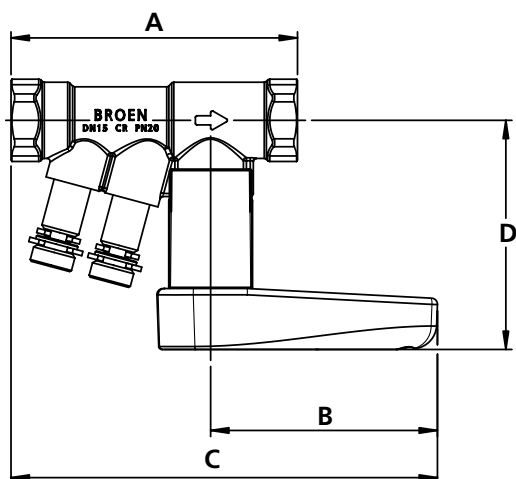


Balancing Valves

FIG 900S Venturi Commissioning Station (FODRV)

Female x Female DN15-DN50

Dimensions



BOSS™ 900S



BOSS™ 900S Venturi FODRV DN15-50

Specification

The commissioning station and DRV incorporates a characterised regulating needle combined with an isolating ball valve. The double regulating feature allows the valve to be isolated without movement of the set regulation point. The needle is regulated using an allen key. The valve is suitable for mounting in any orientation.

The flow rate is measured using a fixed orifice Venturi cartridge with double seal test points inserted into the valve body. These functions are incorporated into a single fitting which contains any up and down stream lengths required for laminar flow conditions except when installed in close proximity to a pump. The commissioning valve should produce a signal of between 10 – 60kPa except on the ultra low flow valves where the signal should be between 1 – 4.7kPa. The valve is suitable for mounting with the test points pointing down. The commissioning station has an accuracy of +/-3%.

Weights & Dimensions – FODRV Female x Female							
Size DN	Nominal Size	A mm	B mm	C mm	D mm	Weight kg	Product Code
15UL	½in	94	75	144	76	0.405	22073188
15L	½in	94	75	140	76	0.405	22073199
15S	½in	94	75	140	76	0.495	22073207
15H	½in	94	75	140	76	0.495	22073410
20L	¾in	100	75	144	79	0.405	22073273
20S	¾in	100	75	144	79	0.495	22073218
20H	¾in	100	75	144	79	0.495	22073421
25S	1in	112	75	150	83	0.67	22073229
25H	1in	112	75	150	83	0.67	22073432
32H	1½in	130	122	208	109	1.27	22073240
40H	1½in	140	122	213	113	1.66	22073251
50H	2in	156	122	221	120	2.37	22073262

Balancing Valves

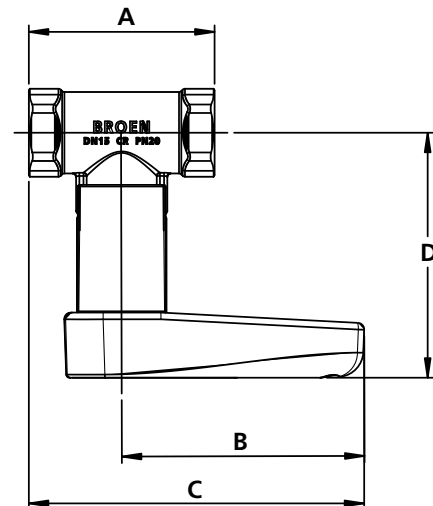
FIG 901S Venturi (DRV)

Female x Female DN15-DN50



BOSS™ 901S Venturi DRV DN15-50

Dimensions



BOSS™ 901S

Weights & Dimensions – DRV Female x Female							
Size	Nominal	A	B	C	D	Weight	Product
DN	Size	mm	mm	mm	mm	kg	Code
15L	½in	57	75	104	76	0.23	22073967
15S	½in	57	75	104	76	0.23	22074006
20L	¾in	62	75	106	79	0.29	22073989
20S	¾in	62	75	106	79	0.29	22074017
25S	1in	75	75	113	83	0.47	22074028
32S	1¼in	88	122	166	109	1.01	22074039
40S	1½in	122	171	113	113	1.24	22074050
50S	2in	115	122	180	120	1.80	22074061

Flow Measurement

Flow measurements are via the Venturi nozzle. The BOSS™ Venturi has two test points (P/T plugs). The high pressure test point is identified by the RED retaining clip and the low pressure test point is identified by the BLUE retaining clip. The pressure differential measured between these test points can be used to calculate the actual flow through the Venturi. This differential can be measured using a flow meter or other measuring device. This is converted into a flow rate of litres per second (l/s) or metres cubed per hour (m³/h) either electronically or using a calculation formula.

Valve Sizing

Sizing disc available on request via your local BSS branch or the BOSS™ Technical Team on 0116 245 5940.

Balancing Valves

Balancing Valves

Technical Specification – Female x Female		
	FODRV	DRV
Pressure & Temperature Classification		
Temperature Max (Max)	120°C	135°C
Pressure (Max)	25 bar	25 bar
Materials of Construction		
Valve body	DZR Brass CW602N CuZn36Pb2As	
Spindle	DZR Brass CW602N CuZn36Pb2As	
Ball & adjusting screw	DZR Brass CW602N CuZn36Pb2As Chromium Plated	
Gaskets	PTFE	
O-rings (seals)	EPDM	
Handle	Polyamide P6.6 30% Glass Reinforced	
Measuring P/T plug	DZR Brass CW602N CuZn36Pb2As	
Rubber in P/T plug	EPDM	
Markings on Valves		
Valve Body (Compression & Female)	DN & PN20	DN & PN20
Valve Body (Pressfit)	DN & PN25	DN & PN25
Handle	DN & Kvs Value	DN
Connection		
Female thread	ISO 7/1 Parallel	
Pressure Test According to	ISO5208:1993E	

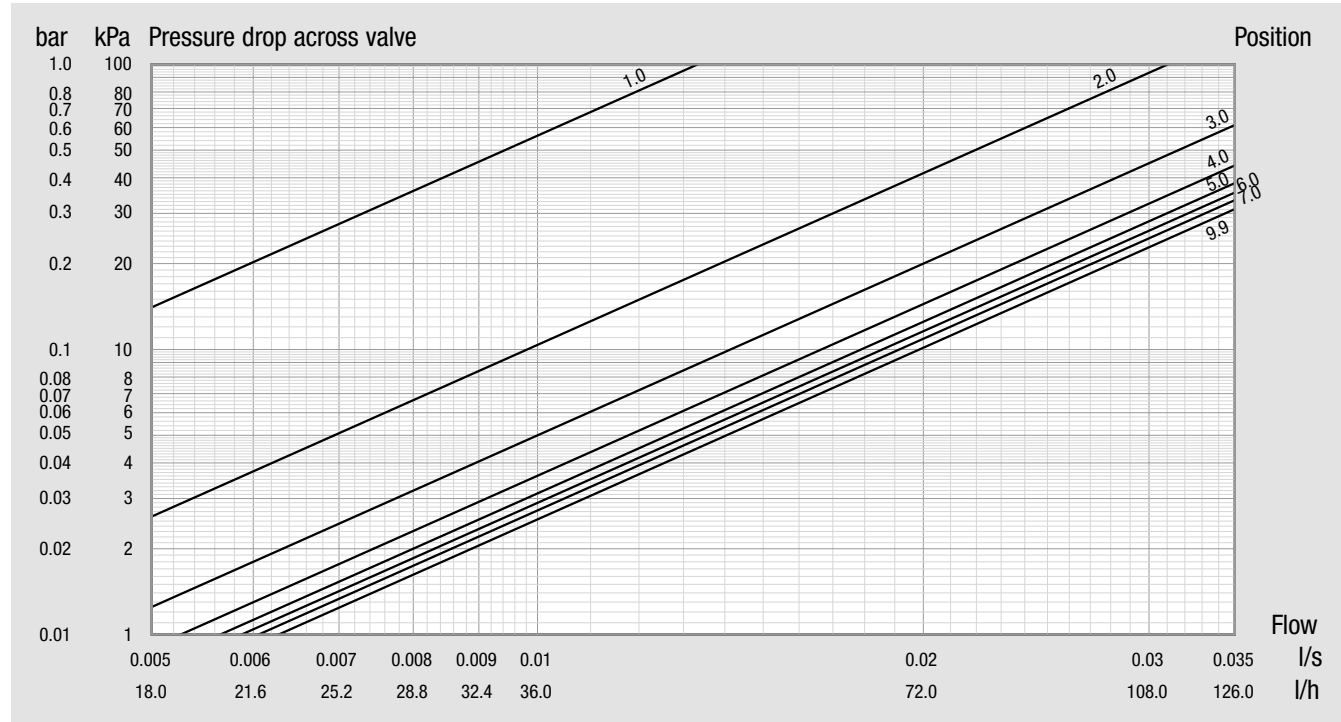
Flow Range – Female x Female Connections								
		FODRV					DRV	
Valve Size	Kvs	Flow Rates*		Signal Kvs	HeadLoss Factor	Loss Size	Valve	Kvs
DN	Description	m³/h	l/s	kPa	m³/h		DN	m³/h
15	Ultra Low Flow	0.163	0.0072 - 0.035	1.2-59.8	0.226	0.52	–	–
	Low Flow	0.359	0.01 - 0.074	1 - 55	0.629	0.33	15L	1.62
	Standard flow	0.746	0.062 - 0.148	9 - 51	1.62	0.21	15S	2.11
	High Flow	1.56	0.138 - 0.325	10 - 56	2.49	0.39	–	–
20	Low Flow	0.746	0.062 - 0.148	9 - 51	1.43	0.27	20L	4.26
	Standard flow	1.56	0.138 - 0.325	10 - 56	2.82	0.31	20S	4.81
	High Flow	2.95	0.258 - 0.603	10 - 54	5.72	0.27	–	–
25	Standard flow	2.95	0.258 - 0.603	10 - 54	7.54	0.15	25S	9.94
	High Flow	6.01	0.54 - 1.25	10 - 56	12.10	0.25	–	–
32	High flow	6.01	0.54 - 1.25	10 - 56	13.20	0.21	32S	13.30
40	High flow	9.2	0.81 - 1.88	10 - 54	22.00	0.17	40S	23.30
50	High flow	17.1	1.52 - 3.51	10 - 55	36.00	0.23	50S	35.30

