

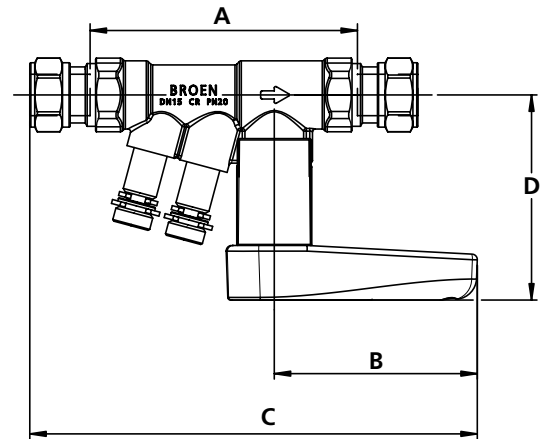
Balancing Valves

FIG 900SC Venturi Commissioning Valve (FODRV) Cu x Cu Compression DN15-DN50



BOSS™ 900SC Venturi FODRV DN15-50

Dimensions



BOSS™ 900SC

Weights & Dimensions – FODRV Cu x Cu Compression

Size	Nominal	A	B	C	D	Weight	Product
DN	Size	mm	mm	mm	mm	kg	Code
15L	15mm	99	75	164	76	0.541	22073295
15S	15mm	99	75	164	76	0.541	22073303
15H	15mm	99	75	164	76	0.541	22073443
20L	22mm	105	75	170	79	0.717	22073369
20S	22mm	105	75	170	79	0.717	22073314
20H	22mm	105	75	170	79	0.717	22073454
25S	28mm	118	75	177	73	0.998	22073325
25H	28mm	118	75	177	83	0.998	22073465
32H	35mm	135	122	241	109	1.806	22073336
40H	42mm	149	122	253	113	2.508	22073347
50H	54mm	167	122	265	120	3.818	22073358

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.

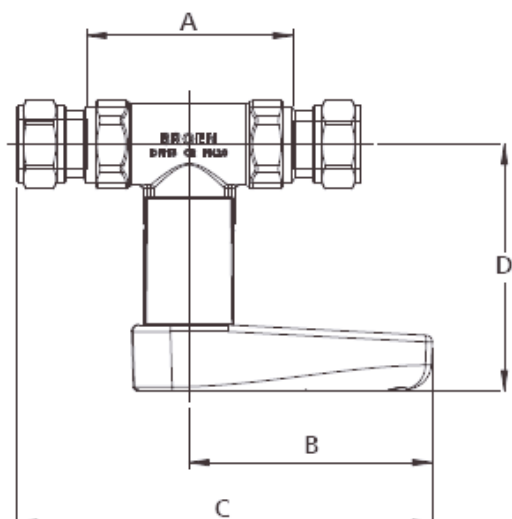
The flow rate is measured using a fixed orifice Venturi cartridge with double seal test points inserted into the valve body. These functions are incorporated into a single fitting which contains any up and down stream lengths required for laminar flow conditions except when installed in close proximity 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%.

Balancing Valves

FIG 901SC Venturi (DRV)

Cu x Cu Compression DN15-DN50

Dimensions



BOSS™ 901SC



BOSS™ 901SC Venturi DRV DN15-50

Weights & Dimensions – DRV Cu x Cu Compression							
Size	Nominal	A	B	C	D	Weight	Product
DN	Size	mm	mm	mm	mm	kg	Code
15L	15mm	62	75	128	76	0.366	22074168
15S	15mm	62	75	128	76	0.366	22074209
20L	22mm	67	75	132	79	0.512	22074190
20S	22mm	67	75	132	79	0.512	22074220
25S	28mm	81	75	140	83	0.798	22074231
32S	35mm	93	122	199	109	1.546	22074242
40S	42mm	107	122	211	113	2.118	22074253
50S	54mm	126	122	224	120	3.248	22074264

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

Technical Specification – Cu x Cu Compression		
	FODRV	DRV
Pressure & Temperature Classification		
Temperature Max (Max)	120°C	135°C
Pressure (Max)	5 bar	5 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		
Compression	EN1254-2	
Pressure Test According to	ISO5208:1993E	

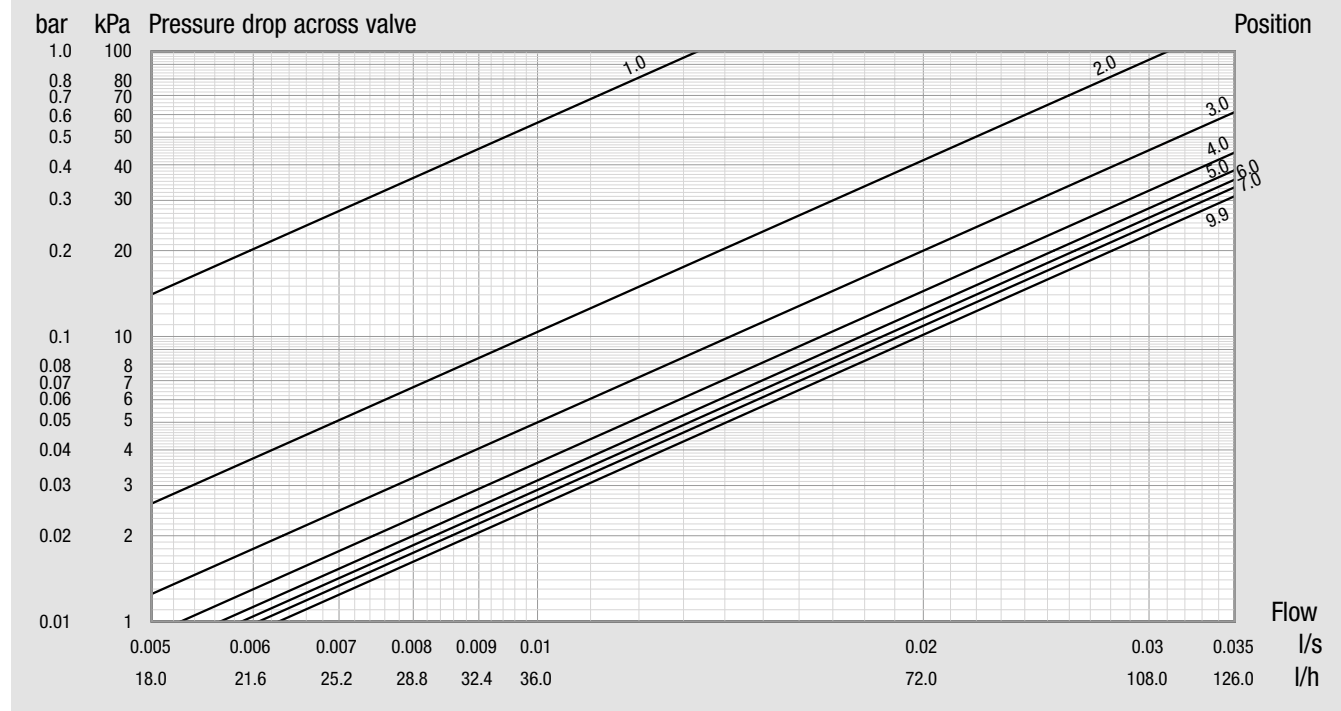
Flow Range – Cu x Cu Compression Connections								
		FODRV					DRV	
Valve Size	Kvs	Flow Rates*		Signal	Head Loss	Loss	Valve	Kvs
						Factor	Size	
DN	Description	m³h	l/s	kPa	m³h		DN	m³h
15	Ultra Low Flow	0.163	0.0076 to 0.035	1.2 to 59.8	0.226	0.52	–	–
	Low Flow	0.359	0.0172 to 0.074	1 to 55	0.629	0.33	15L	1.62
	Standard Flow	0.746	0.036 to 0.148	9 to 51	1.62	0.21	15S	2.11
	High Flow	1.56	0.074 to 0.325	10 to 56	2.49	0.39	–	–
20	Low Flow	0.746	0.036 to 0.148	9 to 51	1.43	0.27	20L	4.26
	Standard Flow	1.56	0.074 to 0.325	10 to 56	2.82	0.31	20S	4.81
	High Flow	2.95	0.142 to 0.603	10 to 54	5.72	0.27	–	–
25	Standard Flow	2.95	0.142 to 0.603	10 to 54	7.54	0.15	25S	9.94
	High Flow	6.01	0.29 to 1.25	10 to 56	12.10	0.25	–	–
32	High Flow	6.01	0.29 to 1.25	10 to 56	13.20	0.21	32S	13.30
40	High Flow	9.2	0.44 to 1.88	10 to 54	22.00	0.17	40S	23.30
50	High Flow	17.1	0.82 to 3.51	10 to 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

