

Spring operated pressure reducing valve DRVD Type



The spring operated pressure reducing valve (DRVD) is able to reduce automatically the downstream pressure to a pre-selected value independently from the upstream pressure and flow-rate condition.

This valve is used on pipeline for safety reasons (to have downstream pressure lower than the permissible value) and also for functionality reasons (to make work the downstream pipeline at constant pressure).

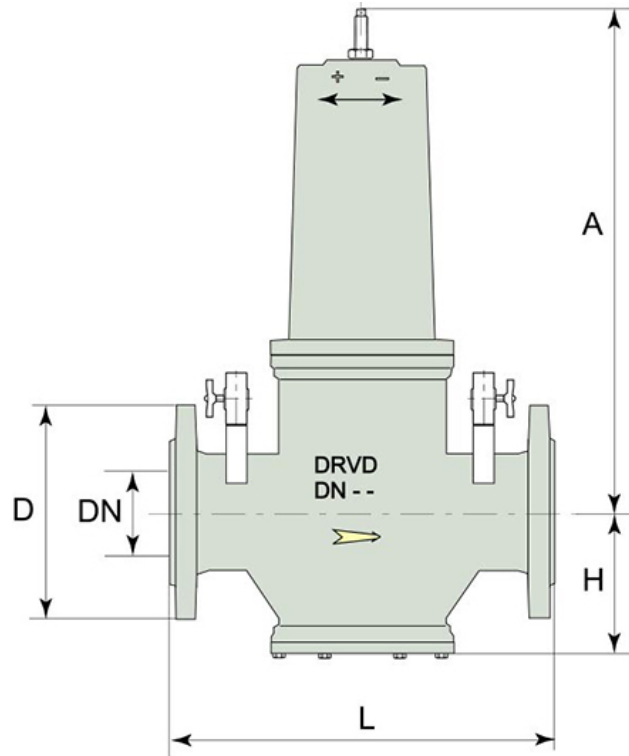
The DRVD are available from DN50 to 200 mm for PN16 bar.

Downstream pressure adjustable from 1,5 to 6 bar, standard version.

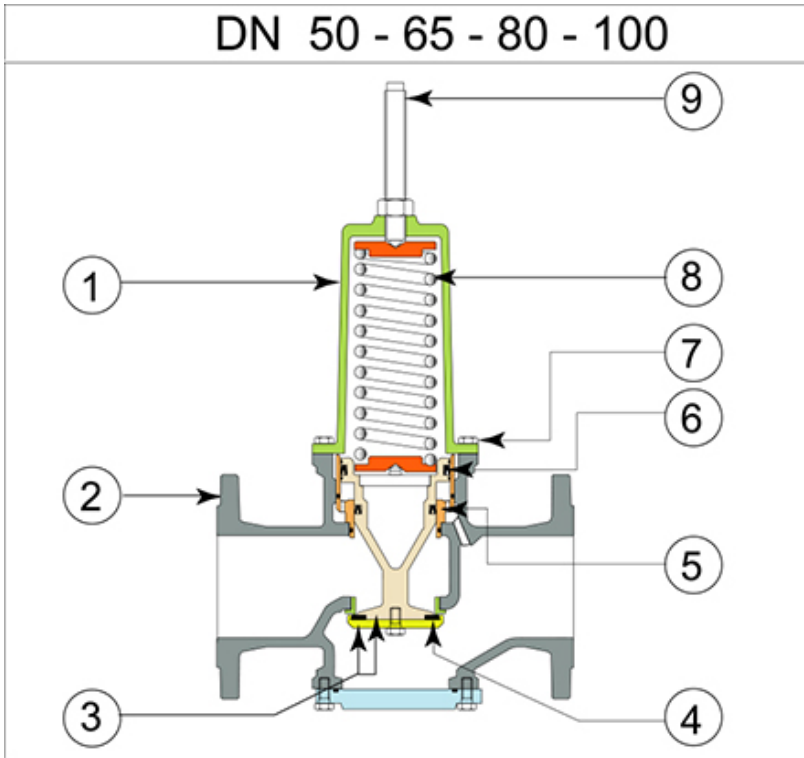
Downstream pressure adjustable from 4 to 12 bar, on demand.

