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Anderson, Greenwood & Co.

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DWN	S.Willis	6-06-89	INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS FOR M25 & M251 "PBT" INSTRUMENT MANIFOLD
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1.0 INTRODUCTION

Anderson, Greenwood and Co., 2-valve manifold is metal-seated with a globe configuration designed for standard service. The seat is a free-swiveling stainless steel ball sealing on a line contact at the orifice. Teflon packing is standard with a variety of end connections.

2.0 INSTALLATION

2.1 Check valve body for flow arrow for proper flow orientation.

2.2 Immediately prior to valve installation, check the piping to which the valve is to be connected for cleanliness and freedom from foreign materials.

2.3 Threaded pipe joints depend on a good intimate fit between the male and female pipe threads, therefore the use of a thread sealant is recommended and the pipe fitting connections must be made up tight.

3.0 OPERATION

Valves which have been reasonably matched to a typical valve service application and properly installed in its piping system can expect to have a long service life with a minimum of attention. However, these valves have moving and wearing parts and depend on long term preservation of highly finished surfaces on these parts for satisfactory valve performance.

3.1 The use of a "cheater" to operate the valve handle is not necessary and not recommended. This practice can cause valve damage.

3.2 All valves have rising stems with right hand thread. Rotate the handle counter-clockwise to open and clockwise to close. In the closed position, the valve should be seated at 4-5 ft- lb or torque.

3.3 Bonnets with rising stems are provided with a backseat. Backseats in rising stem bonnets should be considered basically as stops to prevent overtravel when opening valves. It is recommended not to leave the upper stem in the backseated position. Note MSS SP-92, "MSS Valve User Guide", paragraph 4.3.

3.4 Operation of 2-Valve Manifold

The schematic for the M25 & M251 zero-calibration manifolds is shown in Figure 1. These 2-valve units are used on static pressure transmitters, switches or gages.

3.4.1 In normal operation of the system, the block valve between the process and instrument ports will be open and the calibration valve closed.

3.4.2 To readjust the instrument to zero, close the block valve to isolate the instrument from the system. Open the calibration valve to bleed the instrument pressure to atmospheric pressure. When fully vented, the instrument should show zero output. A threaded outlet is provided for field spot-check or reset of the instrument.

4.0 MANIFOLD MAINTENANCE

The important performance parameters are pressure boundary integrity, actuating force required and internal leak tightness. Maintenance should logically address the importance of preserving the performance parameters.

Valves which remain in one position for long periods of time may be subject to some loss of operability as a result of loss of effective lubricants in threads, aging of packing surface, corrosion of moving parts or accumulation of harmful solids. In some applications it may be desirable to schedule periodic partial or full cycle exercising these valves.

Stem seal leakage usually results from packing wear, and can usually be corrected by tightening the bonnet bushing. Overtightening can cause high stem friction, accelerated wear and shortened packing life.

4.1 Packing Replacement

If stem seal replacement is needed, safe practice requires depressurizing the valve before removal of the bonnet bushing. Teflon packings do not often need replacement. If leakage occurs usually the leak can be stopped by tightening the bonnet bushing.

Reference Figure 2 for parts identification.

4.1.1 Remove bonnet lock pin and roll pin from valve body by using heavy duty pliers or wire cutters.

4.1.2 Unscrew bonnet counter-clockwise to remove bonnet assembly from valve body.

4.1.3 Place bonnet assembly in soft-jawed vise to facilitate disassembly.

4.1.4 Remove handle (item 6) by loosening handle bolt.

4.1.5 Remove dust boot (item 7) from upper portion of bushing (item 3).

4.1.6 Loosen jam nut (item 5) and unscrew bushing off stem and out of the bonnet.

4.1.7 Remove stem (item 1) from bonnet (item 2) by pushing it downward.

4.1.8 Remove Teflon packing (item 4) from the bonnet.

4.1.9 Clean all bonnet assembly parts with acetone or alcohol.

4.1.10 Inspect parts for damage, particularly the stem threads and ball end. Replace both stem and bonnet bushing if threads do not engage smoothly.

4.1.11 Lubricate the stem threads with the appropriate lubricant specified on the assembly drawing.

4.1.12 Insert the stem, (item 1) threaded end first, into the end of the bonnet (item 2), that is threaded externally.

4.1.13 Place the packing (item 4) over the threaded end of the stem and push it down into the body of the bonnet.

4.1.14 Lightly lubricate the bushing (item 3) threads with the appropriate lubricant. Do not over lubricate or allow lubricant to drip.

4.1.15 Place the bushing with jam nut over the stem and start the threads for both the stem and the bonnet by hand. Screw the bushing down into the bonnet until it reaches the stem seal.