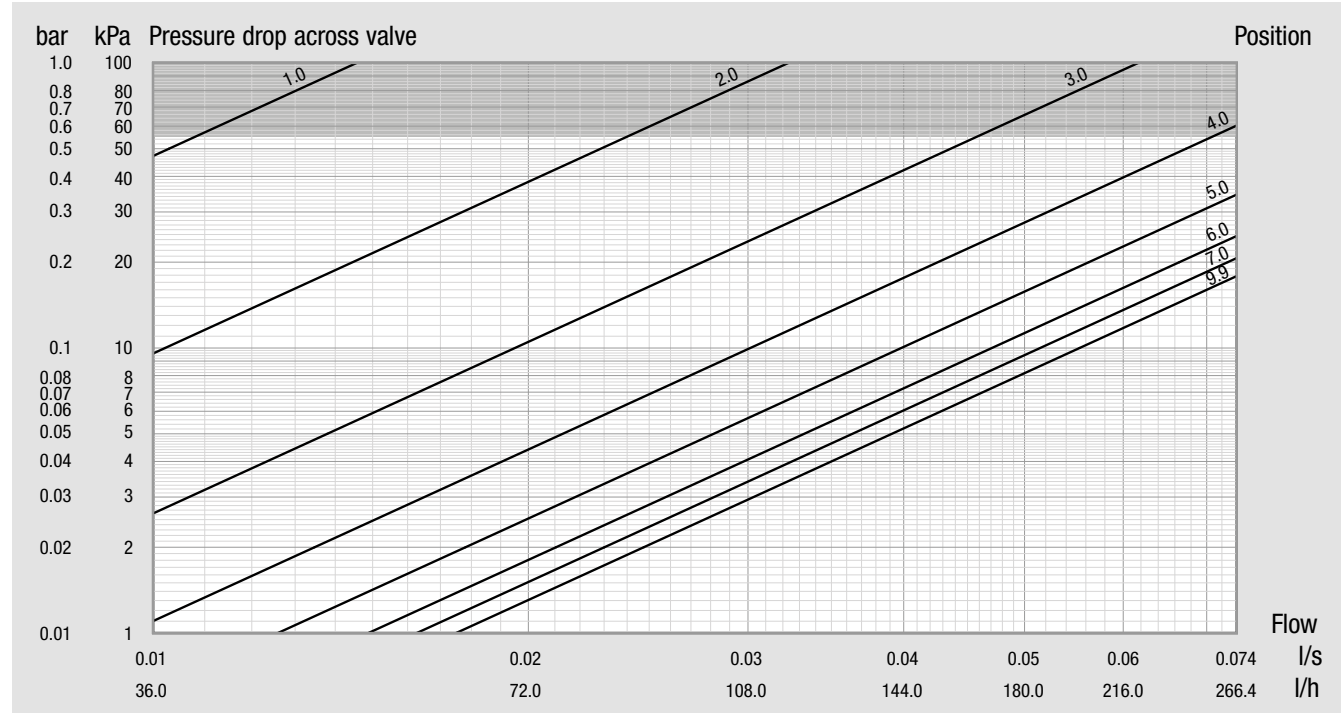
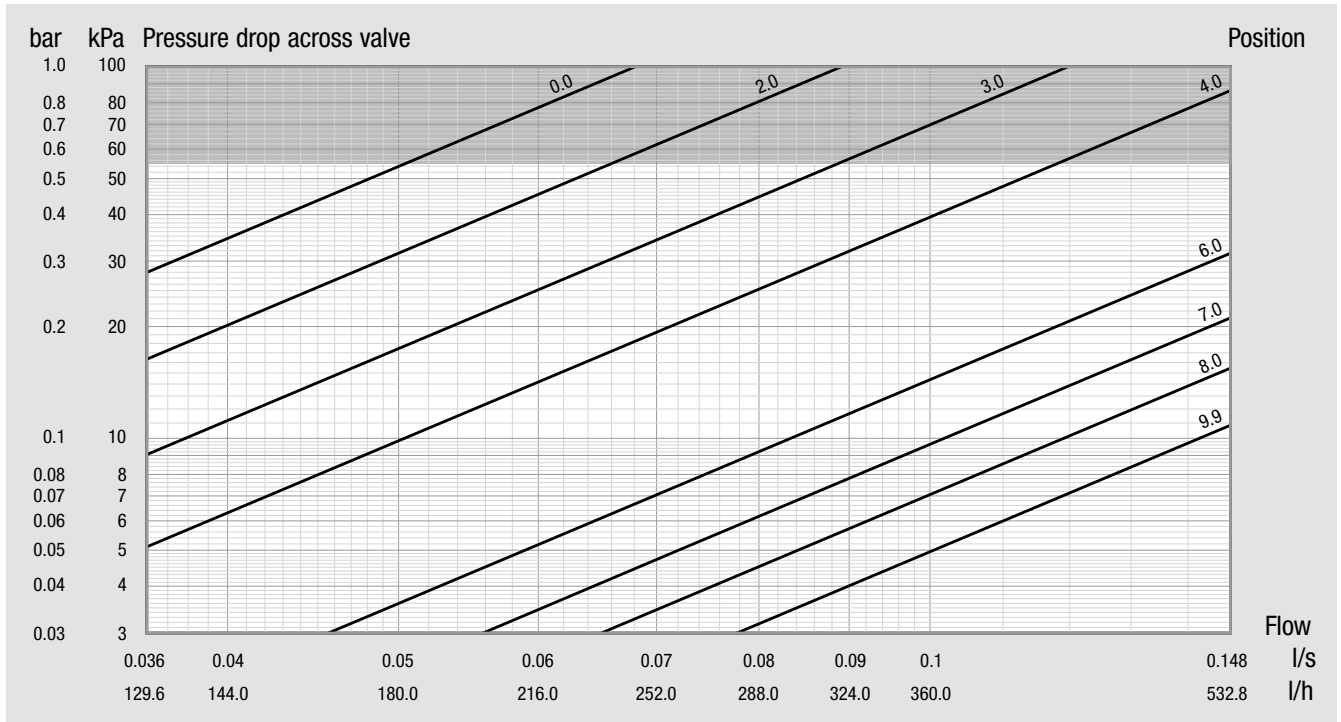


