8 7/16	215
TH	185	7 5/16	7 5/16	185
h	140	5 1/2	5 1/2	140
TW	129	5	5	129
TR	62	2 3/8	2 3/8	62
Weight kg/lbs*	7 / 15		7 / 15	



Grooved Type

Valve Size	50 (2")		80 (3")		100 (4")		150 (6")	
	mm	inch	mm	inch	mm	inch	mm	inch
VL	215	8 1/2	351	13 13/16	376	14 13/16	521	20 1/2
VH	173	6 13/16	228	9	240	9 7/16	330	13
h	140	5 1/2	170	6 11/16	180	7 1/16	230	9 1/16
VW	128	5	197	7 3/4	236	9 5/16	331	13 1/16
VR	78	3	106	4 3/16	118	4 5/8	147.5	5 13/16
Weight kg/lbs*	6.5 / 14.5		15.1 / 33.25		26.5 / 58.5		58.25 / 128.5	



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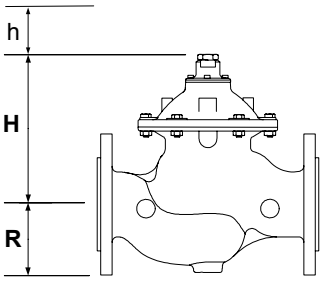
Dimensions & Weights

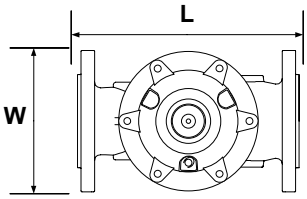
Model 32 (25 bar rated valves)

Globe Flanged Type

Valve Size	80 (3")		100 (4")		150 (6")		200 (8")		250 (10")	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
L	310	12 3/16	350	13 3/4	480	18 7/8	600	23 5/8	730	28 3/4
H	185	7 1/4	232	9 3/16	250	10	334	13 1/8	395	15 1/2
h**	107	4 1/4	156	6 1/8	170	6 3/4	220	8 11/16	275	10 13/16
W	200	7 7/8	235	9 1/4	300	11 3/4	360	14 3/16	425	16 3/4
R	100	3 15/16	120	4 11/16	150	5 7/8	182	6 3/16	215	8 7/16
Weight Kg/lbs*	15 / 33		27 / 60		51 / 112		92 / 202		171 / 377	
Vol.control chamber lit/gal	0.1 / 0.02		0.3 / 0.08		0.7 / 0.2		1.5 / 0.37		4.3 / 1.1	

Valve Size	300 (12")		350 (14")		400 (16")		450 (18")		500 (20")		600 (24")	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
L	850	33 7/16	980	38 9/16	1100	43 5/16	1200	47 1/4	1250	49 3/16	1259	49 9/16
H	545	21 1/2	635	25	635	25	855	33 5/8	855	33 5/8	1311	51 5/8
h**	400	15 3/4	480	18 7/8	480	18 7/8	600	23 5/8	600	23 5/8	245	9 5/8
W	489	19 1/4	610	24	628	24 3/4	850	33 7/16	850	33 7/16	881	34 11/16
R	245	9 3/8	260	10 3/16	314	12 3/8	310	12 3/16	357.5	14 1/16	459	18 1/16
Weight Kg/lbs*	330 / 726		510 / 1124		544 / 1197		945 / 2083		980 / 2160		1030 / 2266	
Vol.control chamber lit/gal	9.7 / 2.6		18.6 / 4.9		18.6 / 4.9		50 / 13.2		50 / 13.2		50 / 13.2	

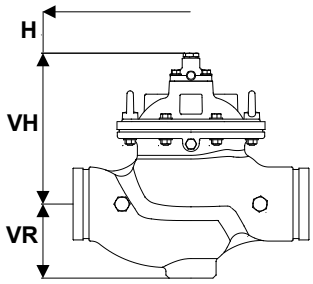


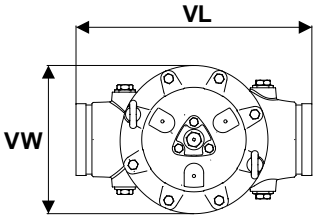


- h* = minimal required maintenance space
- End Connections (for PN16 or PN25)
- ISO 2084, 2441, 5752 ANSI B16, AS2129, JIS B22.

