

Series W-STBV-25Q (DN65-DN500)

Static Balancing Valve

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Static Balancing Valve

◆ Application

The Series W-STBV Static Balancing Valve is designed for flow balancing in cooling, heating or process water systems. Its measuring points enable convenient system troubleshooting.

◆ Features

- Accurate flow control
- Numerical indicator of opening rate on the handwheel
- Lockable set position
- Shut-off function achieved by handwheel
- Self-sealing measuring points to protect against leakage
- Using balanced valve core, easy to adjust
- The handwheel adopt the die casting aluminum, strong and durable
- The hand wheel wrench connection with energy saving



◆ Operating Principles

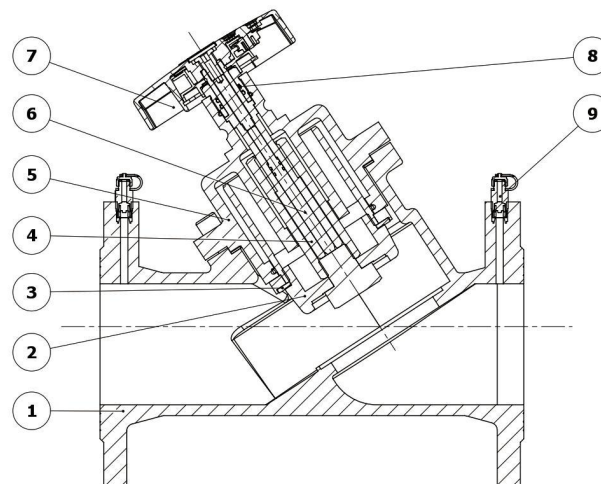
The Series W-STBV Static Balancing Valves can be applied in different places in a water system. When the system is under static hydraulic disorder, through manually setting the opening rate of the valves, the system's undesired resistance distribution can be changed into the desired one. This ensures that the actual flow value of every bypass or terminal matches its design value.

◆ Technical Specification

Dimensions:	DN65-DN500
Working Temperature:	-25~120°C
Working Pressure:	PN25
Fluid Medium:	Cold and Hot Water / Ethylene Glycol
Connection:	Flange Connection
Connection Standard:	ISO 7005

Materials:

① Valve Body:	Ductile Iron
② Valve Core:	Stainless steel
③ Valve Base Sealing:	EPDM
④ Valve Stem:	Ductile Iron
⑤ Valve Bonnet:	Ductile Iron
⑥ Core Rod:	Stainless steel
⑦ Handwheel:	Cast Aluminum
⑧ Valve Stem Sealing:	FPM
⑨ Measuring Points:	Stainless steel



◆ Technical Specification

Product Type:

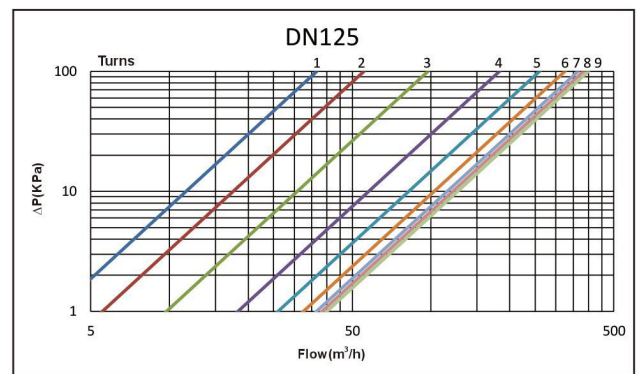
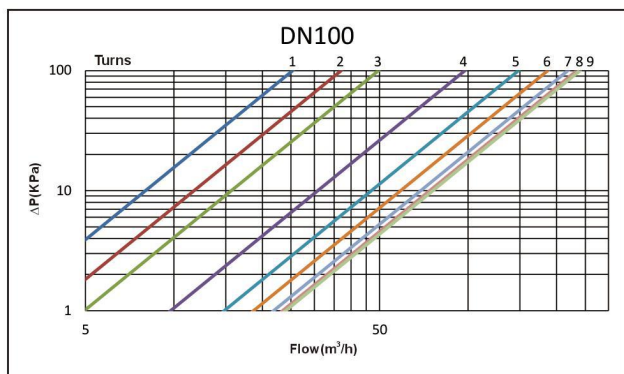
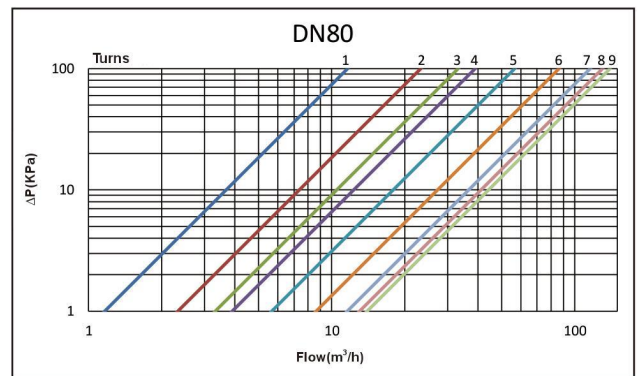
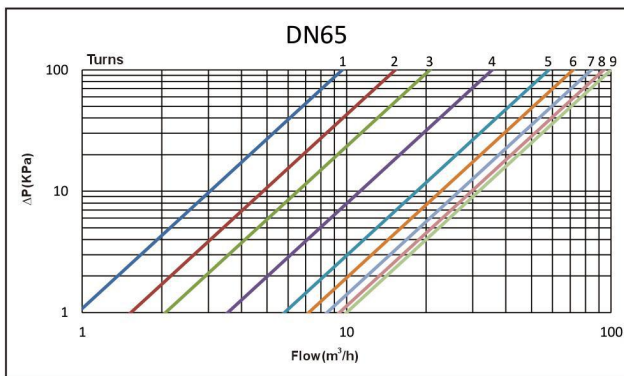
Type	Size	Kvs	EDP Code
W-STBV065-25Q	DN65	100	616P2093
W-STBV080-25Q	DN80	140	616P2094
W-STBV100-25Q	DN100	240	616P2095
W-STBV125-25Q	DN125	400	616P2096
W-STBV150-25Q	DN150	625	616P2097
W-STBV200-25Q	DN200	980	616P2098
W-STBV250-25Q	DN250	1320	616P2099
W-STBV300-25Q	DN300	1720	616P2100
W-STBV350-25Q	DN350	2450	616P2101
W-STBV400-25Q	DN400	3080	616P2102
W-STBV450-25Q	DN450	3750	616P2103
W-STBV500-25Q	DN500	4210	616P2104