DN (mm)	L (mm)	A maxi (mm)	D (mm)	H (mm)	PN 10		PN 16	
					Mass (kg)	References	Mass (kg)	References
50	230	300	165	82	15.00	165834	15.00	165834
65	290	350	185	90	22.00	165872	22.00	165872
80	310	390	200	100	27.00	165911	27.00	165911
100	350	440	220	121	37.00	166907	37.00	166907
125	400	560	250	152	78.00	165986	78.00	165986
150	450	670	285	169	92.00	166029	92.00	166029
200	550	1050	340	234	191.00	166070	180.00	166071

Standard version for downstream pressure from 1.5 to 6 bar

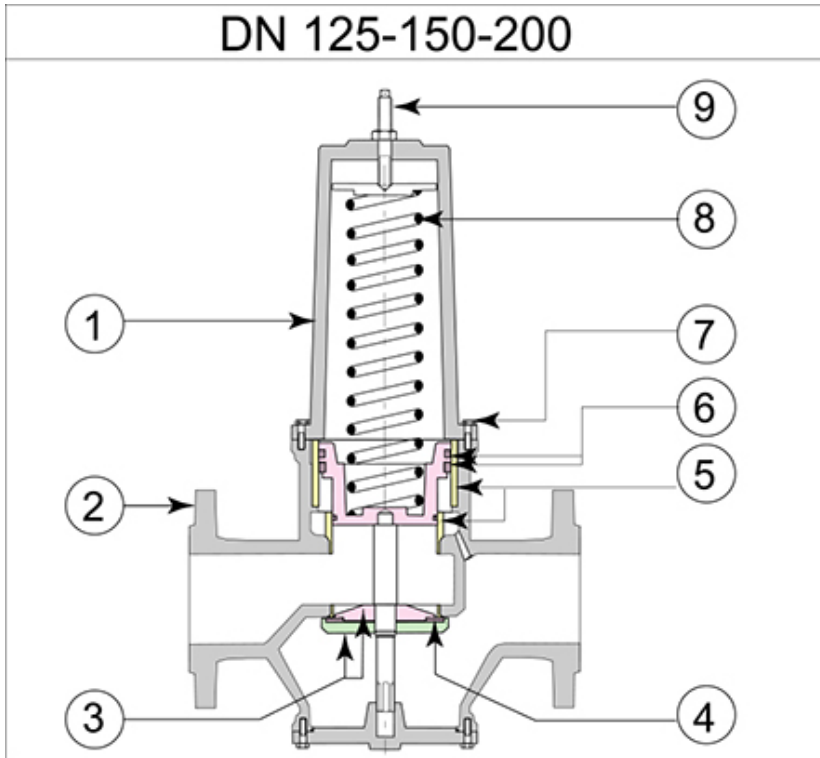


Material and coating (DN50 - 65 - 80 - 100)



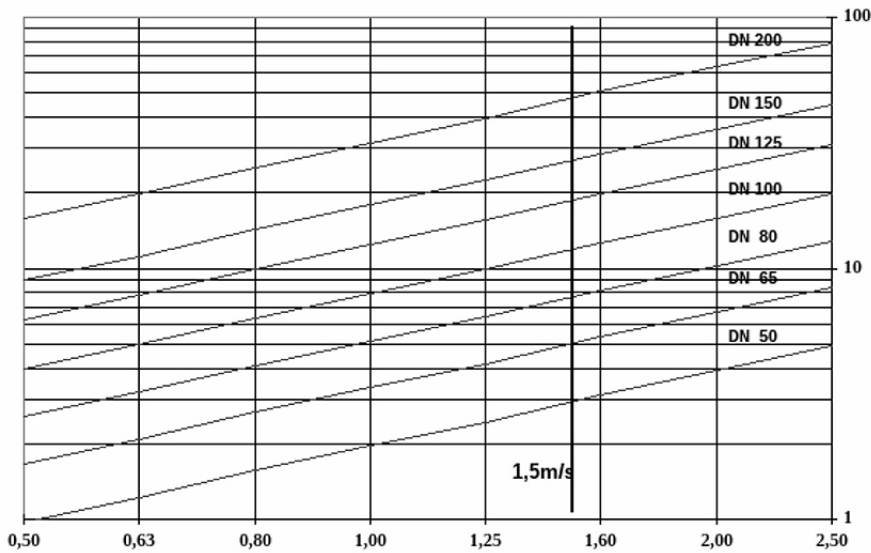
Item	Description	Material	Coating
1	Cover	Ductile Iron EN-GJS-400-15 according to EN 1563	Blue epoxy, mini thickness 250µm.
2	Body	Ductile Iron EN-GJS-400-15 according to EN 1563	Blue epoxy, mini thickness 250µm.
3	Retaining disk	Brass CW 612 N according to EN 12164	
4	Gasket	Nitrile (NBR)	
5	Seat ring	Bronze	
6	Gasket	Nitrile (NBR)	
7	Screw	Stainless steel X5CrNi18-10 according to EN 10088-3	
8	Spring	Steel 55 Si 7 according to EN 10132-4	Epoxy Cataphoresis
9	Adjustment screw	Galvanized steel Class 4.8 according to EN 20898-1	