Grooved Type

Valve Size	80 (3")		100 (4")	
	mm	inch	mm	inch
VL	310	12 3/16	348	13 11/16
VH	173	6 13/16	228	9
h	107	4 3/16	156	6 1/8
VW	128	5 1/16	197	7 3/4
VR	78	3 1/16	105	4 1/8
Weight kg/lbs*	6.5 / 14.3		15.1 / 33.3	





Size Selection Tables

Models 30 (16 bar rated valves) / 31 (25 bar rated valves)

Valve Size		40 (1½")	50 (2")	65 (2½")	80 (3")	100 (4")	150 (6")	200 (8")	250 (10")	300 (12")	350 (14")	400 (16")	450 (18")	500 (20")	600 (24")	700 (28")	800 (32")
Max. recommended flow rate for continuous operation (m^3/h)		25	40	40	100	160	350	620	970	1400	1900	2500	3100	3600	5600	7600	8135
Max. recommended flow rate for continuous operation (Gpm)		110	180	180	440	700	1600	2800	4300	6200	8400	11000	13660	15800	24700	33500	35840
Min. recommended flow rate		<1m^3/h (<5 gpm)															
Globe Type																	
Flow Rate Factor:	Kv (Metric)	43	43	43	103	167	407	676	1160	1600	1600	3000	3150	3300	7000	7000	7000
	Cv (US)	50	50	50	120	195	475	790	1360	1900	1900	3500	3700	3860	8200	8200	8200
Head Loss Factor K (dimensionless)		2.2	5.4	15.4	6.7	5.6	4.8	5.5	4.5	5	9	3.8	6	5.9	4.2	7.8	13.4
Angle Type																	
Flow Rate Factor:	Kv (Metric)	60	60		140	190	460	770	1310								
	Cv (US)	70	70		164	222	537	900	1533								
Head Loss Factor K (dimensionless)		1.3	2.8		3.3	4.3	4.3	4.2	3.6								

For head Loss of fully open valves use the following equations:

$H\ (Bar) = \left(\frac{Q\ [m^3/h]}{Kv}\right)^2$ | $H\ (Psi) = \left(\frac{Q\ [gpm]}{Cv}\right)^2$ | $H = K\ \frac{V^2}{2g}$

Model 32 (25 bar rated valves)

Valve Size		80 (3")	100 (4")	150 (6")	200 (8")	250 (10")	300 (12")	350 (14")	400 (16")	450 (18")	500 (20")	600 (24")
Max. recommended flow rate for continuous operation (m^3/h)		60	145	225	510	970	1400	1900	2030	3100	3600	3600
Max. recommended flow rate for continuous operation (Gpm)		265	640	990	2250	3990	6200	8400	8940	13660	15860	15860
Min. recommended flow rate		>1 m^3/h (>5 GPM)										
Flow rate factor:	Kv	43	115	165	345	663	1160	1600	1600	3000	3000	3000
	Cv	50	133	192	400	770	1360	1900	1900	3500	3500	3500

