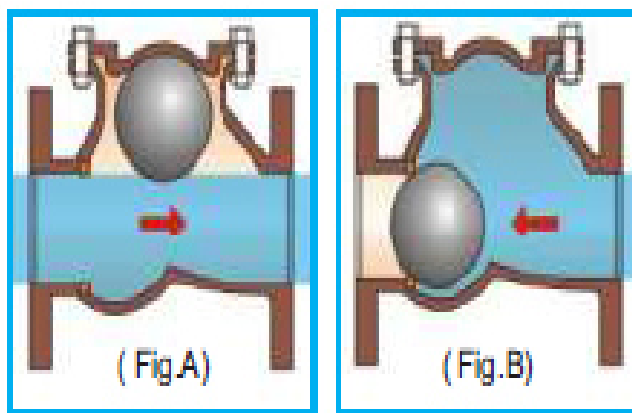
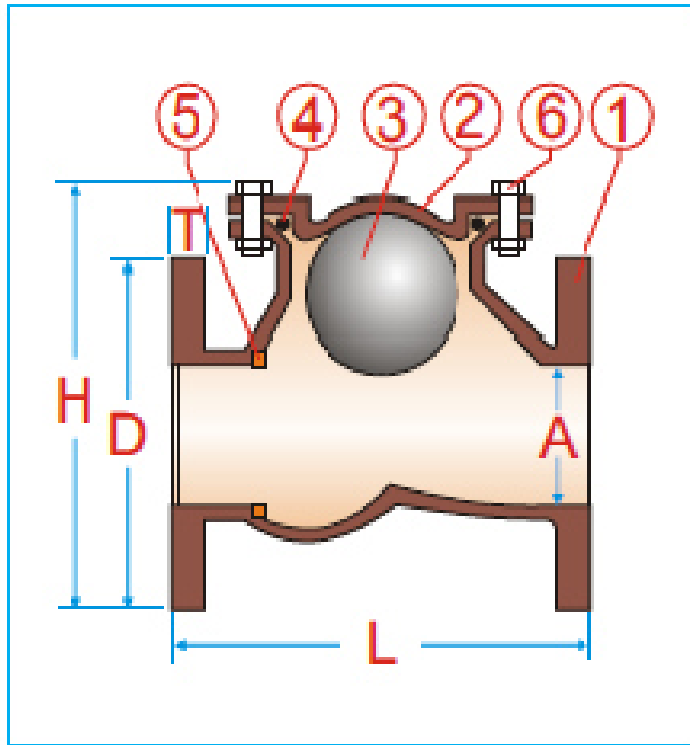


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INSTALLATION, OPERATION AND MAINTENANCE MANUAL FOR
NORMEX BALL CHECK VALVES FLANGED END (MODEL-B01)





Part List/Materials of Construction

| Part | Description | Standard | Special |
|------|-----------------------|---------------------------------|----------------------|
| 1 | Body | Cast Iron IS210,FG200(min)/GG25 | St.Steel, Cast Steel |
| 2 | Cover | Cast Iron IS210,FG200(min)/GG25 | St.Steel, Cast Steel |
| 3 | Ball | Nitrile Rubbercoated | EPDM,Neoprene |
| 4 | Cover Ring | Nitrile ASTM D2000 | Butyle,Viton |
| 5 | Ball Seat Ring | L.T.Bronze LTB2 | St.Steel,Hard Rubber |
| 6 | Fasteners | CarbonSteel CL4 | St.Steel |

1) Storage:

The valve, if required to be stored, it is advisable to keep with inlet and outlet bores in closed condition and valve to be covered with protective cover to avoid dirt and foreign material entering the valve. Store in a dry place to avoid rust.

2) Installation Procedure:

2.1) Pre –Installation:

- Remove all protection /Storage coverings on valves
- The valve, pipe, mating flanges should be clean of any debris, dirt, sharp protrusions etc.
- All equipments like spanners, nut-bolts, torque wrench, gaskets etc should be kept handy.
- Check for any foreign particles/dirt inside the valve and ensure that ball operates smoothly by simply pushing the ball from inlet side.

2.2) Installation:

- The valves can be installed in horizontal as well as vertical position.
- Please verify distance between flanges & drilling (pcd, no of holes and hole diameter) of valves and mating flanges are same.
- The valves to be centered to the axis of pipe.
- The mating flanges should be parallel.
- No welding work on pipe & flanges should be carried out after installation of valves. The ball and the seat can be seriously damaged if done so.
- While assembling valve look for direction of flow as shown by arrow on valve.
- Tighten the flanges with nut bolts with gaskets between the flanges.
- Valve should not be installed immediately after the pump in the turbulence zone. It is recommended the distance from pump should be 3 to 10 times pipe diameter, depending on flow conditions. Please take piping consultant recommendation for the same.

3) Operations:

The Non return or Ball Check Valves are not required to be operated. They open and close automatically. As the pump starts, the ball leave the seat and rolls towards the cover side allowing the onward passage of fluid. As the pump stops, due to self weight and back pressure, ball rolls back on the seat and prevents backward flow of the fluid. The Cast Iron Check Valves are rated for pressure as below-

25mm-125mm:1.6KPa(16 bar or 16kg/cm²)

150mm-300mm: 1.0KPa(10 bar or 10kg/cm²)

350mm-400mm:0.6KPa6 bar or 6kg/cm²)

Cracking/opening pressure is minimal (less than 0.5kg/cm)

4) Maintenance:

Ball Check Valves require no periodic maintenance or lubrications. They are designed as fit and forget type. If for some reason, periodic check is required to be made, to be done as-

- Inspect the fasteners on covers and flanges are tight and not rusty
- Check for no leakage from gaskets through valve cover and mating flanges.

5) Repairs:

Repairs, if any should be done by the competent person. There are very few replaceable parts in the valve. The ball and cover ring (gasket) are free parts and can be replaced easily on the installation point of the valves. To replace ball and cover ring, the valve is not required to remove from the pipe line. Please note that these parts cannot be repaired but can be replaced. The seat ring, if damaged will need special skills to replace.

5.1) To remove/replace ball and 'O' ring-

- It is not necessary to remove valve from the line. Make sure that pipe line is depressurized cold and drained.
- Keep spare ball and /or cover ring handy. Note that the diameter of ball and the cover ring is higher than the nominal diameter of valves.
- Remove the cover fasteners and cover from the valve top.
- Pull out the ball from the valve body. Discard if found cracked/damaged.
- Pull out rubber ring from cover. Replace with the spare one.
- Inspect the valve seat (usually Gun metal or SS) if damaged, follow procedure 5.2.
If not damaged insert the spare ball freely in the body, re install the cover and tighten the fasteners. If damaged, fastener also to be replaced.
- The valve is ready for operation.

5.2) If valve seat is damaged it is preferred to send the valve to factory for repairs.

6) Safety:

The fluids passing through the valve can be harmful to humans and/or surrounding. It can be toxic, corrosive, polluting, flammable, and unhygienic like sewage.

Therefore wear appropriate clothing, gloves, eye protectors, helmet etc.

Always verify the pipe line is depressurized and cold. Ensure pump shall not start accidentally.

We hope 'Normex' Ball Check Valves serves you with trouble-free operation years over years.