* The flow rates given in the table are for water flow in steel pipes which provide a pressure loss of 100 to 500 Pa per metre of pipe.

FIG 900S, 900SC, 901S & 903 DN 15 – Flow diagrams

For calculation of flow rate formula see page 4.17

DN 15UL - Ultra low flow



DN 15L - Low flow

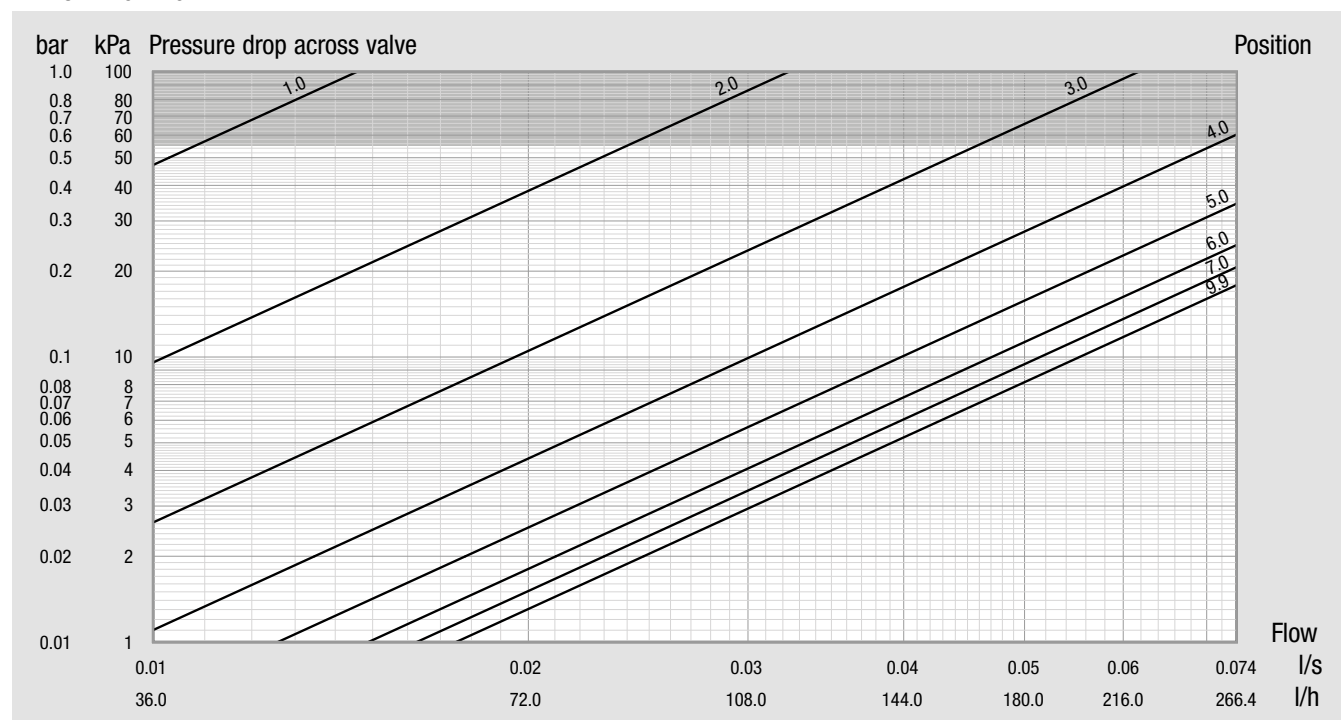
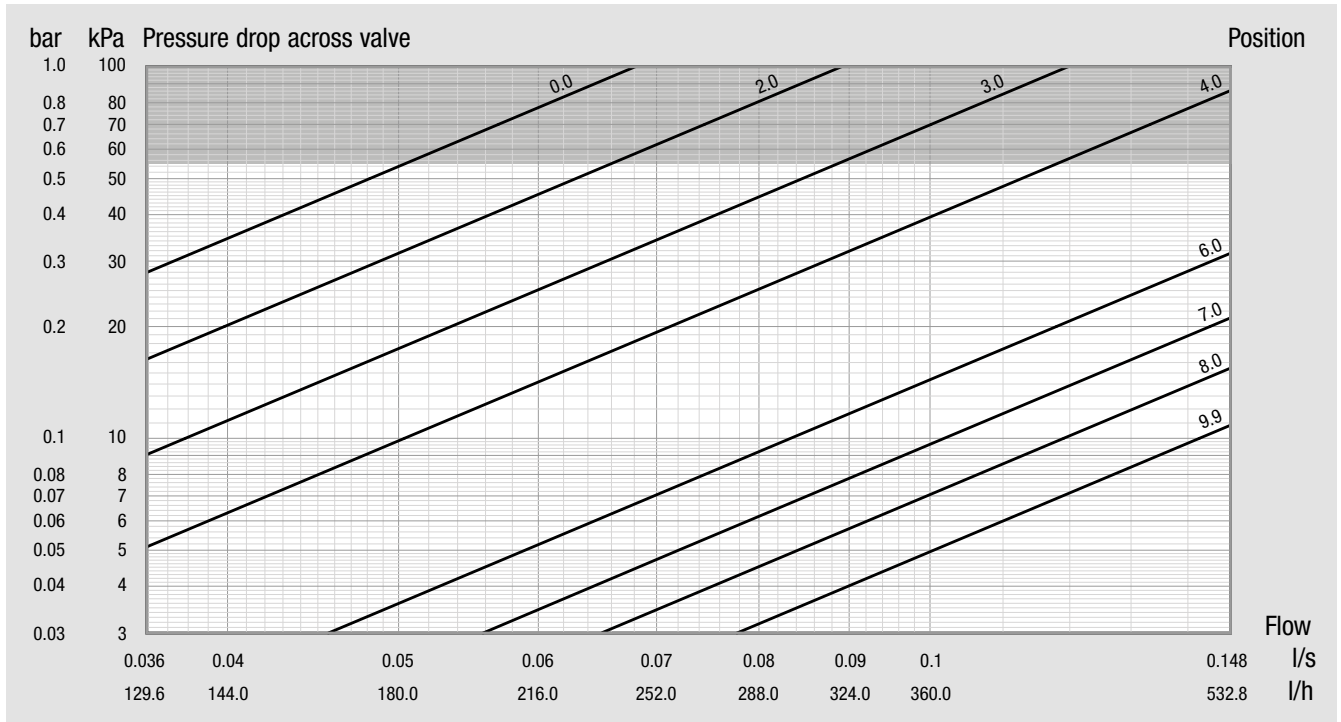


