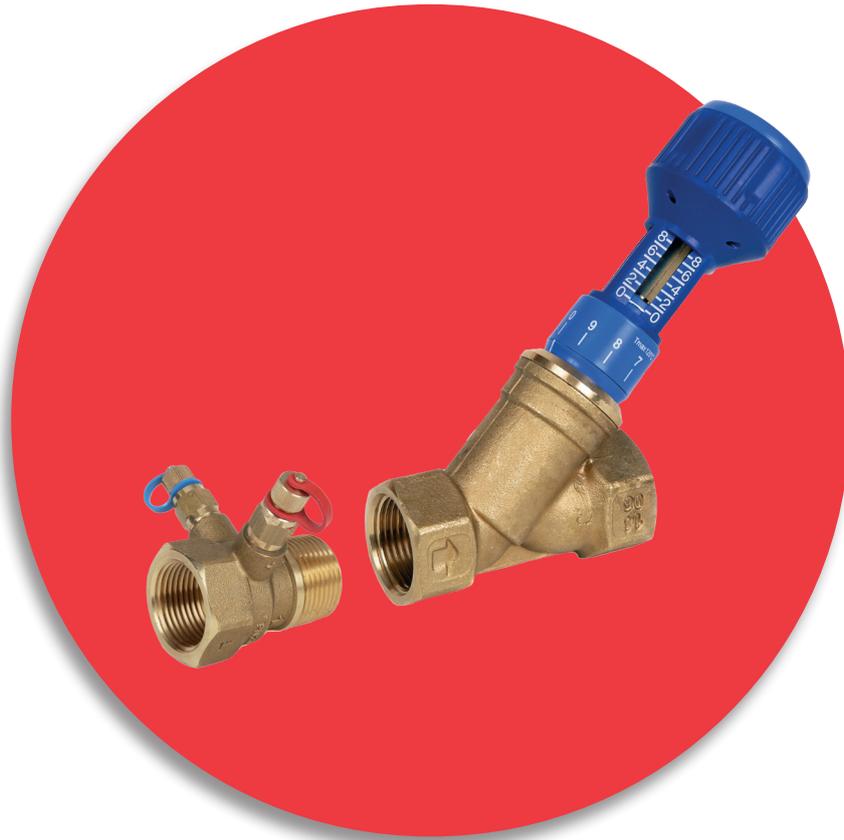




# Installation & Operating Manual



## ART 26 & ART 27 DZR Commissioning Set

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## Contents

1. Introduction
2. Technical Data
3. Valve Features
4. Valve Installation
5. Regulating
6. Approvals Classification
7. Troubleshooting
8. Warranty

### 1. Introduction

- Albion Valves (UK) Ltd ART 26 is a stand-alone double regulating valve.
- Albion Valves (UK) Ltd ART 27 is a fixed orifice metering station used to measure flow passing through it.
- The ART 26 DRV can be used close coupled to an ART 27 metering station to form a commissioning set.
- By using the ART 26 & ART 27 combined flow measurement accuracy of the fixed orifice +/- 5%.
- The ART 26 has a lockable scale function, to set maximum opening set position.
- The ART 26 & ART 27 have been classified in accordance with PED 2014/68/EU.

### 2. Technical Data

Valve Type	Size Range	Connection Type	Temperature Rating	Pressure Rating (Max)
ART 26	DN15–DN50	ISO 7/1	-10°C - 120°C	20 bar
ART 27	DN15-DN50	ISO 7/1	-10°C - 120°C	20 bar
ART 26 and ART 27	15mm-54mm	Universal M & V 15mm – 35mm / Dedicated M & V 42mm & 54mm	-10°C – 120°C	20 bar
ART 26 and ART 27 PRS	15mm-54mm	Universal M & V 15mm – 35mm / Dedicated M & V 42mm & 54mm	-10°C – 120°C	DN15 to DN28 20bar  DN35 to DN54 16bar

### Flow Coefficient

The flow rate can be calculated using the Kv value and a measured signal.

$$K_v = Q \cdot 36 / \sqrt{\Delta P} \quad K_{vs} = Q \cdot 36 / \sqrt{\Delta P_s}$$



Where Kv & Kvs = flow coefficient (m<sup>3</sup>/hr at 1 bar differential)

Q - Flow rate (l/s)

ΔP - Head loss attributable to valve (kPa)

ΔPs - Differential pressure across tapping's (signal) (kPa)

### Kvs Values ART 26 and ART 27

Size	½" UUL	½ ULL	½"UL	½" L	½" M	½"	¾"	1"	1 ¼"	1 ½"	2"
Kvs	0.10	0.17	0.23	0.47	0.98	1.80	4.06	7.45	16.63	23.00	47.50

### Kvs Values ART 26 and ART 27 PRS

Size	DN15	DN20	DN25	DN32	DN40	DN50
Kvs	1.80	4.06	7.45	16.63	23.00	47.50

### Pressure Loss

The pressure loss across a metering station is less than signal differential pressure indicated on the flow charts. The pressure loss is obtained by multiplying the pressure signal by the pressure recovery factors given in the table.

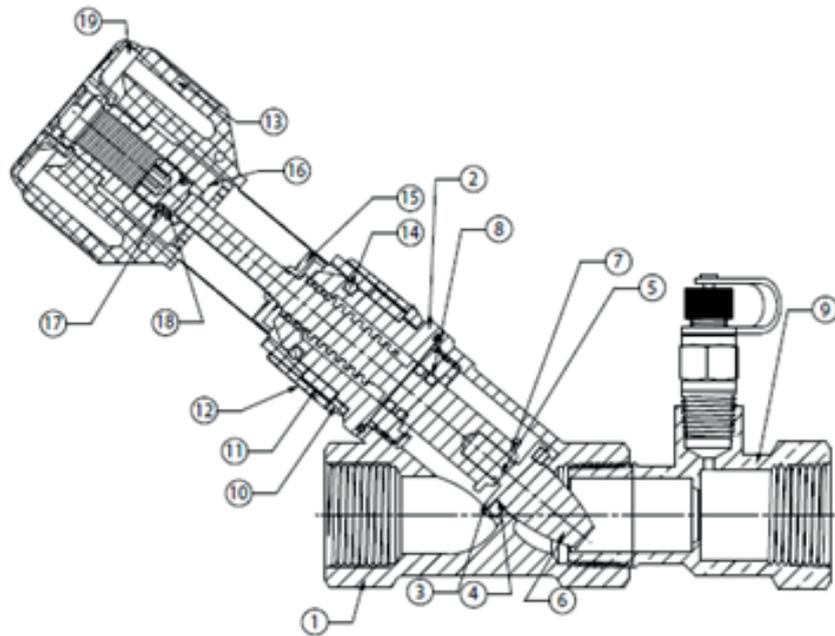
This applies to when the metering station is used in a stand-alone application or close coupled to a double regulating valve.

