

STATIC BALANCING VALVE FLANGED END

Lehry double regulating and commissioning valves installed in the pipework of hot water central heating systems and cooling systems and serve to achieve a Aquatic balance between the various circuits of the system.

The double regulating and commissioning valves may be installed in either the supply or the return pipe.

When installing the valves, it is to be observed that the direction of flow conforms with the arrow on the valve body and that the valve is installed with a minimum of 3 D (3 x nominal pipe diameter) of straight pipe at the valve inlet and of 2 D (2 x nominal pipe diameter) of straight pipe at the valve outlet.



Features:-

- ❖ Ideal flow regulation characteristics, relative flow and relative opening are linearly related;
- ❖ Accurate valve opening indicator, accurate to 1% of full valve opening;
- ❖ The best cut-off function;
- ❖ Lock opening - reliable memory function;
- ❖ Enhanced nylon hand wheel, laser engraving valve opening, clearer scale, more accurate, and not easy to wear.
- ❖ The testing points with self-sealing pressure/flow are distributed on two side flanges. If the valve does not need to be debugged, the testing points can be replaced with brass plug to avoid the phenomenon of measuring whole collision during transportation.
- ❖ From DN80, the valve is designed with balancing chamber, the function is: small torque, easy opening and closing, can reduce vibration and noise in the process of testing and using, also can reduce the impact of the fluid media on the valve stem then reduce the security hidden danger.

Daily Maintenance :-

- 1) Building air conditioning or heating pipe network
In order to meet the requirement of energy saving, the air-conditioning and heating network system in the building needs to ensure that all supervisors and branches meet the design flow. The balancing valve should be installed on the main pipe, vertical pipe and branch pipe.
- 2) District heating pipe network
District heating network is often by heating boiler room or heat station to a number of buildings, due to the different distances from the heat source of each building, if there is no effective equipment to eliminate residual pressure head of close loop, the flow distribution will not comply with the design requirements, causing proximal overheating, distal too cold. Balancing valves shall be installed on each main pipe and branch pipe to ensure the flow balance between each main pipe and each building.
- 3) Heat exchanger group cargo water chiller
When heat exchange unit or cold-water unit is installed in parallel, if the flow rate of each unit is not consistent with its rated flow rate, the unit will not operate efficiently. In this case, a balance valve shall be installed at the place of each heat exchange unit or chiller to ensure the designed flow rate of each unit and the safe and normal operation of each unit
- 4) Thermal power station
In the system of heating water or steam from a thermal power station or boiler room to a number of heat stations, balancing valves shall be installed on the primary circuit side of each heat station in order to obtain the required flow rate at each heat station. In order to ensure that the flow rate of each secondary loop is the design flow, the balance valve should also be installed on the side of each secondary loop of the heat station.

Valve Specification: -

No.	Item	Material
1	Body	CI/DI
2	Bonnet	CI/DI
3	Stem Barrel	CI/DI
4	Disc	CI/DI
5	Sleeve	CI/DI
6	Stem	Brass/ SS304
7	Limit stem	Brass/ SS304
8	Screw	Carbon steel
S1	Bolt	SS304
S2	Sealing	EPDM
S3	O-ring	EPDM
S4	O-ring	EPDM
S5	Bolt	Carbon steel
S6	Testing point	Brass
S7	O-ring	EPDM
S8	O-ring	EPDM
S9	Hand wheel	Nylon-66/ CI/DI

Technical Specification

Pressure Rating : PN 16 / PN 25 Optional
 Connection Standard : Flanged End EN1092-PN16/PN25
 Temperature : -10°C~100°C
 Medium : Hot/ cold water
 Size : DN50~DN700

Parameter Table

Size		Kvs (m ³ /h)	Temp (C°)
DN	mm		
50	2	54	-10~ 120°C
65	2 1/2"	94.47	
80	3"	137.2	
100	4"	211.2	
125	5"	330.4	
150	6"	408.52	
200	8"	759.25	
250	10"	1162.25	
300	12"	1703.3	
350	14"	2112.5	
400	16"	3080	
450	18"	3750	
500	20"	4210	
600	24"	5524	
650	26"	5524	
700	28"	7096	