FIG 900S, 900SC, 901 & 903 DN 15 – Flow diagrams

DN 15S - Standard flow



DN 15H - High flow

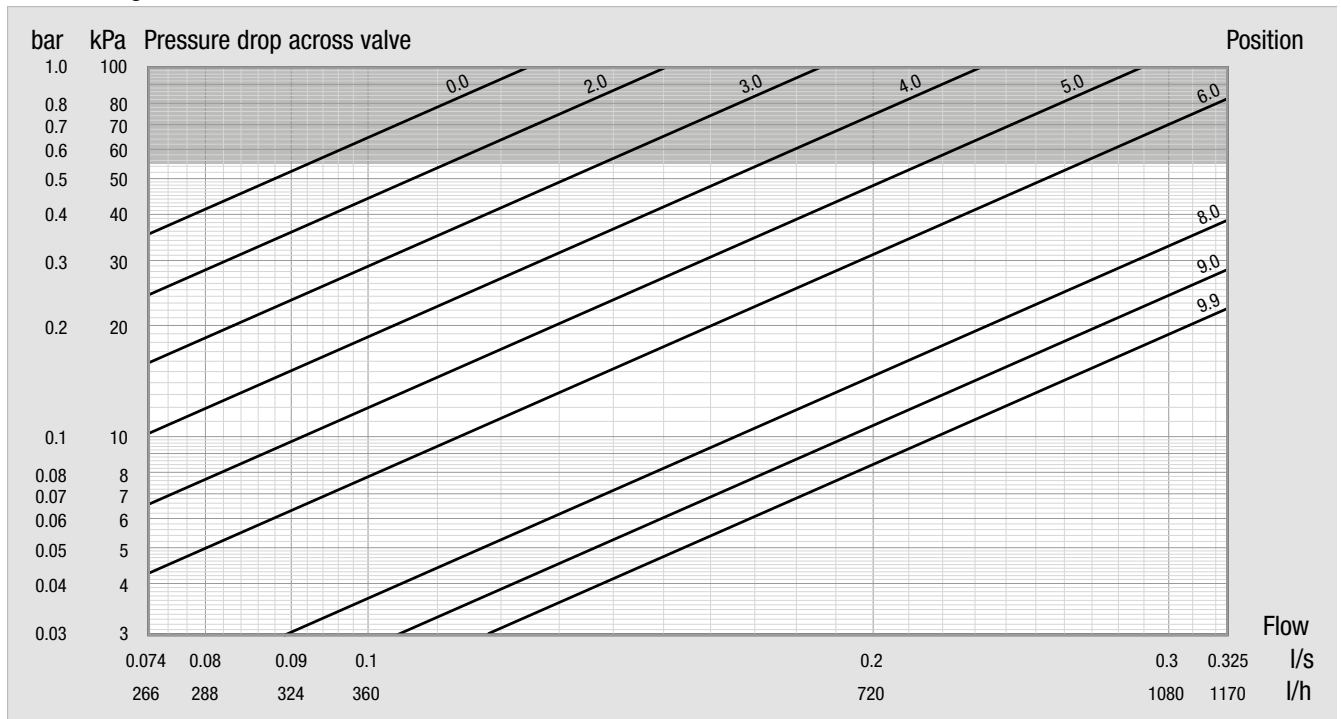
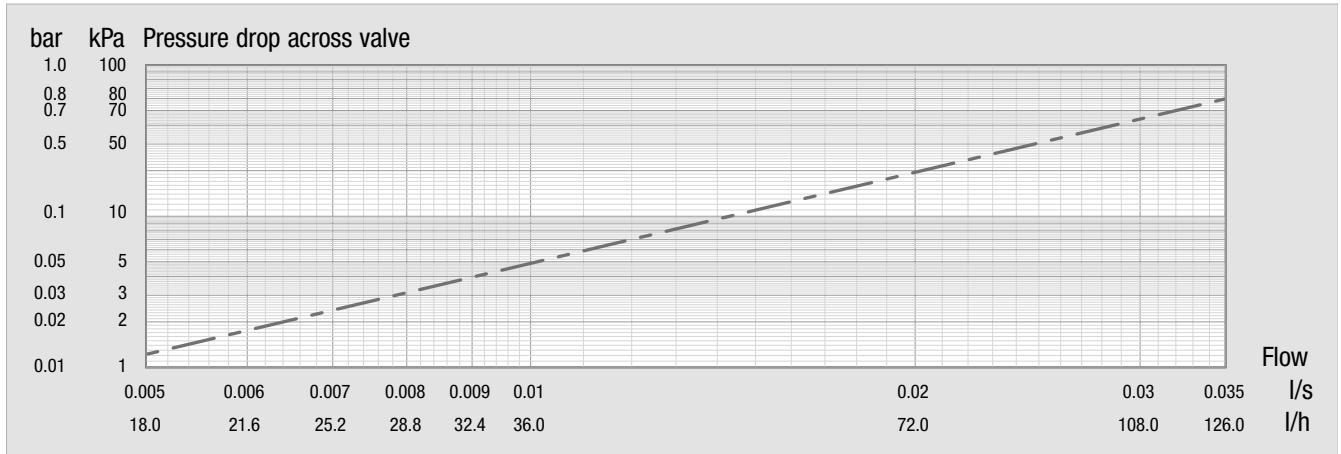


FIG 900S, 900SC, 901 & 903 DN 15 – Measuring signal diagrams

For calculation of flow rate formula see page 4.17

DN 15UL - Ultra low flow



DN 15L - Low flow

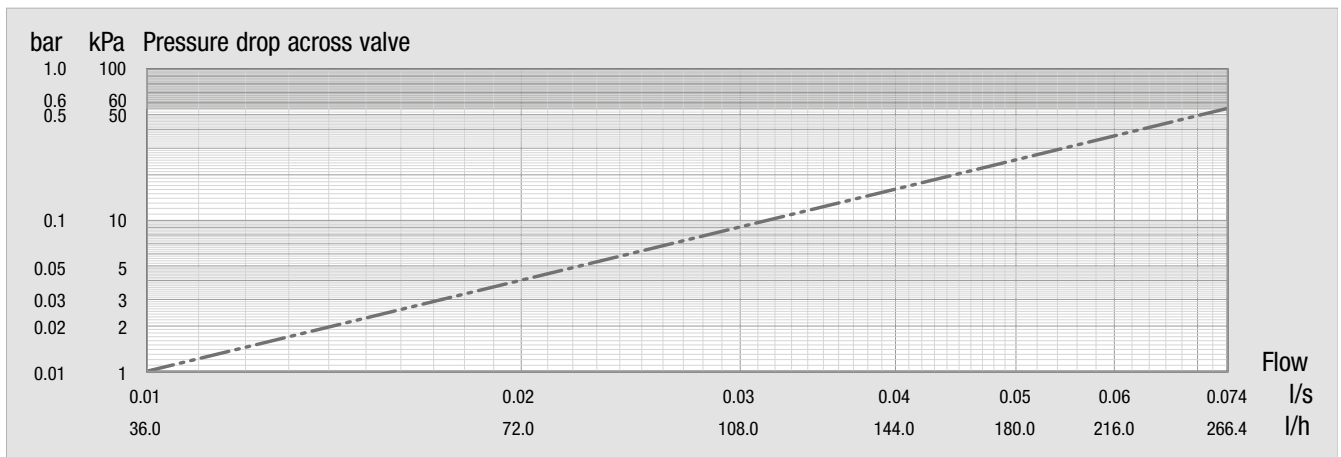
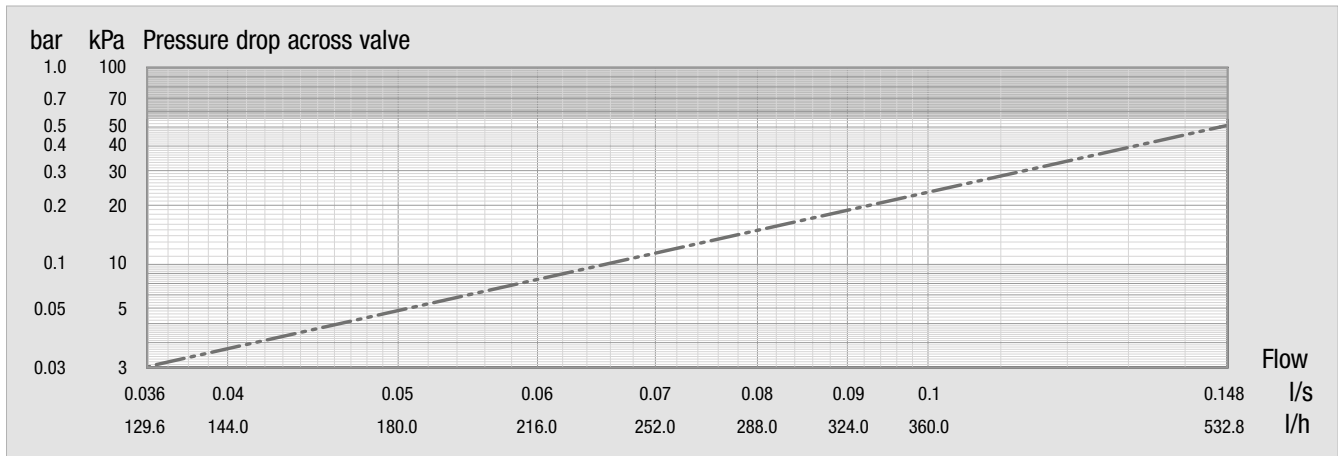
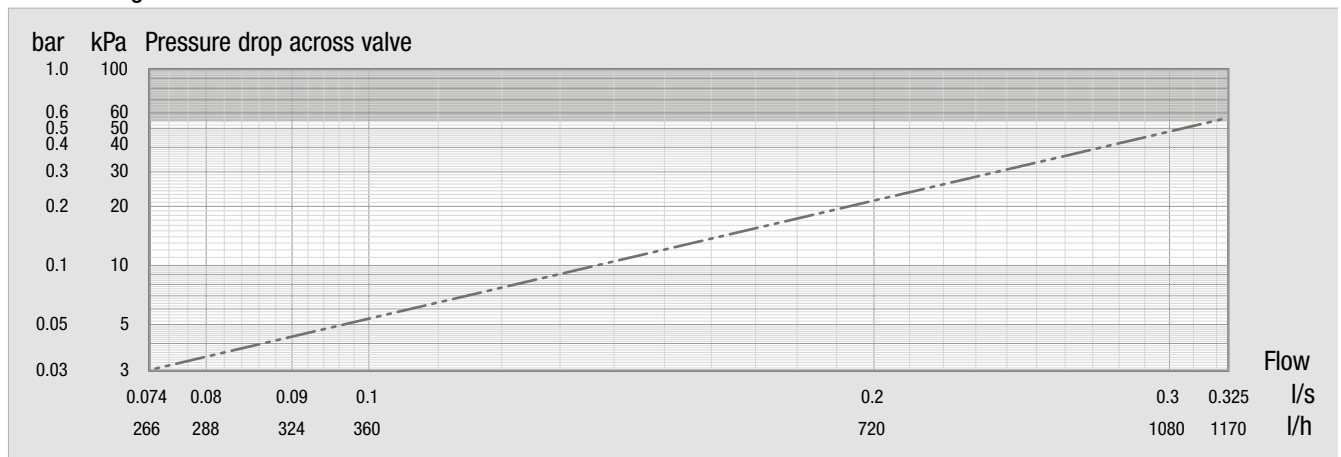


