

Operating instructions Installation / Operation flanged ball valve series FG / FD

General information

- The valve may be fitted in any position in the pipework.
- The pipes must not have any tension.
- Do not carry out welding work on the flanges and pipelines when the ball valve has been installed, as this could cause damage to the valve.
- The ball valves are supplied with end caps for protecting the flange connections and the interior space of the valves. The caps must not be removed before installation of the valves.
- The ball valves are shipped in fully open position to prevent damage of seats and ball surface.
- **CAUTION:** The rotating ball may cause injury. Keep away from space between ball and body!

Flange connection:

The GEFA flanged ball valve series FG / FD is designed for mounting between DIN-flanges. It should be taken into account, that a valve which is designed for a particular flange standard cannot be normally used for other flanges. If pipeline flanges are to be used which are not in accordance with the specifications of the order, the manufacturer is to be consulted.

All standard flange seals can be used.

Mounting

- Prior to the mounting of the valve, flush the pipeline to remove all traces of soiling, welding residues, etc.
- Remove the end caps, flange facings must be undamaged and clean.
- Check whether the flange clearance is in accordance with the face-to-face dimension of the ball valve.
- Before mounting the valve, the flanges are to be sufficiently spread using a suitable tool.
- The valve must be completely opened.
- Insert the ball valve and the seals between the flanges.
- Install the valve with shaft top side or horizontal.
- Insert the flange screws and nuts.
- Remove the spreader and hand-tighten the screws.
- Check whether the valve, the seals and the counter-flanges are in true alignment.
- Tighten the flange screws crosswise using the specified torque.
- **ATTENTION:** Do not operate the valve before flushing, **the valve must stay in open position**, as otherwise the seats may be damaged!

Putting into operation

- Flush the ball valve and pipe thoroughly again.
- Open and close the valve for test run.

Mounting of actuators

- It must be ensured that the actuator is centred on the valve shaft.
- Before mounting the actuator the gland nut has to be secured by the security cap.
- The mounted actuator must not cause a thrust load on the valve shaft. If necessary the actuator must be fastened / supported. NOTE: In case of moving pipelines the fastening of the actuator must not be rigid.
- For working temperatures up to max. 140°C the actuators can be directly mounted. If temperatures are higher a mounting bracket should be used as thermal isolation between actuator and valve.

Removal

- Ensure that the pipeline has been rendered depressurised and emptied.
- Loosen and remove the flange screws and nuts.
- Spread the flanges using a suitable tool and remove the valve.

Operating instructions Maintenance / Storage flanged ball valve series FG

Maintenance

- The ball valves are maintenance-free.
- Should a leakage occur at the gland packing, retighten the gland nut/screws (12/21). Take care that the gland nut/screws are not tightened too much. Normally the leakage can be stopped by simply turning the nut/screws by 30° to 60°.

Replacement of seats and seals

- Ensure that the pipeline has been rendered depressurised and emptied.
- Loosen and remove the flange screws and nuts.
- Spread the flanges using a suitable tool and remove the valve.
- Close the valve.
- Loosen and remove the hexagon nuts (19) from the stud bolts (18).
- Remove the body connector (2) from the body (1).
- Remove seats (5), ball (3) and body seal (17). Be careful not to damage the ball.
- Remove handle nut/screw (15/25), hand lever (13/23 and 24) and stop plate (DN 65-100 / 22) respectively security cap (DN 15-50 / 27) and unscrew gland nut/screws (12/21).
- Take off gland flange (DN 65-100 / 20), disk spring washers (11), washer (26) and remove gland (10).
- Push stem (4) into the valve body and remove it carefully.
- Remove thrust washer (7) and primary sealing (8) from the stem.
- Remove stem packing (6) and thrust washer (9).
- Clean all parts, especially the sealing surfaces of the ends.

Assembly

- Put the thrust washer (7) and the primary sealing (8) on the stem (4) and insert stem from the inside of the body.
- Put stem packing (6), thrust washer (9), gland (10), washer (26) and disk spring washers (11) on stem.
- DN 8-50: Replace gland nut (12) and tighten. Avoid rotating the stem (4) by applying a suitable wrench. Secure the gland nut by mounting the security cap (27).
 DN 65-100: Replace gland flange (20) and fix it using the screws (21).
 See table tightening moments for gland nut/screws.
- Replace stop plate (DN 65-100 / 22), hand lever (13/23 and 24) and handle nut/screw (15/25).
- Insert ball (3), seats (5) and body seal (17).
- Leave ball in **closed position**, put the body connector (2) on the body (1) and tighten the hexagon nuts (19) crosswise (see table tightening moments for body screws).
- Open and close the valve for test run.
- **CAUTION:** The rotating ball may cause injury. Keep away from space between ball and body!

Tightening moments for body screws

Max. tightening moments must not be significantly exceeded.

DN	15/20	25/32	40/50	65-100 (PN16)	65-100 (PN40)
M [Nm]	15	30	55	55	120

Tightening moments for gland nut / screws

DN	15/20	25/32	40/50	65-100
M [Nm]	14	18	25	7

Storage

- Storage and transport of the valves to be dry and clean (without any dirt).
- Temperatures for storing: - 15°C to + 30°C
- In humid rooms drying material respectively heating is necessary to avoid condensation of water.
- Valves have to be protected against force (shock, blow, vibration etc.).
- During storage or transport the ball valve must be either in open or closed position (no intermediate position!).