The pressure losses for the ART 26 double regulating valves are given on the individual flow charts along with the corresponding Kv values at the various positions open.

### 3. Valve Features

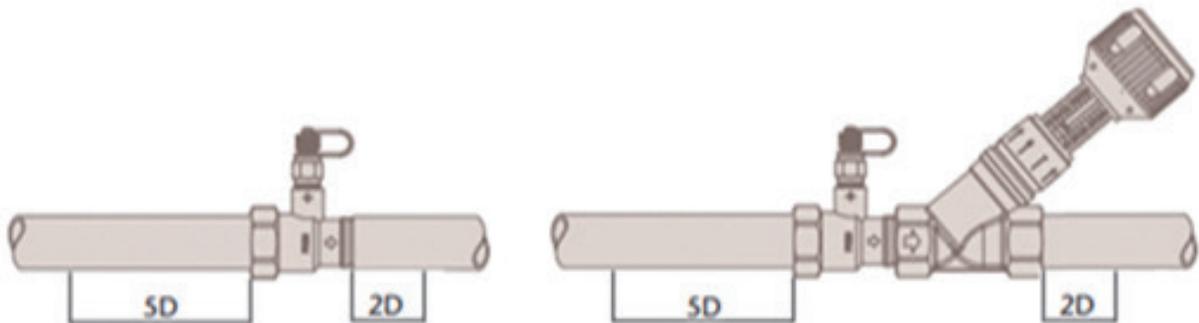
- The ART 26 & ART 27 DZR Commissioning Set is used for balancing the flow in heating, cooling and domestic water systems.
- The ART 26 & ART 27 DZR Commissioning Set has a flow accuracy of +/- 5% flow accuracy.
- The ART 26 & ART 27 DZR Commissioning Set is fitted with 2 test points.
- Digital scale with lock function.
- Made of "DZR" (Dezincification Resistant) brass.
- This article is made in compliance with the quality management requirements of ISO 9001 standard.
- All articles are tested in accordance with the EN 12266-1 standard.
- It can be used in a wide variety of sectors: heating, air conditioning, water, sanitary systems and generally with any non-corrosive liquid.

1. Valve body
2. Bonnet
3. Gasket support
4. Gasket
5. Stem for shutter
6. Shutter
7. Stem
8. O-ring
9. Metering station
10. Turn index
11. Spacer
12. Tenths of a turn index
13. Knob
14. Pin
15. Index
16. Entrainer
17. O-ring
18. Memory
19. Cup



#### 4. Valve Installation

- The ART 26 & ART 27 DZR Commissioning Set should be sited to ensure ease of access.
- It is the responsibility of the installer to ensure the ART 26 & ART 27 DZR Commissioning Set is suitable for service conditions e.g., temperature, pressure, and service media.
- Where fitted, remove flange protectors / dust caps and all other packaging material.
- Care should be taken to ensure the surface finish of the ART 26 & ART 27 DZR Commissioning Set is protected during installation.
- The ART 26 & ART 27 DZR Commissioning Set may be installed in horizontal or vertical pipework.
- The ART 26 & ART 27 DZR Commissioning Set is unidirectional and should only be used for flow in the direction shown on the valve.
- Suitable gaskets / sealing material should be used during installation.
- ART 26 & ART 27 Commissioning Set should be installed with a minimum of 5 pipe diameters upstream and 2 pipe diameters downstream as per the image below. This is to ensure flow measurement accuracy is maintained during the commissioning stage.
- The memory stop can be set once the valve is at the correct design flow rate. This can be done by removing the blue handwheel cap and rotating the cross head screw in a CCW direction until resistance is met.



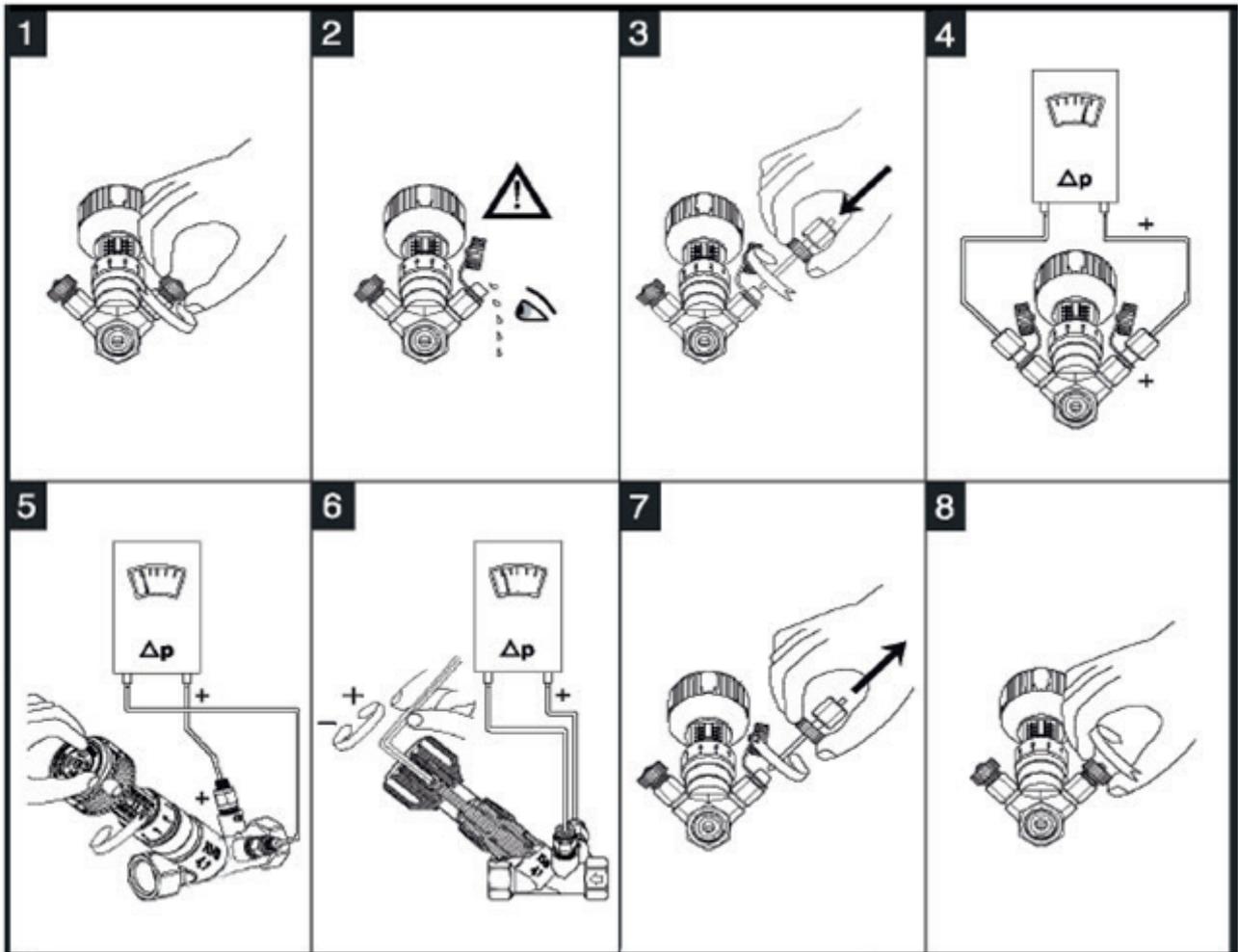
## Flushing

Control valves are sized to give good control over the system water and have therefore been designed with small, convoluted flow paths. These water ways may not allow adequate water velocities needed for flushing the system during the pre-commissioning stages of water treatment, even when fully open.