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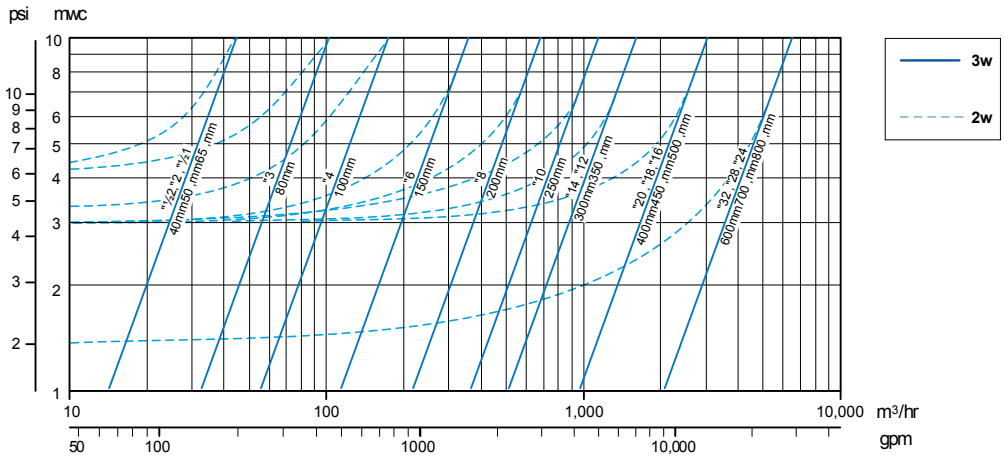
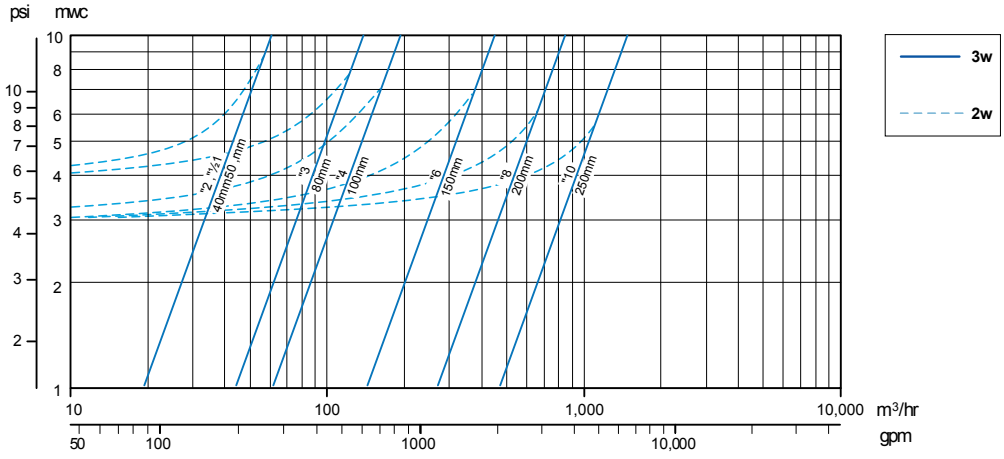
Headloss Charts

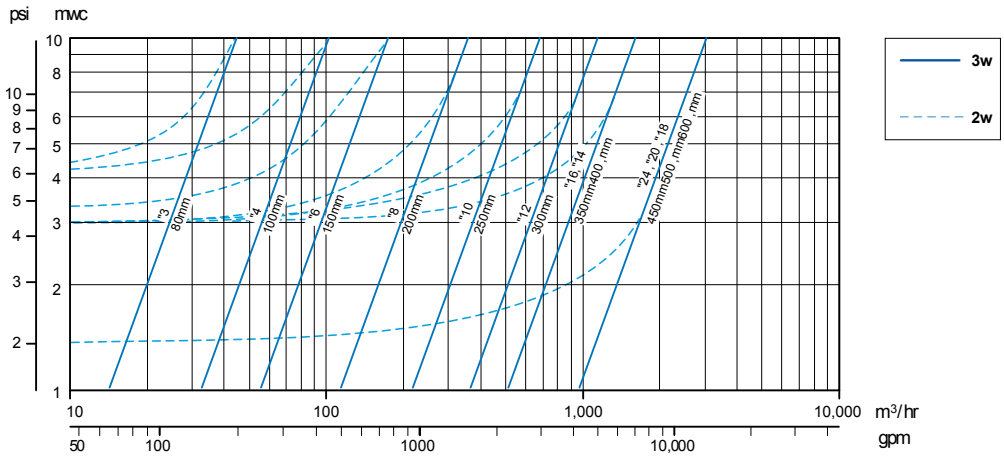
Models 30/31 (Globe Pattern) Pressure Loss Chart