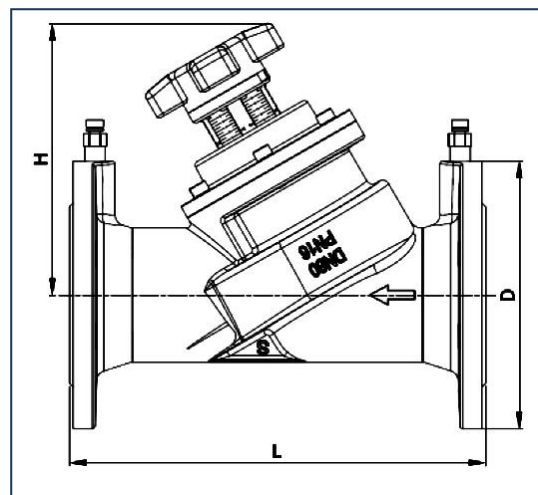
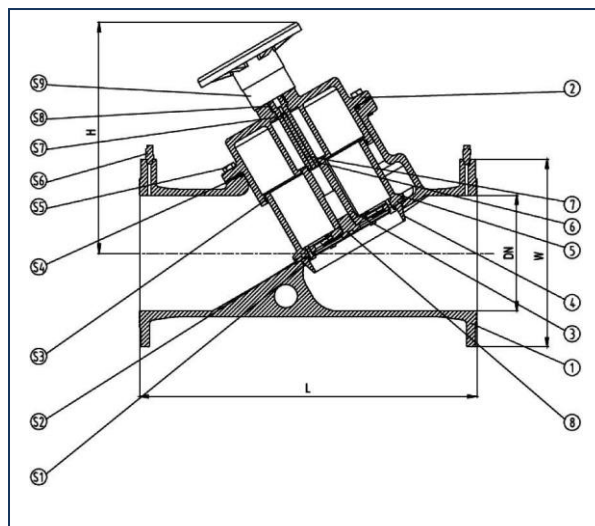
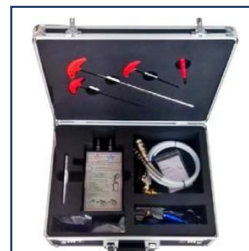
Dimensions

(All Dimensions are in mm)

Size	PN16	PN25	L	H
	Bolt aperture	Bolt aperture		
DN50	4-19	4-19	230	214
DN65	4-19	8-19	290	222
DN80	8-19	8-19	310	257
DN100	8-19	8-23	350	275
DN125	8-19	8-28	400	332
DN150	8-23	8-28	480	396
DN200	12-23	12-28	600	498
DN250	12-28	12-31	730	555
DN300	12-28	16-31	850	630
DN350	16-28	16-34	980	733
DN400	16-31	16-37	1100	800
DN450	20-31	20-37	1200	810
DN500	20-34	20-37	1250	900
DN600	20-37	20-41	1450	1135
DN650	20-37	20-41	1450	1135
DN700	24-37	24-44	1650	1468

