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OPERATING, INSTALLATION AND MAINTENANCE

INFORMATION FOR

GATE, GLOBE AND CHECK VALVES

1. **GENERAL**

This manual applies to all standard Gate, Globe and Check valve products supplied by **Flow Control Company Limited**.

INSTALLATION, OPERATION AND MAINTENANCE

The Gate, Globe and Check valve products supplied by **Flow Control Company Limited** may be installed and operated in service conditions suitable to their design and construction and only in accordance with all applicable codes, standards and generally accepted good construction and operation practise.

No special tools are required for installation, disassembly, maintenance and reassembly of these valve products.

Replacement of minor valve components, including stem packing, bonnet gaskets, may be done under field conditions, provided proper procedures are followed.

Replacement of major components, including stem and wedge/disc should not be done under field conditions, but should be done only in a properly equipped workshop.

All gate valve and globe valve stem packing may be replaced while valve is in normal service in accordance with normal pressure and temperature rating applicable to the valve type. To ensure the safety of all personnel, the procedure for changing stem packing (Section 2) must be followed.

We recommend that the bonnet studs on the valve be checked for tightness prior to pressurising and also after a short period of service. This is particularly important if the valve has been subjected to severe changes in temperature. Tightening should be done alternately from one side of the bonnet to the other to prevent distortion.

2. STEM PACKING

Stem packing is used on all standard gate valves and globe valves, bolted bonnet type.

We suggest periodic inspection of the stem packing. In the event that the stem packing is leaking, it may only be necessary to tighten the gland flange bolting.

PROCEDURE FOR CHANGING STEM PACKING (Valve in normal service)

The valve must be in fully open position with the stem retracted against the back seat.

Only when the stem is fully backseated can the gland flange bolting be loosened slightly to release any pressure in the packing/stuffing box chamber. This procedure also serves as a test to confirm that the stem is fully backseated and sealing against the back seat.

WARNING: If the stem does not backseat correctly and seal against the back seat completely, the stem packing cannot be replaced while the valve is under service conditions.

The gland flange bolting may be further loosened to allow the gland bushing to move up the stem permitting the removal and replacement of the stem packing.

3. BOLTED BONNET GLOBE & GATE VALVES

DISASSEMBLING

Remove the body-bonnet bolting to allow removal of the bonnet assembly from the body. The bonnet-yoke assembly including the stem and the disc may be removed from the body.

The disc may now be removed from the stem.

The stem may now be removed down through the bonnet by unscrewing in a proper direction.

MAINTENANCE OF DISC, SEAT RING AND STEM

To check that the original sealing characteristics of the valve are maintained, we suggest a "bluing test." This test will indicate any uneven wear, leak paths or damage to the sealing surface.

The disc and seat ring sealing surfaces may be refressed using suitable fine grained grit paper, emery cloth or an equivalent. During redressing, be sure that the work is done evenly on the complete surface. This is necessary to maintain the original plane of the sealing surface.

The valve stem should be inspected, cleaned and redressed if necessary, to remove any build-up of process product in the area of the stem packing and stuffing box. Care must be taken to retain the original stem finish, particularly in the stem packing area.

Clean all internal and external parts of foreign materials or process products that could interfere with the normal operation of the valve.

REASSEMBLING

Replace the stem by inserting it up through the bonnet and stuffing box to engage the threads of the yoke bushing.

Replace the disc on the end of the stem.

Place the new bonnet gasket in the correct position on the bonnet flange. Use new gasket each time the valve is disassembled, using manufacturer supplied replacement or equal.

The bonnet-stem-yoke assembly may now be replaced on the valve body.

The body-bonnet bolting should be cross tightened to ensure even tightness and equal compression of the body-bonnet gasket. Bolts are to be tightened to bolting torques indicated in the standard tables with specific reference to bolting material.

The gland flange bolting should be cross tightened to compress the stem packing evenly but only enough to prevent stem leakage. Over tightening will result in stem seizure.

After complete reassembling, we suggest a suitable hydrostatic test to confirm proper reassembly and sealing of the valve.

4. **BOLTED BONNET BALL CHECK VALVE**

DISASSEMBLING

Remove the body-bonnet bolting to allow removing of the bonnet (cover).

Remove the spring and ball.

MAINTENANCE OF BALL AND SEAT RING

To check that the original sealing characteristics of the valve are maintained, we suggest a "bluing test." This test will indicate any uneven wear, leak paths or damage to the sealing surfaces.

The ball and the seat ring sealing surfaces may be redressed using suitable fine grained grit paper, emery cloth or an equivalent. During redressing, be sure that the work is done evenly on the complete surface. This is necessary to maintain the original plane of the sealing surfaces.

Clean all internal and external parts of foreign materials or process product that could interfere with the normal operation of the valve.

REASSEMBLING

Replace the ball and spring and then the bonnet (cover), using a new body-bonnet gasket. Use new gasket each time the valve is disassembled, manufacturers supplied or equal.

The body-bonnet bolting should be cross tightened to ensure even tightness and equal compression on the body-bonnet gasket. Bolts are to be tightened to bolting torques indicated on standards table with specific reference to the bolting material.