



DRV



DRVE

DRV and DRVE pressure reducing valves are a high quality industrial valve suitable for inlet pressure up to 2500kpa. They are designed to reduce outlet pressure of between 100 and 600kpa and are easily adjustable by simply turning a screw on the valve. The DRV and DRVE can be used on water, air and neutral gases.

FEATURES

- Equilibrated seat ensures stable outlet pressure even with sudden and varying inlet pressure changes.
- DRV incorporates cleanable strainer and barrel union ends.
- Pressure gauge port for setting.
- High flow rates.
- Low noise level of less than 20 decibels.

OPTIONS

- Gauges.

TECHNICAL DATA

Size Range:	DN15 - DN50
Max. Upstream Pressure:	25 bar
Downstream Pressure: (Outlet)	1.5 - 6 bar
Connections:	DRV barrel unions BSP DRVE BSPF
Downstream Pressure Adjustment: (setting screw)	Increase pressure (clockwise rotation) Decrease pressure (anti-clockwise rotation)
Maximum Operating Temperature:	30°C

CHOOSING THE CORRECT SIZE OF DRV PRESSURE REDUCING VALVE

Correct sizing is very important when choosing the right DRV for the job. It is important that the media speed or velocity is not so high as to cause large pressure drops or noise levels which will be conveyed to the distribution network. Velocities should be kept between 1 and 2 m/sec for fluids and 10 and 20 m/sec for air (refer to graph C).

Once you have chosen either the DRV or DRVE you can select the correct size from graph A. Having done this, graph B will also give you head losses for the size of the valve chosen, this is to be added to the set pressure reducing valve.

EXAMPLES OF SIZING:

Example 1 (cavitation)
Pressure reducing valve with:

Inlet Pressure $P_1 = 14$ bars
Outlet Pressure $P_2 = 3$ bars

From the cavitation diagram it can be seen that the pressure reducing valve is constantly working in the red zone. To avoid rapid deterioration, two pressure reducing valves could be used, one connected upstream to the other.

Upstream pressure reducing valve: pressure front from 14 to 6 bars (green zone).
Downstream pressure reducing valve: pressure front from 6 to 3 bars (green zone).

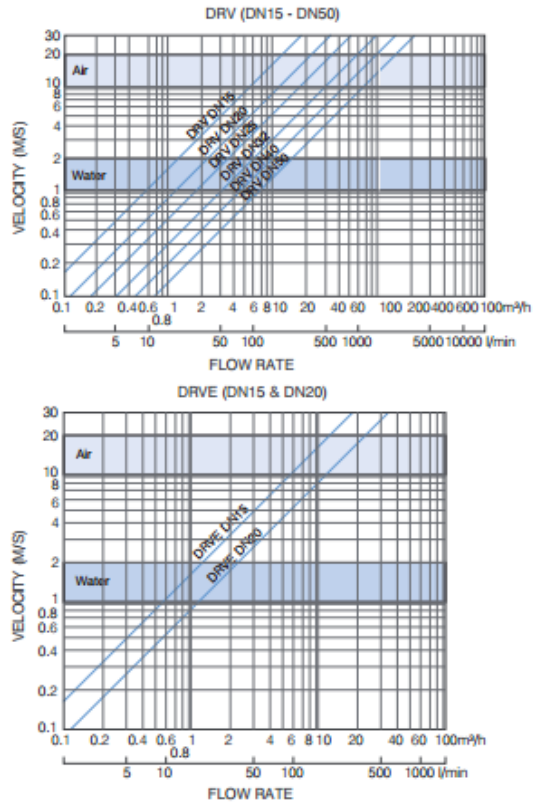
Example 2 (flow rate)
DRV/E pressure reducing valve with:

Inlet pressure (min) $P_1 = 8$ bars
Outlet pressure $P_2 = 4$ bars
Maximum flow rate $Q = 50$ l/min

