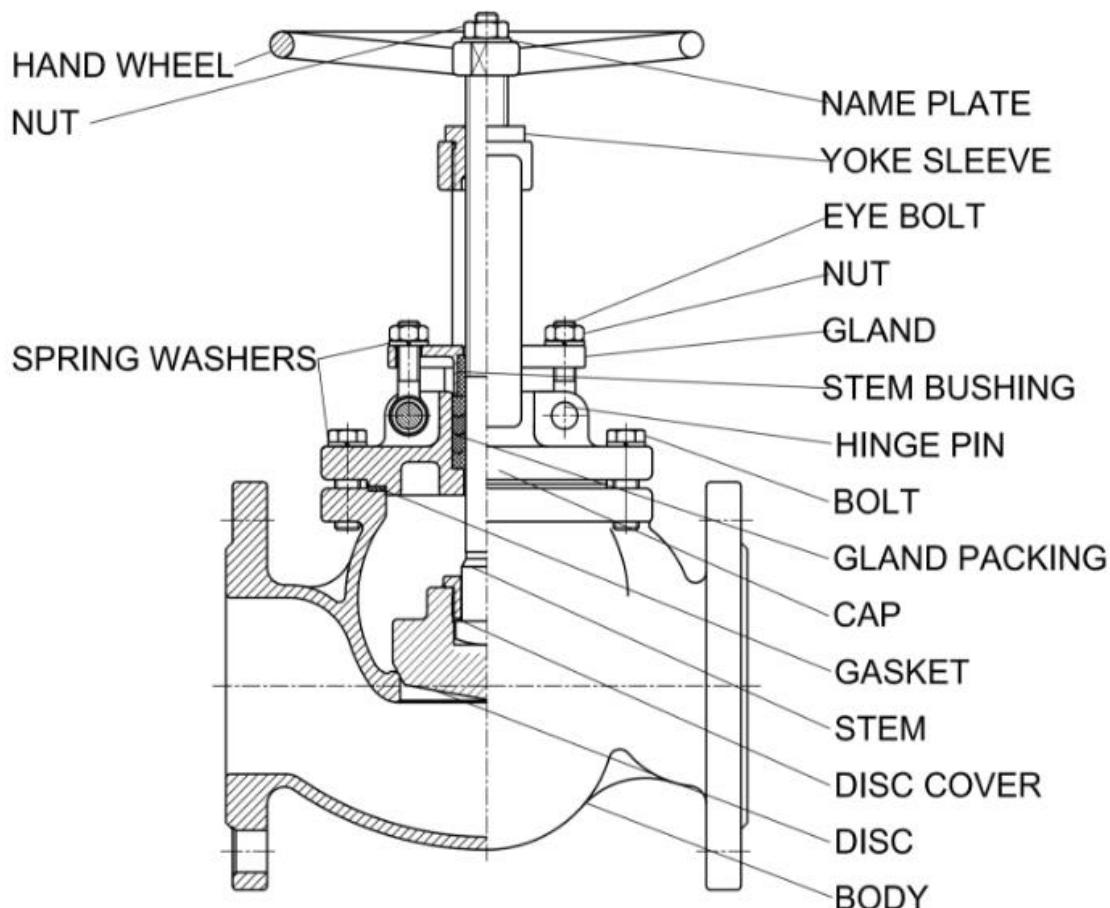


Installation, Operation, and Maintenance Instructions
Forged & Stainless-Steel Globe Valves
Series 31 & 316



1. Utilization

Globe valve may be assembled on the equipment or pipes, open or close the flow passage to control the fluid.

2. Operating Instructions

For the manual operating valve, turn the hand wheel; for the electrical actuator operating valve, operate the electrical actuator to open or close the valve. when turned clockwise, the wedge is dropped, and the valve is closed, so the flow passage is shut off; when turned counterclockwise, the wedge is risen, and the valve is opened, so the flow passage has opened.