FIG 900S, 900SC, 901 & 903 DN 15 – Measuring signal diagrams

DN 15S - Standard flow



DN 15H - High flow

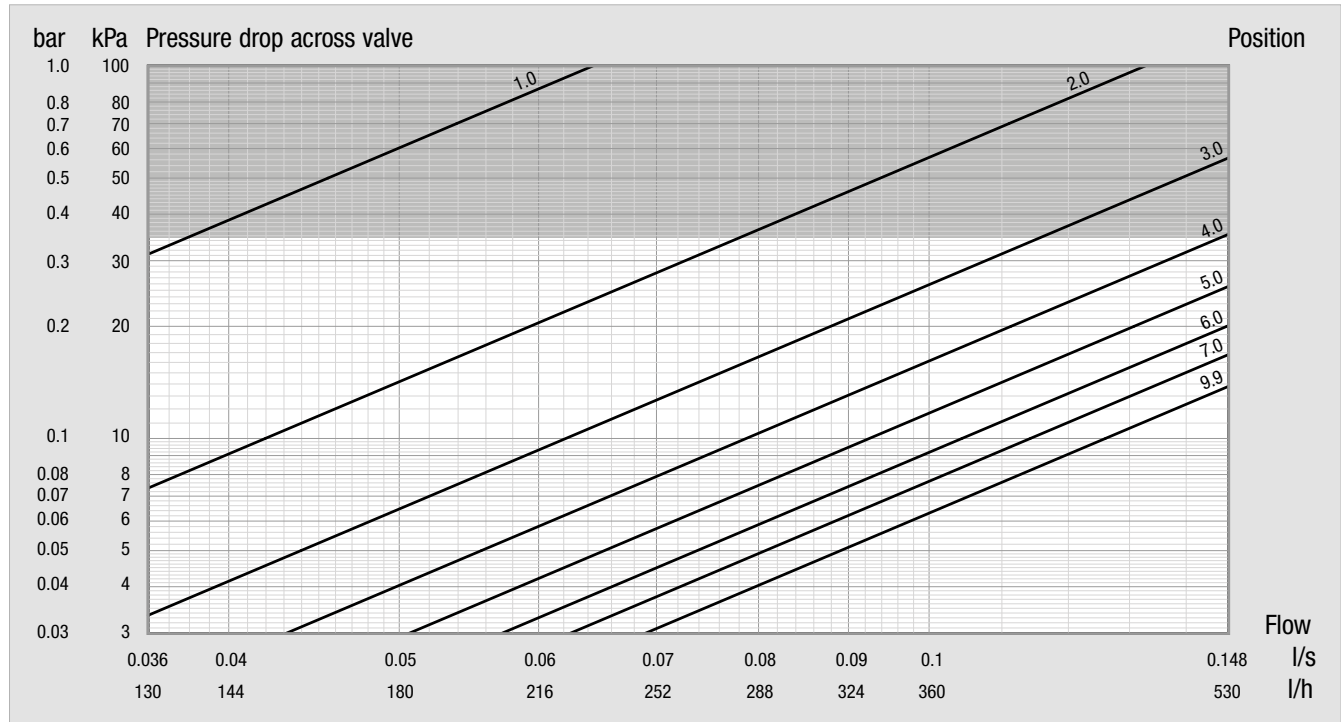


Balancing Valves

DN 20 – Flow diagrams

For calculation of flow rate formula see page 4.17

DN 20L - Low flow



DN 20S - Standard flow

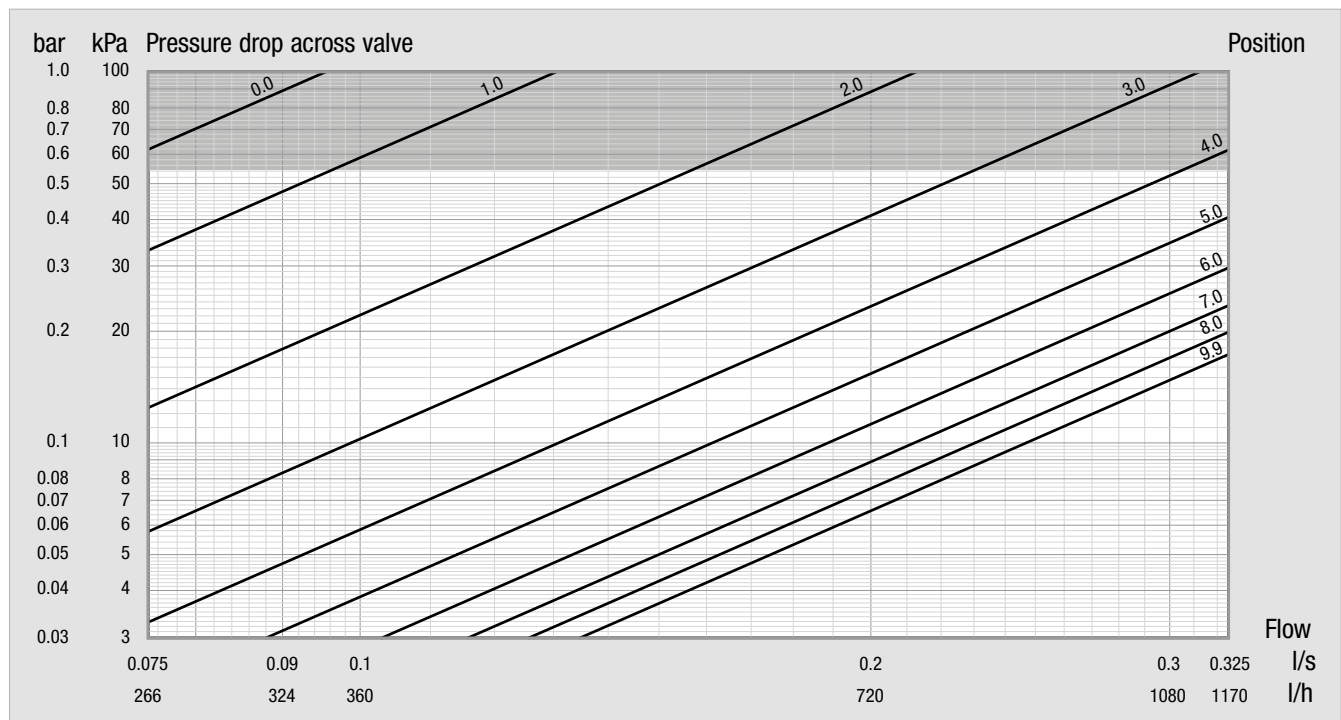
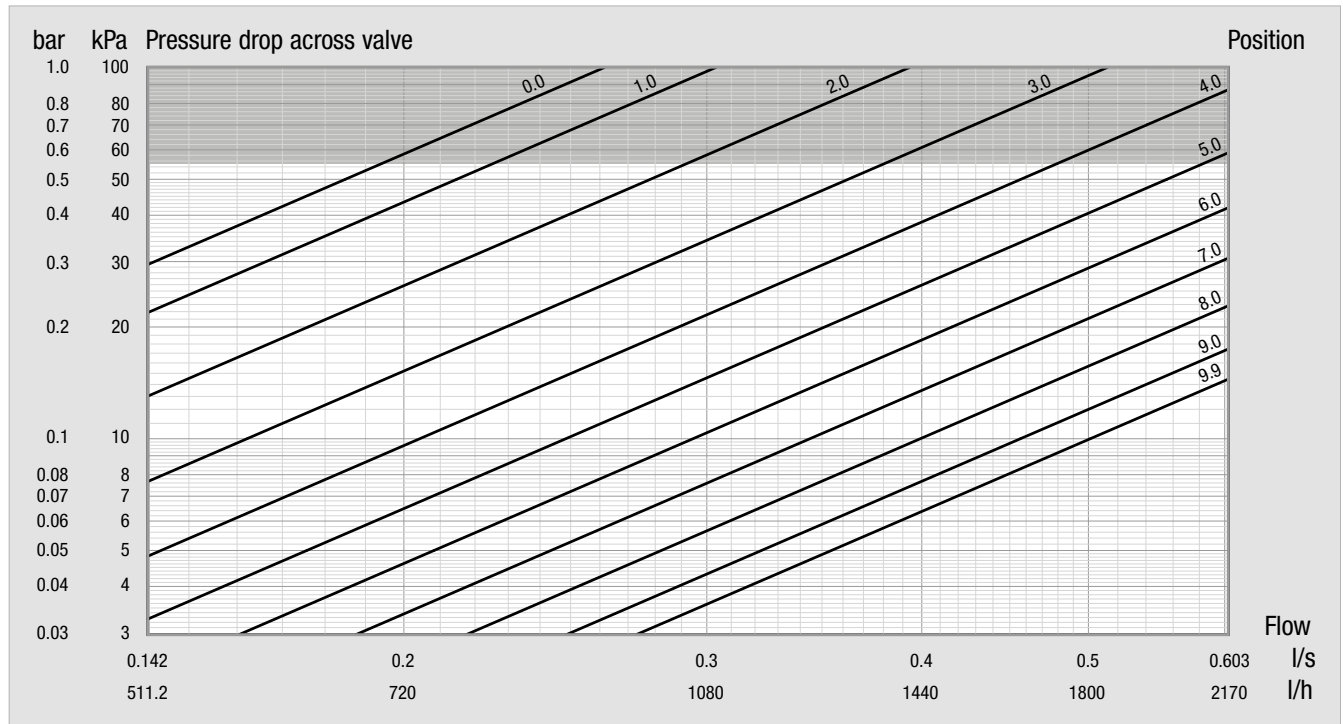


