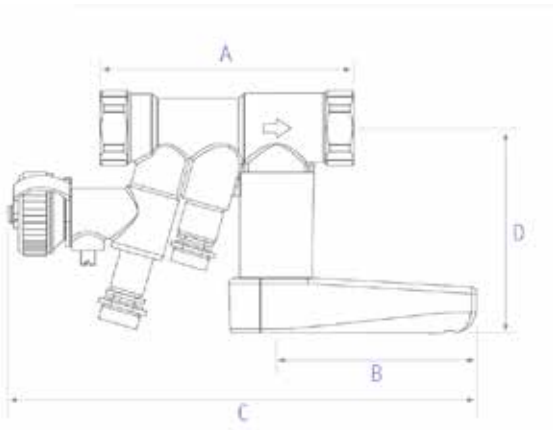


Balancing Valves

FIG 903 Venturi Commissioning Valve with Drain

Dimensions



BOSS™ 903 Venturi



BOSS™ 903 Venturi

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%.

Technical Specification – Female x Female / Pressfit Connection

Pressure & Temperature Classification

Max Temperature	120°C
Min Temperature	-20°C
Max Pressure	25 bar (Pressfit to 16 bar)

Materials of Construction

Valve Body	DZR Brass CW602N
Ball and Needle	DZR Brass CW602N (chrome plated)
Valve Handle	Polyamide (PA6.6 30%GF)

Sealings

O-rings	EPDM
Gaskets	PTFE
Test Point Sealings	Test Point Sealings EPDM

Markings on Valve

Valve Body	DN, PN, Flow Direction
KV Measuring	(KV-Measuring)
Handle	DN, Flow Version

Weights & Dimensions – Female x Female

Size DN	Nominal Size	A mm	B mm	C mm	D mm	Weight kg	Product Code
15UL	15mm	94	75	174	76	0.55	22074508
15L	15mm	94	75	174	76	0.55	22074519
15S	15mm	94	75	174	76	0.55	22074530
15H	15mm	94	75	174	76	0.55	22074541
20L	20mm	100	75	174	79	0.65	22074552
20S	20mm	100	75	174	79	0.65	22074563
20H	20mm	100	75	174	79	0.65	22074574
25S	25mm	112	75	175	83	0.8	22074585
25H	25mm	112	75	175	83	0.8	22074596
32H	32mm	130	112	228	109	1.5	22074604
40H	40mm	140	122	234	113	1.7	22074615
50H	50mm	156	122	238	120	2.4	22074626

Balancing Valves

Flow Range – Female x Female / Pressfit Connections								
FODRV						DRV		
Valve Size	Kvs	Flow Rates*		Signal Kvs	HeadLoss Factor	Loss Size	Valve	Kvs
DN	Description	m ³ /h	l/s	kPa	m ³ /h		DN	m ³ /h
15	Ultra Low Flow	0.163	0.0076 - 0.035	3.0 - 59.8	0.226	0.52	–	–
	Low Flow	0.359	0.0172 - 0.074	3.0 - 55	0.629	0.33	15L	1.62
	Standard flow	0.746	0.036 - 0.148	3.0 - 51	1.62	0.21	15S	2.11
	High Flow	1.56	0.074 - 0.325	3.0 - 56.5	2.49	0.39	–	–
15/18	Ultra Low Flow	0.163	0.0076 - 0.035	3.0 - 59.8	0.229	0.52	–	–
	Low Flow	0.359	0.0172 - 0.074	3.0 - 55	0.629	0.33	15/18L	1.62
	Standard Flow	0.746	0.036 - 0.148	3.0 - 51	1.620	0.210	15/18S	2.10
	High Flow	1.56	0.074 - 0.325	3.0 - 56.5	2.49	0.39	–	–
20	Low Flow	0.746	0.036 - 0.148	3.0 - 51	1.43	0.27	20/15L	4.26
	Standard flow	1.56	0.074 - 0.325	3.0 - 56.5	2.82	0.31	20/15S	4.79
	High Flow	2.95	0.142 - 0.603	3.0 - 54	5.72	0.27	–	–
20/18	Low Flow	0.746	0.036 - 0.148	3.0 - 51	1.43	0.27	20/18L	4.26
	Standard flow	1.56	0.074 - 0.325	3.0 - 56.5	2.82	0.31	20/18S	4.79
	High Flow	2.95	0.142 - 0.603	3.0 - 54	5.72	0.27	–	–
20/22	Low Flow	0.746	0.036 - 0.148	3.0 - 51	1.43	0.27	20/22L	4.26
	Standard flow	1.56	0.074 - 0.325	3.0 - 56.5	2.82	0.31	20/22S	4.81
	High Flow	2.95	0.142 - 0.603	3.0 - 54	5.72	0.27	–	–
25/28	Standard flow	2.95	0.142 - 0.603	3.0 - 54	7.54	0.15	25/28S	12.80
	High flow	6.01	0.29 - 1.25	3.0 - 56	12.10	0.25	–	–
32/35	High flow	6.01	0.29 - 1.25	3.0 - 56	13.20	0.21	32/35S	13.28
40/42	High flow	9.2	0.44 - 1.88	3.0 - 54	22.00	0.17	40/42S	23.30
50/54	High flow	17.1	0.82 - 3.51	3.0 - 55	36.00	0.23	50/54S	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 kPa per metre of pipe.

Weights & Dimensions – Pressfit Connections							
Size DN	Nominal Size	A mm	B mm	C mm	D mm	Weight kg	Product Code
15UL	15 x 15mm	145	75	174	76	0.63	22074637
15L	15 x 15mm	145	75	174	76	0.63	22074648
15S	15 x 15mm	145	75	174	76	0.63	22074659
15H	15 x 15mm	145	75	174	76	0.63	22074670
15UL	15 x 18mm	147	75	174	76	0.64	22074681
15L	15 x 18mm	147	75	174	76	0.64	22074692
15S	15 x 18mm	147	75	174	76	0.64	22074700
15H	15 x 18mm	147	75	174	76	0.64	22074711
20L	20 x 15mm	154	75	174	79	0.76	22074722
20S	20 x 15mm	154	75	174	79	0.76	22074733
20H	20 x 15mm	154	75	174	79	0.76	22074744
20L	20 x 18mm	151	75	174	79	0.76	22074755
20S	20 x 18mm	151	75	174	79	0.76	22074766
20H	20 x 18mm	151	75	174	79	0.76	22074777
20L	20 x 22mm	161	75	174	79	0.77	22074788
20S	20 x 22mm	161	75	174	79	0.77	22074799
20H	20 x 22mm	161	75	174	79	0.77	22074807
25S	25 x 28mm	187	75	175	83	1	22074818
25H	25 x 28mm	187	75	175	83	1	22074829
32H	32 x 35mm	251	112	228	109	1.78	22074840
40H	40 x 42mm	277	122	234	113	2.08	22074851
50H	50 x 54mm	313	122	238	120	3.07	22074862

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.