3. Assembly

1. Before assembly, check the valve carefully, the main check items are the following:

- a. Check the inside passage, note whether there is dirt on the seats face, and if the seal surface is damaged.
- b. Check whether the stem packing is suitable, to assure the packing seal, but not to affect the turning of the stem flexible.

2. When assembled, check the valve mark carefully and see whether it is conformed with the requirement of utilization, and note whether the direction of the flow is conformed with the allow direction on the body.

3. It mustn't use the hand wheel or the delivery device, and it mustn't strike each other.

4. After assembling the valve, check whether the connected bolt is tightened evenly.

5. When assembling the valve, the location should be considered for the convenience of operation and maintenance.

After assembling the valve, the valve should be opened fully when its system or pipeline is pressurized.

4. Utilization

1. When it is working, open or close the disc fully, do not open the disc partly to adjust the rate of the flow to prevent the high speed from damaging the seal surface.
2. When it is working, inject some lubricating oil into the stem, as well as the thread of the stem nut often.
3. The hand wheel of manual operating valves must be designed and manufactured according to the open and close torque that operate the valve, the end customer shall not use the lever or other tool to enlarge the open and close torque.

5. Disassembly

1. Before disassembling, remove all the pressure that's between the inlet and outlet.
2. Once confirmed that there is no pressure on the pipeline, disassemble the bonnet, bolt, and nut and lift the bonnet component. Care should be taken to not damage the backseat.
3. Take gasket out of bonnet.
4. Turning around stem, take out the stem, separate the disc from stem. Disassemble bonnet component.

6. Maintenance

1. Check and maintain that the valve is working periodically, the main item as the follows.
2. Check the wear of the seat surface. If it is damaged, repair and replace it. Check whether the wear of the stem and the thread of stem nut.
3. Check whether the connected bolt and nut is connected steady.
4. Check the gasket, if the packing is damaged or invalid, replace it in time. But do not replace the packing when pressurized.
5. Replace packing
6. Turn around hand wheel, lift stem to counter closure, and confirm there is no pressure.
7. Use sharp tool to disassemble packing that needs to be replaced. It must

not scrape the surface of the stem.

8. Take out the packing, calculate the specification and ring number of it, then assemble the related new packing until stuffed up the stuffing box.
9. Tighten gland and lock the eye nut.
10. Loosen hand wheel to make stem dropped and check whether the packing is leaking. If there is leakage, lock the eye nut, then continue until there is no leakage.
11. After disassembling the valve, check it, then reassemble it. It shall be carried out the seat test. The seat test is carried out according to the related standard and make detailed records to be checked.

Problem, Cause and Solution Chart

Problem	cause	Solution
Packing is leakage	1. gland isn't tightened	1. tighten the gland nut evenly, press the packing
	2. packing ring number is not sufficient	2. add the packing ring number
	3. packing is invalid	3. replace packing
Seal surface is leakage	1. some dirt on the seal surface	1. get rid of the dirt on seal surface
	2. seal surface is damaged	2. repair the seal surface or replace the wedge, seat
Leakage between the body and bonnet	1. the connected bolt isn't tightened or it is tightened non-evenly	1. tighten the connected bolt evenly
	2. the flange seal surface or the pressure seal body, bonnet seal surface is damaged	2. repair the flange seal surface or the pressure seal body, bonnet seal surface
	3. gasket is invalid or the seal ring is damaged	3. replace gasket or repair metal seal ring
hand wheel isn't turned flexible or the wedge can't be closure	1. packing is tightened over	1. loose the packing gland nut suitable
	2. gland is aslant	2. check gland
	3. stem nut is damaged or dirty	3. repair the thread of stem nut, and get rid of the dirt
	4. thread of stem nut is worn seriously or cracked	4. replace the stem nut
	5. the stem is winding	5. check stem
Problem of electrical actuator	See the electrical actuator instruction	