FIG 900S, 900SC, 901 & 903 DN 20 – Flow diagram

DN 20H - High flow



Calculation of flow rate

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

where

Q = flow rate (l/s)

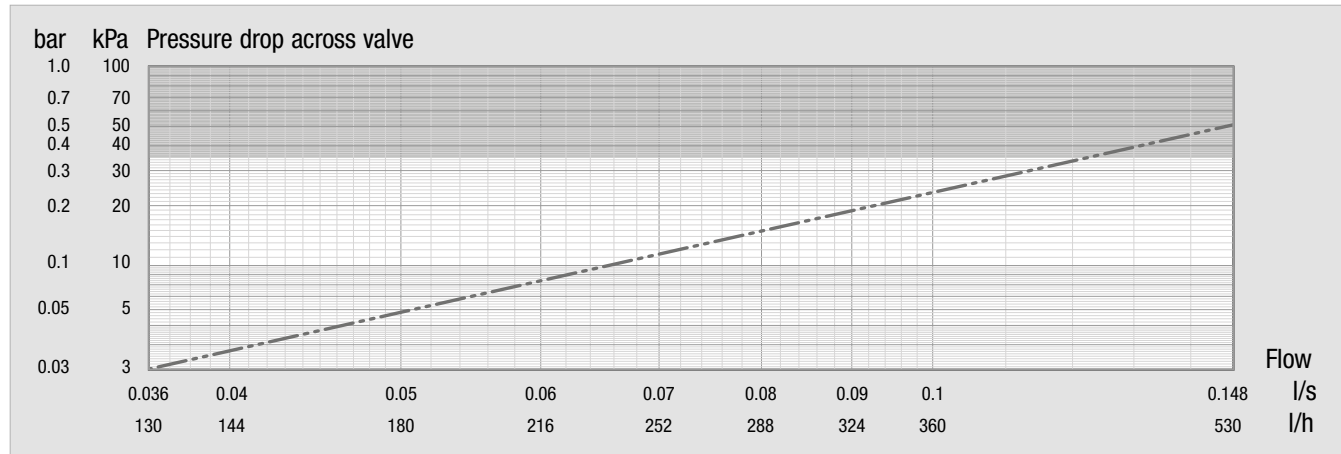
ΔP = Signal (kPa)

Kvs = Signal coefficient

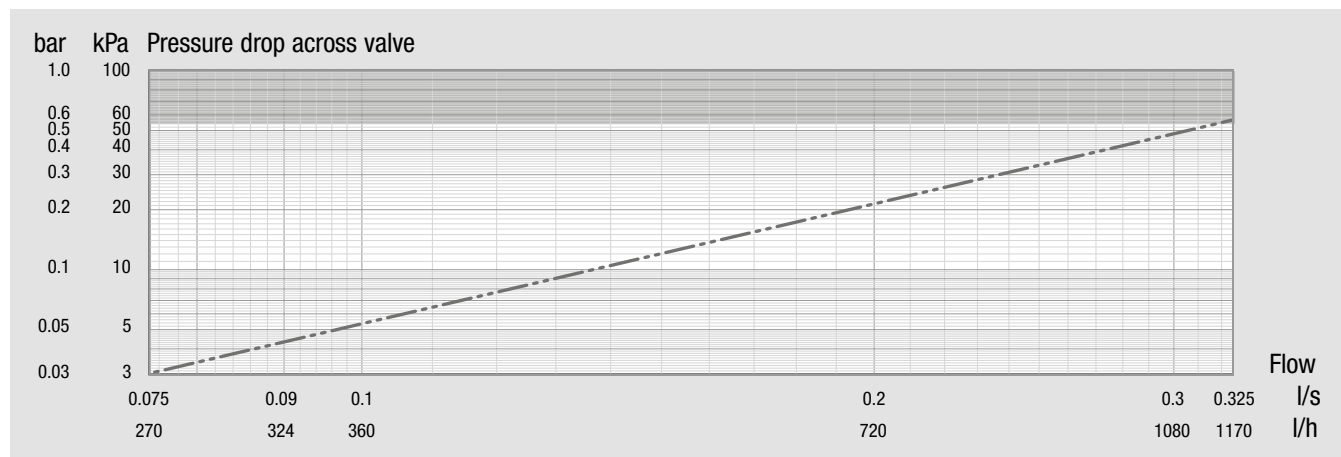
FIG 900S, 900SC, 901 & 903 DN 20 – Measuring Signal Diagrams