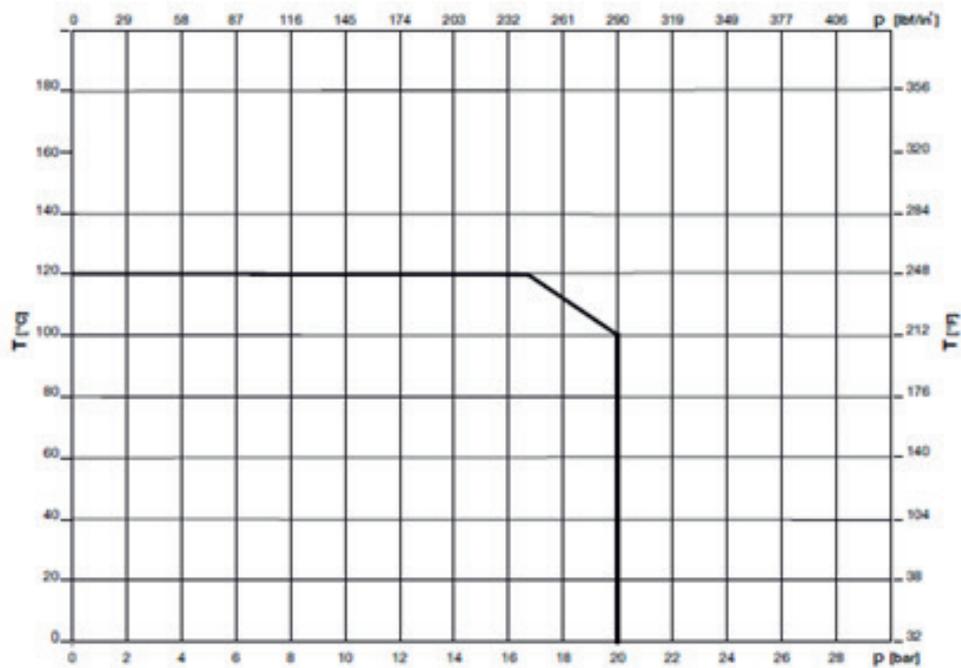
In line with BSRIA BG29 recommendations, suitable consideration needs to be made as to how the removal of system debris can be achieved during the system flushing process.

## 5. Regulating

- To close the valve rotate the handle clockwise until it stops. Using the data reported in the attached diagrams, the flow can be regulated by rotating the handle counter-clockwise until the required flow rate is reached.
- This flow rate can be measured using a differential manometer.
- This interfaces with the balancing valve through two sensors inserted in the binder points (Kvs) placed before and after the valve's gauged diaphragm.
- The main scale with values from 0 to 8 on the handle, indicates the turns for opening the obturator, while the second circular scale from 0 to 9 records the tenths of one turn.
- The position of the handle at the required flow rate can be memorized using a 6 mm Allen Key.



## Pressure – Tei



## 6. Approvals Classification

- The valve is classified in accordance with PED 2014/68/EU as Sound Engineering Practice (SEP).

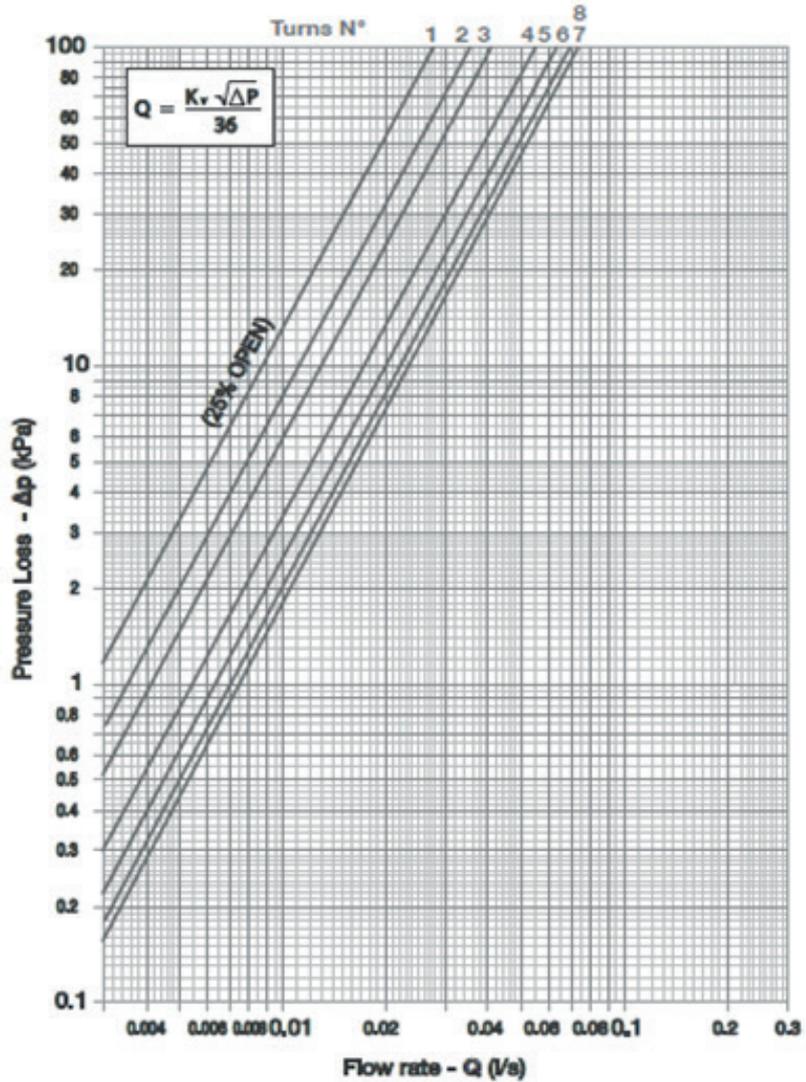
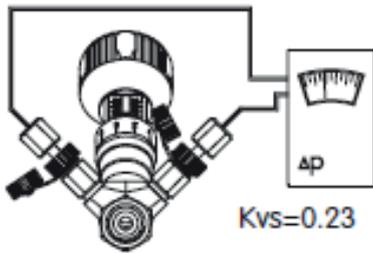
## 7. Troubleshooting

- If any maintenance is to be undertaken on the valve it is the responsibility of the installer to ensure the system is adequately drained and depressurized.
- A full risk assessment should be undertaken prior to any works taking place.