Material and coating (DN125 - 150 - 200)

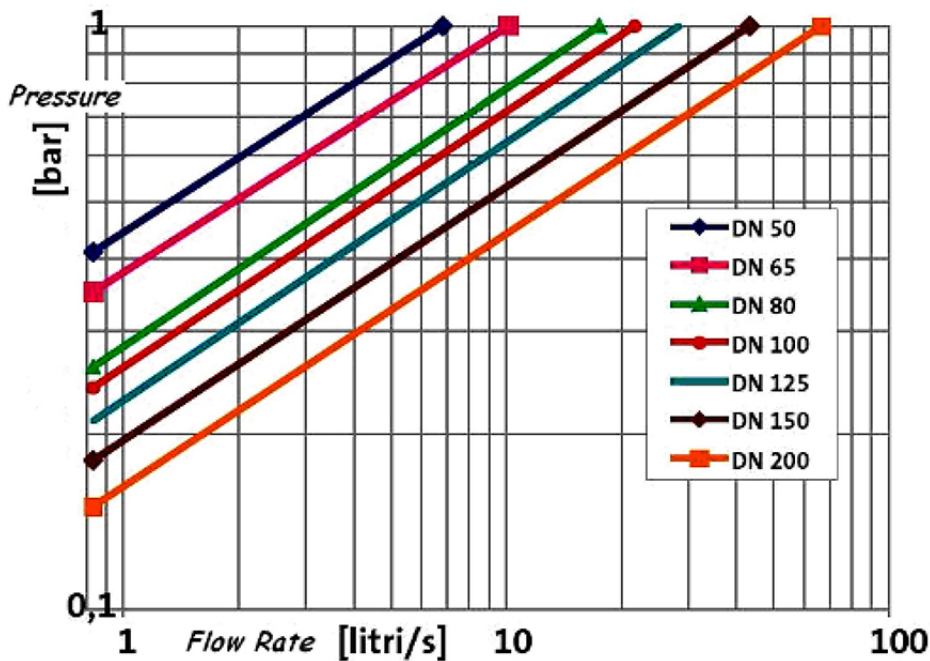


Item	Description	Material	Coating
1	Cover	Ductile Iron EN-GJS-400-15 according to EN 1563	Blue epoxy, mini thickness 250µm.
2	Body	Ductile Iron EN-GJS-400-15 according to EN 1563	Blue epoxy, mini thickness 250µm.
3	Retaining disk	Galvanized steel S235JR according to EN 10025	
4	Gasket	Nitrile (NBR)	
5	Seat ring	Bronze CuSn5Zn5Pb5-CC491K according to EN 1982	
6	Gasket	Nitrile (NBR)	
7	Screw	Stainless steel X5CrNi18-10 according to EN 10088-3	
8	Spring	Steel 55 Si 7 according to EN 10132-4	Epoxy Cataphoresis
9	Adjustment screw	Galvanized steel Class 4.8 according to EN 20898-1	

Hydraulic characteristics



Speed in m/s and flow in l/s



Choice of the valve

The selection of DRVD is made considering that the speed inside the valve does not have to reach an excessive value that can cause vibrations, noises, head loss or cavitation.

Moreover it's necessary to verify that the exercise temperature have to stay between 0°C and 40 °C.

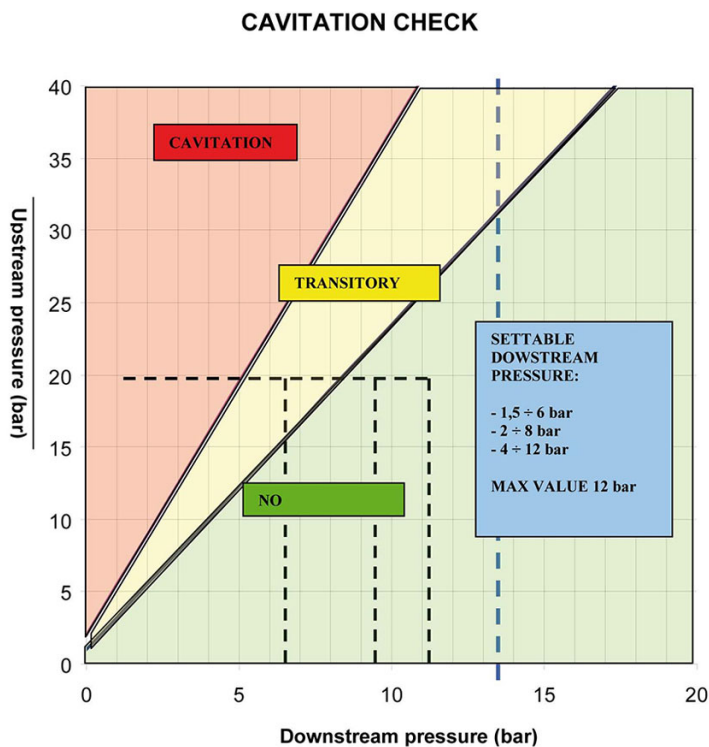
For a right dimensioning it's necessary to know the followings parameters:

- Upstream hydrostatic pressure (that is the pressure with valve close)
- Required downstream pressure
- Maximum speed in the DRVD (maximum speed = 1,5 m/s). In alternative is enough to know the flow rate Q and is possible to determinate the appropriate diameter in this way:

From the following graph, with the project flow rate Q and with the maximum speed, it's possible to determinate the diameter.

The head loss in DRVD is determinable from the following diagram: see second diagram.

Cavitation




To avoid cavitation it's necessary to verify that there's not an elevated difference of pressure between upstream and downstream.

Entering in the graph with the value of upstream pressure and with the required value of downstream pressure, it's possible to have three different situations:

- The point is in the no cavitation zone;
- The point is in the transitory zone: can be some problem of cavitation. The functioning it's possible only for a short time, otherwise there's the damaging of the valve;
- The point is in the cavitation zone: is not possible to work otherwise there can be a quickly damaging of the valve.

Applicable Standards

DRVD - B	
DN 80	Cod.0504083 - P
PN 16 bar	Range 1,5 - 6 bar
RR08S0AA	S.N 20859

Hydraulic test

Every single DRVD is subjected to hydraulic final test with the purpose of verifying the accordance with the prescriptions EN 12266:

- Body test at max (1,5·PN; PEA) (open valve);
- Seat test at 1,1·PN (close valve).

Product test

Control of coating: test of thickness, holiday test, impact test, MIBK test.

Conformity to the standards

Plant test:

- EN 12266

Flanges drilling:

- EN 1092-2
- ISO 7005-2

Face to face dimension:

- ISO 5752-1 for DN 50-125
- EN 558 series 1 for DN50-125, series 26 for DN150-200

Suitability for potable water:

- D.M. 174/04 for applicable parts (ex C.M. 102 of 02/12/1978)
- Conformity to foreign norms: KTW (Germany), WRC (U.K.), ACS (France)

Marking

Label on the flange, example: see attached label.

On the body:

- Material: GGG40

- Flow rate direction
- Type: DRVD (DN)

On the cover: regulation direction.

Instruction for use

Storage

The valve will have to be held (if possible) in covered places, the most possible protected from the sun and from the rain and generally from the atmospheric agents. Moreover it will have to be avoid that the seal of the same comes in contact with powder or earth.

Installation

The DRVD has to be installed in horizontal position, respecting the flow rate direction indicated on the valve. We advise to use the horizontal installation to avoid the risk of gasket weakening. It's advisable to ensure an easy accessibility with a section device and to prevent damage to the pressure reducing valve using an upstream filter. We recommend a dismounting joint installation to facilitate all the operation of mounting and maintenance.

Regulation

Unscrew completely the spring, introduce the fluid at max flow rate and close the section valve downstream. In this condition the DRVD closes. Regulate progressively and slowly the screw. Consequently, the valve opens slowly: watching on a gauge the downstream pressure till the attainment of required value without flow rate (pressure gauge available on demand). Please refer to the O&M manual for details.

Maintenance

All maintenance operations have to be carried out after emptying the pipeline (no water flow and no pressure) to avoid any danger during these operations. In any case, when the superior and inferior covers are dismantled, the shutter and the gasket can be easily extracted and, if necessary, replaced without remove the valve from the pipeline. Please refer to the O&M manual for details about the ordinary and extraordinary maintenance operations.

Linked products



Operation and maintenance instructions for pressure reducing valve Type DRVD NG DN50-100



Operation and maintenance instructions for pressure reducing valve Type DRVD DN125-200

The information on this sketch is, to the best of our knowledge correct at the time of printing. However Saint-Gobain are constantly looking at ways of improving their products and services therefore reserve the right to change without prior notice, any of the data shown. Any orders placed will be subject to our Standard Conditions of Sale, available on request.