FIG 900S, 900SC, 901 & 903 DN 15 – Flow diagrams

DN 15S - Standard flow



DN 15H - High flow

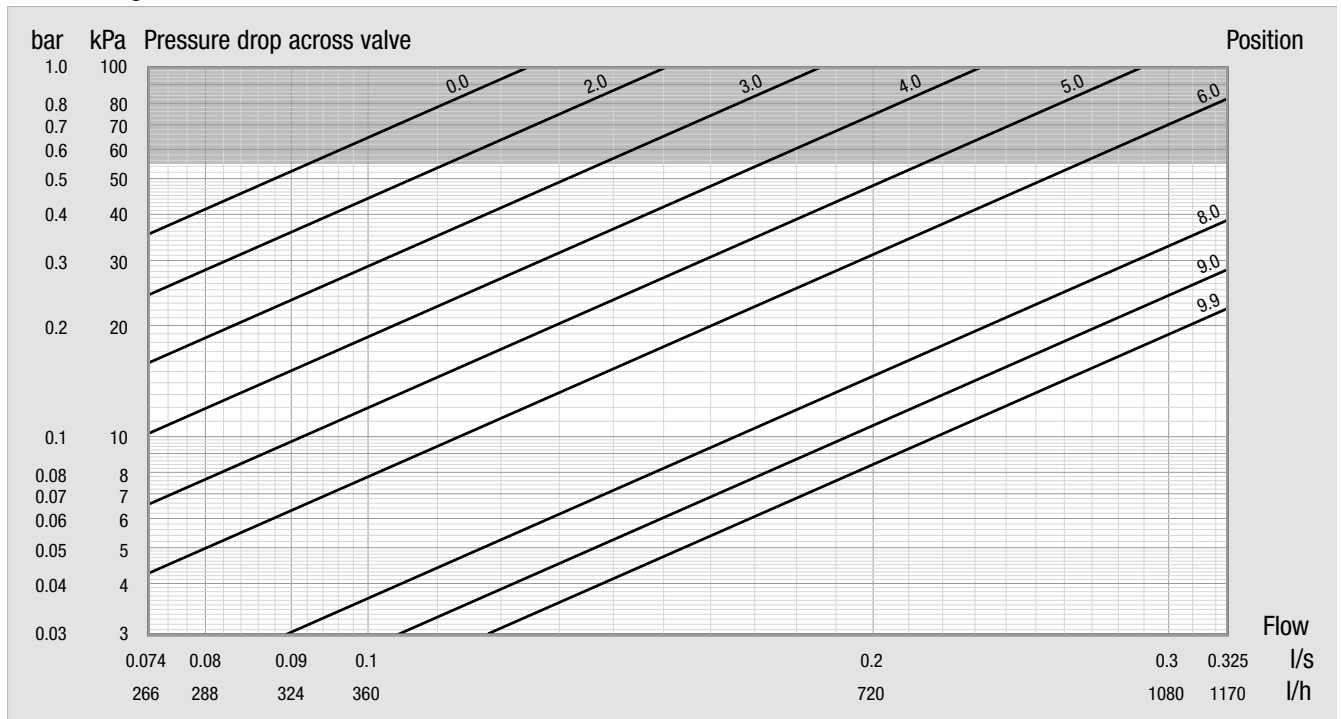
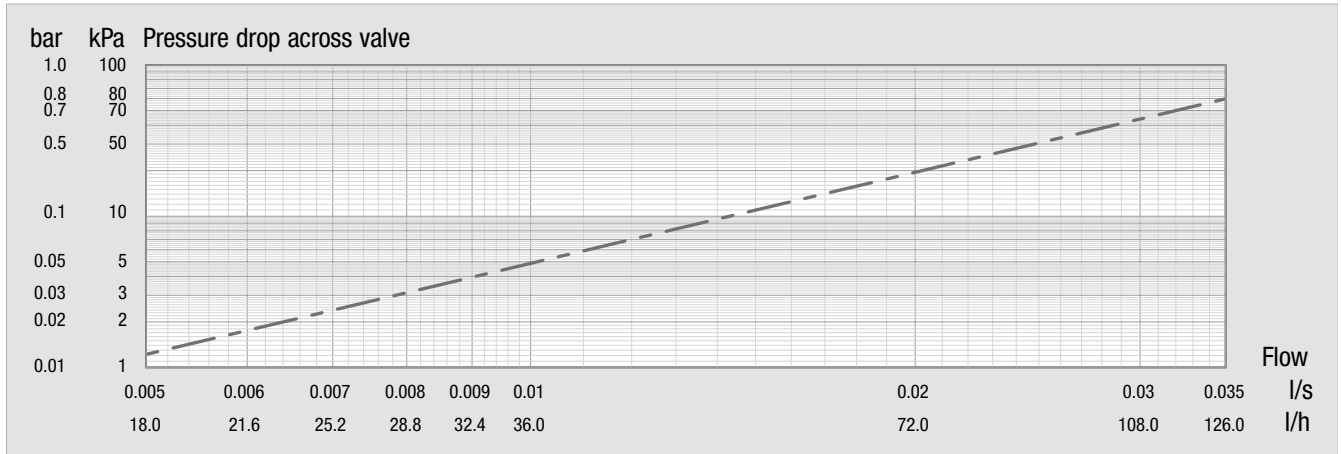


FIG 900S, 900SC, 901 & 903 DN 15 – Measuring signal diagrams

For calculation of flow rate formula see page 4.17

DN 15UL - Ultra low flow



DN 15L - Low flow

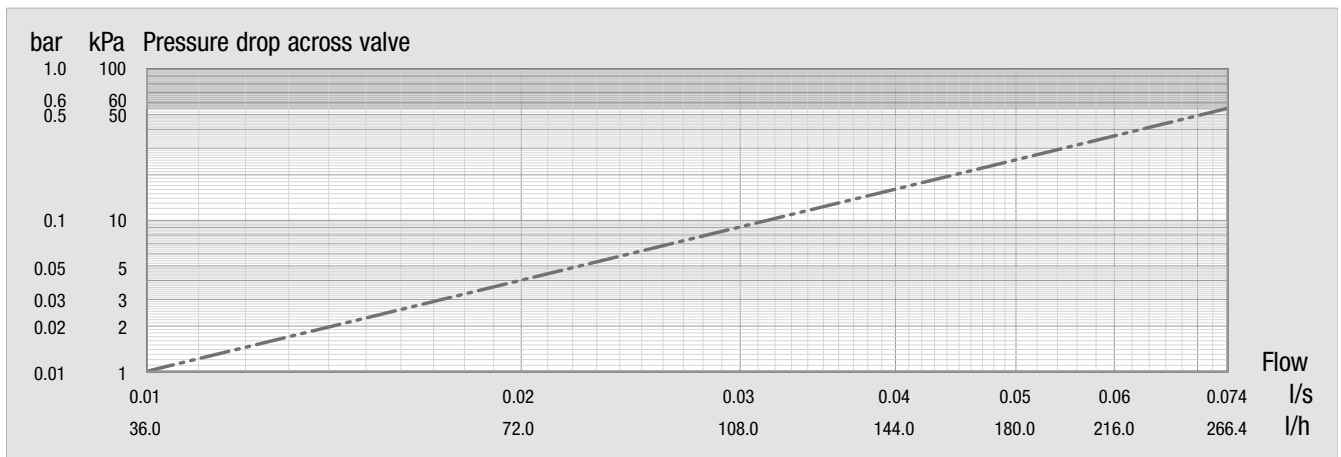
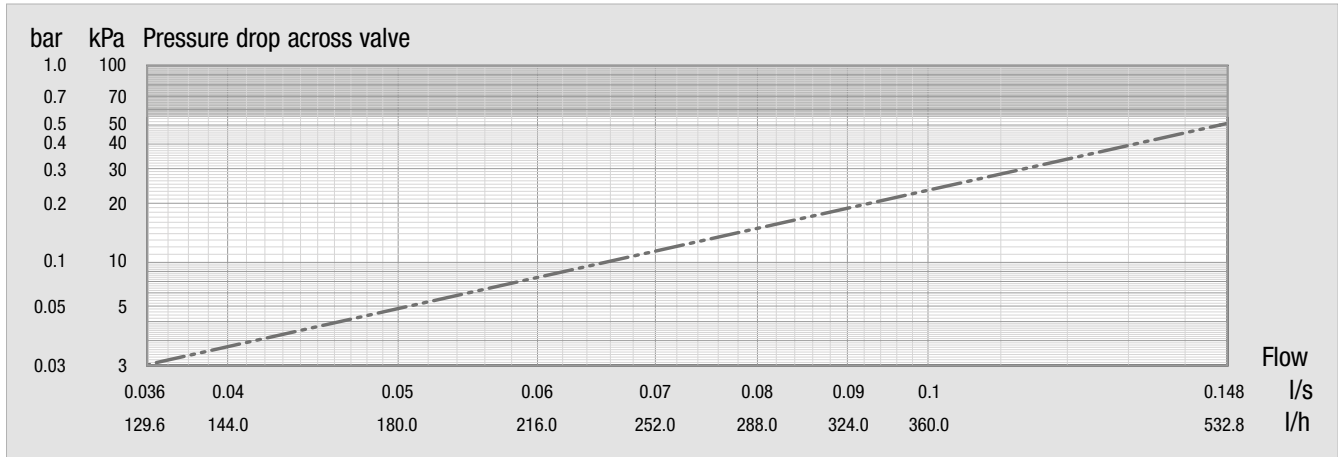
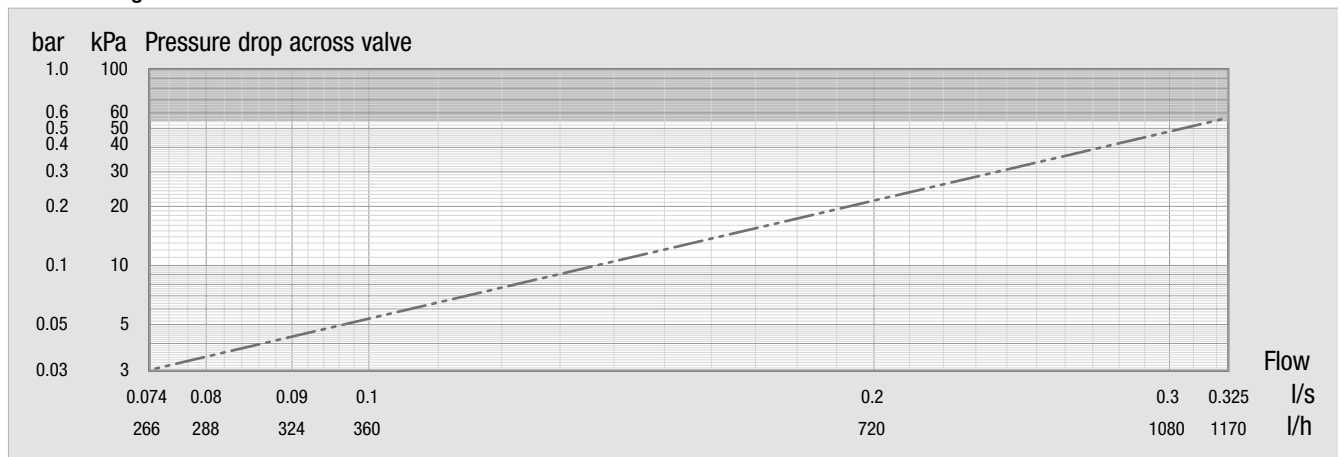


