

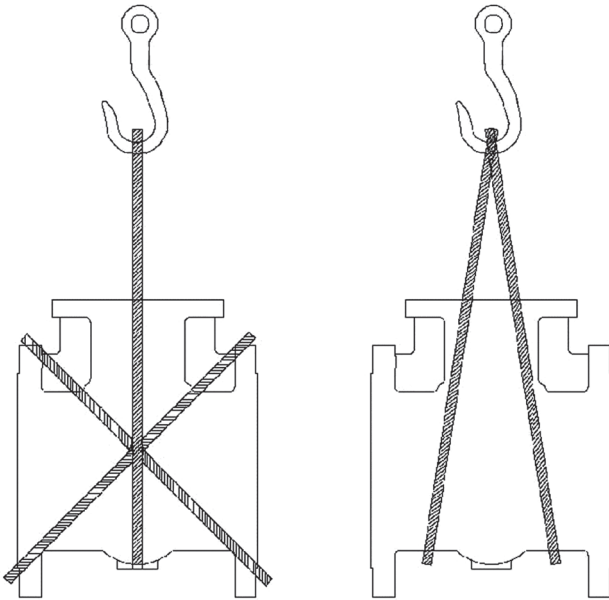
FIGURE 45XX - 46XX - 47XX - 55XX - 56XX - 57XX

FLANGED GATE, GLOBE & CHECK VALVES

SAFETY, STORAGE & PRESERVATION

SAFETY INSTRUCTION FOR TRANSPORTATION

Safety regulations must be complied with for transport to the place of installation. Confirm that the valves cannot tilt or slip in any way.



STORAGE & PRESERVATION

If the valve has to be stored before installation:

- Store it on horizontal level surface in dry and clean atmosphere.
- Store valves in a dust-free and well ventilated place with low humidity.
- In the instance that the valve is required to be stored for a long duration, ensure that rust preventive is applied on the machined corrodible surfaces.
- It is advisable to give a coat of grease on seat rings during the storage period and keep the valves in partly open position so that the seat surfaces do not gall. Keep the seat rings away from a dusty atmosphere.
- Gear box, electrical/hydraulic/pneumatic actuators & accessories should also be stored away from dust, dirt or any rainfall or water.

CAUTION

- It is recommended always to use the installation, operation & maintenance manual before installing, operating or repairing any gate, globe & check valve.
- Use specified/recommended MOC for specified application.
- Before installation, it is advised that user ascertain the compatibility of the material.

FIGURE 45XX - 46XX - 47XX - 55XX - 56XX - 57XX

FLANGED GATE, GLOBE & CHECK VALVES



SAFETY & INSTALLATION CHECKS

- Periodically ensure the tightness of body-adapter joint bolting, operatability and the electrical continuity of the valve.
- Always use dry, moisture-free air while opening the valve with pneumatic actuator or for cleaning purposes.
- Ensure that thorough ventilation is provided while working on the close equipment for oxygen transfer.
- Ensure that the end protections are removed before installation of valve in line.
- Do not drag the valve.
- Do not allow any such process which may generate spark in flammable environment.



WARNING:

The user is liable for any damage resulting from incorrect transport, storage and preservation.

CHECKS FOR THE PIPE-LINE BEFORE INSTALLATION

- a. Clean the pipeline thoroughly so that it does not contain any solid matter which may damage the valve internals.
- b. Avoid parallel, radial and angular mismatch between connecting flanges of valve and the pipeline.
- c. Upstream and downstream piping should be adequately supported and anchored (if required) in such a way that the piping system does not impose any forces and moments on the valve body and the hydraulic thrust arising due to valve closure is carried and sustained by valve supports. Valve flanges are not designed to carry any external loads and moments arising due to pipe expansions/contractions.
- d. Provide suitable concrete block for supporting the valves and to prevent any sagging caused by weight of the valve.
- e. Ensure that pipeline flanges are parallel and are mating the valve flange without leaving any parallel or angular gap between the flanges. Do not over-tighten the flange bolts/nuts to make the flanges parallel forcefully. Doing so may cause undue stresses in the valve flanges and body, leading to their deformation & malfunctioning.
- f. If the globe valves are supplied with by-pass arrangement (against specific order requirement), ensure the by-pass arrangement on the valve is intact.
- g. Ensure that there is adequate space available to accommodate the rising stem when valve is in fully open condition.
- h. Remove all material such as weld splatter, oil, grease and dirt from the pipe flanges.

FIGURE 45XX - 46XX - 47XX - 55XX - 56XX - 57XX
FLANGED GATE, GLOBE & CHECK VALVES



MAINTENANCE & INSTALLATION

MAINTENANCE INSTRUCTIONS

Valves should be inspected at least semi-annually, with additional inspections as dictated by service conditions.