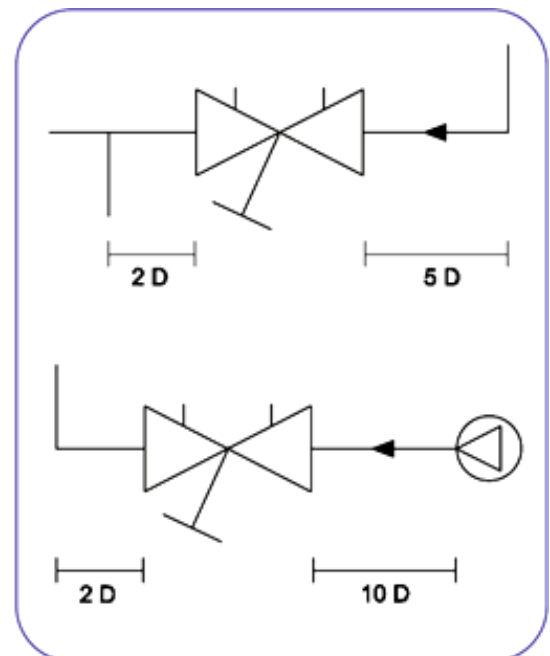
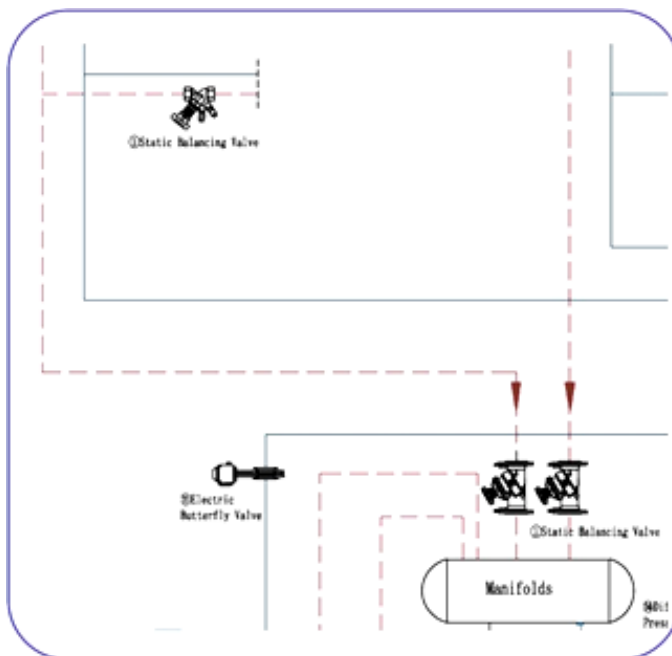
Testing Point :

Self-sealing testing point, open the measuring port and insert the probe to measure. Relative equipment: hydraulic balancing debugging instrument



Installation instructions:

- 1) The installation location and direction
 - ❖ The balancing valve can be installed on the water supply pipeline or on the water return pipe, Only one installation is required for each loop. It is suggested that the balance valve should be installed on the water return pipe with a lower water temperature.
 - ❖ The balancing valve on the manifold, should be installed in the pump outlet direction ;
 - ❖ The balancing valve can be installed in horizontal or vertical installation ;
 - ❖ The medium flow direction should be consistent with the direction on valve body ;
 - ❖ The opening indicator number on the handle should be oriented in a direction that the debugger can see to facilitate debugging
- 2) Installation precautions
 - ❖ The valve opening once identified, do not arbitrarily change ;
 - ❖ The balance valve has shut-off function, no need to install globe valve ;
 - ❖ Flanges should be sealed.
 - ❖ The measuring joint need to be installed before medium flushes the valve.
 - ❖ In order to insure the valve works properly, there need a straight pipe which length is not less than 5 times of pipe diameter at the water inlet, and 2 times at the water outlet.



Hand wheel (A) - Presetting

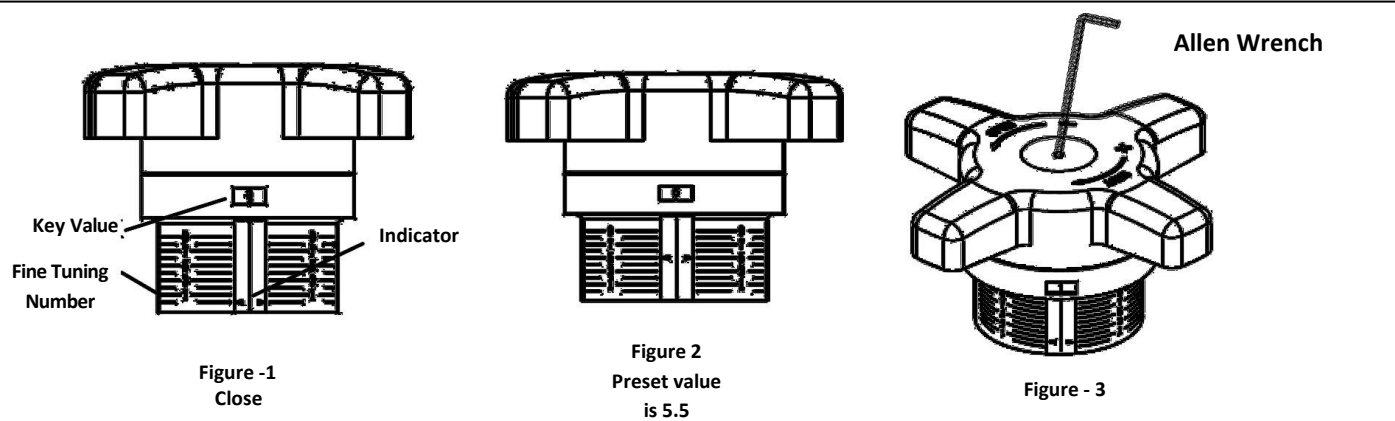
- 1) The presetting value of the valve is set by turning the hand wheel.