For calculation of flow rate formula see page 4.17

DN 20L - Low flow



DN 20S - Standard flow



DN 20H - High flow

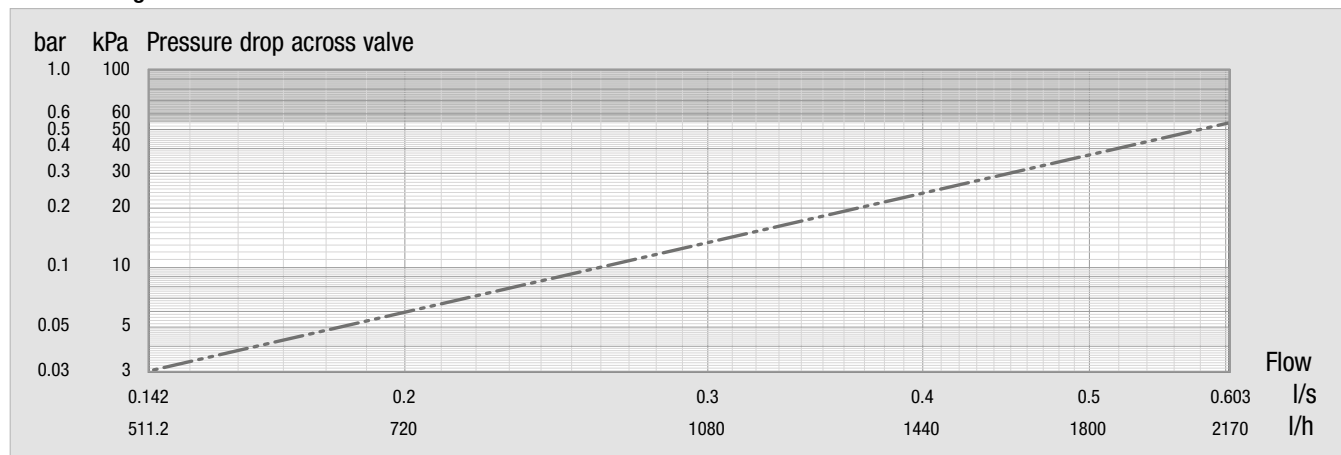
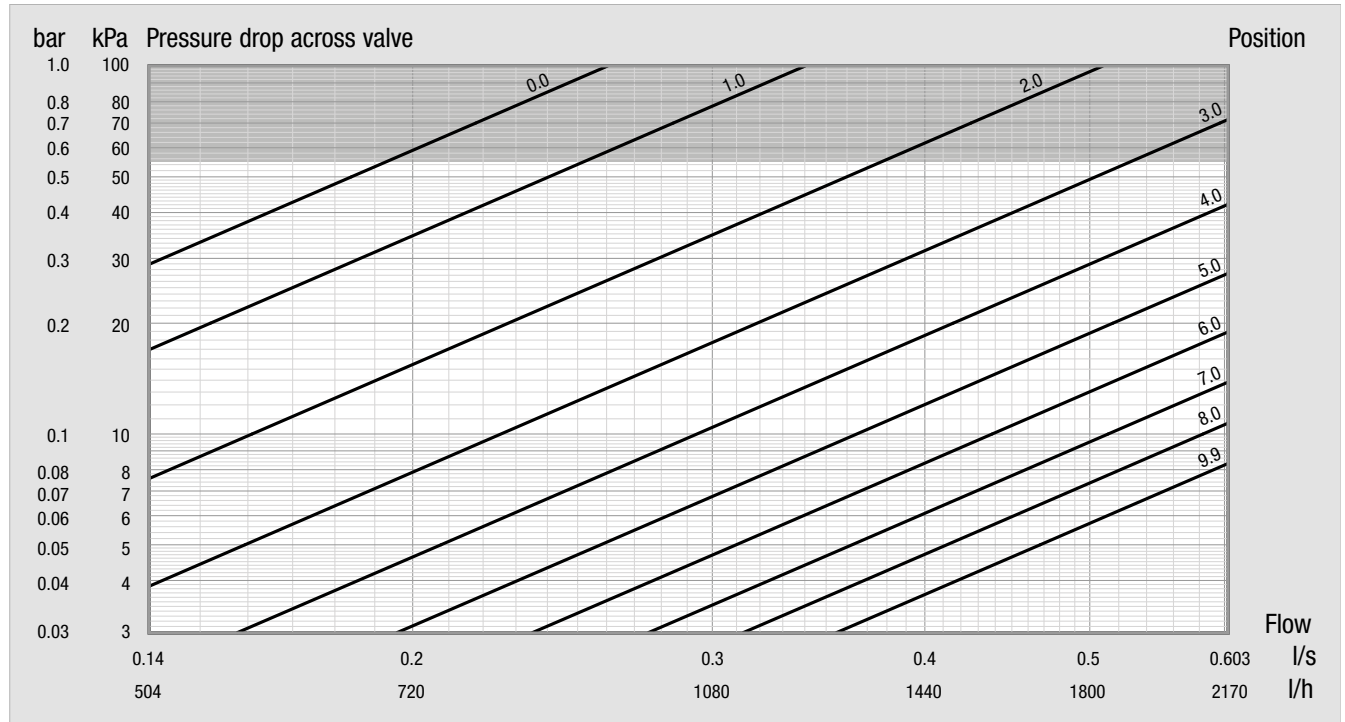


FIG 900S, 900SC, 901 & 903 DN 25 – Flow diagrams

DN 25S - Standard flow



DN 25H - High flow

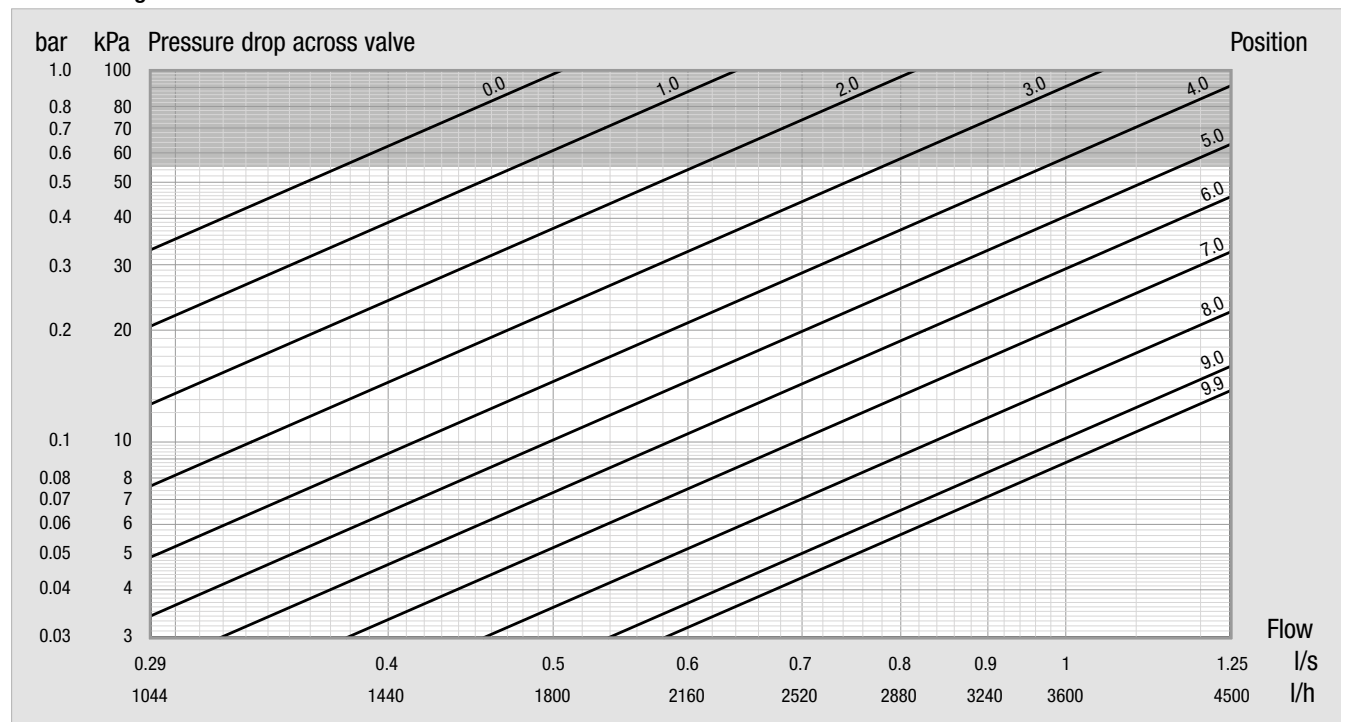
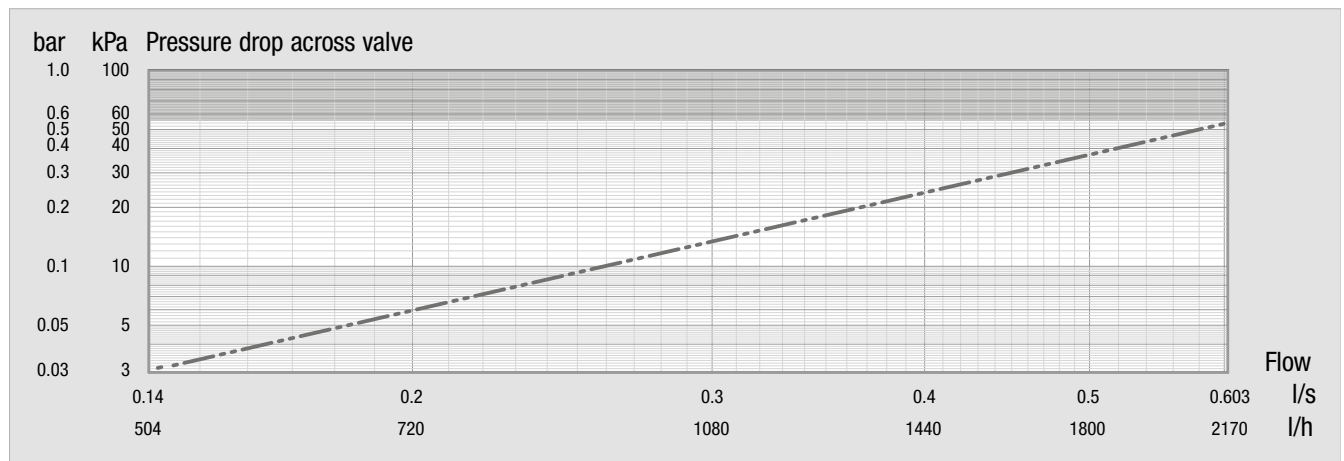