Models 30A/31A (Angle Pattern) Pressure Loss Chart



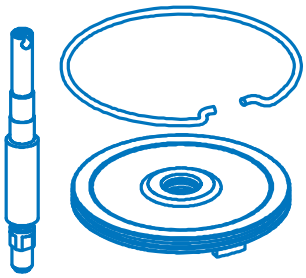
Model 32 (Globe Pattern) Pressure Loss



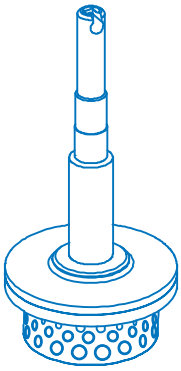
Components

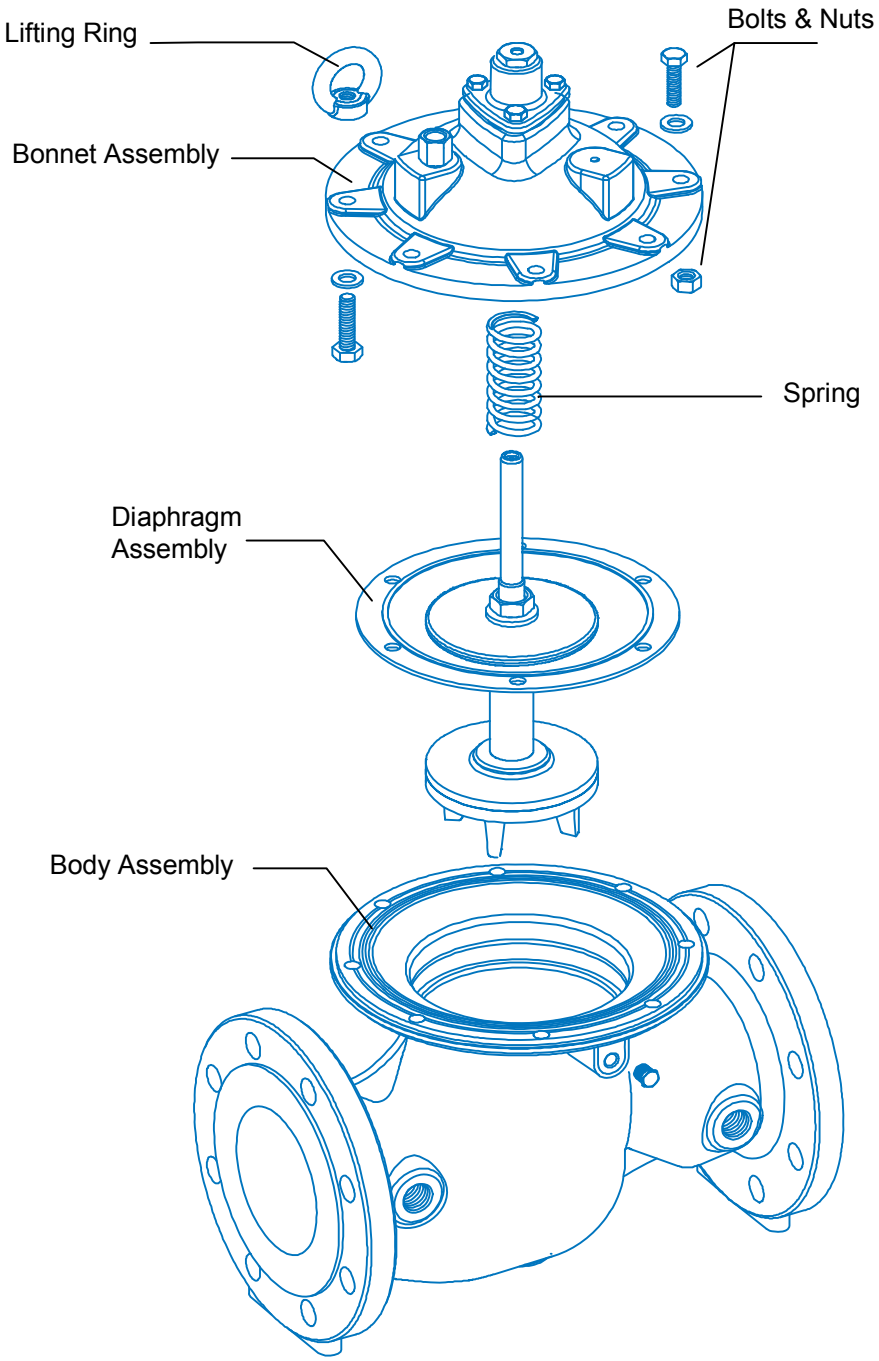
Position Ind. Kit

Double-Chamber Conversion Kit



'F' Version Conversion Kit





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Electronic and Remote control functions

EL Electrically- activated valve
Controlled by an electric solenoid valve, that initiates opening or closure of the main valve. The electric control can be added to most other control applications.

