MICROFINISH GATE, GLOBE & CHECK VALVES

INSTALLATION OPERATION AND MAINTENANCE MANUAL

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INSTALLATION, OPERATION & MAINTENANCE MANUAL (GATE, GLOBE & CHECK VALVE)

THE TROUBLE-FREE PERFORMANCE OF A VALVE LARGELY DEPENDS ON THE SELECTION OF A RIGHT VALVE FOR THE JOB FOLLOWED BY PROPER STORAGE, NEAT INSTALLATION, GENTLE OPERATION & TIMELY MAINTENANCE. PLEASE FOLLOW THE GUIDELINES GIVEN FOR THE VALVE TO FUNCTION WELL TO YOUR SATISFACTION.

1. GENERAL

1.1 Upon delivery, inspect the valve for any shipping damage

1.2 As per the packing slip placed inside the box, verify the goods received. Items packed loose within the box are separately identified in the packing slip. Check for short supply, if any

2. STORAGE

2.1 Do not take-off the end protectors until installation.

2.2 **CAUTION!** Avoid possible entry of any foreign matter such as water dirt, mud, sand etc., into the valve in order to protect the lapped sealing faces of the valve seats.

3. INSTALLATION

3.1 Valve conforming to the Customer's specification in all respects is duly tested prior to dispatch. However, ensure once again that specifications mentioned over the name plate are in line with your requirements with regard to size, material of construction, working pressure etc.,

3.2 Alignment and proper supports for the piping are essential to prevent unwanted stresses in the valves.

4. CAUTION! Blowout or flush the pipelines thoroughly before valve installation. If not the hard particles left within the pipeline can easily ruin the seating faces – A common cause for most of the valve failures.

4.1 Ensure that valves are freely accessible to the operator.

4.2 Mating flange faces should be clean for proper sealing at the joint.

5. GATE/GLOBE VALVES: The actuating stem will project out while opening and hence provide enough headroom.

6. Take off end protectors just prior to the installation.

7. CHECK VALVES: Remove additional packing stuff placed inside the valve bore.

DIRECTION OF MOUNTING

GATE VALVE can be mounted for flow in either direction. It can be installed both in horizontal and vertical pipelines. However, preferred mounting is in horizontal pipeline with the stem in upright position.

GLOBE VALVE is generally mounted in such a way that fluid pressure should act beneath the disc. However, when operating conditions are very severe, like high temperature steam, the other way may be desired. It can be installed both in horizontal & vertical pipelines. However, preferred mounting is in horizontal pipeline with the stem in upright position.

CHECK VALVE should be mounted with flow tending to open the disc. Body exterior has an arrow –head to indicate the direction of flow. It can be installed both in horizontal and vertical pipelines. If vertical, flow has to be in upward direction only. However, preferred mounting is in horizontal pipeline.

OPERATION (GATE & GLOBE VALVE)

1. After installation, operate the valve slowly up and down and ensure free movement of the stem.
2. All external bolting of the valve may be checked to ensure that they have not got loosened during transit, storage or handling.
3. Never use a wrench and try to achieve tight shut-off. The torque through the handwheel is sufficient to seal the pressure.
4. When valve is fully opened screw it down about a quarter turn to prevent sticking.
5. **CAUTION!** Do not use the GATE VALVE for throttling. Left partly open or cracked open, the wedge would erode rapidly and may cause a severe damage to the seat faces.
6. Some more greasing may be done at the stem threads, if required
7. Direction of hand wheel rotation: Facing the hand wheel, clockwise rotation to close the valveand anti-clockwise rotation to open the valve.

MAINTENANCE

1. The valve hardly needs any maintenance. Regular greasing at the stem threads and periodic cleaning of the seat faces would keep the valve smooth and efficient in its function.
2. The moment any trouble is noticed with the valve, examine and take corrective action when required.
3. Do not attempt any modifications/repairs arbitrarily. Utilize our services when required.
4. **IMPORTANT!** It is easy to identify the valve by the **SERIAL NUMBER** punched on the valve body. Try to quote the same whenever referring to us.

