GBV-A
Balancing Valves

1.0 INSTALLATION

1.1 To ensure accuracy of measurement, the GBV should be located at least five pipe diameters downstream from any fitting, and at least ten pipe diameters downstream from a pump. Two pipe diameters downstream from the GBV should be free of any fitting (as illustrated in Figure 1).

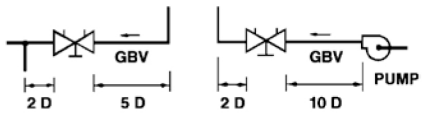


Figure 1 - Spacing

1.2 GBV valves must be installed with flow in the direction of the arrow of the valve body. Easy access to the probe metering ports (P.M.P.'s) and handwheel must be provided.

1.3 GBV valves can be installed in horizontal or vertical piping. The metering ports should never be installed below the pipe (pointing down), as this will allow system sediment to accumulate in the ports. (Illustrated below for horizontal piping in Figure 2.)

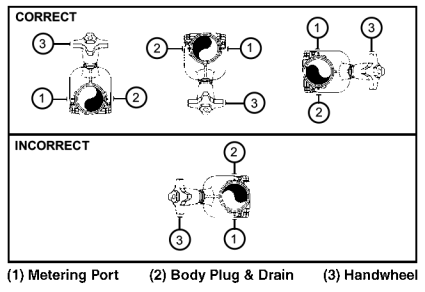


Figure 2 - Install Port Position

1.4 GBV angle-style valves are designed to replace piping elbows.

1.5 Metering ports and body plugs may be interchanged for improved accessibility.

2.0 FLANGE ADAPTERS

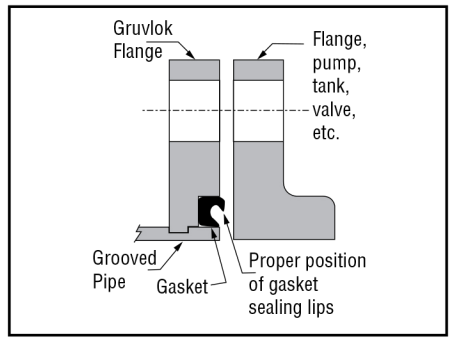
2.1 The Fig. 7012 Gruvlok Flange Adapter can be used with the GBV Balancing Valves. Installation is similar to the installation of the Figure 7012 with grooved pipe.

2.2 Loosen the nut on the latch bolt to the end of the bolt thread. (It is not necessary to remove the nut from the latch bolt.) Swing the latch bolt out of the slot. Open the Gruvlok Flange and place it around the grooved tube with the key section fitting into the groove. The flange gasket cavity must face the tube end.

2.3 Swing the latch bolt back into the slotted hole. Tighten the nut until the flange halves make solid contact.

2.4 Check the gasket grade to verify that it is properly suited for the intended service. Lubricate the entire surface of the gasket and the flange gasket cavity using Gruvlok lubricant. Position the Gruvlok Flange Gasket around the tube end and press the gasket into the cavity between the tube O.D. and the flange recess. The gasket must be properly positioned as shown in Step 2.5. Be careful that foreign particles do not adhere to lubricated surfaces.

2.5 The correct positioning and relationship of all components comprising a Gruvlok Flange joint. The Fig. 7012 Gruvlok Flange gasket must be inserted so that the sealing lips face toward the tube end and the mating flange face and away from the Gruvlok Flange itself.



NOTE: Design of the Gruvlok Flange provides sealing only withthe special Gruvlok Flange gasket. Only Gruvlok Flange gaskets may be used with Fig. 7012 Gruvlok Flanges.

2.6 Align the Gruvlok Flange bolt holes with the mating flange bolt holes. Insert a standard bolt or stud through the bolt hole, and thread a nut on hand tight. Insert the next bolt or stud opposite the first and again thread the nut on hand tight. Continue this procedure until all holes have been fitted.

NOTE: Take care to assure that the gasket lip is not bent backwards or pinched between the two flanges.

2.7 Tighten the nuts evenly so that the flange faces remain parallel and make firm even contact around the entire flange. Torque all bolts to required flange joint torque levels.

3.0 CONVERSION (STRAIGHT TO ANGLE)

3.1 Open the valve one complete turn.

3.2 Remove the body bolts from the valve body.

3.3 Rotate one-half of the valve body, 180°, making sure the seat and the "O" ring stay in position and does not get nicked or cut.

3.4 Replace the body bolts and tighten evenly.

4.0 OPERATION

4.1 The valve operates from closed (Figure 4) to partially open (Figure 5) to fully open (Figure 6) by a counterclockwise rotation of the orange handwheel, using five 360° turns for the 2-1/2" and 3" valves, six turns for the 4", 5" and 6" valves, 12 turns for the 8" and 10" valves and 14 turns for the 12" valve. The position of the valve is indicated by two scales.

Inner Scale (Figure 6) - This sleeve has a vertical arrowed scale which indicates the number of full turns the valve has been opened.

Outer Scale (Figure 6) - This scale is a micrometer type scale marked 0-9 at the tapered base of the orange handwheel. Each gives 1/10th indications for each 360° turn of opening against the indicator line of the Inner Scale.