MAINTENANCE CHECK PARAMETERS:

No.	Parameter to Check	Method of Checking
01	Leakage through Gland Area, Body-Bonnet/Side Piece Joint Gasket	Visual
02	Troubleshooting in Opening/Closing like Noise, Vibration	Feel
03	Condition of Body Seat Ring/Disc Seat Face—Scratches, Intactness	Visual & Feeler Gauge

WARNING:
Do not try to rectify the valve leakage by reworking of seats. Leaking seats have to be replaced with new GM genuine seats.

INSTALLATION OF GATE, GLOBE & CHECK VALVES

- Transport valve safely to the installation site using suitable hoisting gear dimensioned in accordance with the weight and size of the valve.
- Before installation, ensure that the valve end protectors are removed and gasket is placed for flanged end valves.
- Clean pipeline, seal and connecting flange.
- Never install the valve with the actuator on the underneath side in the pipeline.
- Preferred installation of gate valve is with stem vertical. Any deviation from vertical may affect performance. In no case should valve be installed with stem below horizontal.
- Preferred installation for check valve is horizontal with flow per directional arrow. Check valve may be installed in vertical application with flow up.
- Check valves require a minimum of 10 straight pipe diameters between inlet/outlet and other fittings or equipment.



FIGURE 45XX - 46XX - 47XX - 55XX - 56XX - 57XX

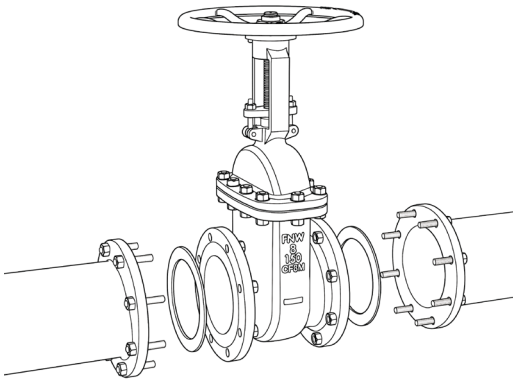
FLANGED GATE, GLOBE & CHECK VALVES



CONNECTING THE FLANGES

CONNECTING THE FIRST FLANGE

- Position the seal carefully.
- Secure the valve to the pipeline flange with a few bolts.
- Check that the valve and gaskets are correctly located in relation to the pipeline flange.
- Check the alignment of the valve and pipeline.
- Correct any discrepancies.
- Tighten the bolts crosswise.
- Torque flange bolting in multiple passes in accordance with gasket manufacturer recommendation.



CONNECTING THE SECOND FLANGE

- The second flange is installed in the same way as the first flange.
- Tighten the bolts crosswise.
- After installation, check for any leaks.
- After installation, the pipeline and valve must be rinsed through before the valve is actuated.

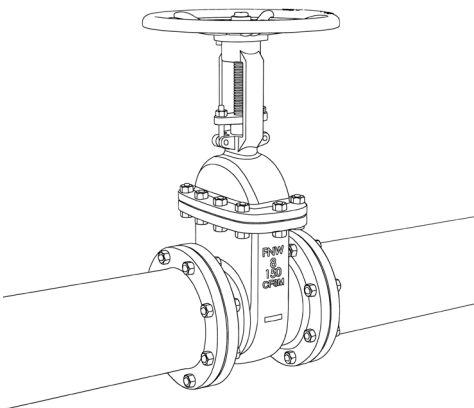


FIGURE 45XX - 46XX - 47XX - 55XX - 56XX - 57XX FLANGED GATE, GLOBE & CHECK VALVES



VALVE DISASSEMBLY

GATE VALVE DISASSEMBLY

- Remove the hand wheel nut (17), hand wheel (16), bonnet bushing (15), stem nut (14).
- Detach bonnet studs and nuts (11).
- Detach the eye bolts and eye bolt nuts (12).
- Remove the gland flange (9), gland bushing (8), and gland packing (7).
- Lift bonnet (2) upward from valve body (1) and set aside.
- Remove bonnet gasket (10).
- Remove back seat bushing (5).
- Lift stem (6) and wedge (4) assembly out of the valve body (1) using care not to scratch the seating surfaces.
- Remove seat ring (3) from body.
- Check gasket (10), change if required.
- All components should be stored in a clean place.