FIG 900S, 900SC, 901 & 903 DN 15 – Measuring signal diagrams

DN 15S - Standard flow



DN 15H - High flow

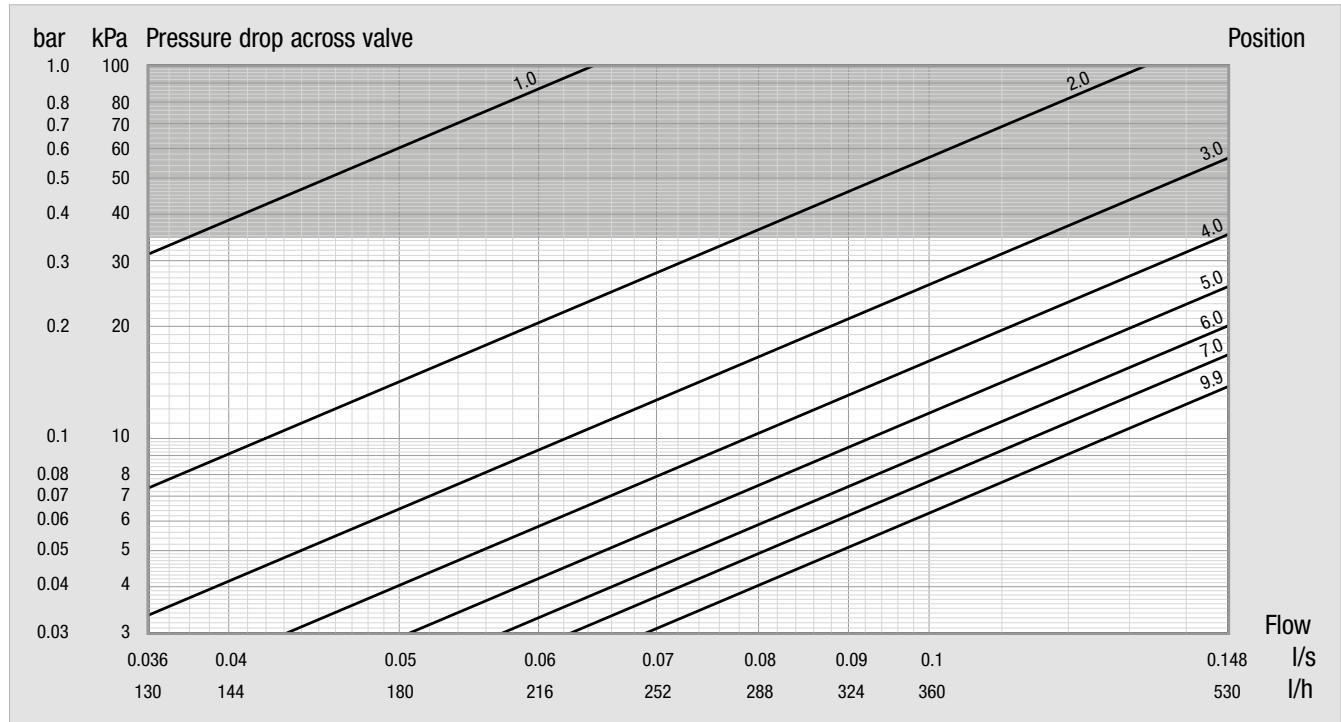


Balancing Valves

DN 20 – Flow diagrams

For calculation of flow rate formula see page 4.17

DN 20L - Low flow



DN 20S - Standard flow

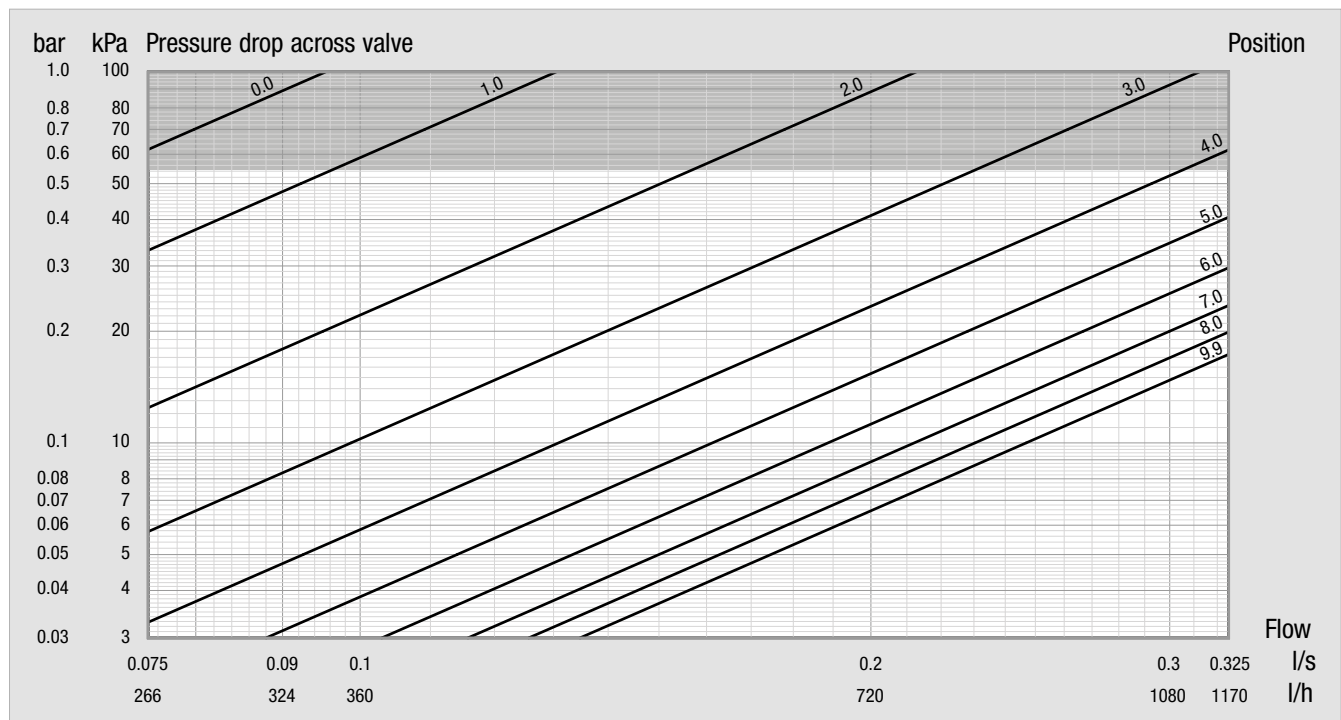
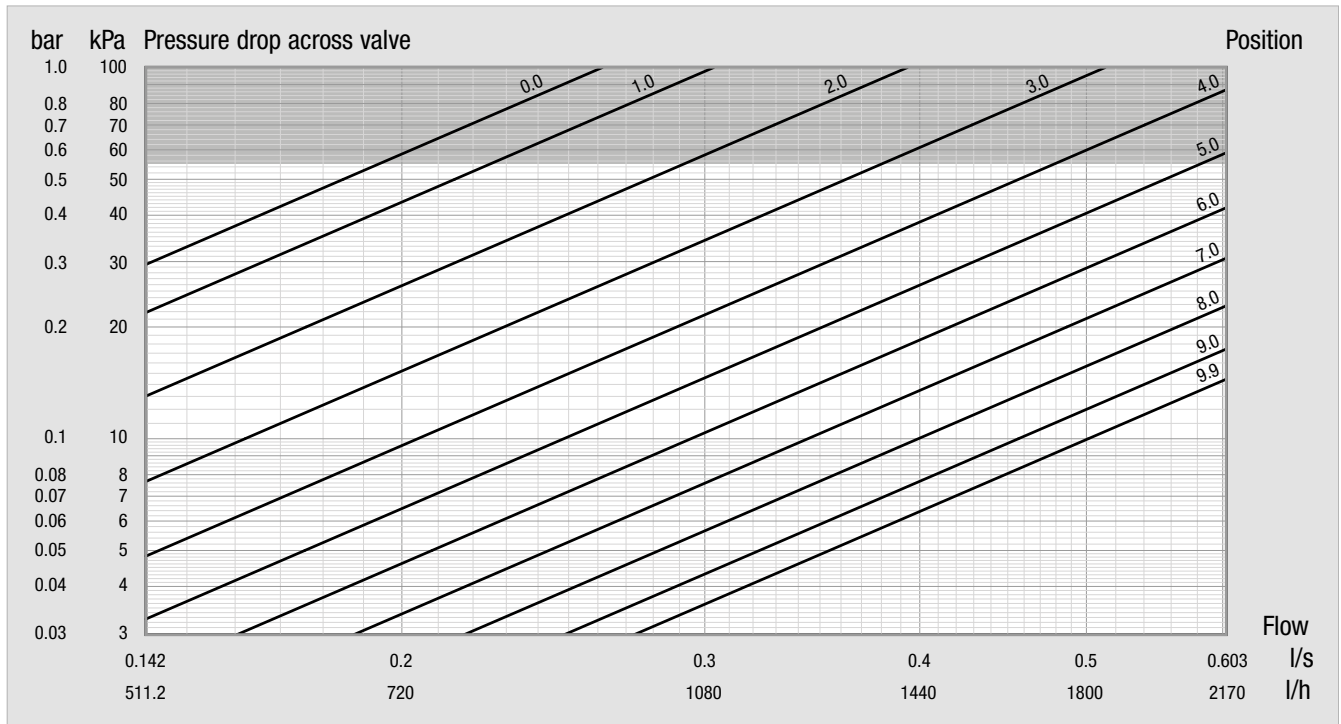