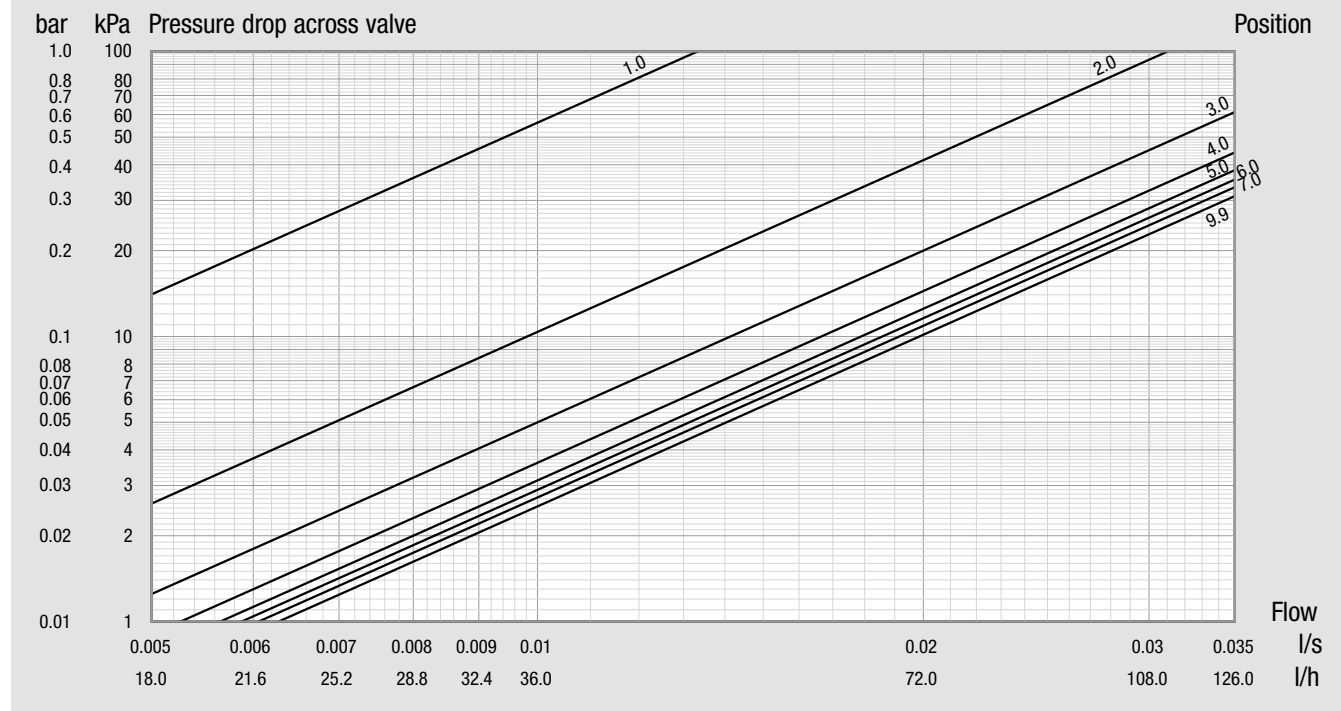
Valve Sizing

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

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

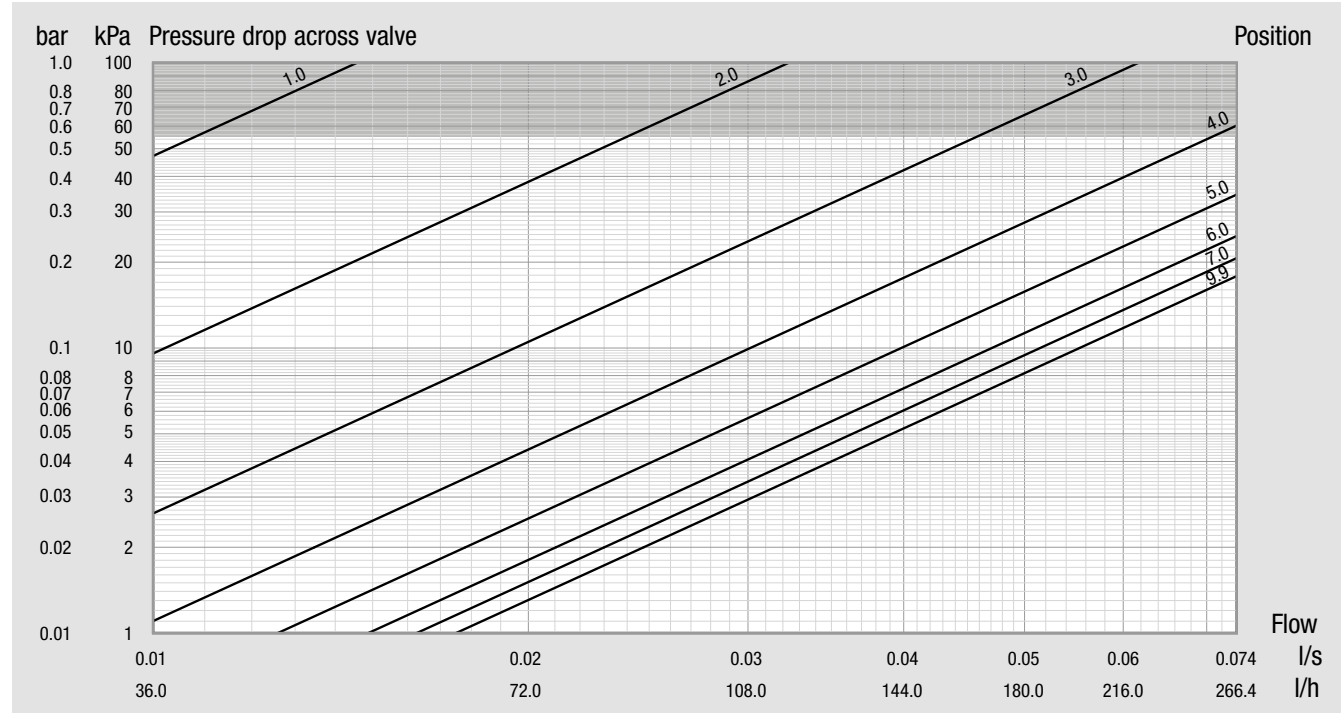
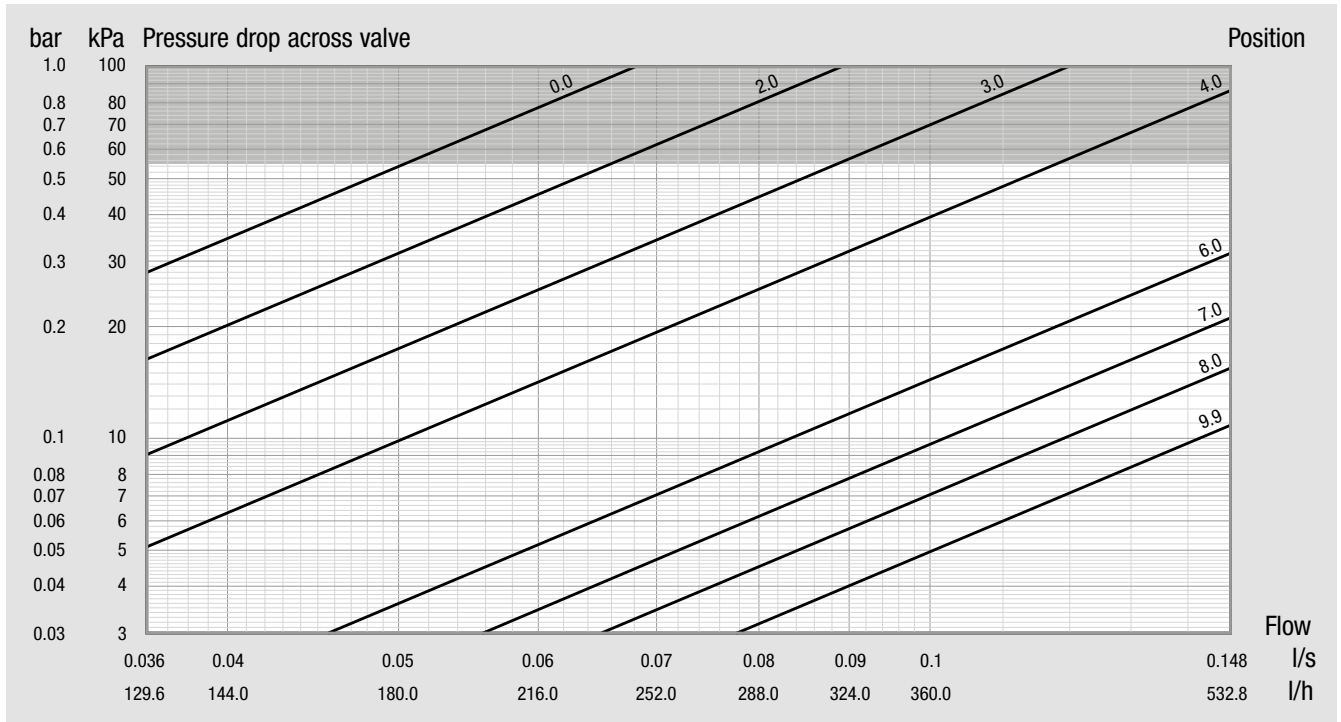