EL

EC Electronically- controlled valve
Activated by the versatile DOROT "ConDor" controller, that enables all control functions, or combination of functions, at extreme accuracy. Can be controlled by any pulse- activating controller.

EC

Pressure Regulating functions

PR Pressure Reducing valve
Reduces high upstream pressure to a steady, lower downstream pressure, regardless of fluctuations in the values of upstream-pressure or rate of flow.
Should downstream pressure exceed the required set point (due to stoppage of the flow in the pipeline), the valve closes drip tight.
Dorot PR valve is also UL listed, for use in fire fighting systems.
Optional Pressure Reducing applications:

- **PRM(T2)** Dual Set-Point, Timer-modulated pressure reducing valve
- **PRM(FM)** Electronically-Controlled, Flow-Modulated PRV
- **PRM(HyMod)** Hydraulically-Controlled, Flow-Modulated PRV
- **PR(D)** Differential Pressure Reducing valve

PR

PRM

PR(D)

PS Pressure Sustaining valve
Assembled in the pipeline and modulates to maintain a steady pressure in the network upstream of its location.
Dorot PS valve is UL listed for use in fire-fighting systems.
Optional Pressure Sustaining applications:

- **PS(R)** Pressure Sustaining/Relief valve
- **DI** Differential- sustaining valve

PS

Rate of Flow Regulating functions

FR Flow-rate control valve
Maintains preset, stabilized flow rate in the network regardless of pressure variations and flow demand.

FR

FE Rupture- protection valve
Normally-open in-line valve. Should the flow Rate exceed a preset point, due to pipe rupture, the valve closes automatically.

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Water Level Control

FL Water-level control valve- modulating type
Mounted on the tank / reservoir inlet, below or above the water level. Closes when the water level rises to the float location, preventing overflow, and opens when the water level drops.

FLDI1 and FLDI2 Water-level control valve- differential type
Mounted on the tank / reservoir inlet, below or above the water level. It closes when the water rises to the requested maximal level, and opens when the water level drops to a preset minimal point. The levels difference is adjustable.

AL Altitude control valve
Mounted on the inlet of the tank / reservoir, below the water level . The valve is activated by the hydrostatic pressure of the water level. It closes when the water rise to the requested maximal level, and opens fully when the water level drops to the preset minimal point. The differential between the water levels is adjustable.

FLEL Electrically-activated level control valve
Mounted on the tank / reservoir inlet, below or above the requested water level.
Activated by An Electric Float pilot located in the tank / reservoir. It closes when the water rise to the requested maximal level, and opens fully when the water level drops to the preset minimal point. The differential between the water levels is adjustable.

AL / PR, FLDI1 / PR, FLDI2 / PR Combination of water level and flow rate control
Mounted on the tank / reservoir inlet. It limits the flow into the tank, and maintain the preset maximal and minimal water levels.

AL / PS, FLDI1 / PS, FLDI2 / PS Combination of water level and back-pressure control
Mounted on the tank / reservoir inlet. It maintains the pressure in the supply network and the preset maximal and minimal water levels.

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Pumping Systems Control and Water Hammer / Surge Protection

CV Check valve
The valve is in "open" position when inlet pressure is higher than outlet pressure.
The valve closes, preventing returning flow, on inverted flow direction.

NS Two-Stages, cushioned closure check valve
Developed to eliminate pressure slam of check valves, frequently found in roof-tank filling pumps of high-rise buildings. It opens on pump start, and closes at controlled pace when the pump stops.

BC Pump control valve
Installed on the pump discharge. Eliminating pressure surges caused by rapid change of the pipe velocity. Opens slowly on the pump startup, and closes at adjustable pace before shut-off. The pump motor is then switched-off by an electric interlink with the valve.
Optional Pump Control valve applications:

- **BC/PS** Pump control and Back-pressure sustaining valve
- **BC/CD** Pump control valve with extended closure, for long pipelines
- **BC/DI** Booster pump control, maintains constant flow at varying suction conditions

DW Deep well control valve
Mounted on a tee junction, on the discharge head of deep well, upstream of the Check valve. Eliminating pressure surges caused by sudden change of the pipe velocity through start-up and shut-off.