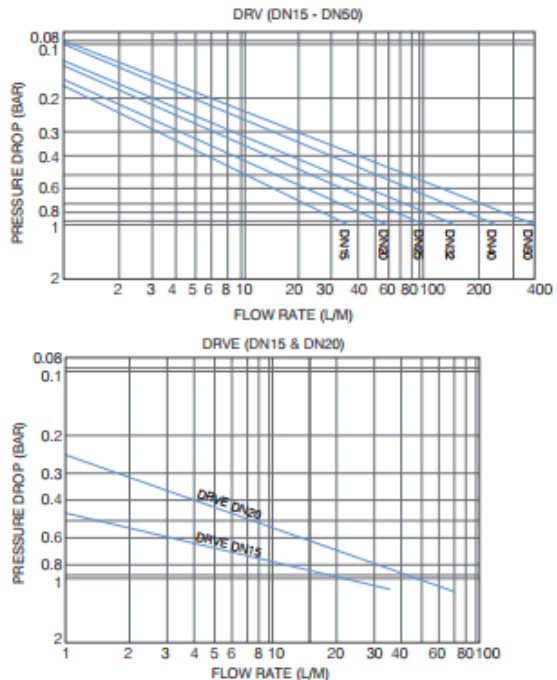
From the flow rate-speed diagram, it can be deduced that a 20 or 25 diameter should be used. From the pressure drop diagram, the following two cases emerge:

DRV20/N $Q = 50$ l/min $DP = 1.1$ bars
DRV25/N $Q = 50$ l/min $DP = 0.68$ bars

GRAPH A: FLOW RATE/ SPEED



GRAPH B: FLOW RATE/ PRESSURE DROP



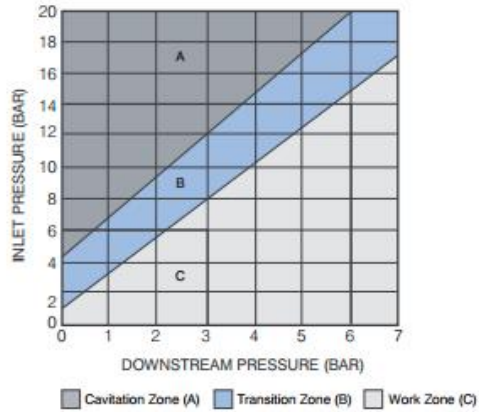
CAVITATION

The cavitation graph shows three operating zones of the pressure reducing valve plotted against the upstream and downstream pressures, namely:

Work Zone (C): normal duty, no cavitation.
 Transition Zone (B): medium duty, risk of cavitation.
 Cavitation Zone (A): heavy duty, the pressure reducing valve shows cavitation.

Continuous operation in the red cavitation zone could cause rapid damage of the internal parts. If the pressure reducing valve is to operate in the red zone, contact the Technical Department of AVFL.

CAVITATION (GRAPH C)



PARTS & MATERIALS

DESCRIPTION	DRV MATERIAL	DRVE MATERIAL
Body	Brass (sand-blasted CW617N)	Brass (sand-blasted CW617N)
Cap	Brass (sand-blasted CW617N)	Reinforced resin
Spring	Galvanized Steel	Galvanized Steel
Diaphragm	NBR reinforced with nylon fabric	NBR reinforced with nylon fabric
Union Connections	Brass (CW617N)	N/A
Guide Bushing	Brass (CW617N)	Brass (CW617N)
Filters	Stainless Steel	N/A
Outlet Connections	Brass (CW617N)	N/A

DIMENSIONS (MM)

SIZE	DRV						DRVE					
	DN	Inch	L	It	H	h1	Weight (Kg)	L	ØL	H	h1	Weight (Kg)
15	½		97	152	135	48	0.9	64	42	93	23	0.3
20	¾		110	171	155	58	1.2	75	45	112	30	0.4
25	1		120	191	182	66	1.7					
32	1 ¼		140	211	227	75	3.1					
40	1 ½		160	246	255	82	5.1					
50	2		175	261	262	88	6.3					