FIG 900S, 900SC, 901 & 903 DN 15 – Flow diagrams

DN 15S - Standard flow



DN 15H - High flow

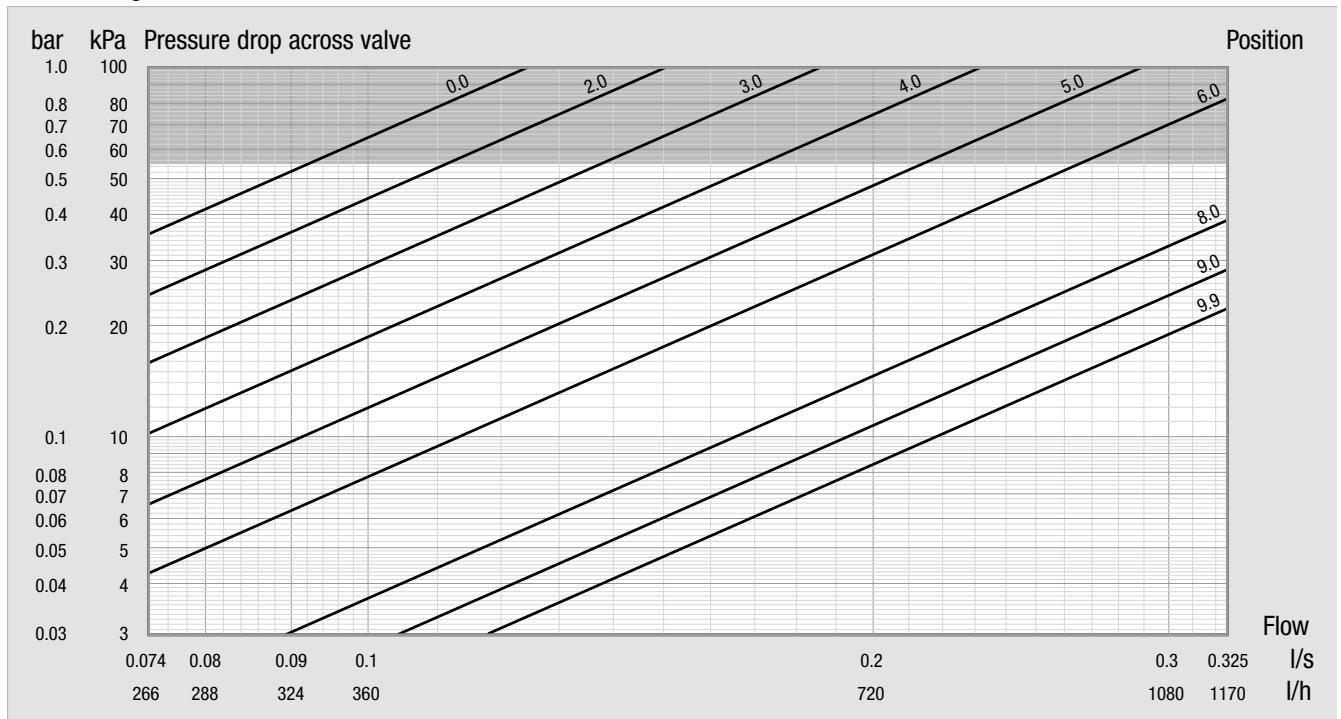
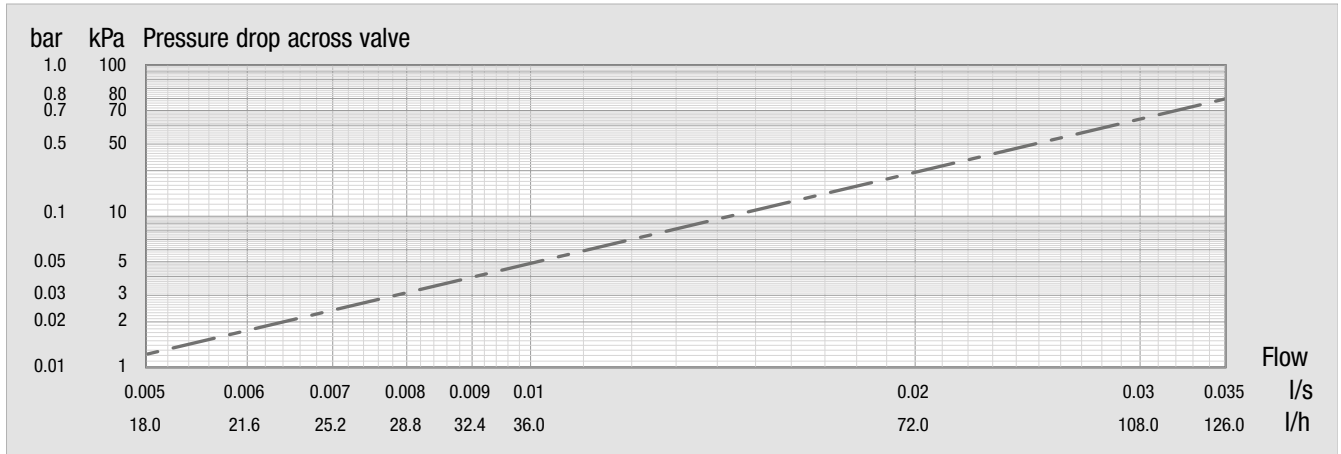


FIG 900S, 900SC, 901 & 903 DN 15 – Measuring signal diagrams

For calculation of flow rate formula see page 4.17

DN 15UL - Ultra low flow



DN 15L - Low flow

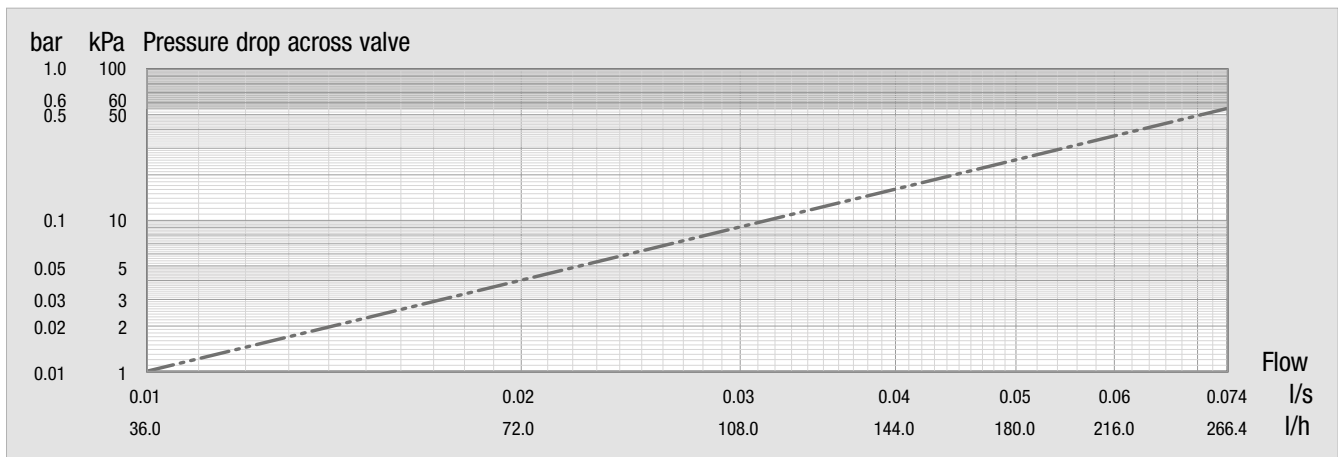
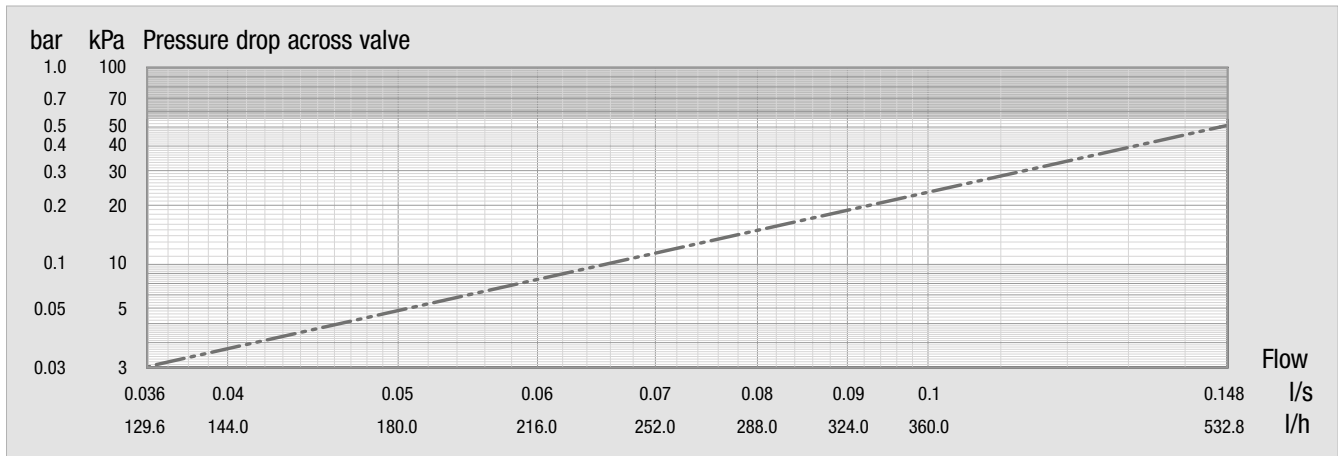
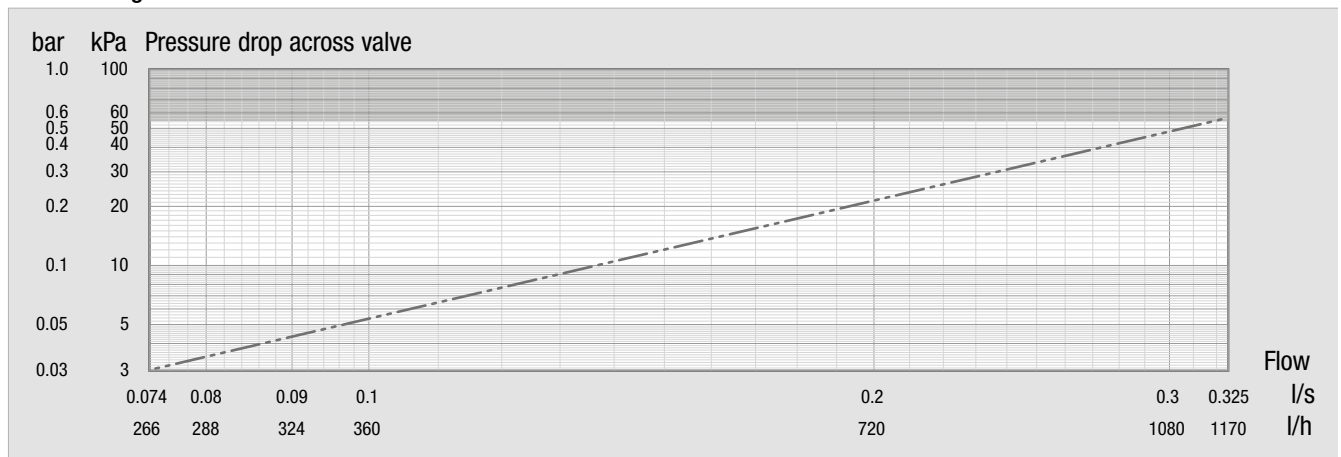