4.1.16 Place the boot (item 7) over the upper portion of the valve stem.

4.1.17 Place the handle assembly (item 6) onto the upper portion of the stem and tighten handle bolt to 10-12 ft-lb. Be careful not to bend the stem.

4.2 Valve Assembly

4.2.1 Lightly lubricate the bonnet threads with the appropriate lubricant.

4.2.2 Place bonnet assembly into the seat cavity and screw the bonnet into the valve body by hand.

4.2.3 Tighten the bonnet to the proper torque value shown below using the preset torque wrench.

M25 Carbon Steel	32-38 Ft-Lb
M25 Stainless Steel	35-40 Ft-Lb
M251 Carbon & Stainless	40-45 Ft-Lb

4.2.4 Tighten the bonnet bushing using a wrench. The bushing should be tightened snugly but not over-tightened. Check the bushing tightness by turning the handle. If it feels too loose you may tighten the bushing more. If it feels tight, the stem seal must be replaced and the bushing retightened.

The bushing tightness is a matter of both judgment and experience. The basic considerations are:

Too Loose - the bonnet will leak.

Too Tight - The handle will be hard to turn and the stem seal may be ruined.

4.2.5 Once the bushing is properly adjusted, tighten the jam nut (item 5) to lock the bushing in place.

4.2.6 Tap one bonnet lock pin into one of the two holes that one of the flats on the bonnet hex best centers over. Then install the roll pin on the exposed circumference of the lockpin.

4.3 If the valve seat is worn such that there is leakage across a bonnet seat and the bonnet ball tip is not damaged, then the seat may be resurfaced with AGCO Seat Surfacing Tool #02.2542.001. Refer to instructions #05.9040.210 on how to use this tool. Follow the procedures of paragraphs 4.1 and 4.2 for removal and installation of the bonnet.

5.0 POST ASSEMBLY INSPECTION

Turn the handle to open and close the valve. Check for binding, rubbing or any resistance to smooth operation.

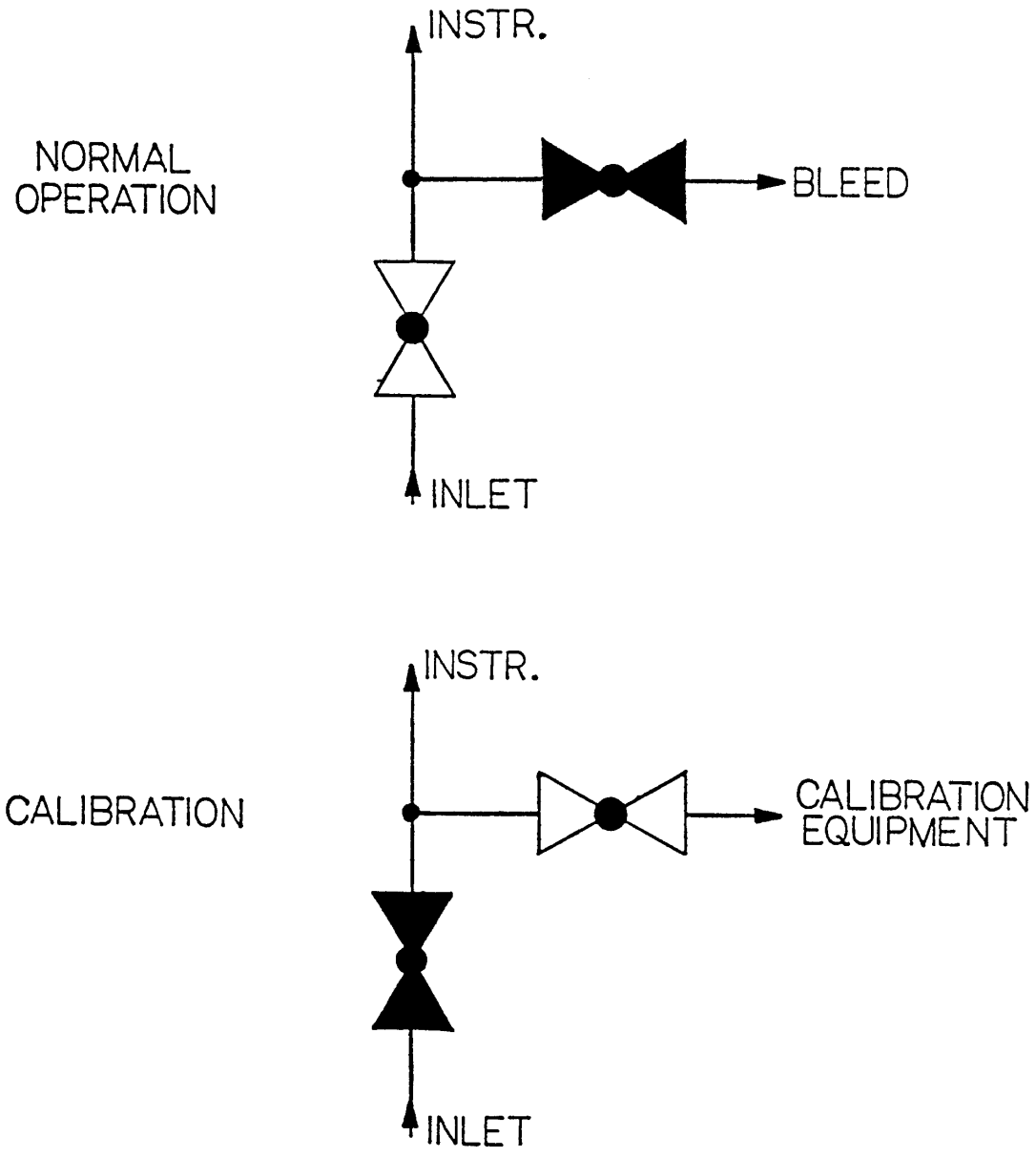
INSTR.
NORMAL OPERATION
BLEED
INLET
INSTR.
CALIBRATION
CALIBRATION EQUIPMENT
INLET