## 8. Warranty

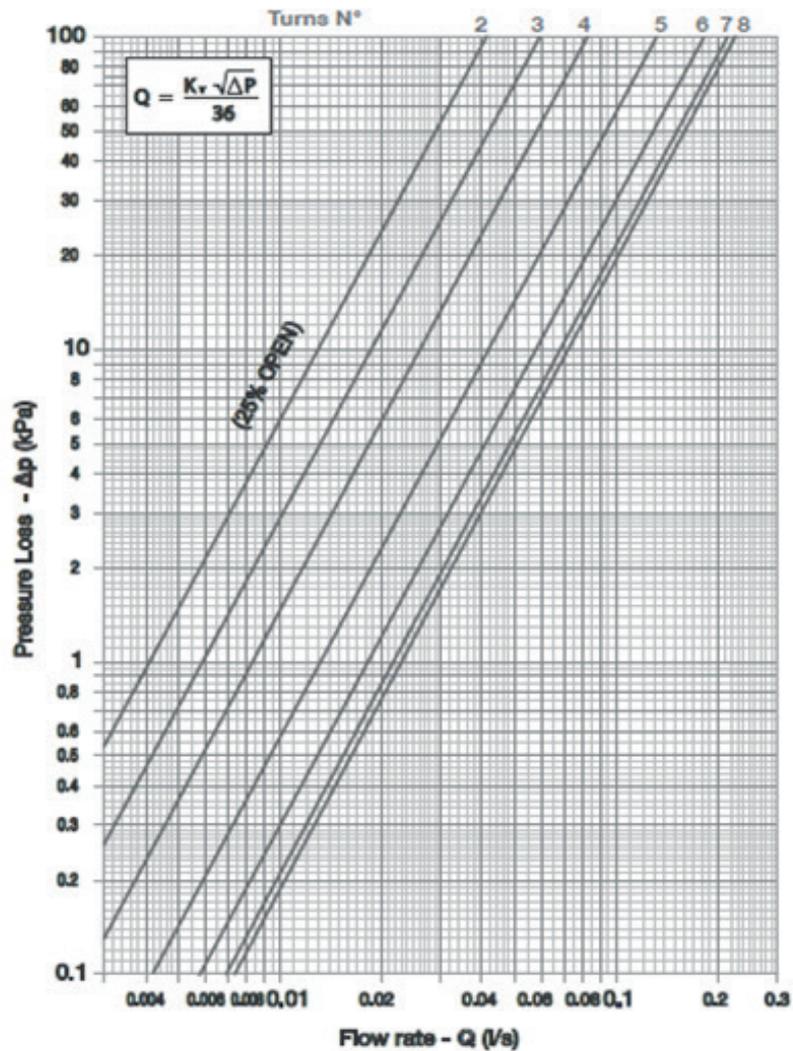
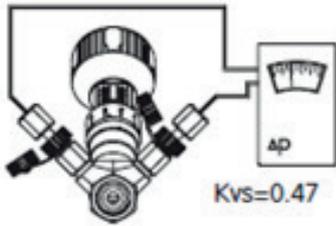
- For further details of Albion Valves (UK) Ltd warranty period, please refer to Albion Valves (UK) Ltd 'Conditions of Sale' available on our website.

### Kv Values – DN 15UL



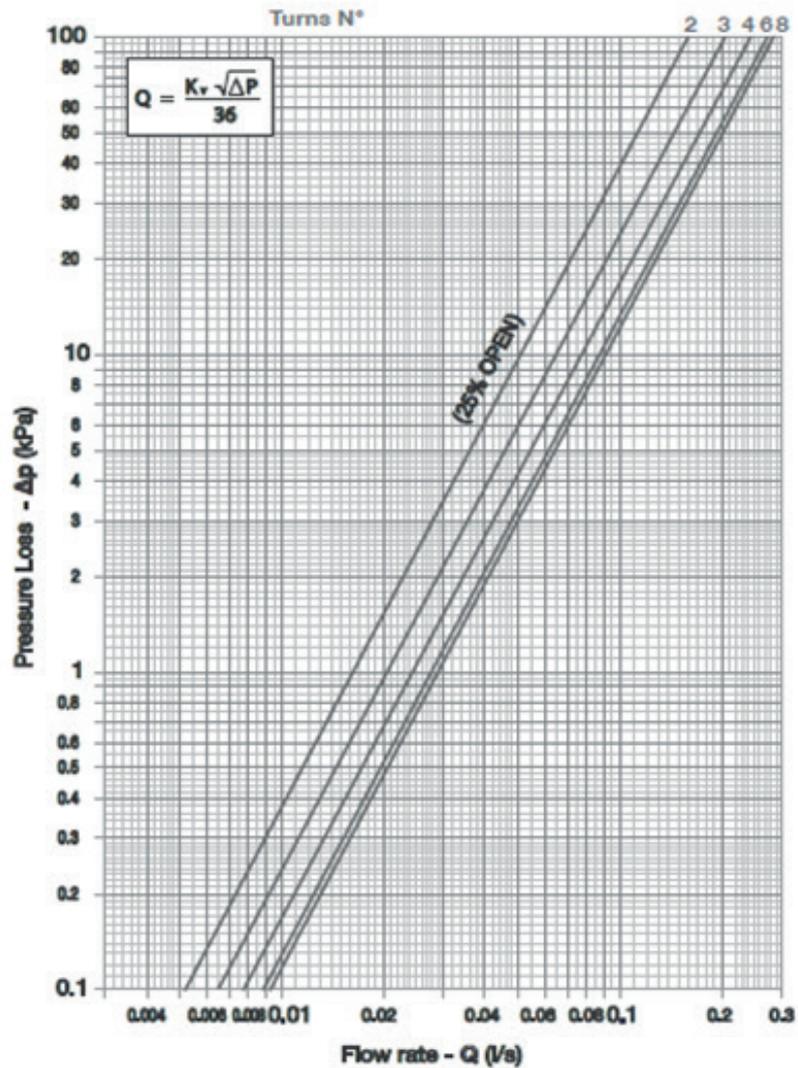
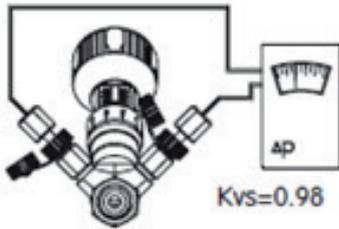
Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	0.1004	0.1028	0.1055	0.1079	0.1105	0.1128	0.1133	0.1171	0.1212	0.1232
3	0.1262	0.1287	0.1310	0.1397	0.1422	0.1461	0.1505	0.1551	0.1600	0.1630
4	0.1665	0.1690	0.1720	0.1754	0.1793	0.1823	0.1829	0.1867	0.1897	0.1974
5	0.2023	0.2041	0.2113	0.2124	0.2134	0.2149	0.2162	0.2232	0.2259	0.2269
6	0.2273	0.2302	0.2308	0.2341	0.2363	0.2372	0.2375	0.2398	0.2432	0.2483
7	0.2505	0.2509	0.2523	0.2533	0.2549	0.2553	0.2558	0.2592	0.2692	0.2603
8	0.2600									