FIG 900S, 900SC, 901 & 903 DN 15 – Measuring signal diagrams

DN 15S - Standard flow



DN 15H - High flow

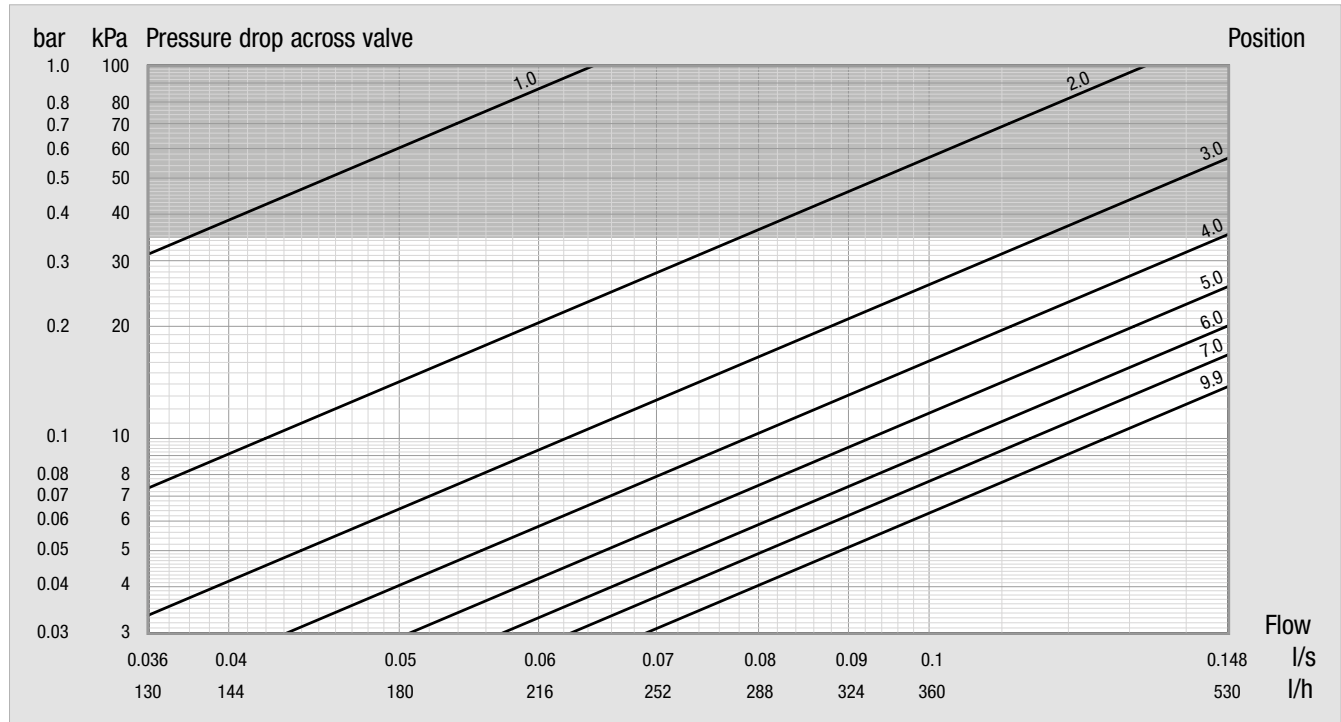


Balancing Valves

DN 20 – Flow diagrams

For calculation of flow rate formula see page 4.17

DN 20L - Low flow



DN 20S - Standard flow

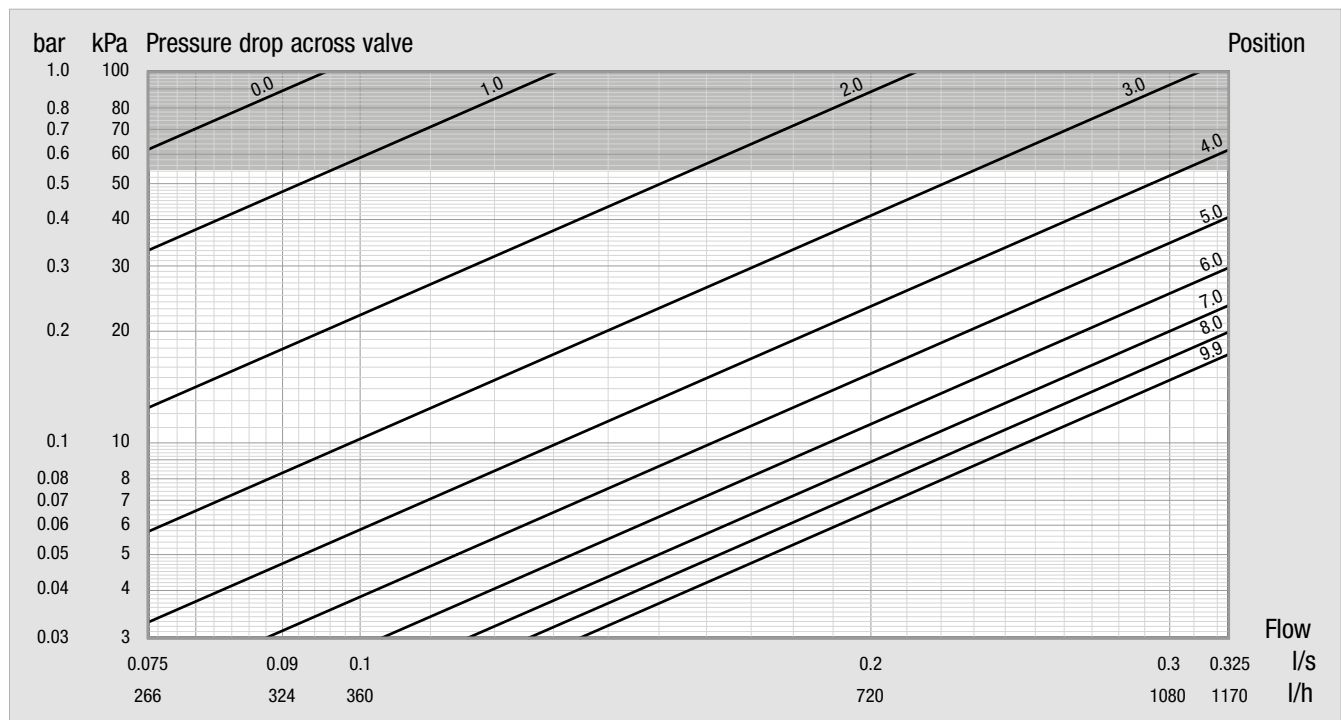
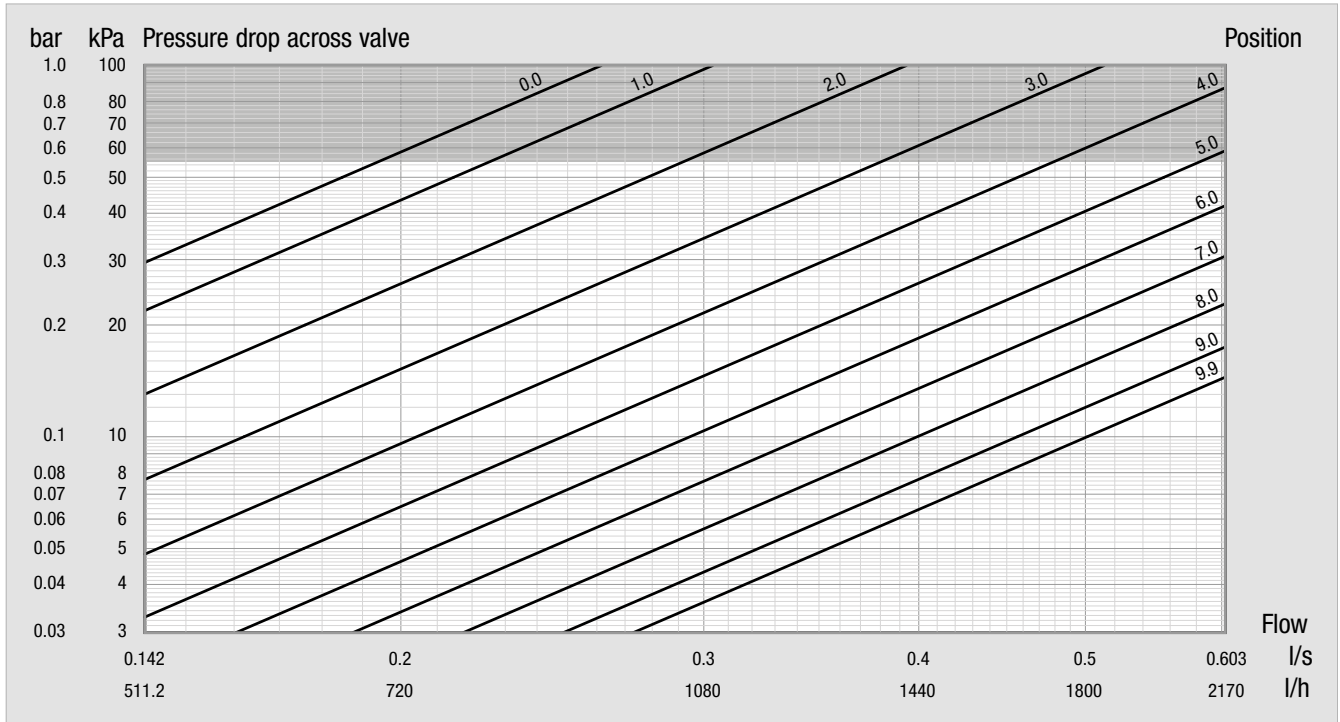