FIG 900S, 900SC, 901 & 903 DN 25 – Measuring signal diagrams

For calculation of flow rate formula see page 4.17

DN 25S - Standard flow



DN 25H - High flow

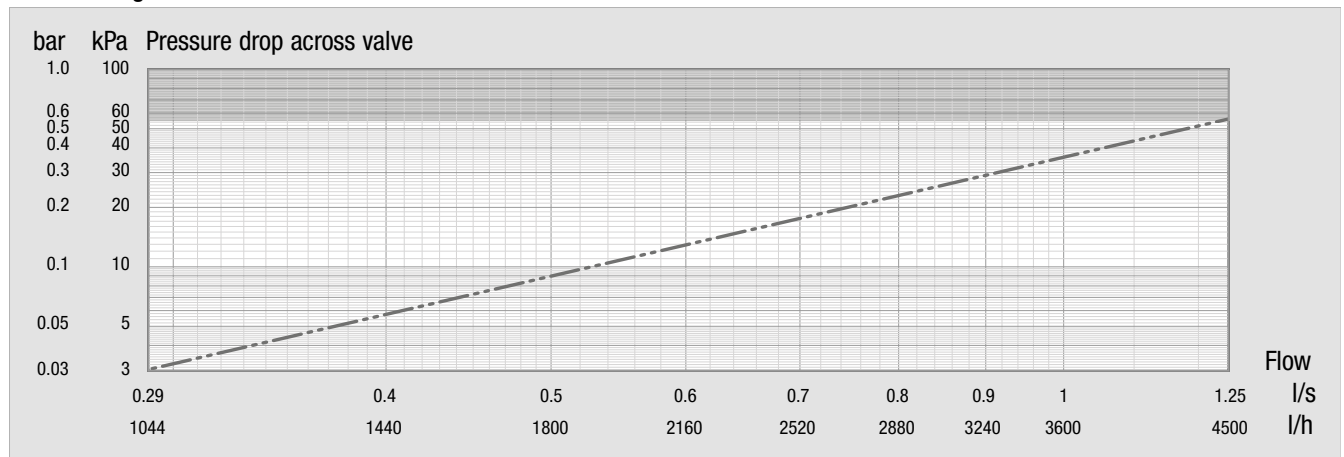
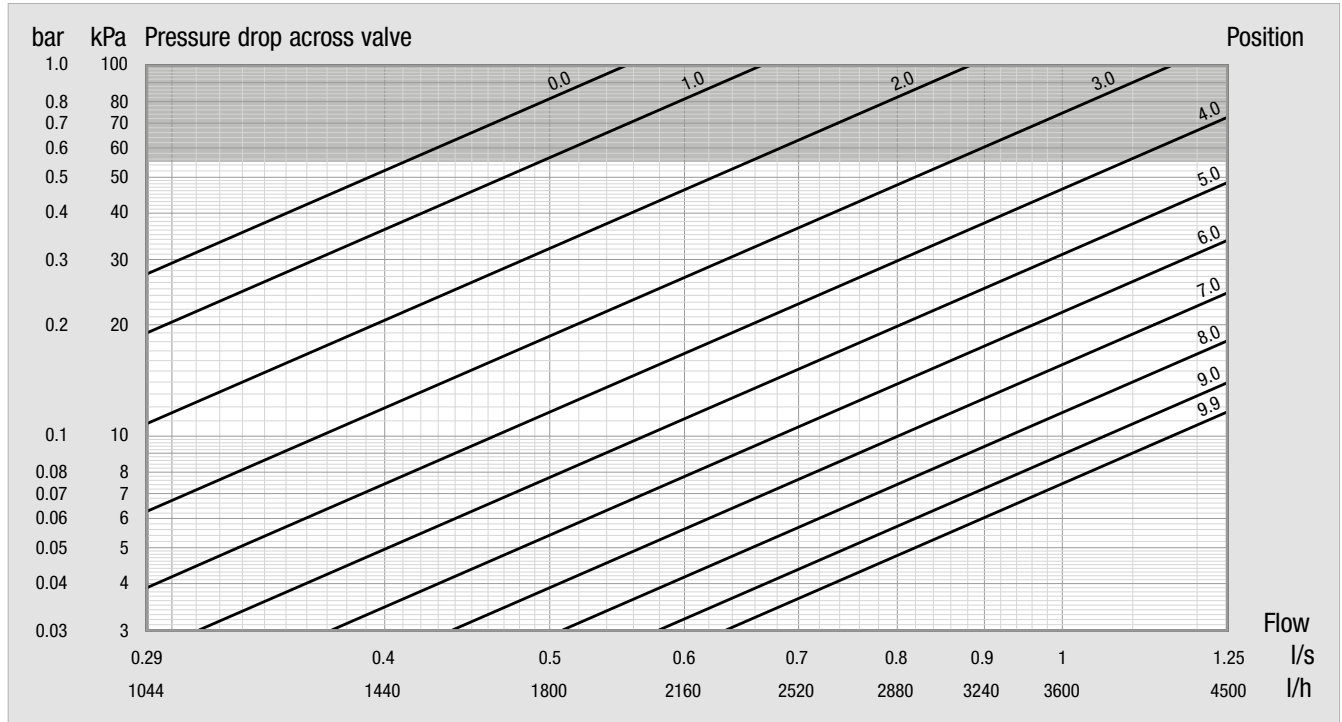