## Kv Values – DN 15L



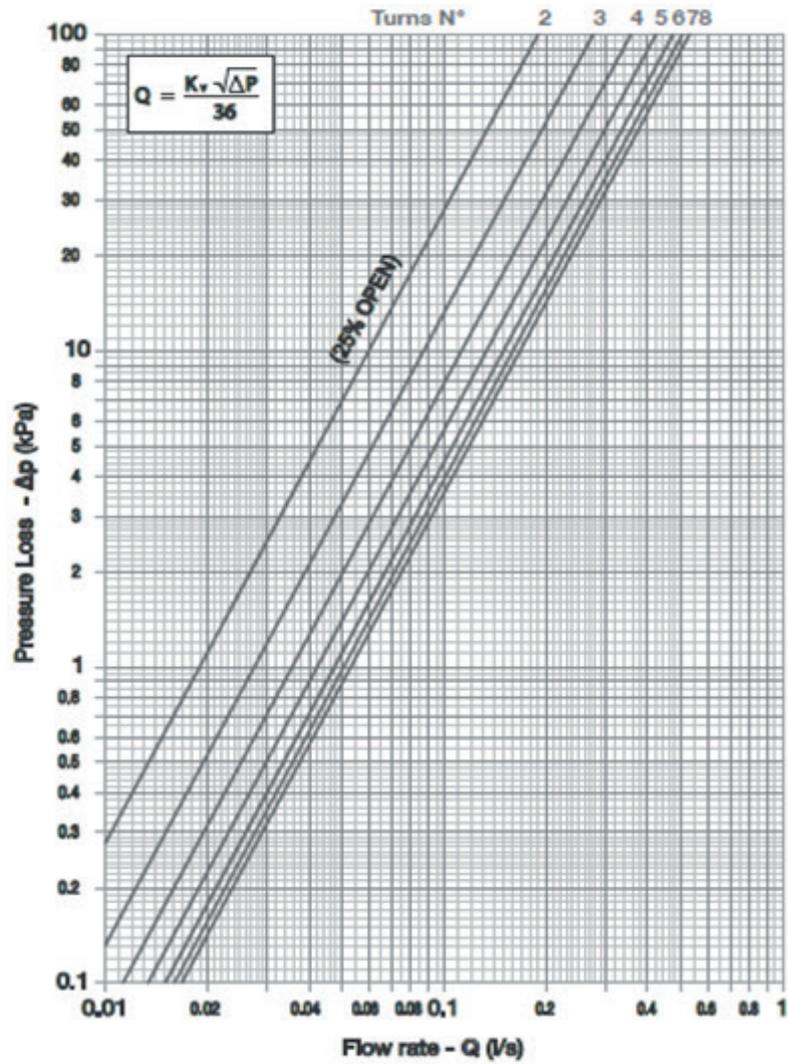
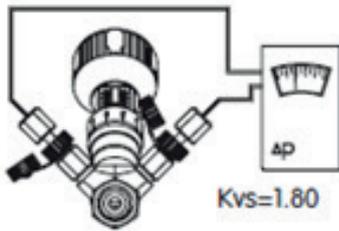
Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	0.1430	0.1488	0.1546	0.1604	0.1662	0.1720	0.1778	0.1836	0.1894	0.1952
3	0.2010	0.2075	0.2140	0.2205	0.2270	0.2335	0.2400	0.2465	0.2530	0.2595
4	0.2660	0.2761	0.2862	0.2963	0.3064	0.3165	0.3266	0.3367	0.3468	0.3569
5	0.3670	0.3742	0.3814	0.3886	0.3958	0.4030	0.4102	0.4174	0.4246	0.4318
6	0.4390	0.4423	0.4456	0.4489	0.4522	0.4555	0.4588	0.4621	0.4654	0.4687
7	0.4720	0.4730	0.4740	0.4750	0.4760	0.4770	0.4780	0.4790	0.4800	0.4810
8	0.4820									

## Kv Values – DN 15M



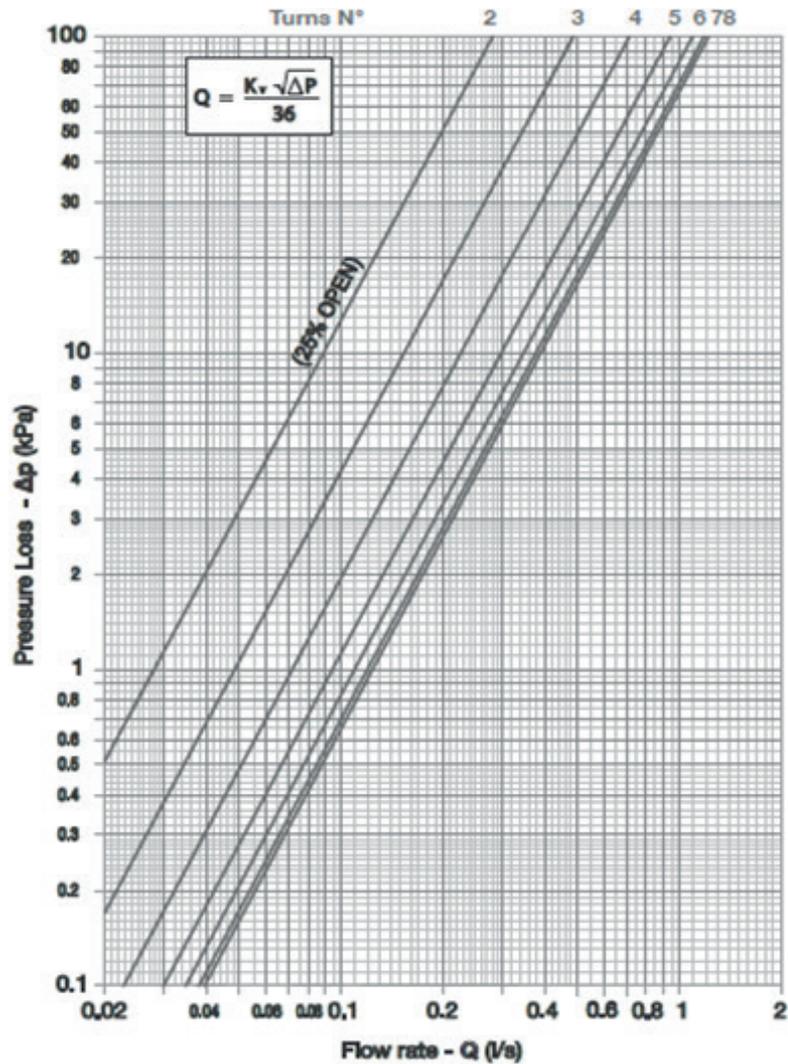
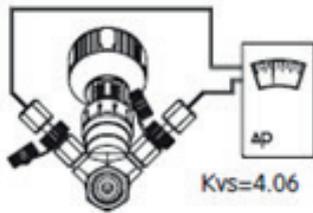
Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	0.1510	0.1572	0.1634	0.1696	0.1752	0.1820	0.1882	0.1944	0.2006	0.2068
3	0.2130	0.2216	0.2302	0.2388	0.2474	0.2560	0.2646	0.2732	0.2818	0.2904
4	0.2990	0.3163	0.3336	0.3509	0.3682	0.3855	0.4028	0.4201	0.4374	0.4547
5	0.4720	0.4907	0.5094	0.5281	0.5468	0.5655	0.5842	0.6029	0.6216	0.6403
6	0.6590	0.6719	0.6848	0.6977	0.7106	0.7235	0.7364	0.7493	0.7622	0.7751
7	0.7880	0.7917	0.7954	0.7991	0.8028	0.8065	0.8102	0.8139	0.8176	0.8213
8	0.8250									

