

**Valve Setting**

- The flow is determined by measuring the signal across the venturi using the red and blue PT ports and converting the signal to a flow rate using the flow charts available from NIBCO®.
- Slowly close the valve whilst reading the differential pressure gauge or manometer until the desired flow rate is achieved.
- The valve may be fully closed at any time. However when re-opened, it will stop exactly at the previously set point. Opening movement should cease when the stop lug is contacted.

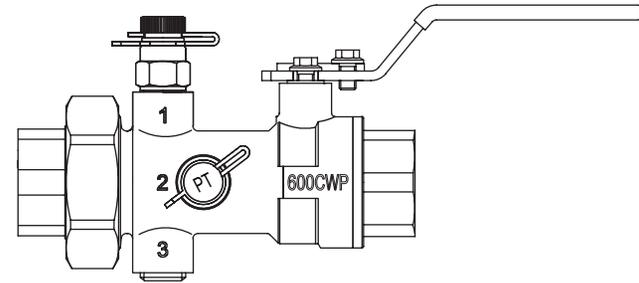
When the required flow has been achieved, the memory stop feature is set as follows:

- Without disturbing the lever position, carefully rotate the regulating plate counter clockwise until it contacts the stop lug on the body.
- Fully re-tighten the regulating adjustment screw.
- Operate the valve to the fully closed position and re-open to the set position to check the operation and setting. **NOTE:** excessive force is not required and should be avoided when setting the valve in the regulated position. Cease turning the lever when a positive stop is felt.

**Maintenance**

The NIBCO® Fixed Orifice Circuit Balancing Valves do not require any routine maintenance.

**1805-LF Fixed Orifice Circuit Balancing Valve  
Lead Free DZR Brass**



**Fixed Orifice Circuit Balancing Valve**

Fixed Orifice Circuit Balancing Valves (FOCBV) provide flow regulation, accurate flow measurement and isolation in a single product. The valve is a precision manufactured product and should be handled, installed and used with care as detailed in these instructions.

**Valve Models**

- Fig. T-1805-LF has female threaded NPT end connections as ASME/ANSI B1.20.1
- Fig. MT-1805-LF has male threaded NPT end connections as ASME/ANSI B1.20.1
- Fig. S-1805-LF has solder end connections as ASME B16.22
- Fig. PC-1805-LF has press end connections

Valves are supplied with P/T ports fitted.

The valve is manufactured in lead free de-zincification resistant brass. It is identified by the WHITE sleeve on the operating lever.

**Limits of Use**

The valve rating is shown in the table below and it must be installed in a system where the normal pressure and temperature does not exceed this rating.

The valve is intended for non-shock operating conditions:

Water hammer, impacts, stress loads, corrosive or erosive external environmental elements and the transport of fluids with abrasive properties should be avoided.

End Connections	Non-Shock Pressure at Temperature Range	Non-Shock Pressure at Max Temperature
Threaded & Solder	600 psi from 15°F(*) to 100°F	150 psi at 250°F
Press	200 psi from 15°F(*) to 230°F	150 psi at 250°F

(\*) = temperatures apply only when glycol additives used.

**Layout and Siting**

Prior to installation, it should be considered where the valves will be located to give access for operation, insertion of the test probes and for setting the required position.

**Installation**

The FOCBV is a precision manufactured product and should not be subjected to misuse. The valve should be unpacked immediately prior to installation to avoid foreign particles entering the valve through the end ports. The valve and adjacent pipework should be checked for cleanliness and freedom from debris before installation. There should be no internal burrs in the pipe to be connected to the valve.

Confirm that pipe threading is correct and undamaged and avoid excessive penetration into the valve which may cause damage.

For solder and press fittings confirm that the outside diameter of the pipe is correct for the internal diameter of the fitting.

It is important to ensure that the flow arrow on the valve body is coincident with the direction of flow in the pipeline.