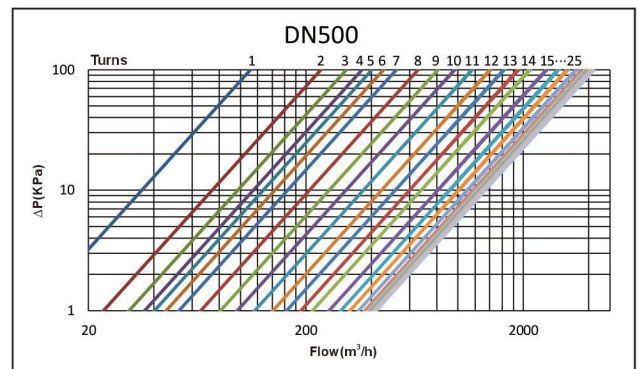
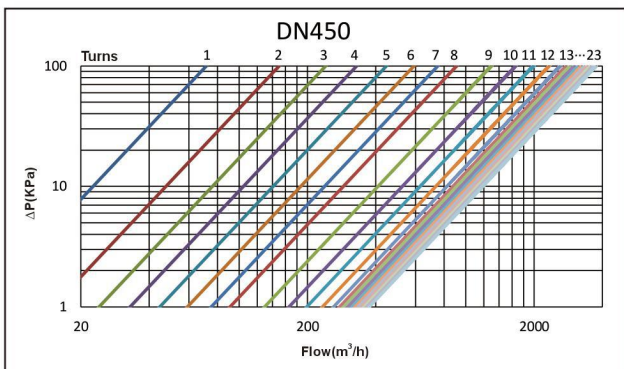
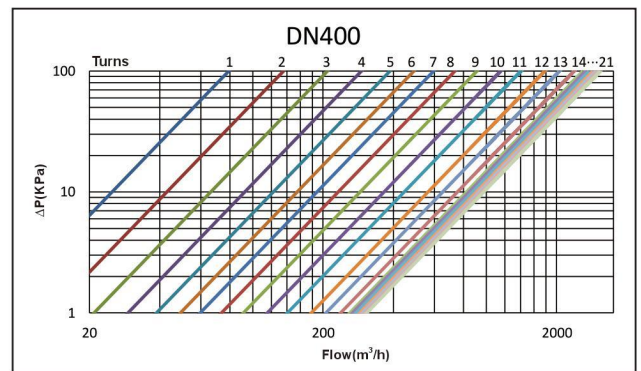
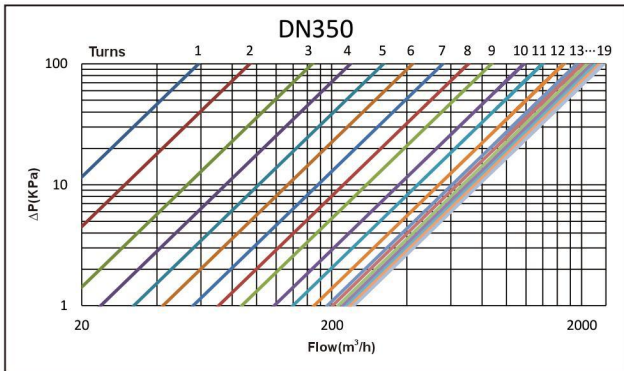
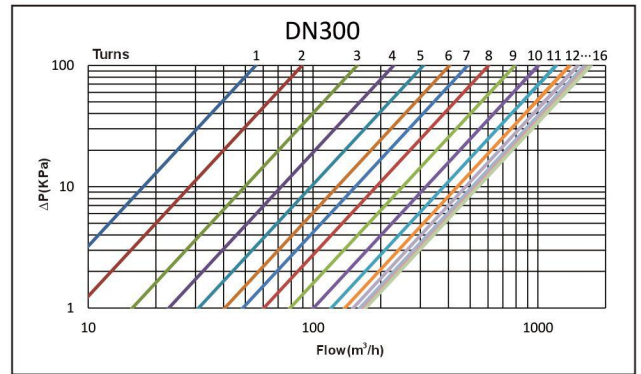
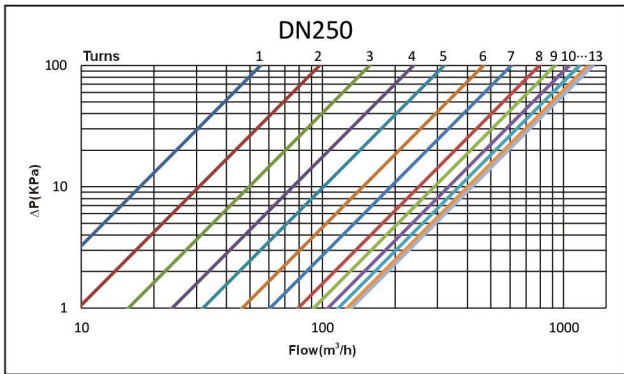
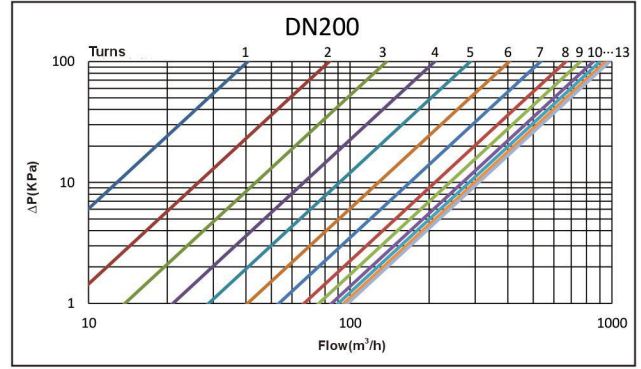
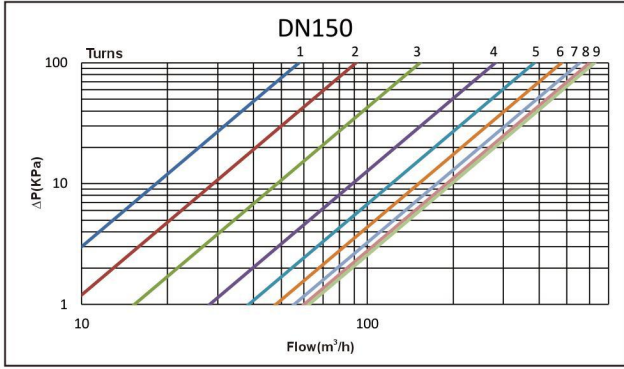
Coding Rules:

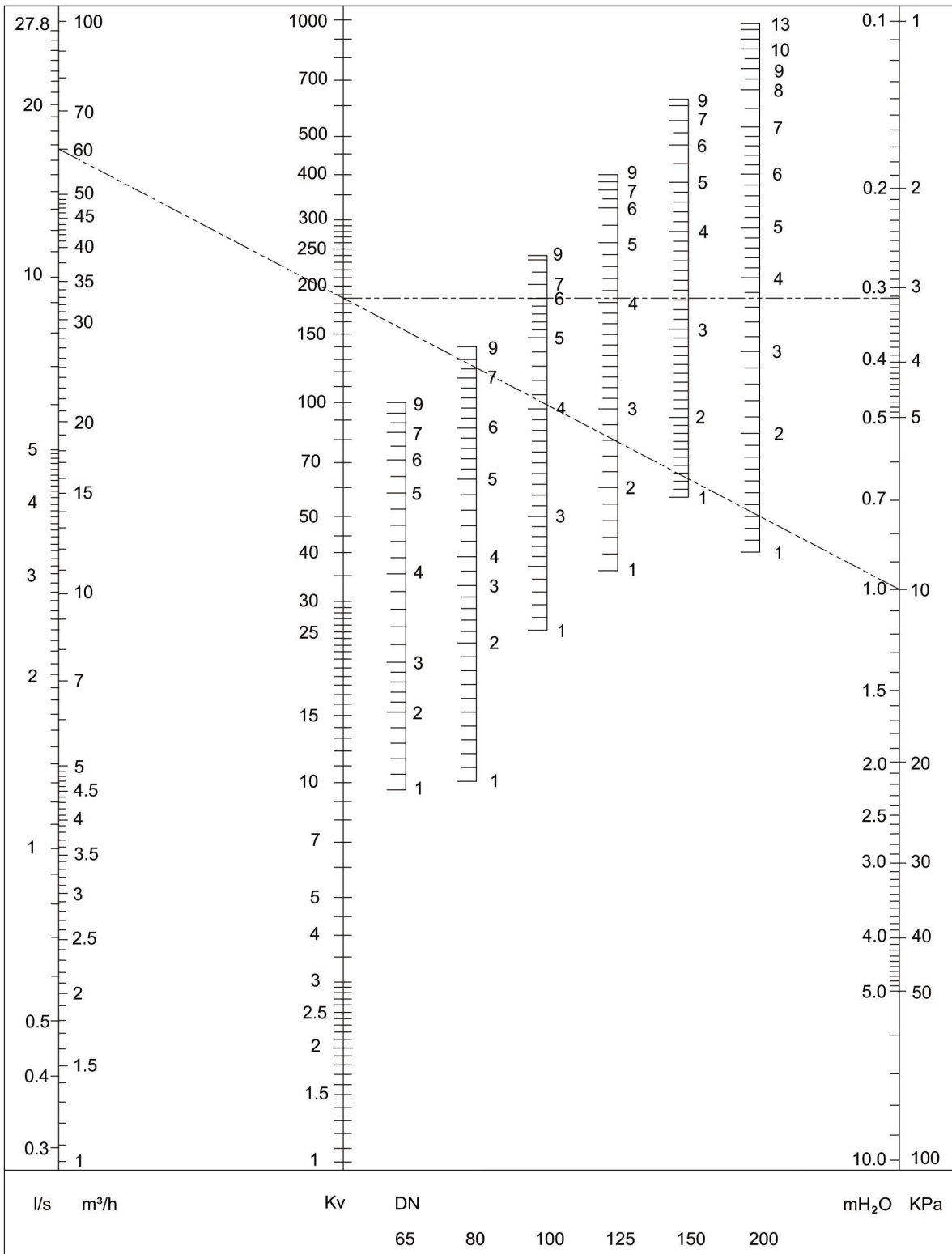
W	WATTS	W-	STBV	065-	25	Q
STBV	Static Balancing Valve					
Size						
065-DN65	080-DN80					
100-DN100	125-DN125					
150-DN150	200-DN200					
250-DN250	300-DN300					
350-DN350	400-DN400					
450-DN450	500-DN500					
Pressure Class	PN25					
Body Material	Ductile Iron					