FIG 900S, 900SC, 901 & 903 DN 20 – Flow diagram

DN 20H - High flow



Calculation of flow rate

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

where

Q = flow rate (l/s)

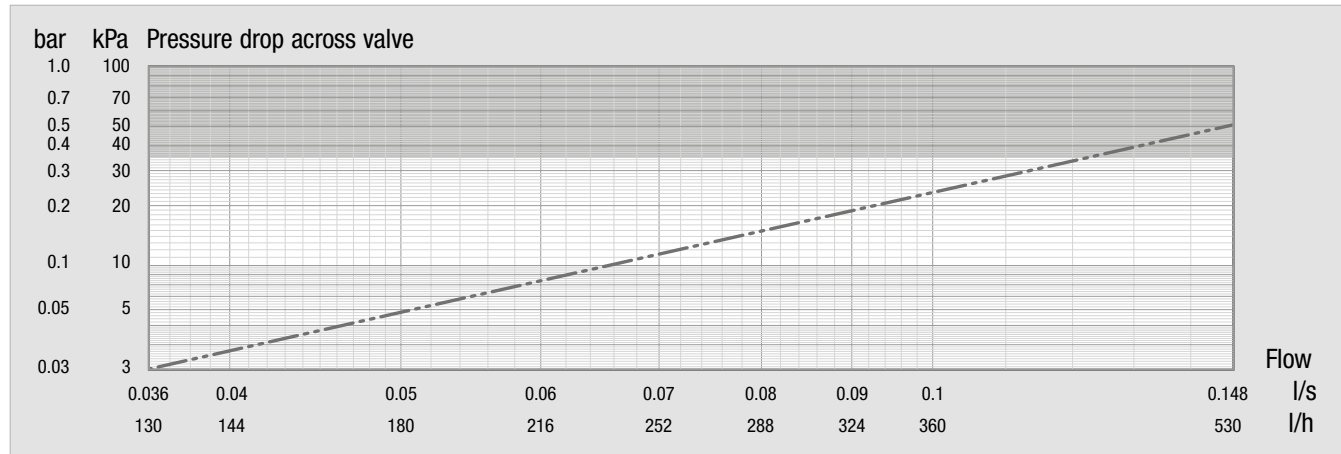
ΔP = Signal (kPa)

Kvs = Signal coefficient

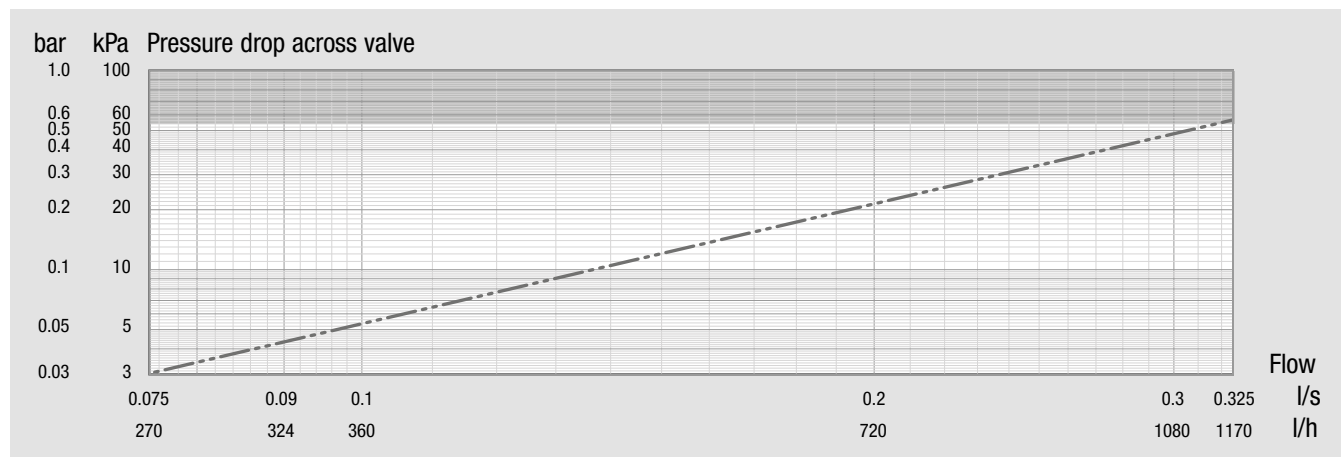
FIG 900S, 900SC, 901 & 903 DN 20 – Measuring Signal Diagrams