Operation methods :

- a) Fully close the valve (See figure 1)
- b) Open valve to the preset valve (See figure 2)
- c) Tighten internal valve stem clockwise with Allen wrench
- d) Complete the valve setting.

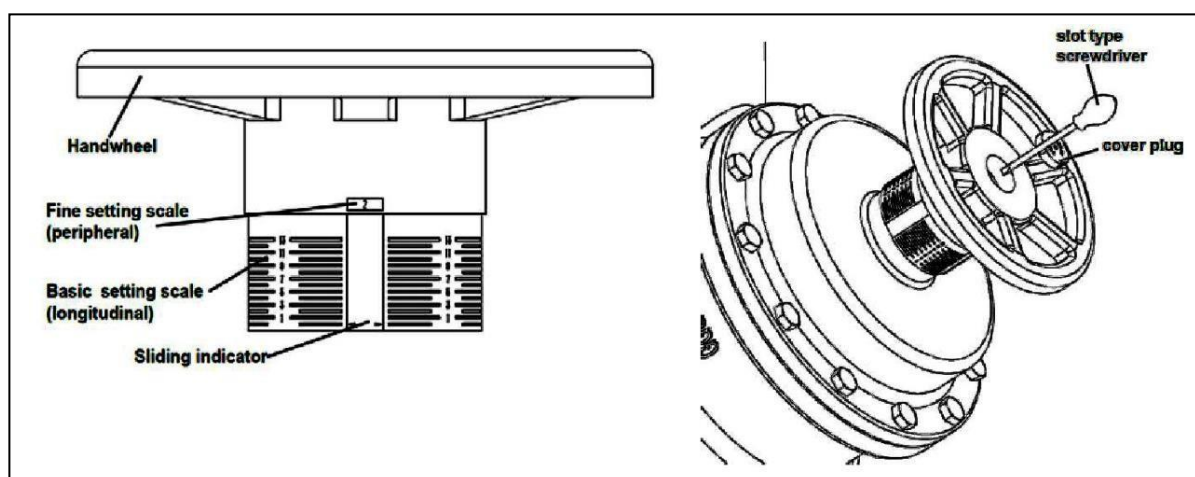
How to check the preset value: close the valve and the reading is 0.0 ring, turn hand wheel until stopping and the reading is default valve (It is 4.5 ring, see the figure 2).

- 2) Limitation of the set presetting value by turning the inner adjustment stem clockwise until it seats. This can be done by using the Allen wrench. (See figure 3)



Hand wheel Presetting

- 1) The presetting value of the valve is set by turning the hand wheel.
 - a) The display of the basic setting is shown by the longitudinal scale together with the sliding indicator. Each turn of the hand wheel is represented by a line on the longitudinal scale.
 - b) The display of the fine setting is shown by the peripheral scale on the hand wheel together with the marking. The subdivisions of the peripheral scale correspond to 1/10th of a turn of the hand wheel.
- 2) Remove cover plug by introducing a screwdriver in the slot and gently raising it off.
- 3) Limitation of the set presetting value by turning the inner adjustment stem clockwise until it seats. This can be done by using the long end of slot type screwdriver or Allen wrench. (see illustration)
- 4) Refit the cover plug



Flow Coefficient Value (Kv)