FIG 900S, 900SC, 901 & 903 DN 20 – Flow diagram

DN 20H - High flow



Calculation of flow rate

$$Q = \frac{Kvs \sqrt{\Delta P}}{36}$$

where

Q = flow rate (l/s)

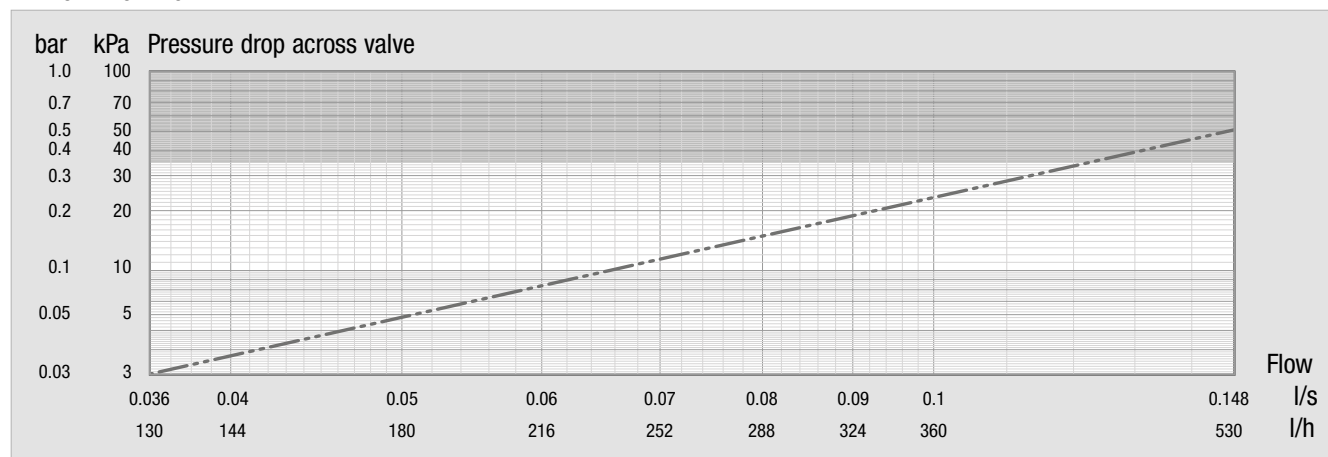
ΔP = Signal (kPa)

Kvs = Signal coefficient

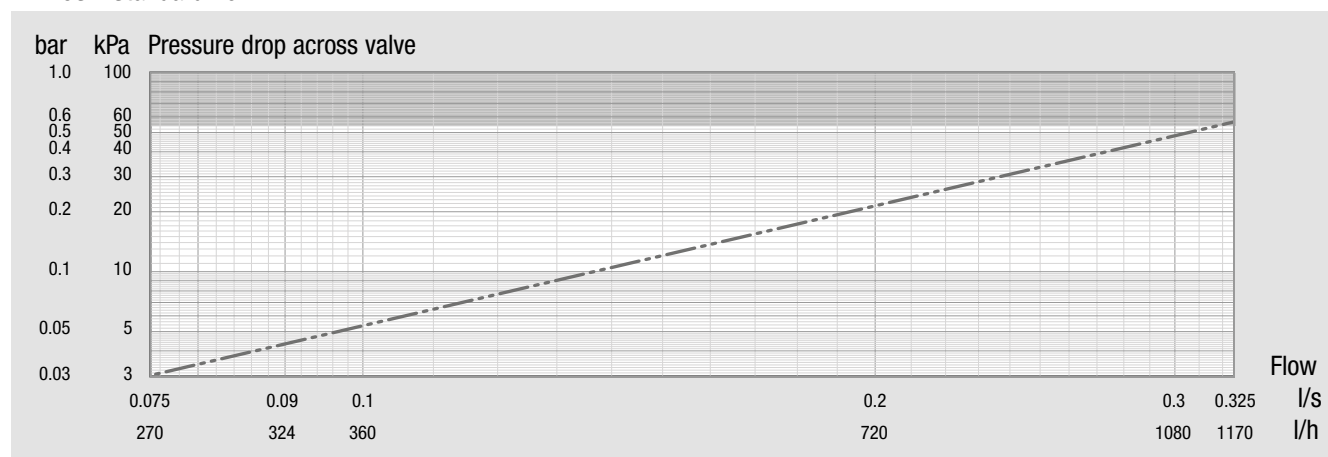
FIG 900S, 900SC, 901 & 903 DN 20 – Measuring Signal Diagrams

