Valve Setting

- 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 resistance is felt. Over tightening is not required and should be avoided.

The valve is provided with a data tag that indicates:

- Fig. number of the valve: T1810 or S1810
- Nominal size
- Flow coefficient Cvs

On the tag there is room to write the required initial setting of the valve, indicating either the setting reading, the design flow rate or the pressure signal.

This tag can be fixed to the handwheel with the plastic zip tie provided. The plastic tie is long enough to be used with insulated piping systems and still provide a clear identification of the valve.

Maintenance

The NIBCO® Fixed Orifice Circuit Balancing Valves Fig. T1810 and S1810 do not require any routine maintenance.

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Installation, Operating and Maintenance Instructions NIBCO®

Fixed Orifice Circuit Balancing Valve

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. T1810 has female threaded NPT end connections as ANSI/ASME B1.20.1
- Fig. S1810 has solder end connections as ANSI B16.22

Valves are supplied with P/T ports fitted.

These instructions will also apply to the Low Flow and Ultra Low Flow products. These products are identified by an"L" and "U" marked on the body, respectively.

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.

Operating Pressure and Temperature

Model	Non-Shock Pressure at Temperature Range	Non-Shock Pressure at Max. Temperature
T1810	300 psi from 15˚F(*) to 160˚F	150 psi at 260˚F
S1810	125 psi from 15˚F(*) to 175˚F	85 psi at 250˚F

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

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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.

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 hemp-type sealant from being extruded into the valve bore, disturbing the flow condition. The use of hemp type material should be avoided since this may cause overstressing of the female threaded ends of the valve.

In order to achieve accurate flow measurement, the fixed orifice circuit balancing valves should be installed with a minimum of 5 diameters equivalent of straight pipe upstream and 2 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.

Care should be taken when installing Fig. S1810 (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.

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 handwheel clockwise. To close the valve, rotate the handwheel clockwise until a positive stop is felt. Over tightening is not required. To open the valve, rotate the handwheel counter clockwise until a positive stop is felt. Further effort is not necessary. When in the fully open position it is recommended to rotate the handwheel clockwise ½ turn.

Operating

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.

There are two P/T ports, each fitted with a colored strap and captive cap.

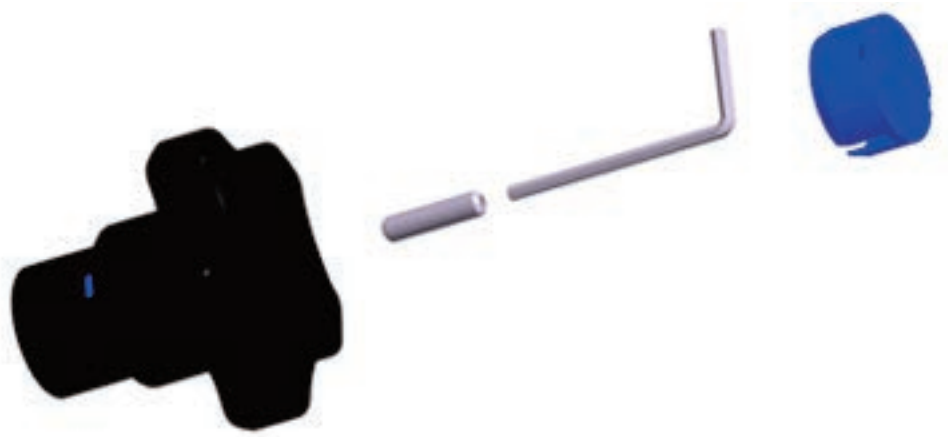
- Upstream (HP) Red
- Downstream (LP) Blue

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. A 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



This setting of the valve will be displayed by the two figures shown in the windows on the side of the handwheel assembly:

- Window closest to the valve body (Sliding numbers 0-4) illustrates the number of full turns
- Window closest to the handwheel (rotating numbers 1-9) illustrates the tenths of a turn

Position 0-0 indicates that the valve is fully closed.

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

- Pry up the center handwheel cap using a small screwdriver or similar tool. Insert the 3mm allen key provided into the opening and while holding the handwheel in its desired position, tighten the inner allen screw clockwise until it stops. Care should be taken not to over tighten this screw.
- Replace the plastic cap. Tampering with the valve setting may be prevented by sealing the cap to the upper part of the handwheel by using the existing slots and an appropriate wire or nylon seals.