For calculation of flow rate formula see page 4.17

DN 20L - Low flow



DN 20S - Standard flow



DN 20H - High flow

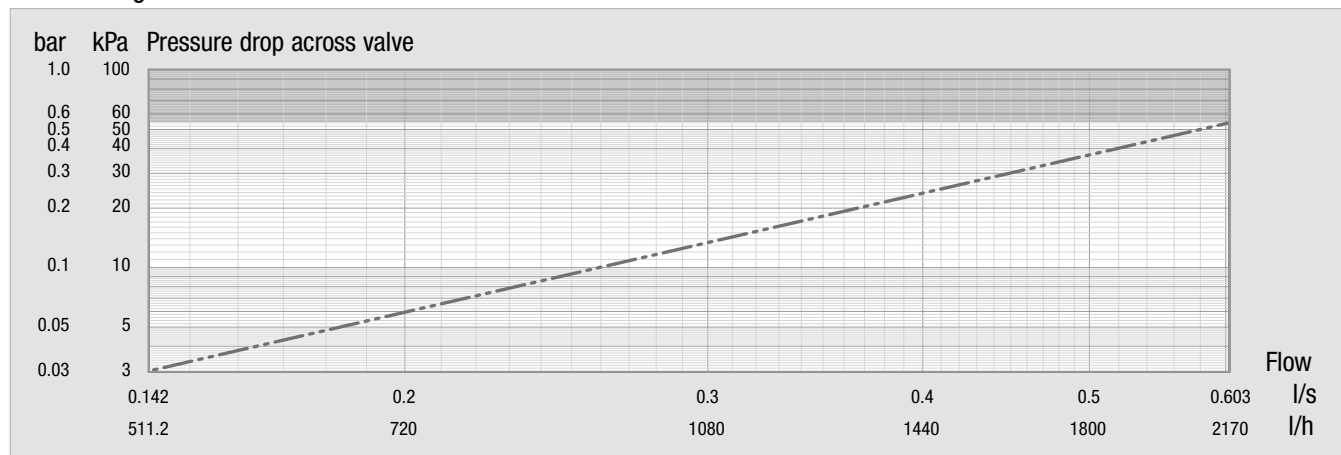
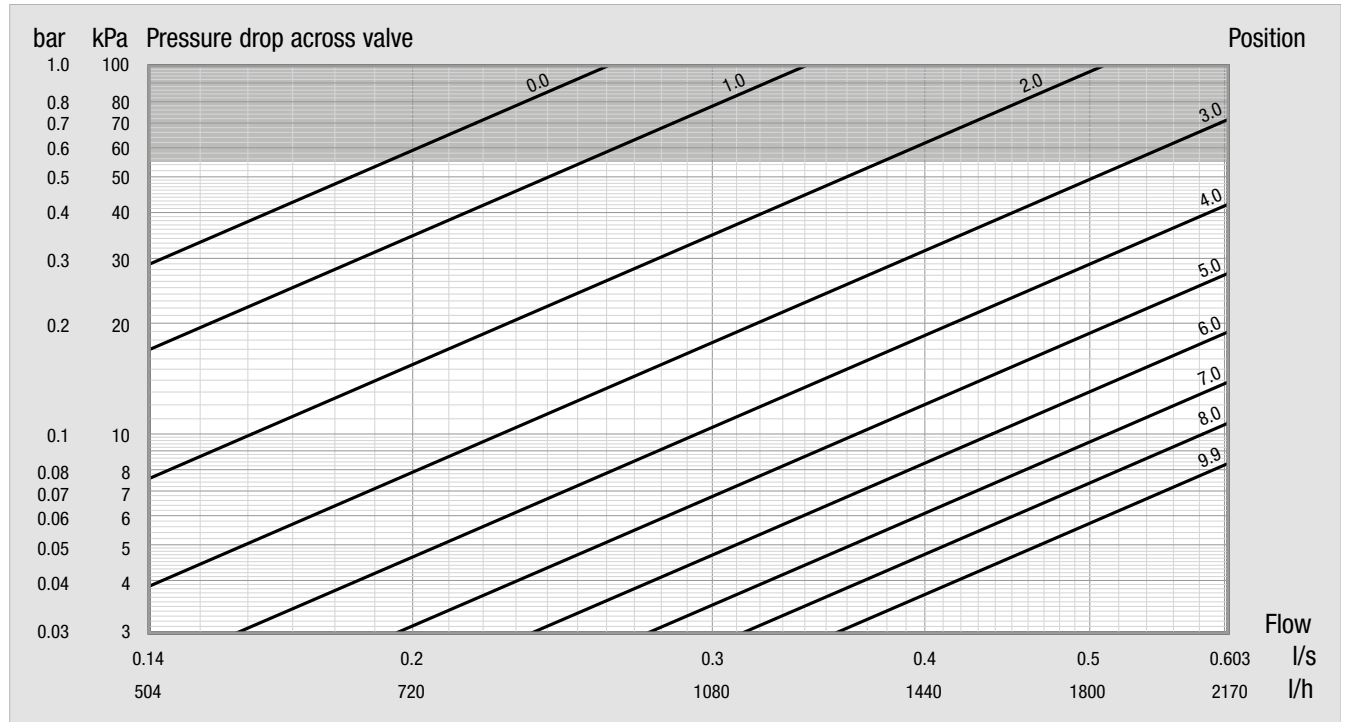


FIG 900S, 900SC, 901 & 903 DN 25 – Flow diagrams

DN 25S - Standard flow



DN 25H - High flow

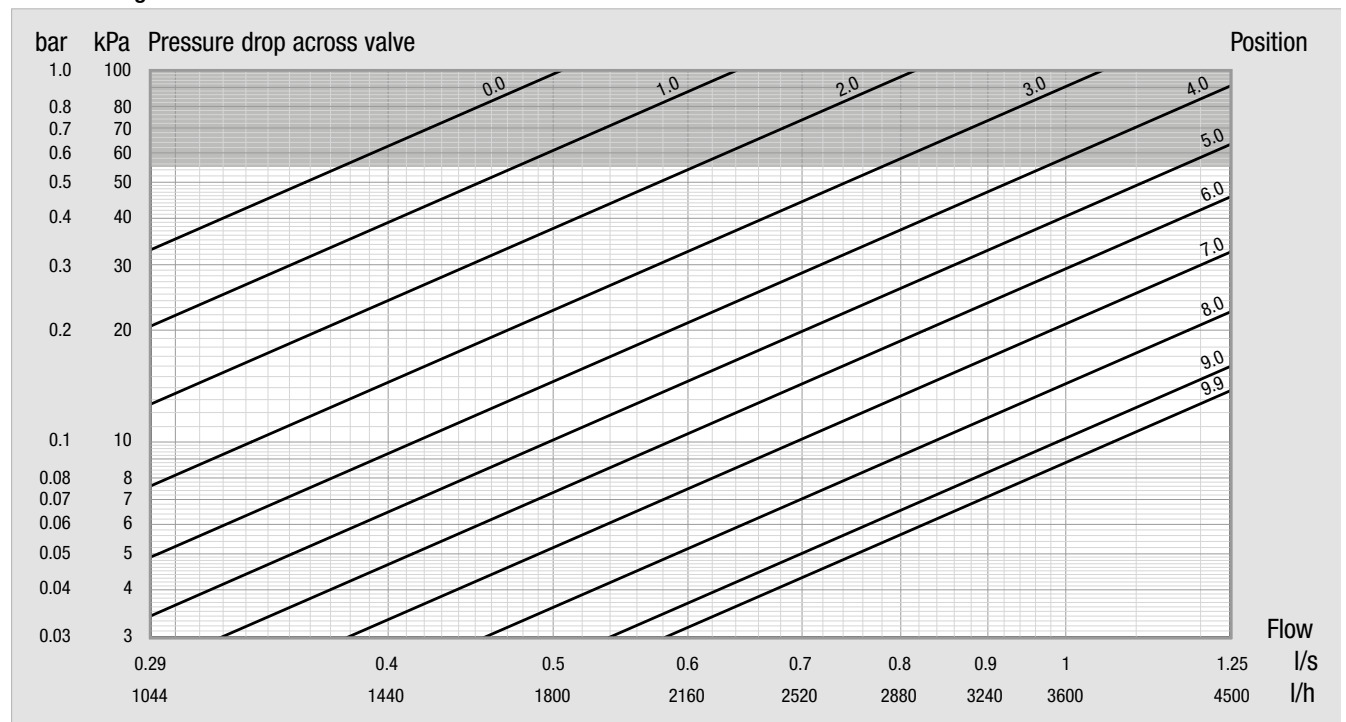
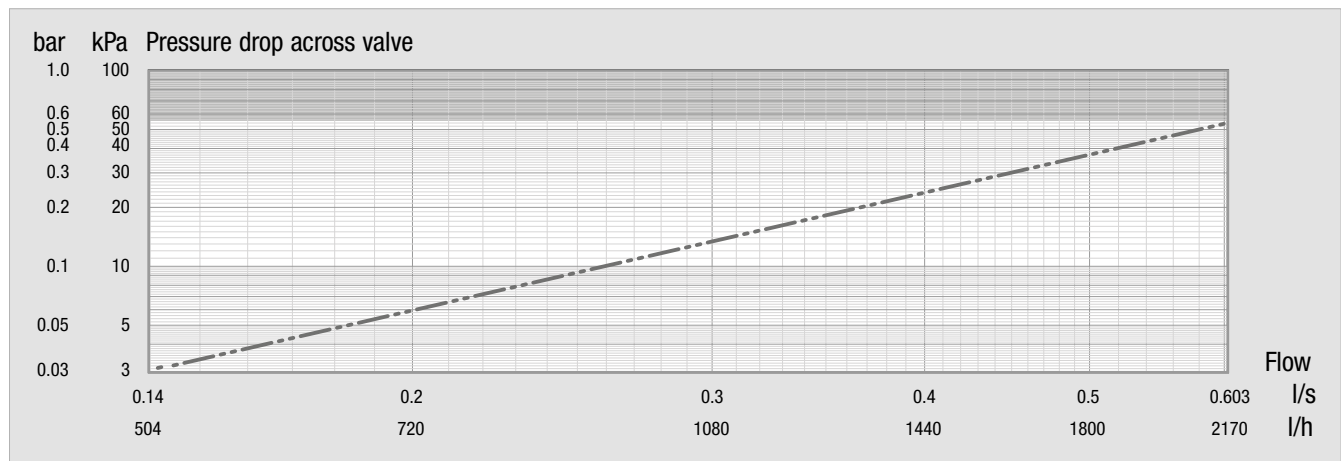