For calculation of flow rate formula see page 4.17

DN 20L - Low flow



DN 20S - Standard flow



DN 20H - High flow

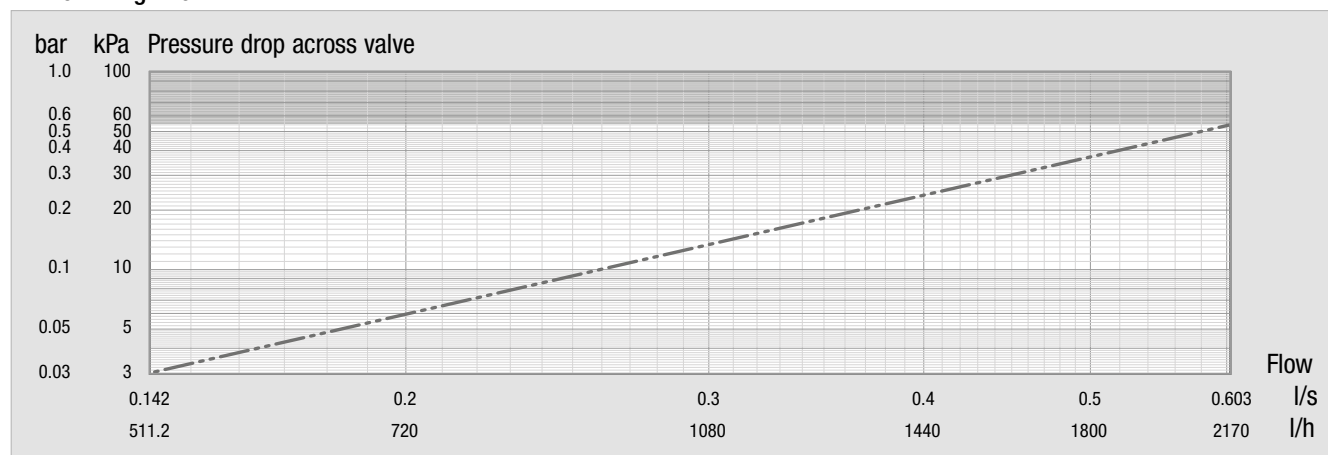
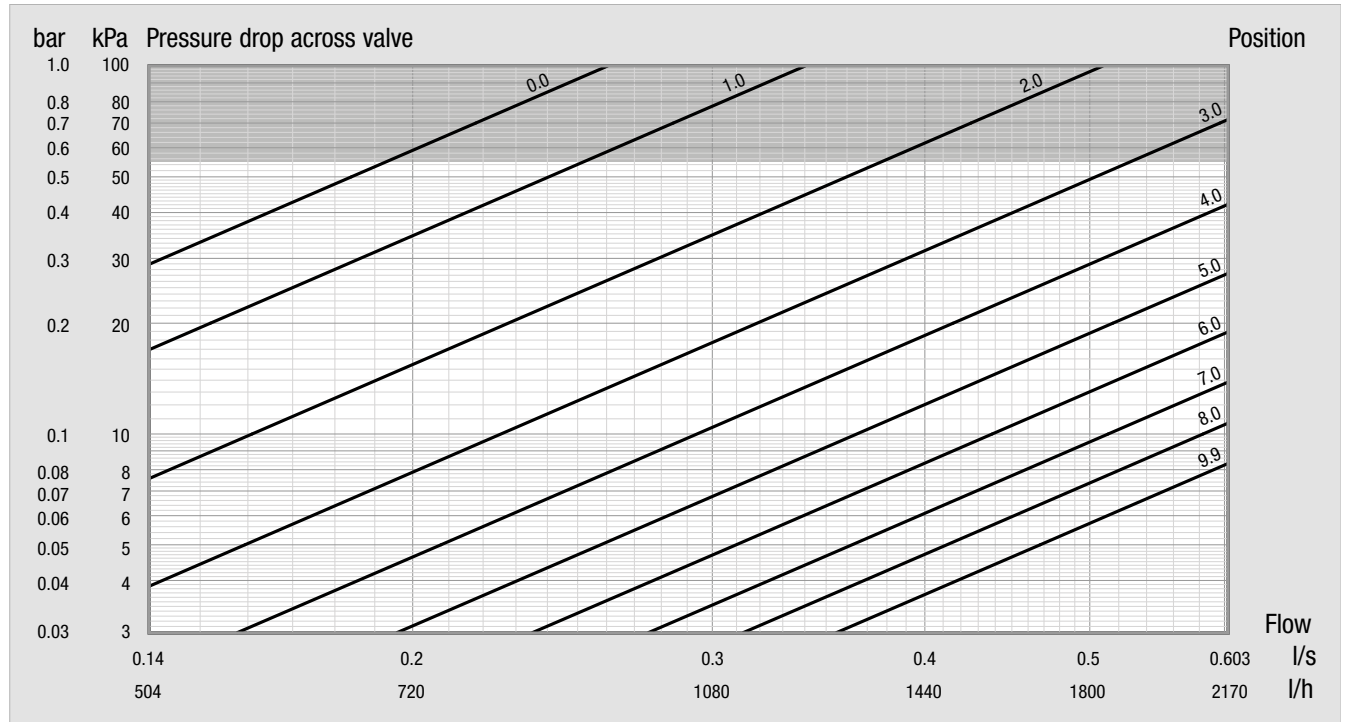


FIG 900S, 900SC, 901 & 903 DN 25 – Flow diagrams

DN 25S - Standard flow



DN 25H - High flow

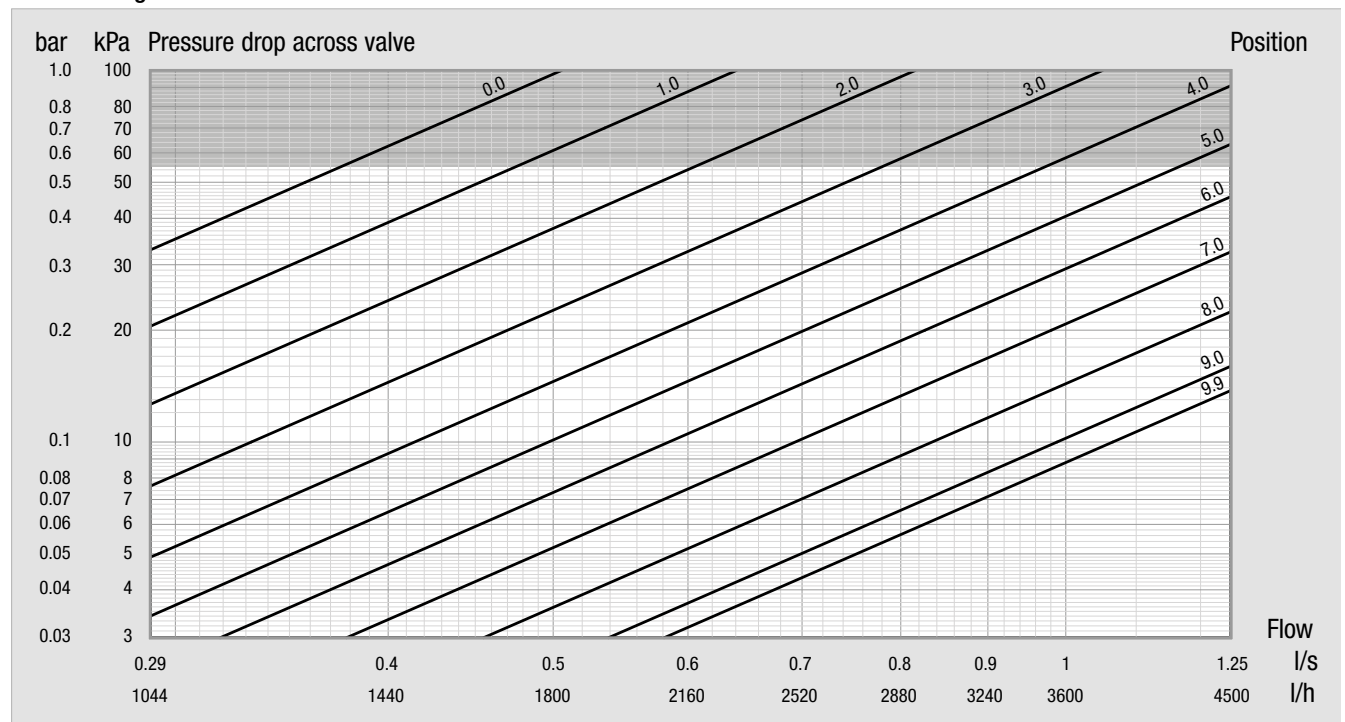
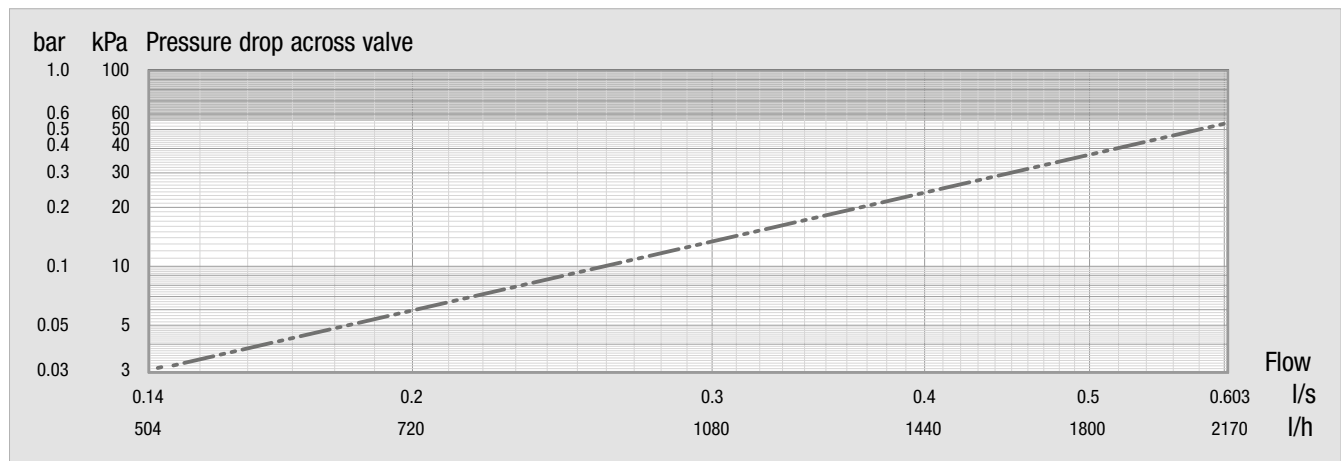