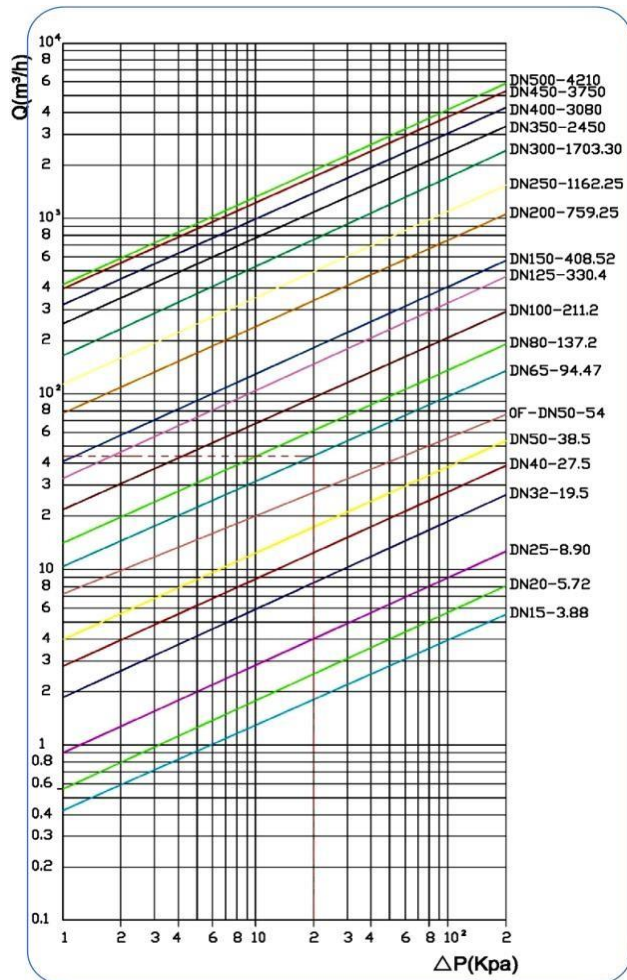
Static Balancing Valve (DN50-DN500)

Turn	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
1	7.4	13.6	14.04	17.6	24.43	30.15	61.52	93.35	77.84
2	15.8	31.17	28.24	38.7	40.42	50.84	114.27	177.64	180.75
3	26.7	48.1	42.78	57.3	64.45	70.45	158.44	247.53	244.12
4	36.9	59.8	62.08	76.5	89.5	93.93	194.06	295.25	309.35
5	46.2	68.35	82.97	99.3	116.92	122.2	228.97	345.49	353.48
6	54.0	76.07	103.73	132.5	166.1	149.16	295.88	480.61	408.11
7		82.61	119.93	167.5	206.71	182.19	375.28	599.27	566.22
8		87.84	127.67	190.2	243.57	223.49	452.07	705.34	742.04
9		94.47	137.31	211.2	272.85	288.33	526	809.04	867.56
10		-	-	-	307.07	326.57	589.74	916.65	1002.31
11		-	-	-	330.22	372.26	651.03	1006.79	1146.01
12		-	-	-	-	408.32	708.91	1081.64	1290.26
13		-	-	-	-	-	759.21	1162.44	1408.81

Static Balancing Valve (DN350-DN700)

Turn	DN350	DN400	DN450	DN500	DN600	DN650	DN700
1	58.67	79.04	71.58	111.3	498	498	698
2	94.05	135.62	150.09	207.5	685	685	985
3	167.18	292.31	329.8	402.6	956	956	1356
4	237.79	490.8	590.3	521.5	1683	1683	1579
5	322.44	595.6	910.6	865.8	2253	2253	1985
6	421.79	911.8	1294.1	1162.9	2865	2865	2556
7	557.08	1153.9	1657.8	1629.6	3172	3172	3287
8	704.52	1407.3	2329.1	2143.7	3752	3752	3996
9	871.73	1779.9	2607.3	2894.6	4117	4117	4728
10	1175.55	2377.5	2887.4	3496.3	4562	4562	5479
11	1396.09	2671.1	3147.3	3886.7	5123	5123	6132
12	1856.3	2946.3	3449.5	4051.7	5341	5341	6746
13	2012.5	3080	3750	4210	5524	5524	7096

Flow Chart



As shown in the left, it is the flow chart of Static balancing valve DN15-DN500 when the valve is full open.

For example :

When the LIV-BAV-CI-002 (DN65) is full open,

$\Delta P = 20 \text{ kPa}$

The Q max is about $45 \text{ m}^3/\text{h}$

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