Manifolds and Instrumentation Valves

Installation, Operation and Maintenance of Manifolds.

1.- USE

Manifolds are used as for gauges isolation (2 valves) as use in diferential pressure applications (3 or 5 valves). As gauges isolation are specially useful since include the cutoff valve and bleeding in one only block, which avoid joints leaks. As far as manifolds used in systems of diferential pressure, the advantage of including in one only block up to 5 valves, makes them indispensable. Our manifolds are designed to work up to 420 bar (6000 PSI) and 400ºC (752ºF) with the suitable packing materials.
CAUTION: Manifolds are forbidden to use in applications where the fluid is viscous. The small orifice size which the flow pass through could easily catch thick and solid materials and get to block.

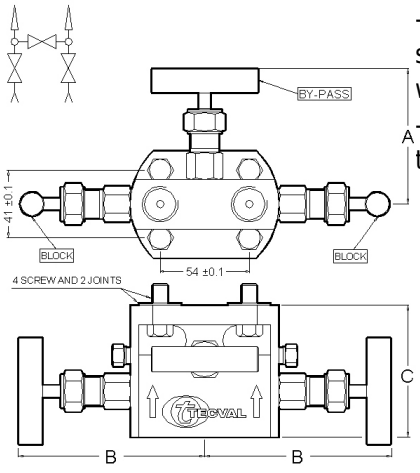
2.- INSTALLATION

- Manifolds must be installed in the direction of flow as indicated by the arrow on the body.

2.1.- THREADED MANIFOLDS INSTALLATION
- Pipe connections should be free of dirt and metal shavings.
- Several wraps of PTFE tape is recommended for use of pipe joint sealant.
- To provide a leak proof joint, firstly Manifold should be tightened to the pipe with the hand, after that, tightening with a wrench 1/2 to 1-1/2 turns past hand tight. Tightening beyond this point may induce excessive stress that could cause failure.

2.2.- FLANGED MANIFOLDS INSTALLATION S/DIN EN 61518
- 4 screws and 2 joints to assemble the transmitter are supplied. Distance between center of 2 ports is 54 mm. (2 1/8")
- To make sure an optimal union is advisable to put correctly in the machined slots of the flat side of the flange the 2 joints and tighten the 4 screws alternately in cross to reach an uniform press.

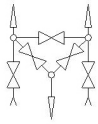
FLANGED MANIFOLD

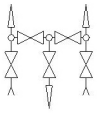


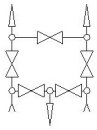
- For the other side, ensure connecting pipes are correctly positioned and supported to avoid any strain on the valves due to the manifolds weight, which ranges between 2,3-3 kgs.
- Manifolds are supplied as per different distribution diagrams, it means that previously the bleed commanding lines must be foreseen.

3. OPERATION

- Before activating any element, it´s recommended to have a look to the distribution diagram marked on the body.
- Flow adjustment is achieved by rotation of the handwheel, clockwise to decrease flow and counterclockwise to increase flow.
- To close the manifold, used hand force only. Never use spanners or bar extension.
- When manifolds are used at elevated temperatures, precautions must be taken during operation to prevent burns in hands.
- 2 valves Manifold have a cutoff valve, also called "principal" and a second bleed valve.
- 3 valves Manifold have 2 bleed valves, one in each side, and one third in the center, called "by pass". This third valve in the center allows levelling the pressure of the two lines. This type of manifold allows to equip small bleed valves in the outlet or in the inlet of the 2 main lines.
- 5 valves Manifold have 2 cutoff valves, one in each side, and 3 valves in the body, which, one or two can be "by pass", and the rest, could be bleed valves, as per distribution diagrams. See our Technical data sheets.


ESQUEMA 1

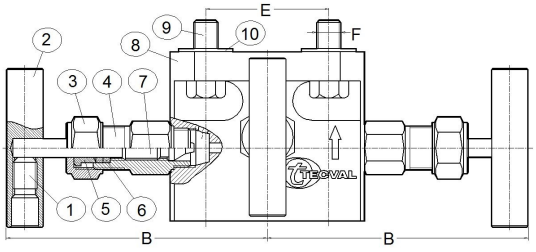

ESQUEMA 2


ESQUEMA 3

- It´s not recommended to leave the valve be a long time without operating. When possible, it should be moved at regular intervals to ensure proper and continuos operation.

4.- MAINTENANCE

- Wait until the system is depressurized and cold.
- When using dangerous fluids, before carrying out any maintenace operations, drain the system and do a test in the workbench, before installing again.



- To adjust the packing, open the valve one full turn (one turn anticlockwise), tighten the nut (part 3) sufficiently to prevent leakage in the stem (part 7), being acceptably tight the turn.
- If packing is Grafoil, wait two minutes after tightening the nut before checking valve operation.
- Re-pressurise and check both leakage and operation.
- All the valves incorporated in our manifolds own back-seat allowing a free packing change while the valves are in service and depressurized.
- Depending on the criticality of service, provide spare parts and gasket kit.

CAUTION: Bonnet (part 4) must not be removed from body (part 8). Do not disassemble valve while under pressure.

TECVAL S.L.
C/Berlin, 1 Nave 4
Pol.Can Torrella
08233-VACARISSES
Barcelona - SPAIN
Tel: +34 938 280 055
tecval@tecval.es