FIG 900S, 900SC, 901 & 903

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

DN 32H - High flow - Flow diagram



DN 32H - High flow - Measuring signal diagram

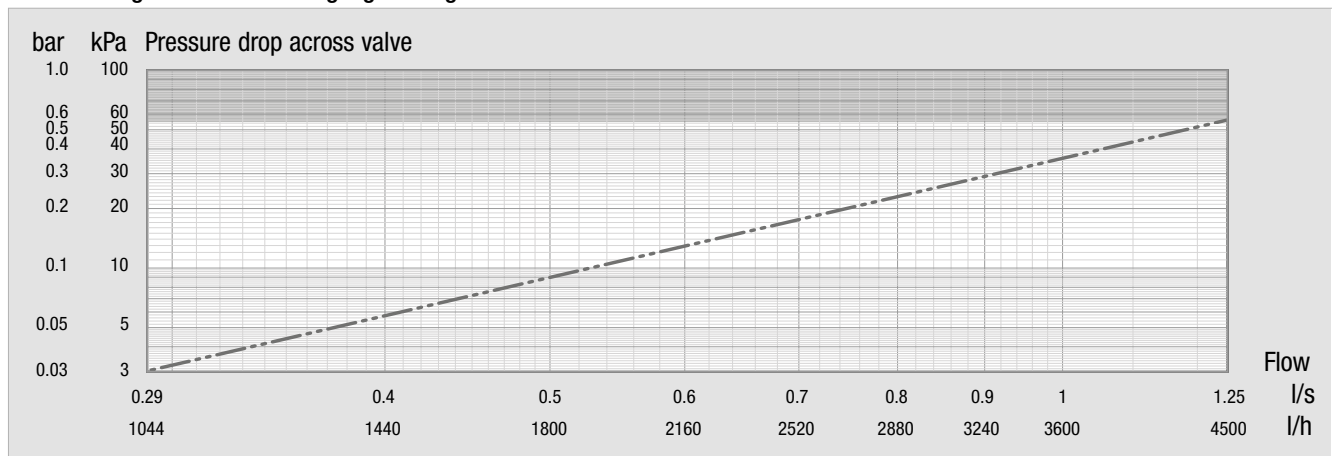
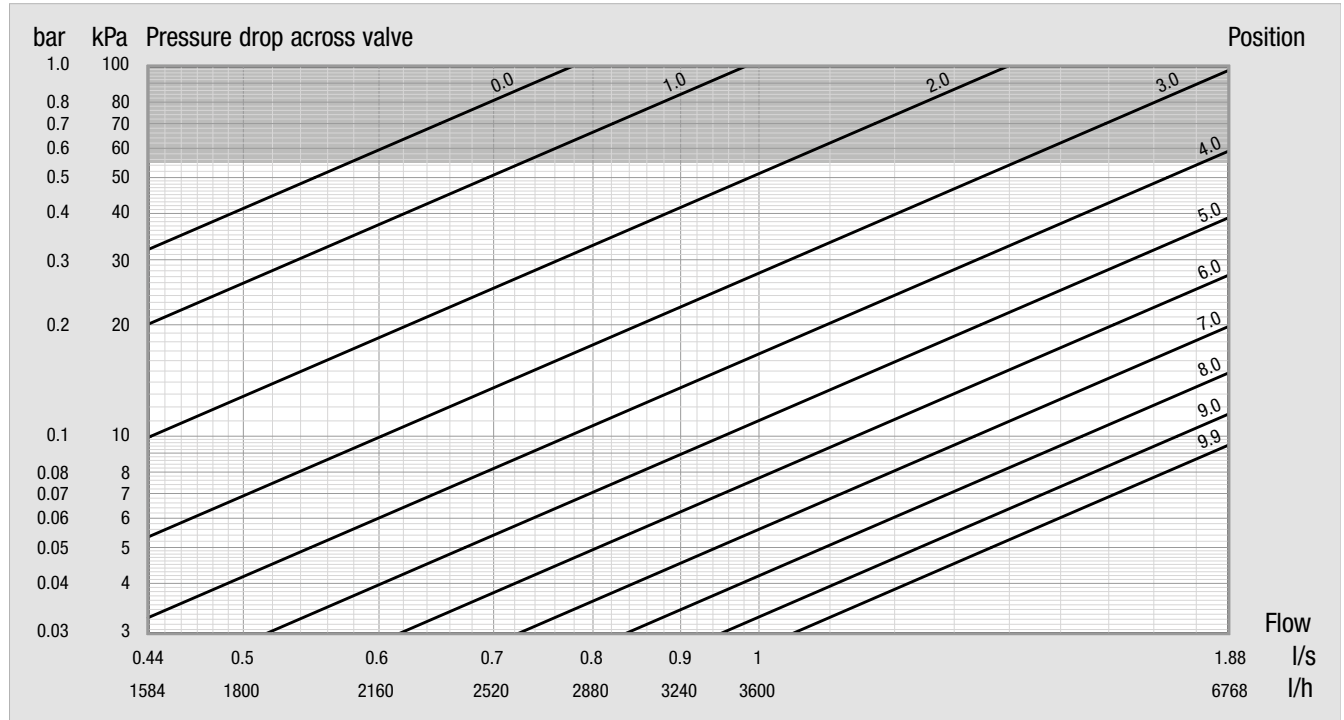


FIG 900S, 900SC, 901 & 903

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

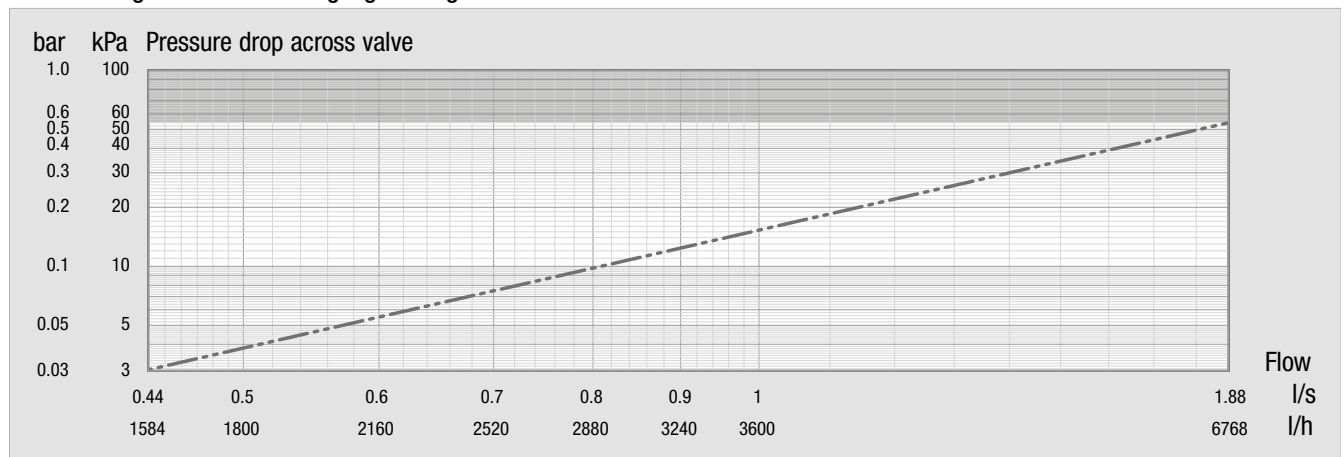
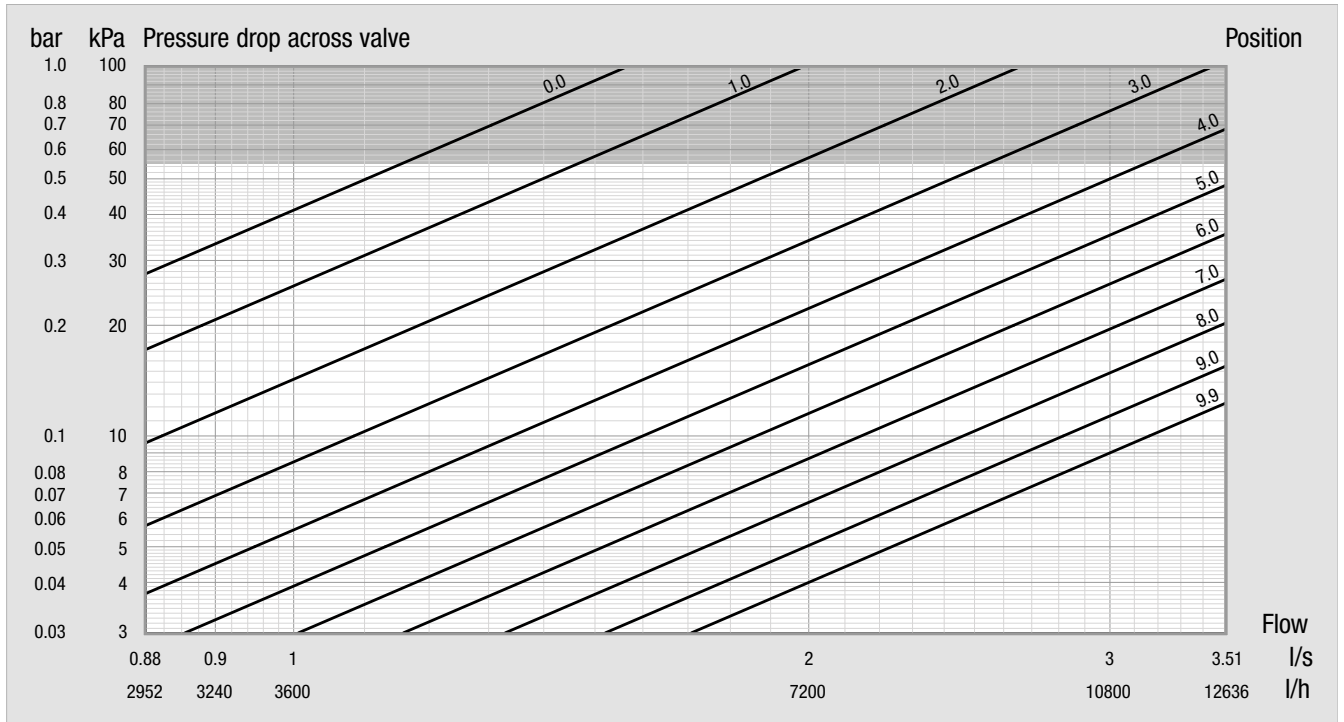


FIG 900S, 900SC, 901 & 903 DN 50 - Flow diagram / Measuring signal diagram

DN 50H - High flow - Flow diagram



DN 50H - High flow - Measuring signal diagram