FIG 900S, 900SC, 901 & 903 DN 25 – Measuring signal diagrams

For calculation of flow rate formula see page 4.17

DN 25S - Standard flow



DN 25H - High flow

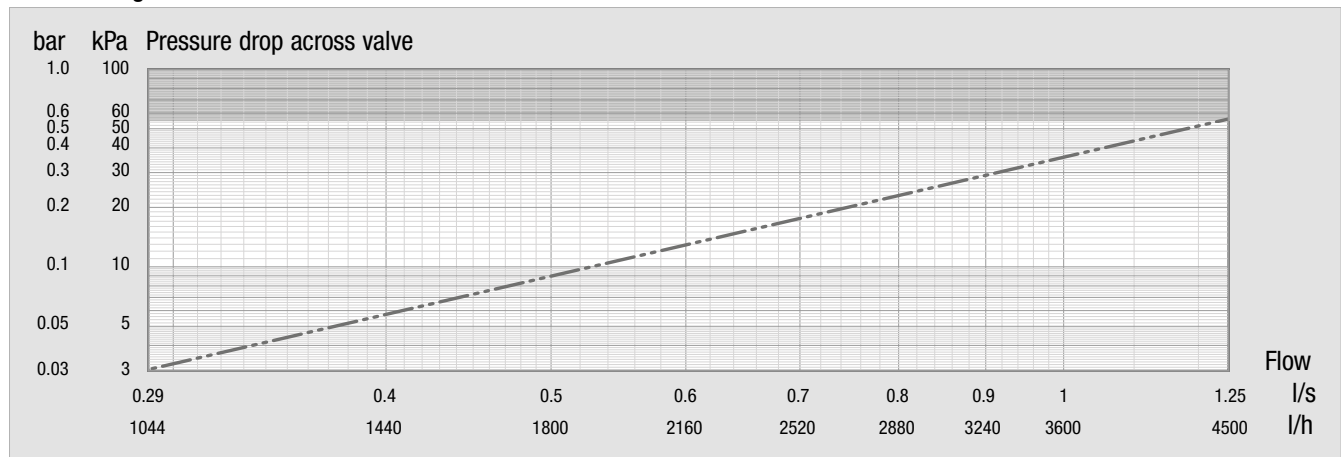
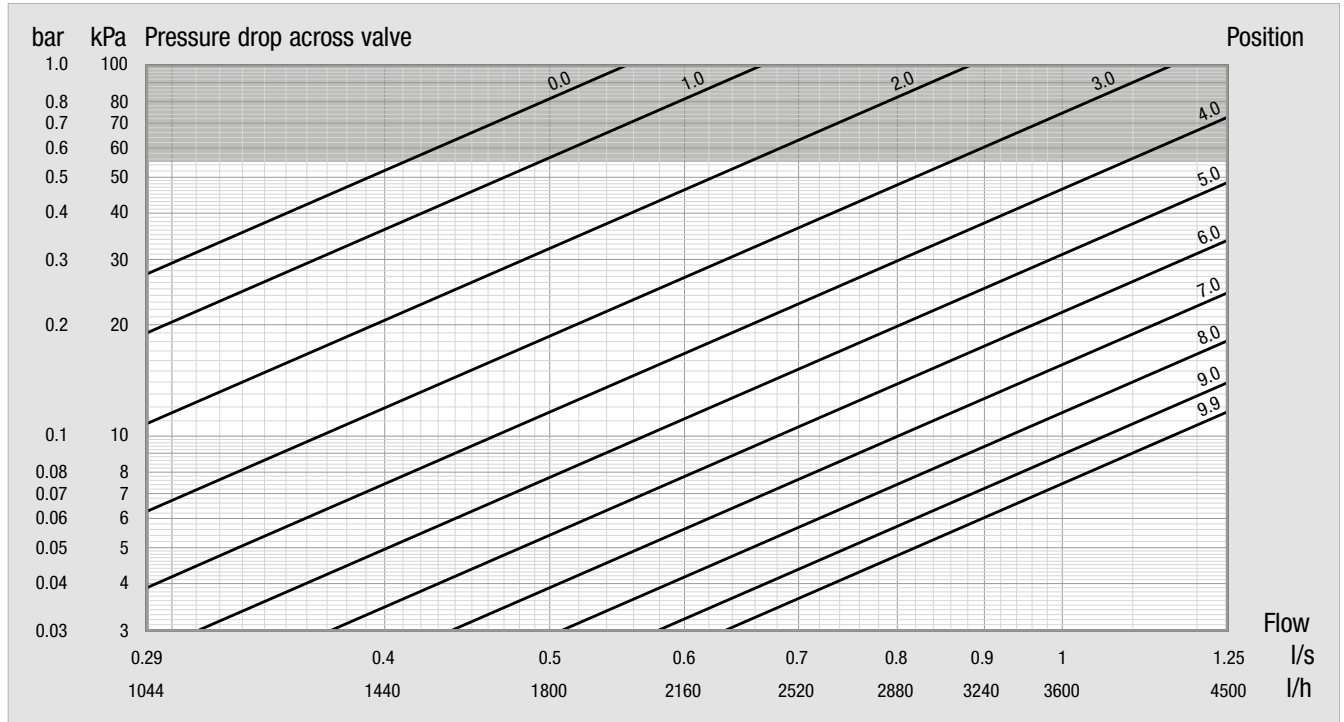