QR Quick-Relief Safety valve
Mounted on a tee junction in the pipeline, releasing the water out of the network.
When upstream pressure exceed the safe value- the valve opens instantly, releasing the pressure surge.

RE Surge-anticipating valve, Hydraulic activation
Mounted on a Tee junction, in a discharge pipe of a pumping station. Protecting the pumping and the network systems from water hammer, generated by power failure, by releasing the returning wave from the system. The valve is activated by the initial low-pressure wave.

RE/EL Surge-anticipating valve, Electric activation
Mounted on a Tee junction, in a discharge pipe of a pumping station. Protecting the pumping and the network systems from water hammer, generated by power failure, by releasing the returning wave from the system. The valve is activated electrically by the power failure event.

SP Surge-preventing closure
A unique DOROT control module, that can be added to any automatic valve. It prevents water hammer, that is generated by the valve closure, when it is located at the end of a long pipeline.

Fire Fighting Applications

The Dorot 300 series valves are UL-listed to be used in Fire Protection Systems at various ranges of applications.

Deluge Valves

The Dorot UL Deluge Valves are suitable for systems that include Electric, Hydraulic or Pneumatic detections. The Dorot 300 series Deluge Valves are activated by each signal or by combinations thereof. All applications are equipped with a manual emergency actuation valve and approved for use in Fire Protection Systems as Automatic Reset or Manual Reset Valves.

DE/EL

Monitor Valves

The Dorot 300 Series Monitor Valves are designed to open immediately as a response to Electric, Hydraulic, Pneumatic or manual activation. The valves use the line pressure to develop maximum power and do not need any external source of power.
The Dorot 300 Series Monitor Valves are designed to be activated locally or remotely.

U-DE/EL

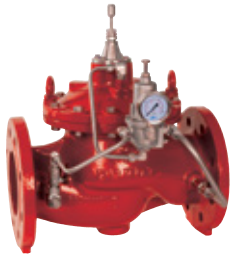
Pressure Reducing Valves

The Dorot 300 Series UL Pressure Reducing Valves are hydraulically self-operating Diaphragm Valves that reduce High upstream pressure to Lower downstream pressure regardless of the upstream pressure fluctuation or unstable flow demand.
The Dorot 300 Series UL Pressure Reducing Valves are designed to maintain constant downstream pressure at all flow conditions.

PR/UL

Pressure Relief Valves

The Dorot 300 Series UL Pressure Relief Valves are designed to maintain constant pressure in the fire Protection System and prevent over pressure by relieving excess pressure back to the reservoir or vent to the atmosphere.



PS/UL

Additional information about the Dorot 300 series Fire Protection applications can be found in the Dorot Fire Protection catalogue.

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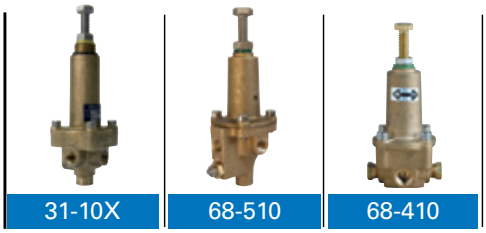
Mini Pilot-Valves

For valve sizes 20mm to 150mm - $^{3}/_{4}$" to 6"
Pressure rating: 25 bar / 360 psi
68-410 - 2-way Pressure reducing pilot valve
68-510 - 2-way Pressure sustaining pilot valve
31-10X - 3-way (pressure rating 16bar / 250psi) Multi purpose (pressure reducing and sustaining) pilot valve

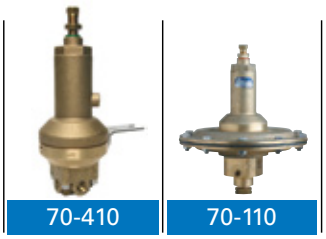


Pilot-Valves

For valve sizes 40mm to 600mm - $1^{1}/_{2}$" to 24"
Pressure rating: 25 bar / 360 psi
CXPR - 2-way Pressure reducing pilot valve (CXRS - remote sensing, CXRD differential pressure reducing)
CXPS - 2-way Pressure sustaining pilot valve (CXSD differential pressure sustaining)
31-310 - 3-way Multi purpose (pressure reducing and sustaining) pilot valve
76-200 - 3 way Differential multi purpose (flow control, differential pressure sustaining)
68-41M - 2-way, Pneumatically modulated, pressure reducing pilot valve

