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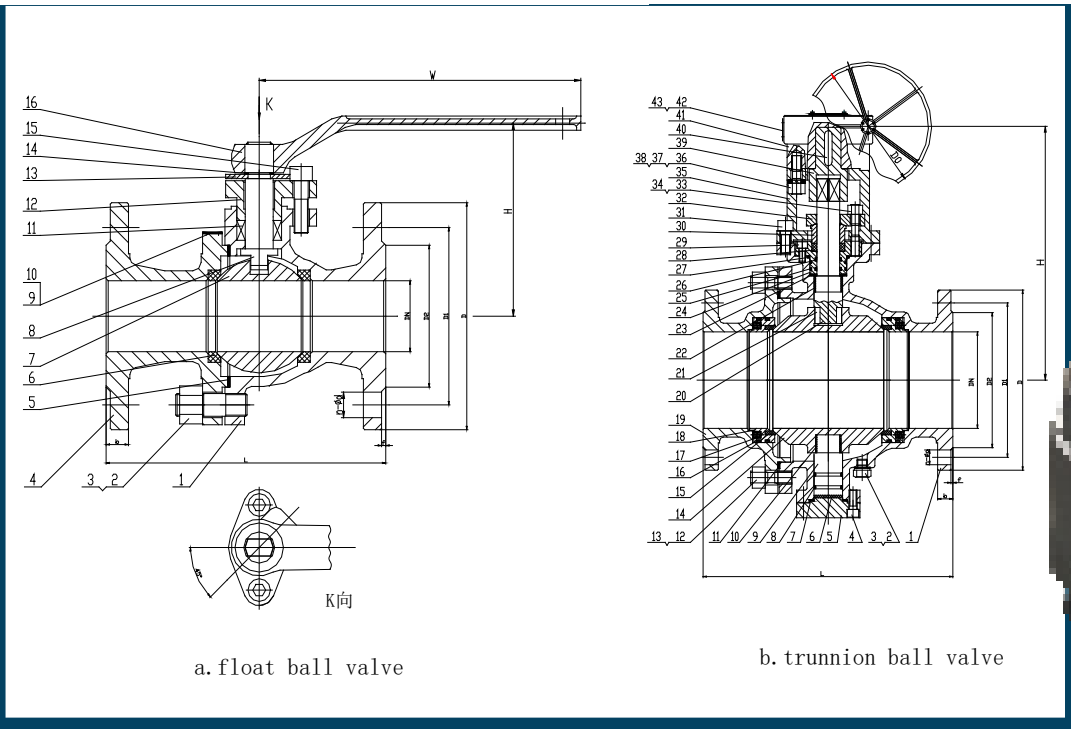
Ball Valve



a. float ball valve

b. trunnion ball valve

Applications

- Ball valves are used to open/close the flow in pipeline.
- The nature of applicable fluid depends on valve material:
- Carbon steel valve applies to non-corrosive fluid, such as water, vapor or oil etc.
- Temperature range depend on sent material:

PTFE ≤130C | PTFE +glass fibre ≤160C | PTFE +graphite ≤160C

Structure

- Ball Valve structure is shown in Fig. 1.
- Gaskets and packing are PTFE or GRAPHITE, they are used to secure sealing

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Operation

- The valve can be manually operated by using the handle for manually operated valves or motor-operated by the electric actuator for motor operated valves or pneumatic operated by pneumatic actuator for pneumatic operated valves. The valve open or closes by turning the ball. Clockwise turning to 90ºresults in valve open.
- The manually operated valve is opened when the handle and the position mark on stem end are parallel to pipeline. When that is perpendicular to the pipeline, the valve is closed.
- For motor/pneumatic operated valves, valve open/close is indicated by the positioner on the electric/ pneumatic actuator.

Storage, maintenance, installation and service

- The valve should be stored in dry room with good ventilation. Valve ends should be covered.
- For valve stored for a long period of time, regular checkup is required to ensure that the valves are in good conditions. Foreign particles should be removed and special care should be taken to keep the valve seat sealing surface clean and prevent any damage of sealing surface.
- Check the conformance of valve identification to the service requirements prior to installation.
- Check the cleanness of the valve cavity and sealing surface and sealing surface and wipe off any dirt with white cloth prior to installation.
- Before installation, the tightness of packing should be checked to ensure that sealing is secured without affecting the turning of stem.
- The valve shall be in full open position when conducting system or pip line pressure test after the valve installation.
- Ball valve shall be in full open or full close position while in service. partial opening for controlling the flow is not allowed.
- Manually operated valve should be operated by using the handle. Use of lowers or other tools is not allowed.
- Valve in service should be examined at prescribed intervals to see whether the wear of sealing surface or stem occurs and the gasket or packing fails. Repair or replacement shall be carried out timely if necessary.
- 5.10 “Electric valve actuator instruction manual” and “Pneumatic valve actuator instruction manual” should be referred with regard to the storage, maintenance, installation and service for motor-operated valve and pneumatic-operated valve respectively.

Ball Valve

Possible troubles, causes and solutions see table 1

Table 1

Possible trouble	Causes	Solution
Leakage through Packing	1.Packing not sufficiently pressed 2.packing failure	1.Tighten the nut to press packing evenly 2.Replace packing
Leakage through Sealing surface	1.Dirt attached to sealing surface 2.Sealing surface damaged	1.Clean off the dirt 2.repair the sealing surface
Leakage through body and bonnet connection	1.Bolting not even 2.Flange surface damaged 3Gasket failure	1.Bolting evenly 2.Repair the flange surface 3.Replace the gasket
Hand wheel not turning smoothly or valve not operated properly	1.Packing over-pressed 2.Gland slanted	1.Loosen the nut so that the packing properly pressed 2.Rectify the gland flange

Guarantee

Guarantee period is one year after service date no later than 18 months after delivery date. Valve failure due to material defectives, manufacturing problems, design unreasonable or any damage under normal operating conditions will be repaired or parts replaced free of charge by manufacturer within the guarantee period.