FIG 900S, 900SC, 901 & 903

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

DN 32H - High flow - Flow diagram



DN 32H - High flow - Measuring signal diagram

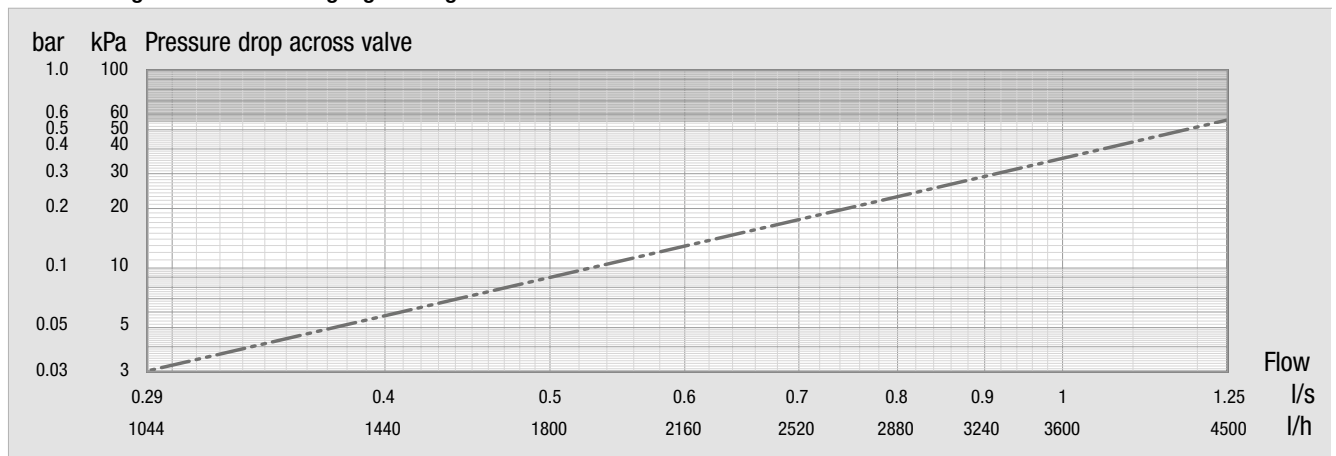
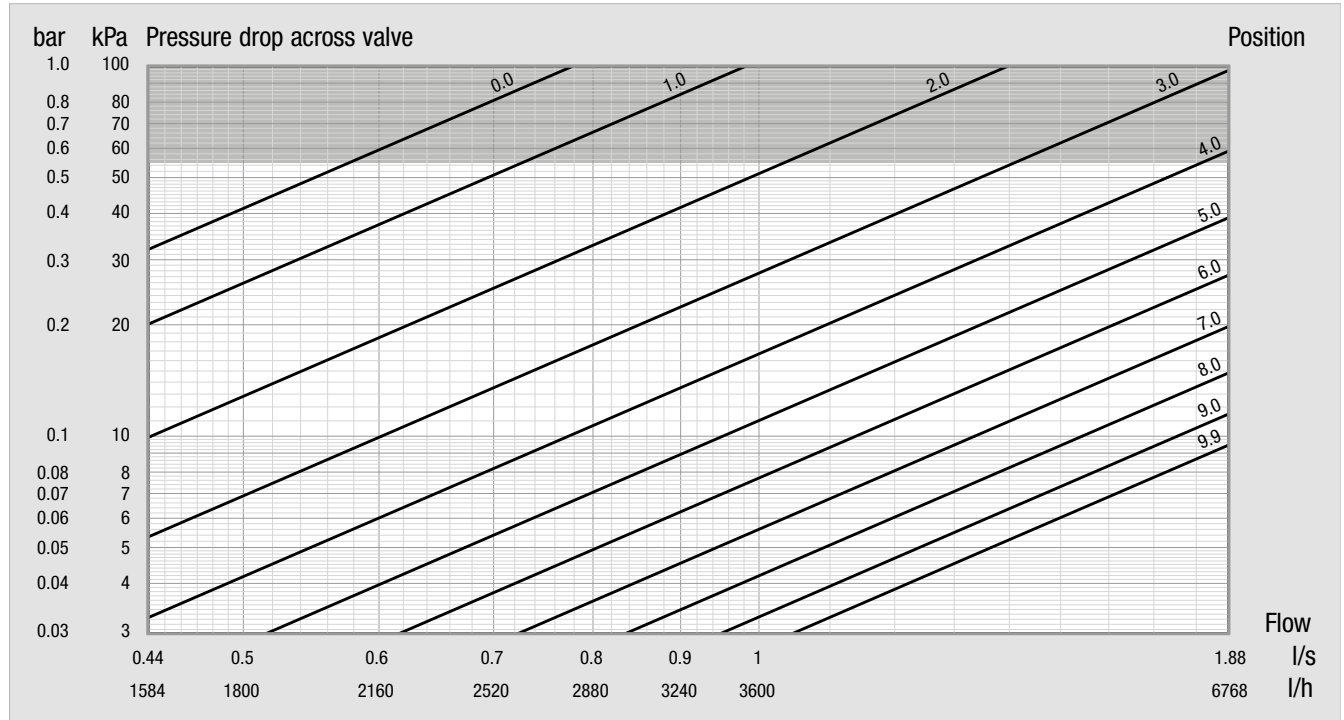


FIG 900S, 900SC, 901 & 903

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

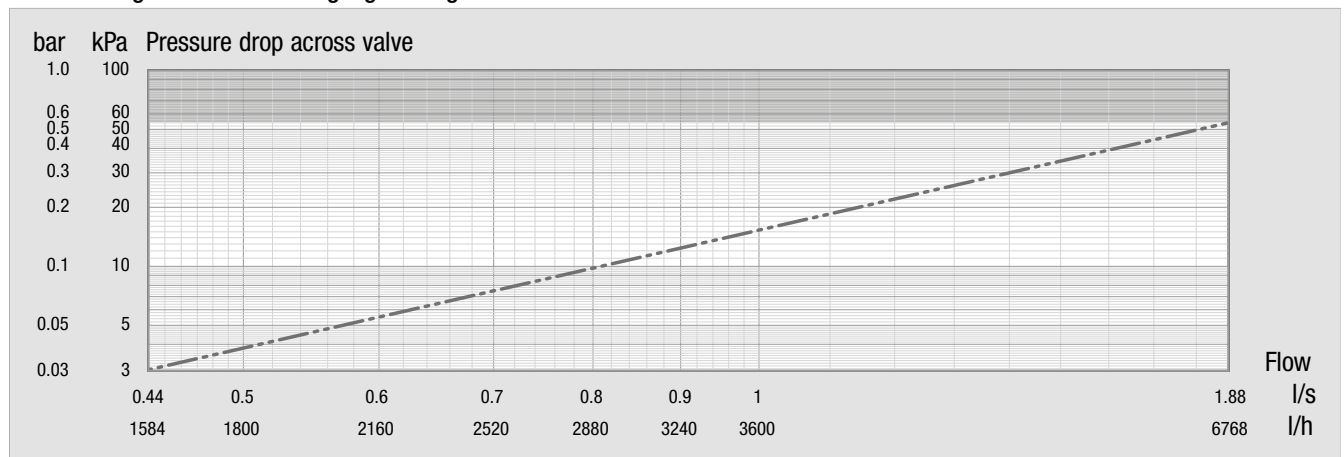
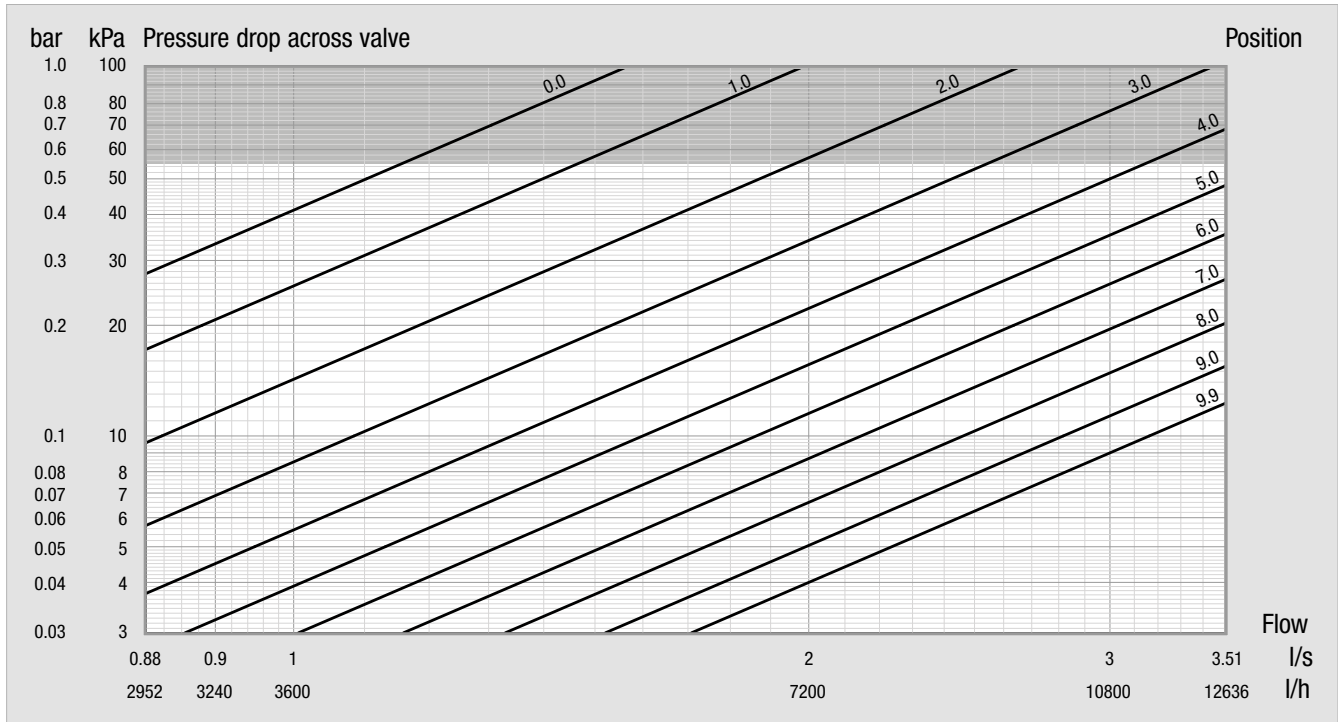


FIG 900S, 900SC, 901 & 903

DN 50 - Flow diagram / Measuring signal diagram

DN 50H - High flow - Flow diagram



DN 50H - High flow - Measuring signal diagram