RECOMMENDED SPARES:

GATE VALVE: a) Packing
b) Gasket
c) Soft Seal Ring (Applicable for soft seated valves only)

GLOBE VALVE : a) Packing
b) Gasket
c) Soft Seal Ring (applicable for soft seated valves only)

SWING CHECK VALVE : a) Gasket
b) Soft seal Ring (Applicable for soft seated valves only)

TROUBLE SHOOTING

Nature Of Trouble (As Applicable)	Possible Causes & Remedy (Key No.
Seat Leakage A)	1,2,3,4,5,6,
Back Seat Leakage A)	7,8,9
Stem OD Gets Deep Scoring Along The Length A)	10,11
Leakage Through Packing A)	12,13,14,
Leakage Through Body-To-Bonnet/Cover Joint B)	15,16,17,
Leakage Across The Pressure Sealring B)	18,19,20
Seat Faces Get Damaged In A Short Duration A)	21

Key No.	Possible Causes	Remedy
01	Pipe-Lines are not Properly Flushed Prior to Installation	Flush Thoroughly
02	Sealing Faces of Seat ring and Wedge/Disc are Damaged	Remove the Damage by Machining (If Required) and Lapping
03	Soft Seal Ring (If Provided) is Damaged	Replace the Soft Seal Ring
04	Body-to-Seat ring Threaded Joint is Leaking Because of Damage on Body Face or Seat ring's Face	Remove the Damage by Machining (If Required) and Lapping
05	Body-to-Seat ring Seal-Weld Joint is Leaking	Weld the Leaking Spot.
06	Operating Torque is Insufficient in Case of Motor-Operated or Piston Actuated Gate/Globe Valve.	In Case of Motor Operation, Torque Setting can be Regulated From 40% To 100% and in case of Piston-Actuator, Air Supply Pressure can be Increased.
07.	Back-Seat Sealing Faces of Stem Collar and Bonnet are Damaged.	Remove the Damage by Machining (If Required) and Lapping.
08.	Bonnet-to-Bonnet Bush Seal Weld Joint is Leaking.	Weld the Leaking Spot.
09.	Bonnet-to-Bonnet Bush Press-Fitted Joint is Leaking.	Remove the Damage, If Any and Lap ahe Bonnet Face and Back-Face af Bonnet Bush.
10.	Back Seat Bore is not Concentric to Stem C/L.	Maintain Concentricity.

11.	Packing Contain Foreign Matter of Hard Particles	Replace With Clean Packing.
12.	Compression Load on Packing is Insufficient.	Tighten the Further.
13.	Packing Have Worn-out.	Operate the Valve to Full Open To Take Back Seating and Install Additional Packing or Replace All the Packing.
14.	Scoring on Stem OD Along Scaling Length	Avoid Scoring (Refer 9&10 Above)
15.	Gasket Sealing Faces of Body And Bonnet/Cover are Damaged	Remove the Damage Marks
16	Gasket is Damaged.	Replace
17.	Body Bolting are not Properly Tightened.	Bolting to be Tightened Uniformly and in a Crisscross Pattern.
18.	Insufficient Pre-Load	Tighten Bonnet-to-Yoke Nuts and Lock Nuts
19.	Pressure Seal Ring is Damaged	Replace.
20.	Sealing Faces in Contract Are Damaged.	Remove Damage
21.	Hardness is Low for the Service Conditions.	Provide Increased Hardness for The Seat Faces (Eg., Stellite-6)

GENERAL ARRANGEMENT OF CONSTRUCTION.

π Refer General – Assembly Drawing.

ASSEMBLY/DIS ASSEMBLY.

π Refer Assembly – Specifications of the Standard valves supplied on request.

APPLICABILITY.

A) Gate & Globe Valves.

B) Gate Globe and Check Valves.