Turns	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500
1	9.63	11.65	25.32	36.62	57.70	40.59	55.41	55.56	58.67	79.04	71.58	111.27
2	15.29	23.30	37.02	55.45	91.35	83.18	97.35	89.45	94.05	135.62	150.09	234.51
3	20.67	33.20	49.57	97.45	153.11	137.78	157.01	157.18	167.18	209.12	240.67	307.44
4	35.55	39.00	97.49	182.84	280.77	210.37	238.49	228.42	237.79	292.31	329.78	362.50
5	58.23	56.72	148.31	260.14	384.70	287.96	319.78	309.84	322.44	387.21	446.03	402.51
6	71.92	86.36	186.49	325.29	478.82	405.55	465.61	405.09	421.79	490.08	590.43	455.27
7	84.36	115.99	218.25	365.05	554.75	534.44	607.47	487.65	557.08	595.60	752.09	521.47
8	93.95	130.33	234.08	383.10	600.61	667.03	794.23	604.22	704.52	734.44	910.58	656.80
9	100.00	140.00	240.00	400.00	625.00	759.62	921.01	791.73	871.73	911.75	1294.09	809.53
10	-	-	-	-	-	850.22	1055.16	1005.55	1175.55	1153.86	1657.80	967.13
11	-	-	-	-	-	901.10	1166.06	1206.57	1396.09	1407.24	1985.72	1162.83
12	-	-	-	-	-	946.70	1267.23	1387.27	1697.82	1779.88	2329.01	1409.23
13	-	-	-	-	-	980.00	1320.00	1510.34	1917.54	2056.43	2607.31	1629.55
14	-	-	-	-	-	-	-	1617.05	2012.05	2377.50	2774.08	1894.87
15	-	-	-	-	-	-	-	1678.41	2118.69	2601.18	2887.43	2143.69
16	-	-	-	-	-	-	-	1720.00	2211.72	2671.07	3015.55	2557.11
17	-	-	-	-	-	-	-	-	2298.74	2764.54	3147.26	2894.62
18	-	-	-	-	-	-	-	-	2372.07	2876.41	3251.94	3187.54
19	-	-	-	-	-	-	-	-	2450.00	2946.23	3351.62	3496.25
20	-	-	-	-	-	-	-	-	-	3011.63	3449.50	3725.41
21	-	-	-	-	-	-	-	-	-	3080.00	3558.67	3886.75
22	-	-	-	-	-	-	-	-	-	-	3657.72	3978.05
23	-	-	-	-	-	-	-	-	-	-	3750.00	4051.66
24	-	-	-	-	-	-	-	-	-	-	-	4123.87
25	-	-	-	-	-	-	-	-	-	-	-	4210.00

Flow Line Graphs:







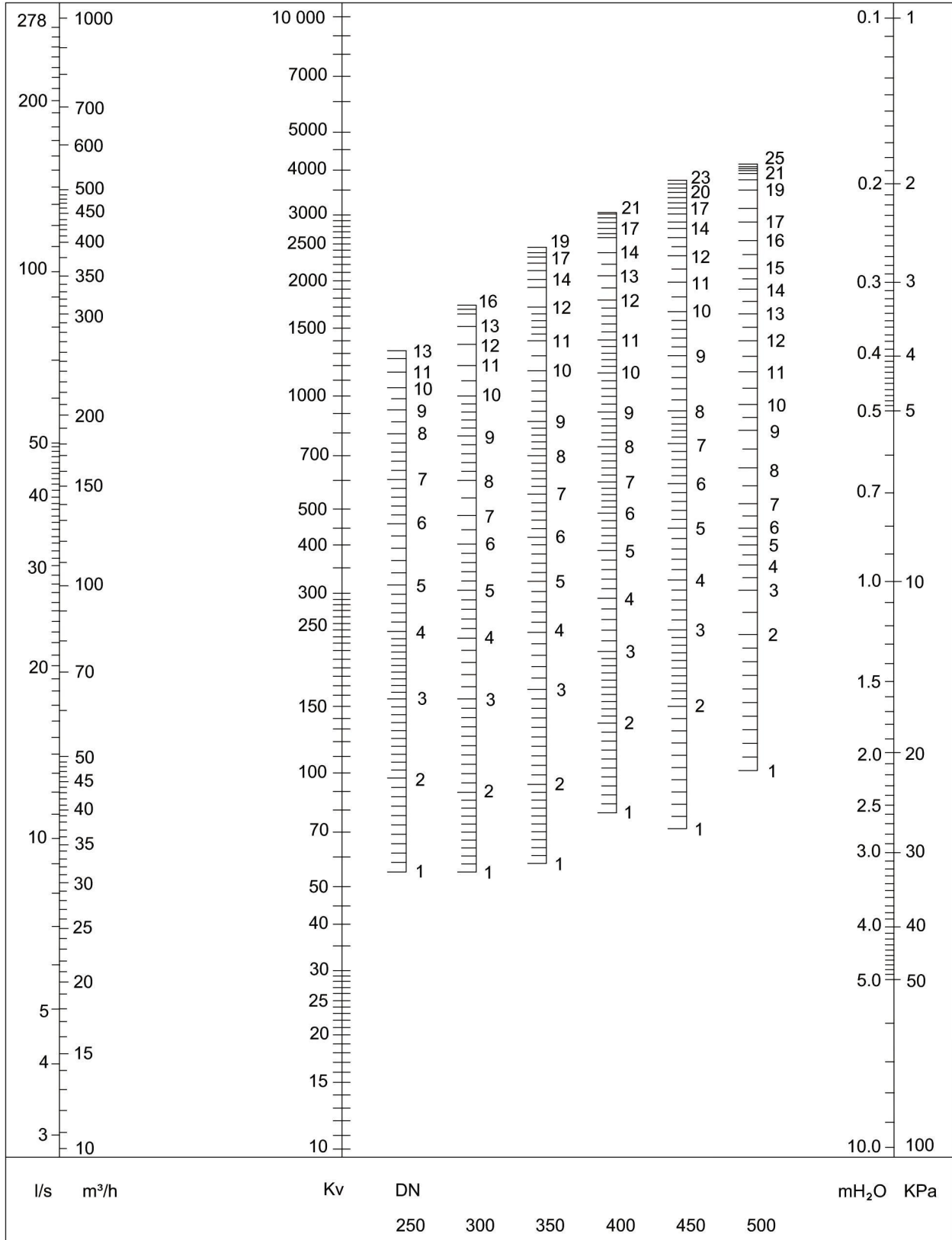
Example of Type Selection:

Q: It is needed to install a Static Balancing Valve on the bypass of an air-conditioning system. Given that the design flow is $Q = 60 \text{ m}^3/\text{h}$ and the design pressure drop is $\Delta P = 10 \text{ KPa}$, select a Static Balancing Valve with proper size.