FIG 900S, 900SC, 901 & 903 DN 25 – Measuring signal diagrams

For calculation of flow rate formula see page 4.17

DN 25S - Standard flow



DN 25H - High flow

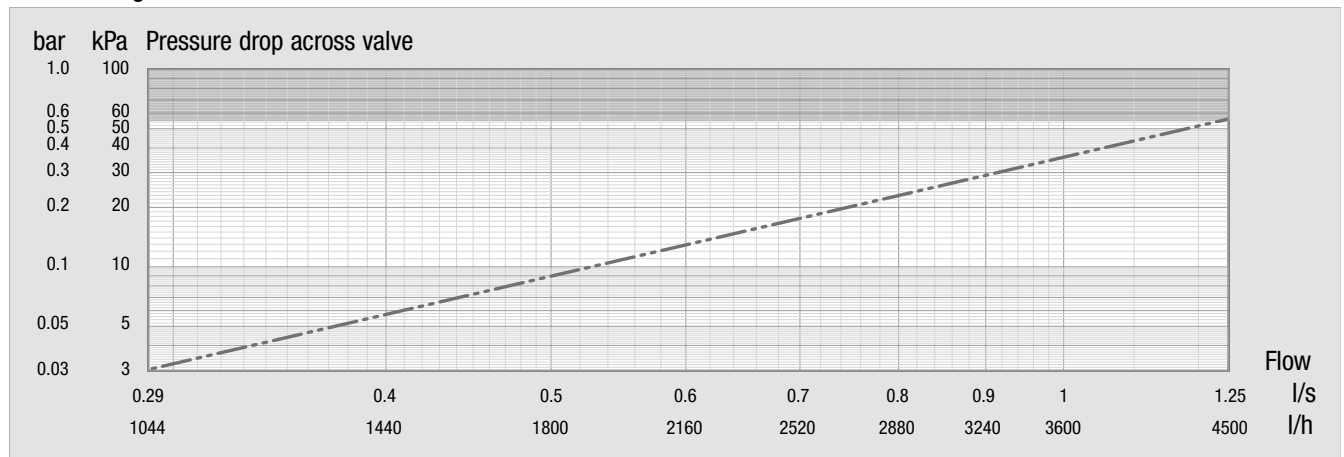
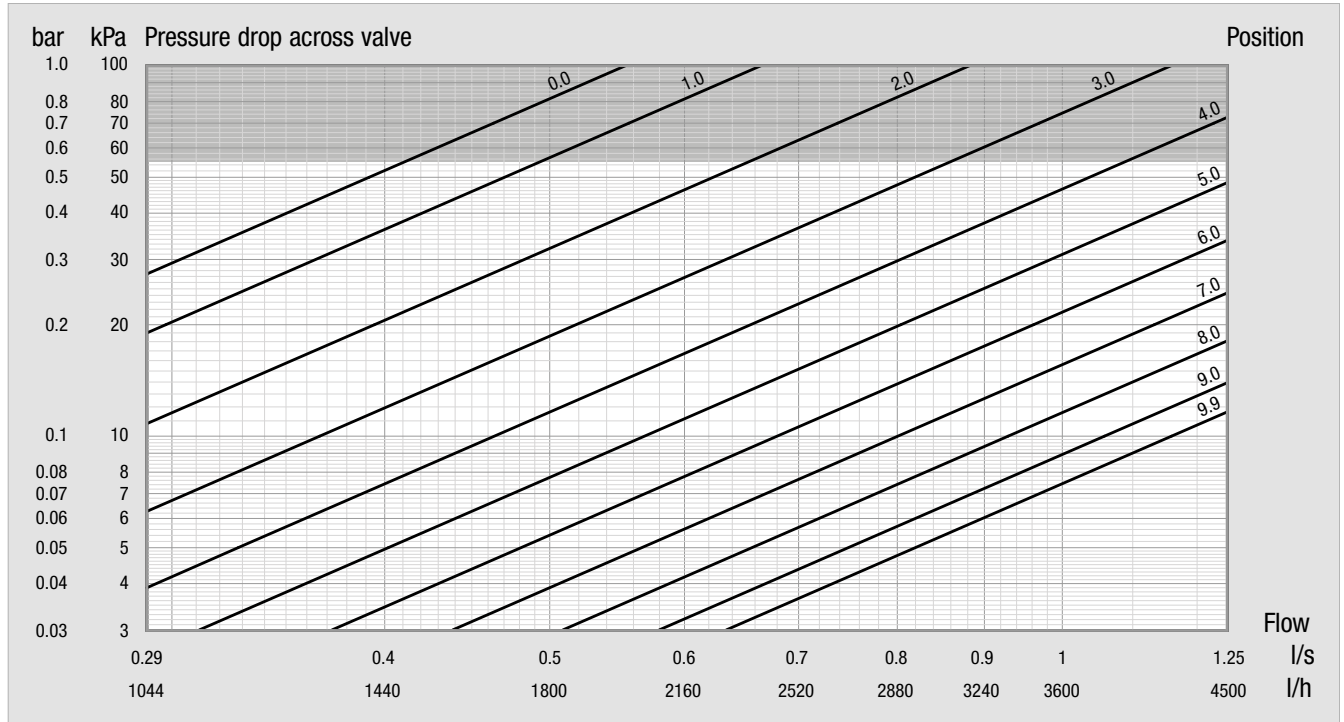