## Kv Values – DN 15



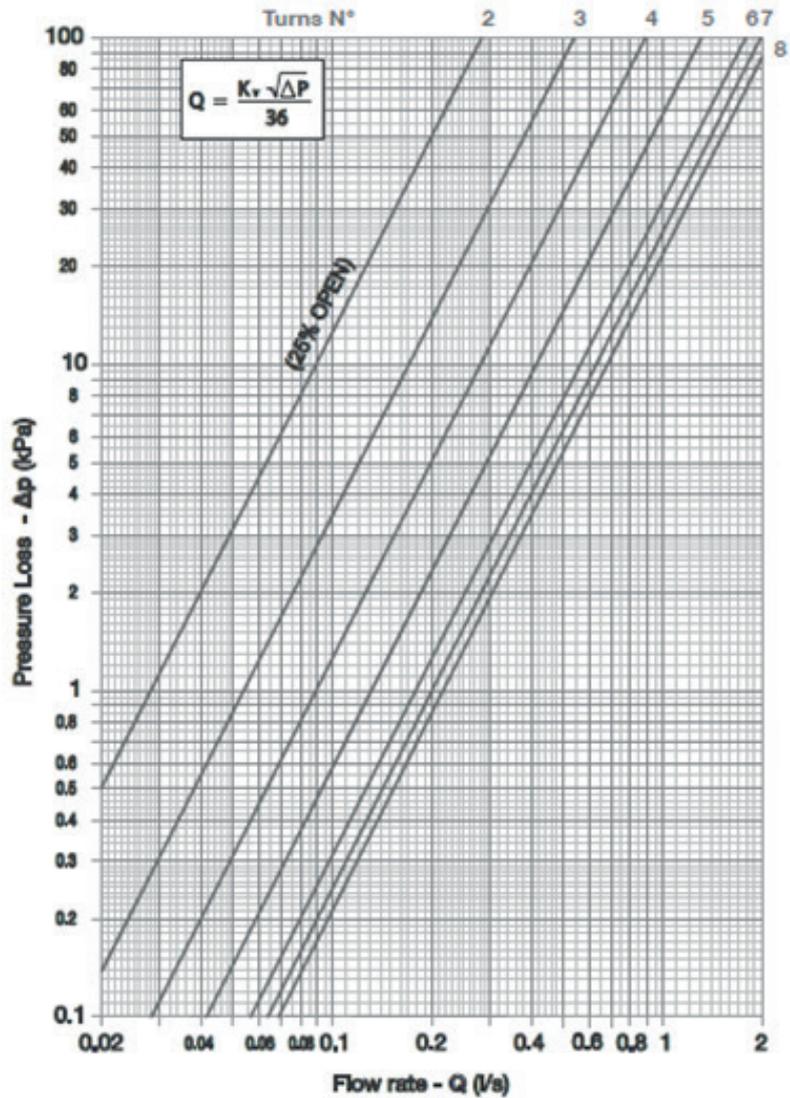
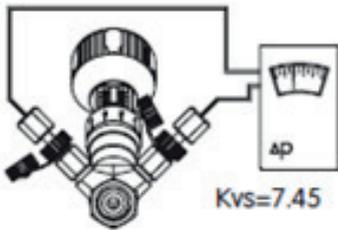
Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	0.688	0.718	0.748	0.779	0.809	0.839	0.869	0.899	0.930	0.960
3	0.990	1.020	1.049	1.085	1.108	1.138	1.167	1.197	1.226	1.256
4	1.285	1.309	1.333	1.356	1.380	1.404	1.428	1.452	1.475	1.499
5	1.523	1.541	1.558	1.576	1.593	1.611	1.629	1.646	1.663	1.681
6	1.699	1.717	1.724	1.737	1.749	1.762	1.775	1.787	1.800	1.812
7	1.825	1.834	1.842	1.851	1.859	1.868	1.877	1.885	1.894	1.902
8	1.911									