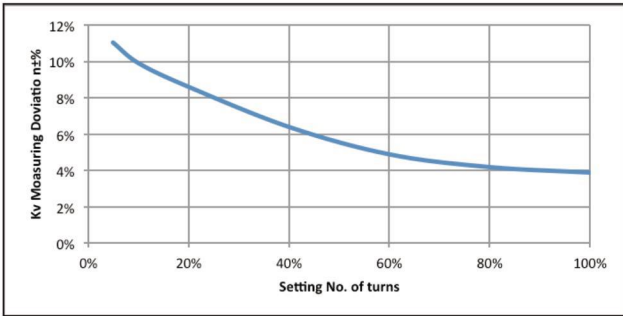
A: Draw a straight line between $Q = 60 \text{ m}^3/\text{h}$ and $\Delta P = 10 \text{ KPa}$, creating an intersection of this line and Kv scale in the middle, $Kv=187$. Based on the intersection, draw a horizontal line crossing three opening scales of differently sized valves. These three new intersections are 6 turns for DN100, 4.1 turns for DN125, 3.3 turns for DN150 and 3.7 turns for DN200 respectively. Since it is recommended to set the valve at around 75% opening rate, choose a Static Balancing Valve in the size of DN100.



Static Balancing Valve



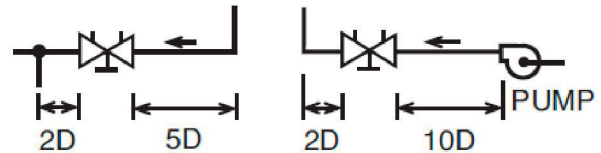
Measuring Accuracy:



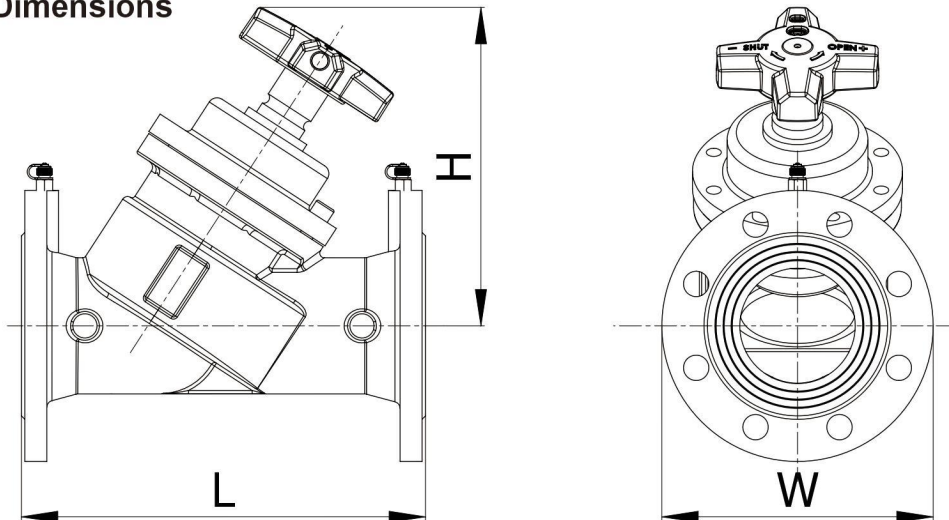
The above curve indicates the measuring accuracy of Series W-STBV valve. Obviously, the larger the opening rate is, the smaller the Kv measuring deviation is. When the valve's opening rate is greater than 50%, the deviation is lower than $\pm 5\%$. Based on this, it is suggested to choose a valve with at least 50% opening rate when working under the design flow. Additionally, in order to ensure adequate on-site commissioning allowance, it is recommended to set the valve at around 75% opening rate.

◆ Installation:

The Series W-STBV Static Balancing Valve is usually installed on return pipe. When combined with Differential Pressure Balancing Valve, it can be used for supply pipe. Generally, when connected to an elbow or a pump, the valve must keep a certain distance from the elbow or the pump. The rule is shown in the right figure.



Installation Dimensions



Size	L(mm)	H(mm)	W(mm)	Weight(Kg)
DN65	290	315	185	15
DN80	310	357	200	21
DN100	350	393	235	31
DN125	400	467	270	46.5
DN150	480	546	300	67
DN200	600	678	360	126
DN250	730	768	425	199
DN300	850	873	485	326
DN350	980	1011	555	451
DN400	1100	1110	620	645
DN450	1200	1145	670	921
DN500	1250	1265	730	1153