FIG 900S, 900SC, 901 & 903

DN 32 – Flow diagram / DN 32 – Measuring signal diagram

DN 32H - High flow - Flow diagram



DN 32H - High flow - Measuring signal diagram

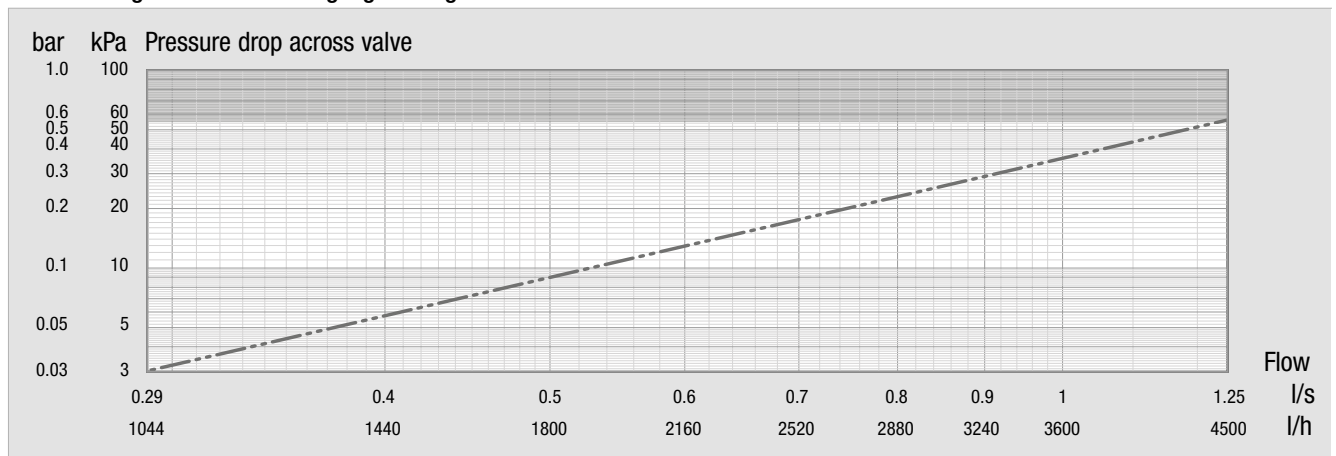
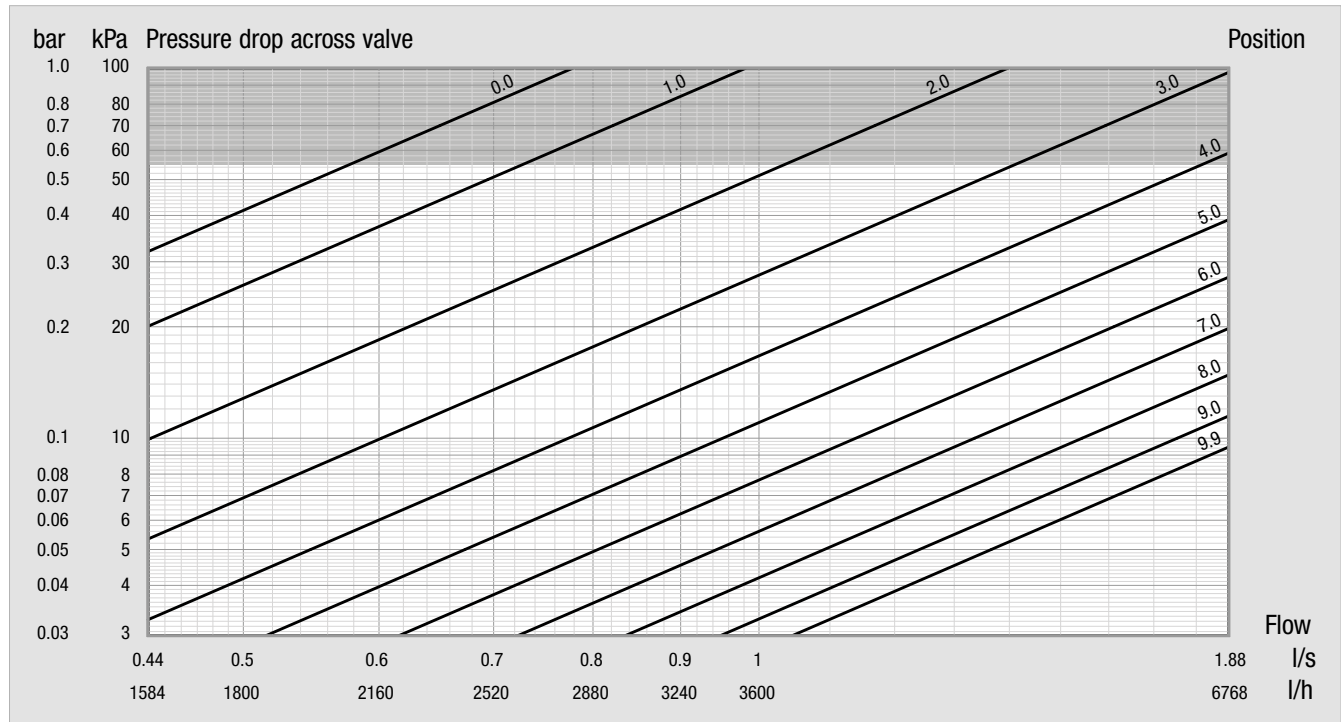


FIG 900S, 900SC, 901 & 903

DN 40 – Flow diagram / DN 40 – Measuring signal diagram

For calculation of flow rate formula see page 4.17

DN 40H - High flow - Flow diagram



DN 40H - High flow - Measuring signal diagram

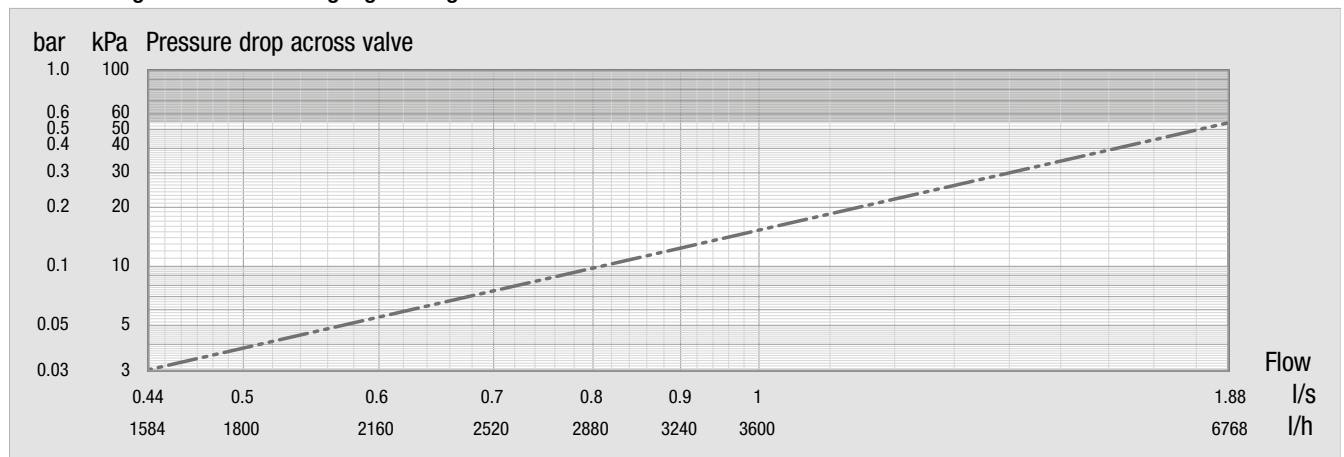
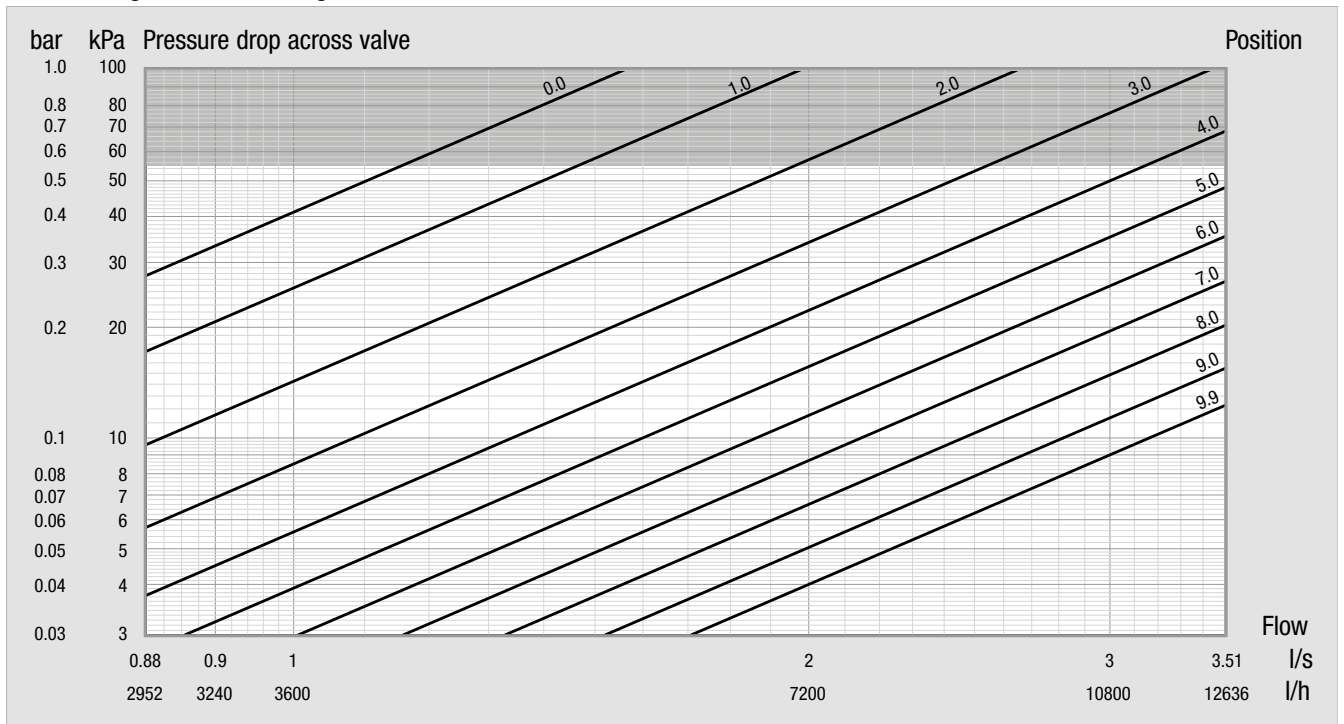


FIG 900S, 900SC, 901 & 903

DN 50 - Flow diagram / Measuring signal diagram

DN 50H - High flow - Flow diagram



DN 50H - High flow - Measuring signal diagram