## Kv Values – DN 20



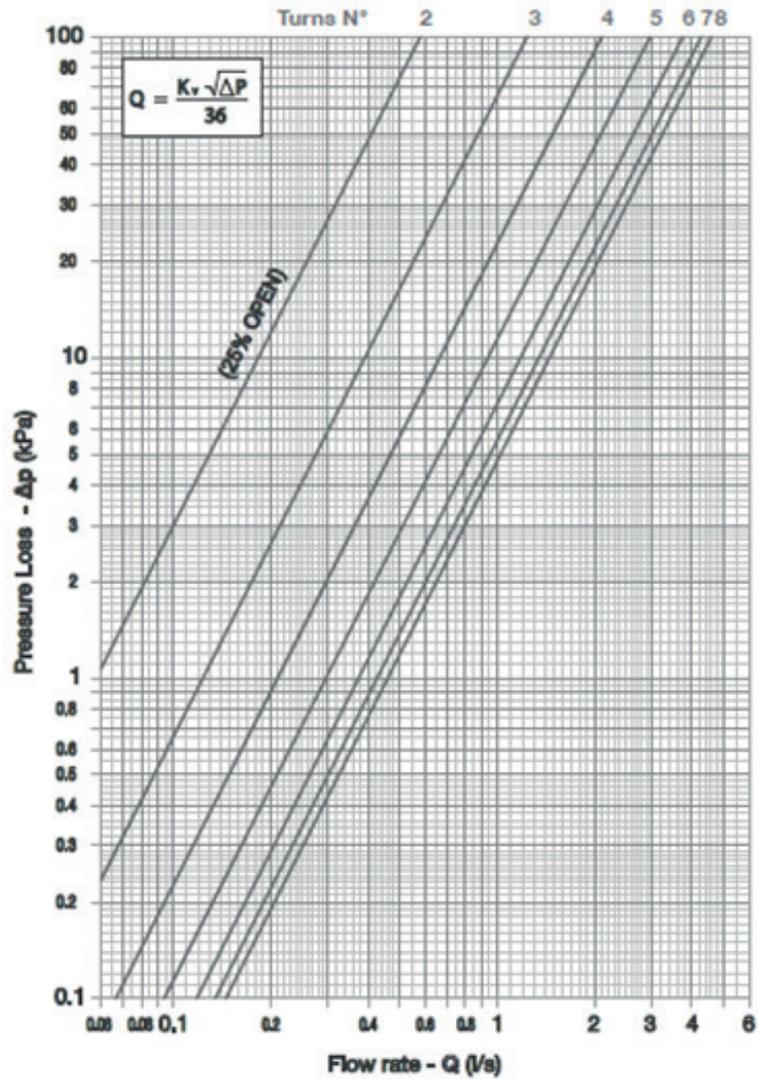
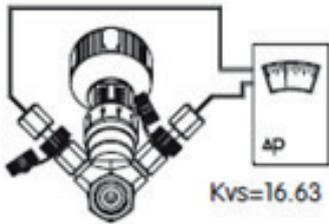
Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	1.004	1.078	1.151	1.225	1.298	1.372	1.445	1.519	1.592	1.666
3	1.739	1.825	1.910	1.996	2.082	2.168	2.253	2.339	2.425	2.510
4	2.596	2.673	2.751	2.828	2.906	2.983	3.060	3.138	3.215	3.263
5	3.370	3.425	3.480	3.535	3.590	3.645	3.700	3.755	3.810	3.865
6	3.920	3.959	3.998	4.037	4.076	4.115	4.153	4.192	4.231	4.270
7	4.309	4.321	4.333	4.344	4.356	4.368	4.380	4.392	4.403	4.415
8	4.427									

### Kv Values – DN 25



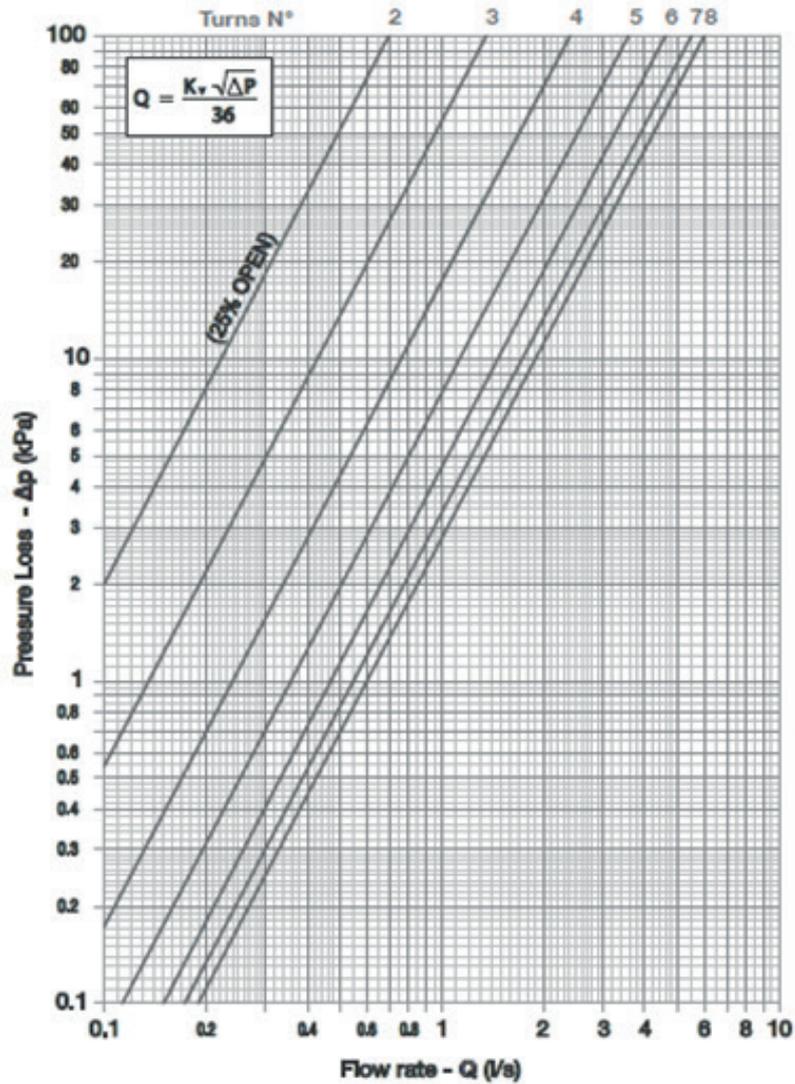
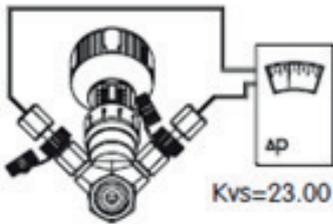
Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	1.022	1.114	1.206	1.299	1.391	1.483	1.575	1.667	1.760	1.852
3	1.944	2.071	2.197	2.324	2.451	2.578	2.704	2.831	2.957	3.084
4	3.211	3.363	3.514	3.666	3.817	3.969	4.121	4.272	4.424	4.575
5	4.727	4.896	5.065	5.235	5.404	5.573	5.742	5.911	6.081	6.250
6	6.419	6.503	6.587	6.672	6.756	6.840	6.924	7.008	7.093	7.177
7	7.216	7.303	7.346	7.388	7.430	7.473	7.515	7.557	7.599	7.641
8	7.684									