High Sensitivity Pilot-Valves

For valve sizes 40mm to 600mm - $1^{1}/_{2}$" to 24"
Pressure rating: 25 bar / 360 psi
70-410 - 2-way Differential pressure reducing mini pilot valve (flow control and altitude control)
70-110 - 3 way Differential multi purpose (flow control, altitude control and differential pressure sustaining) with adjustable differential
31-10H - 3 way multi purpose mini-pilot (flow control, altitude control and differential pressure control)



Float Pilot-Valves

For valve sizes 40mm to 600mm - $1^{1}/_{2}$" to 24"
Pressure rating: 25 bar / 360 psi
70-200 - Electric float
70-400 - Modulating, 2-way metal float pilot
70-610 - Horizontal, differential, 3-way metal float pilot
70-550 - Vertical, differential, 3 and 4-way metal float pilot

Pilots And Accessories

Relay-Valves

For valve sizes 40mm to 600mm - $1^1/_2$" to 24"
Pressure rating: 25 bar / 360 psi
66-210 3-way / 2 positions NO (66-213: NC) hydraulic relay
66-310 3-way adjustable hydraulic relay
28-200 2-way / 2 positions hydraulic relay
28-300 3-way / 2 positions NO/NC hydraulic relay


28-300


66-210


66-310


28-200

Heavy-duty Solenoid Valves

For valve sizes 20mm to 600mm - $^3/_4$" to 24"
Pressure rating: According to the selected orifice and solenoid type
Operating Voltage (others available upon request):
AC: 24V, 110V or 220V
DC: 12V or 24V
Latch 9V, 12V, 24V
B2 2-way NC or NO solenoid valve
B3 3-way NC or NO solenoid valve

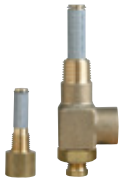

B2


B3

Control Filters

Self-Flushing, Inline Stainless steel screen filter located within the main valve, and rinsed continuously by the stream
Sizes: $^1/_4$", $^1/_2$", 1
External, "Y" type
Stainless steel screen installed in a "Y" shaped body on the pressure source.
Sizes: $^3/_8$", $^1/_2$"
External, large - A large volume external filter


Filtro en "Y"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Automatic Control Valves

Gal Valves - Diaphragm sealing valve. Waterworks, Agriculture and Waste Water applications. Extremely simple structure, single moving part with very low head-loss. Available in Diameters of: 3/4" (20mm) - 24" (600mm).

Series 500 - Disc seal, Y type valve. This valve is compact, partially made of new composite materials. Wide range of flow and pressure regulation. Available in Diameters of: 1.5" (40mm) - 8" (200mm).

uPVC Valves - Diaphragm sealing valves made of uPVC. For use with aggressive water and with underground (PVC) piping. Available in Diameters of: 3" (80mm) - 6" (150mm).

Glass Reinforced Nylon Valves - Diaphragm sealing valves made of reinforced Polyamide used in Greenhouses, Field Crops, Irrigation, Landscaping, Water Treatment (non corrosive). Available in Diameters of: 3/4" (20mm) - 3" (80mm).

Back Flushing Valves - Specially designed valves for back flow flushing of filtration systems. Available in Cast Iron or Glass Reinforced Nylon, Single or Double chamber operation.

Air Release Valves

Irrigation Me

. **Plastic Air Release Valves -** Kinetic, Automatic and Combination Air Release Valves made of Polypropylene materials. Available in Diameters of: 1" (25mm) - 2" (50mm).

Metalic Air Release Valves - Kinetic, Combination and Sewage Air Release Valves made of ductile iron, NAB, SST or other materials. Option for surge arrestor feature. Available in Diameters of: 2" (50mm) - 12" (300mm).

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Expertise
Reliability

Dorot matholding group

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