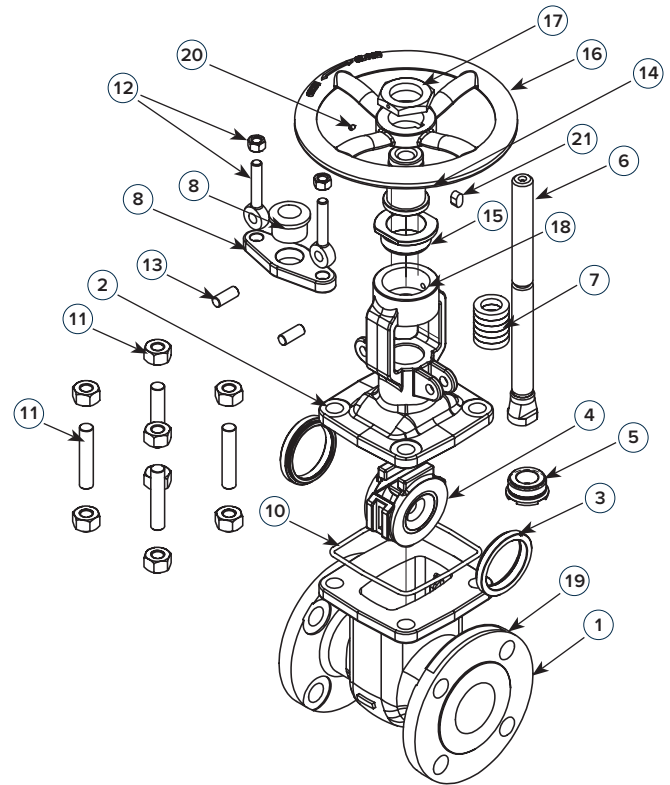


FIGURE 45XX - 46XX - 47XX - 55XX - 56XX - 57XX FLANGED GATE, GLOBE & CHECK VALVES



VALVE DISASSEMBLY

GLOBE VALVE DISASSEMBLY

NOTES:

- Do not attempt disassembly while valve is under pressure or in service.
- Always use appropriate personal protective equipment.
- Confirm there is no hazardous or volatile media contamination.

- Remove the hand wheel nut (14), hand wheel (13), yoke bushing (12).
- Detach bonnet studs and nuts (7).
- Detach the eye bolts and eye bolt nuts (11).
- Remove the gland flange (16), gland bushing (10) and gland packing (8).
- Lift bonnet (6) upward from valve body and set aside.
- Remove bonnet gasket (9).
- Remove back seat bushing (5).
- Lift stem (4) and disc (2) assembly out of the valve body (1) using care not to scratch the seating surfaces.
- Check gasket (9), change if required.
- All components should be stored in a clean place.

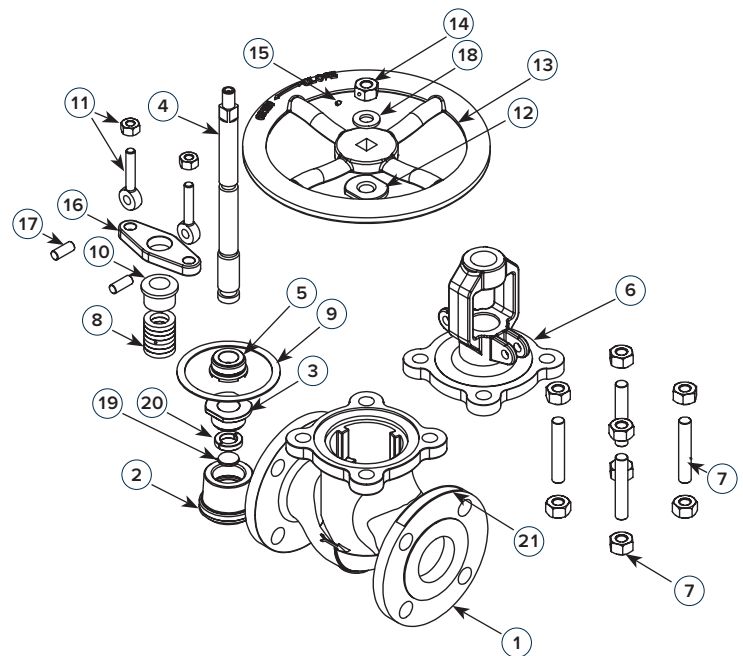


FIGURE 45XX - 46XX - 47XX - 55XX - 56XX - 57XX

FLANGED GATE, GLOBE & CHECK VALVES



VALVE DISASSEMBLY

CHECK VALVE DISASSEMBLY

- Unfasten and remove cover studs and nuts (11).
- Remove the cover (10).
- Remove the bonnet gasket (9).
- While supporting the disc (3) and hinge (7), remove the hinge pin (6).
- Lift the hinge (7) assembly out of the body (1). Be careful not to scratch any of the seating surfaces.
- To remove the hinge (7) from the disc (3), remove the stopper pin (13) and unfasten the disc nut (5).
- All components should be stored in a clean place.

