

Balancing Valve Installation/Adjustment Instructions

TA BBV LF – Manual Balancing Ball Valve - Lead Free, size 1/2" – 2"

Presetting

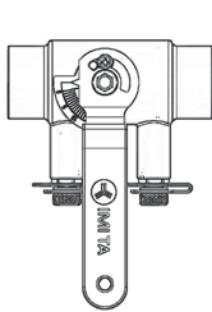


Fig. A Valve fully closed

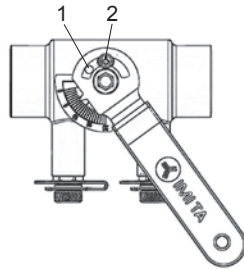


Fig. B Valve opened at position 5

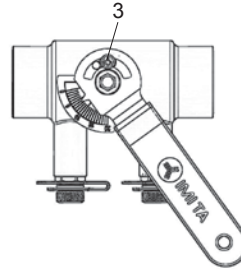


Fig. C Valve preset at position 5

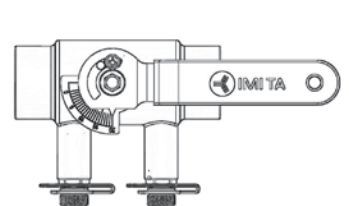


Fig. D Valve fully open

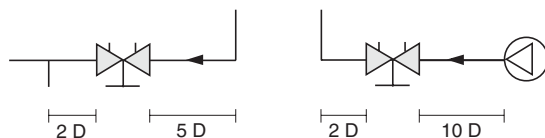
The presetting of a valve for a certain pressure drop (e.g. corresponding to the presetting position 5) should be carried out as follows:

1. Close the valve fully (Fig. A)
2. Open the valve to position 5 (Fig. B)

3. Using a Phillips screwdriver, loosen the set screw assembly counterclockwise (Fig. B:2). Move set screw to designated pin (Fig. B:1) and lock set screw assembly with Philips screwdriver clockwise (Fig. C:3).
4. The valve is now preset.

Installation Requirements

In order to obtain accurate flow measurements, turbulence must be minimized by observing the following piping configurations:



5 D = 5 pipe diameters

1. Flush then depressurize and drain the piping system before installing TA BBV LF. Please ensure flushing chemicals are compatible with the EPDM seals in the ball valve and all other seal materials in the system.
2. TA BBV LF Manual Balancing Ball Valve can be installed in the supply or return line to maintain flow at a pre-determined value. However, IMI TA recommends installing the valve in the return line to reduce noise, flow instability and entrapped air. A Y-strainer with a blow-down valve should be installed in the supply line.
3. Follow the flow direction arrow on the body for proper installation of the valve. Make sure that the valve body is rotated to the desired position for handle access.

Threaded connections

All threaded connections must be clean and free of any burrs. Apply a small amount of pipe joint compound or PTFE tape to the external threads of male threaded pipe connections. **DO NOT** use a combination of tape and pipe joint compound. Avoid getting any foreign material into the flow path.

Sweat connections

IMI TA recommends placing the valve in the fully open position (Fig. D) before attempting to solder the ends. Heat sink the valve body with a wet cloth or putty at the closest joint to protect internal components and direct the flame away from the center of the valve body. Sweat connections must be soft soldered with 95/5 (95% tin, 5% antimony) type solder. **DO NOT** exceed the temperature rating of the valve (248°F/120°C). To prevent damage to internal components, the valve body must be allowed to cool to room temperature before attempting operation.

Measuring Points

Measuring points, also called pressure temperature ports (PT), are self-sealed. Remove the cap and insert the probe through the seal. When not in use, the caps on the PT ports must remain closed.

Sizing

When Δp and design flow are known, calculate the Cv by using the formula provided. Select the valve size so the setting will be approximately 75% of total opening. (Recommended settings: 5-20)

$$Cv = 1.52 \frac{q}{\sqrt{\Delta p}} \quad q \text{ in GPM, } \Delta p \text{ in ft WG}$$

$$Cv = \frac{q}{\sqrt{\Delta p}} \quad q \text{ in GPM, } \Delta p \text{ in psi}$$

Cv Values

Recommended setting: 5-20

Threaded NPT version

Size	1	2	3	4	5	7.5	10	12.5	15	17.5	20
1/2"	0.00	0.03	0.08	0.14	0.21	0.43	0.71	1.10	1.63	2.58	2.83
3/4"	0.03	0.12	0.23	0.32	0.50	0.92	1.63	2.61	3.76	5.89	6.67
1"	0.03	0.18	0.36	0.58	0.83	1.54	2.54	3.90	5.73	8.86	10.32
1 1/4"	0.03	0.16	0.45	0.74	1.13	2.21	3.80	5.95	8.65	13.25	16.31
1 1/2"	0.00	0.17	0.51	0.95	1.43	3.03	5.41	8.91	13.02	20.1	24.3
2"	0.06	0.60	1.34	2.33	3.30	6.45	11.13	17.77	26.1	40.4	45.3

Solder SWT version

Size	1	2	3	4	5	7.5	10	12.5	15	17.5	20
1/2"	0.00	0.03	0.07	0.13	0.19	0.37	0.58	0.93	1.50	2.51	2.74
3/4"	0.06	0.17	0.29	0.42	0.57	1.00	1.62	2.59	3.77	5.93	6.21
1"	0.00	0.09	0.25	0.48	0.66	1.29	2.29	3.56	5.30	7.80	10.29
1 1/4"	0.02	0.18	0.47	0.79	1.18	2.26	3.84	5.97	8.68	12.84	16.38
1 1/2"	0.06	0.13	0.44	0.88	1.40	2.97	5.34	8.88	13.02	20.4	23.8
2"	0.11	0.69	1.45	2.35	3.37	6.36	11.03	17.67	25.0	36.5	44.6



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