FIGURE 1

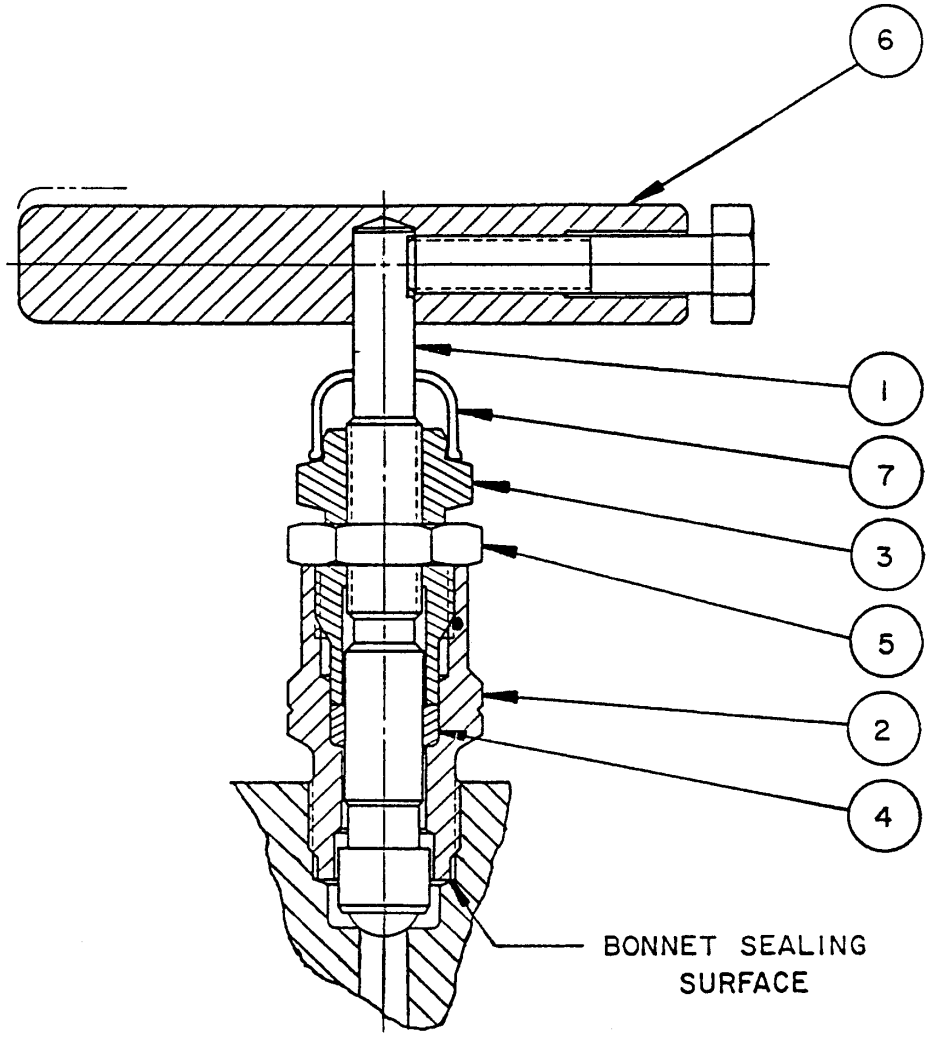

FIGURE 2