## Kv Values – DN 32



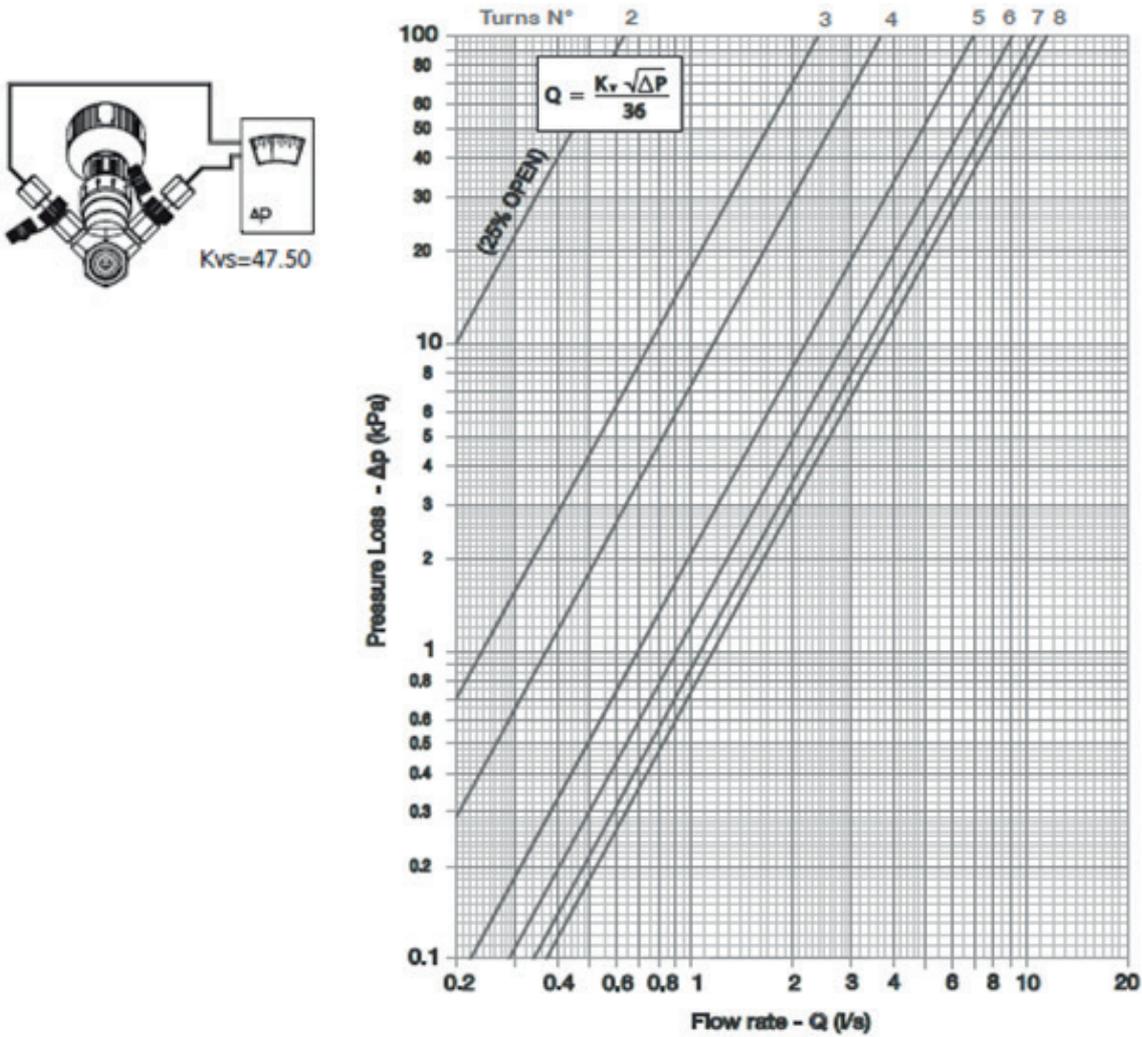
Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	2.164	2.415	2.666	2.918	3.169	3.420	3.671	3.922	4.174	4.425
3	4.676	4.979	5.282	5.584	5.887	6.190	6.493	6.796	7.098	7.4012
4	7.704	8.010	8.315	8.621	8.926	9.232	9.538	9.843	10.149	10.454
5	10.760	11.030	11.298	11.567	11.836	12.105	12.374	12.643	12.912	13.181
6	13.450	13.640	13.830	14.020	14.210	14.400	14.590	14.780	14.970	15.160
7	15.350	15.471	15.592	15.713	15.834	15.955	16.076	16.197	16.318	16.439
8	16.560									

### Kv Values – DN 40



Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	2.531	2.769	3.007	3.245	3.483	3.721	3.958	4.196	4.434	4.672
3	4.910	5.283	5.656	6.029	6.402	6.775	7.148	7.521	7.894	8.270
4	8.640	9.068	9.496	9.924	10.352	10.780	11.208	11.636	12.064	12.492
5	12.920	13.327	13.734	14.140	14.547	14.954	15.361	15.768	16.174	16.581
6	16.988	17.265	17.542	17.820	18.097	18.374	18.651	18.928	19.206	19.483
7	19.760	19.933	20.106	20.279	20.452	20.626	20.799	20.972	21.145	21.318
8	21.491									

## Kv Values – DN 50



Kv (Flow rate in m <sup>3</sup> /h @ 1 bar pressure drop)										
Full turns	Tenths of a turn									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2	2.280	2.915	3.550	4.185	4.820	5.455	6.090	6.725	7.360	7.995
3	8.630	9.431	10.232	11.033	11.834	12.635	13.436	14.237	15.038	15.839
4	16.640	17.491	18.342	19.192	20.043	20.894	21.745	22.596	23.446	24.297
5	25.148	25.911	26.675	27.438	28.202	28.965	29.728	30.492	31.255	32.019
6	32.782	33.326	33.870	34.413	34.957	35.501	36.045	36.589	37.132	37.676
7	38.220	38.555	38.890	39.225	39.560	39.895	40.230	40.565	40.900	41.235
8	41.570									



## **About Albion Valves (UK) Ltd**

Albion has been supplying valves and fittings to the building services and industrial markets for the past 40 years.

Albion was created with the sole purpose of providing quality products at an affordable price. With a growing reputation for quality and reliability, Albion is now an established brand providing the industry with a trusted alternative to premium-priced products.

Our commitment to setting the highest standards in all areas of our business means, if you're looking for quality, service, delivery and choice — you'll find it's all at Albion.

### **Quality**

Whatever you need, you can rest assured that if it comes from Albion it has been designed and manufactured to deliver optimum performance and is accredited with the necessary approvals. Our in-house quality department are always on hand too!

### **Service**

We pride ourselves on our customer service – we have even won awards for it! Our cradle to grave approach means you will never be on your own!

### **Delivery**

We know that time is money, and when a priority project depends on a part you can trust Albion to deliver – next day for all orders placed before 4:00PM.

### **Choice**

We may have started out with a single brass ball valve, but our range has grown substantially since and we now consider ourselves to be a 'One Stop Shop' with our comprehensive range. It is becoming more and more apparent to the industry, that it really is all at Albion.