Thread sealing liquids or tape may be used on the pipe threads but excessive use should be avoided to prevent sealant from being extruded into the valve bore, disturbing the flow condition. The use of hemp-style material should be avoided since this may cause over stressing of the female threaded ends of the valve.

In order to achieve accurate flow measurement, the circuit balancing valve should be installed with a minimum of 5 diameters equivalent of straight pipe upstream and 3 diameters downstream, having the same nominal diameter as the valve and should not include any reducers or intrusions into the bore within these specified lengths.

If a control valve of a smaller size than the 1805 is installed upstream, a valve with a reduced size inlet connection should be used denoted by a suffix 'R' in the code number.

Care should be taken when installing Fig. S-1805 (solder end valve) to ensure that the flame is directed away from the center of the valve (valve seat and seals) and also from the P/T ports (seals). This will reduce the risk of damaging the valve seals due to over heating. Also, set the valve lever in the closed position to protect the plastic sleeve from the flame.

**Operating**

When used for balancing water distribution systems, the valve will always be in the fully open position at the commencement of any flushing or commissioning procedure.

Regulate the valve by rotating the lever clockwise. To close the valve, rotate the lever clockwise until the lever contacts the stop lug on the body; attempting to rotate the lever beyond this point will not improve the sealing capabilities of the valve and may cause damage.

To open the valve, rotate the lever counter clockwise until the lever contacts the stop lug on the body.

During the commissioning stage, all entrained air must be removed from the system before accurate measurements of differential pressure signals can be taken at the P/T ports.

**Operating**

There are two P/T ports, each fitted with a colored strap and captive cap as shown in positions 1 and 2 in the drawing on the front page.

- Upstream (HP) Red
- Downstream (LP) Blue

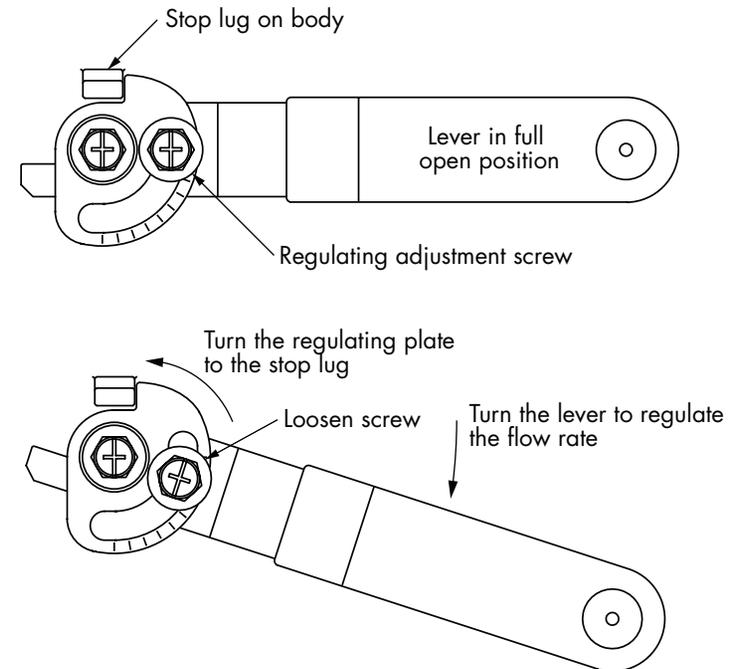
Position 3 is a port fitted with a blank plug.

For safety reasons, all manometer probe insertions of the P/T ports must be carried out with the system cold.

Remove the screwed cap and insert the test probe into the P/T port. Silicone oil or grease should be lightly applied to the shaft of the probe before insertion. No other type of lubricant must be used.

Refer to the flow data manual for individual flow charts, Cvs and Cv values.

**Valve Setting**



The regulating plate rotates around the lever retaining screw and is fixed to the lever by the regulating adjustment screw.

- The approximate position open is indicated by the incremental markings on the regulating plate.
- To regulate the flow loosen the regulating adjustment screw and turn the lever to the required position.