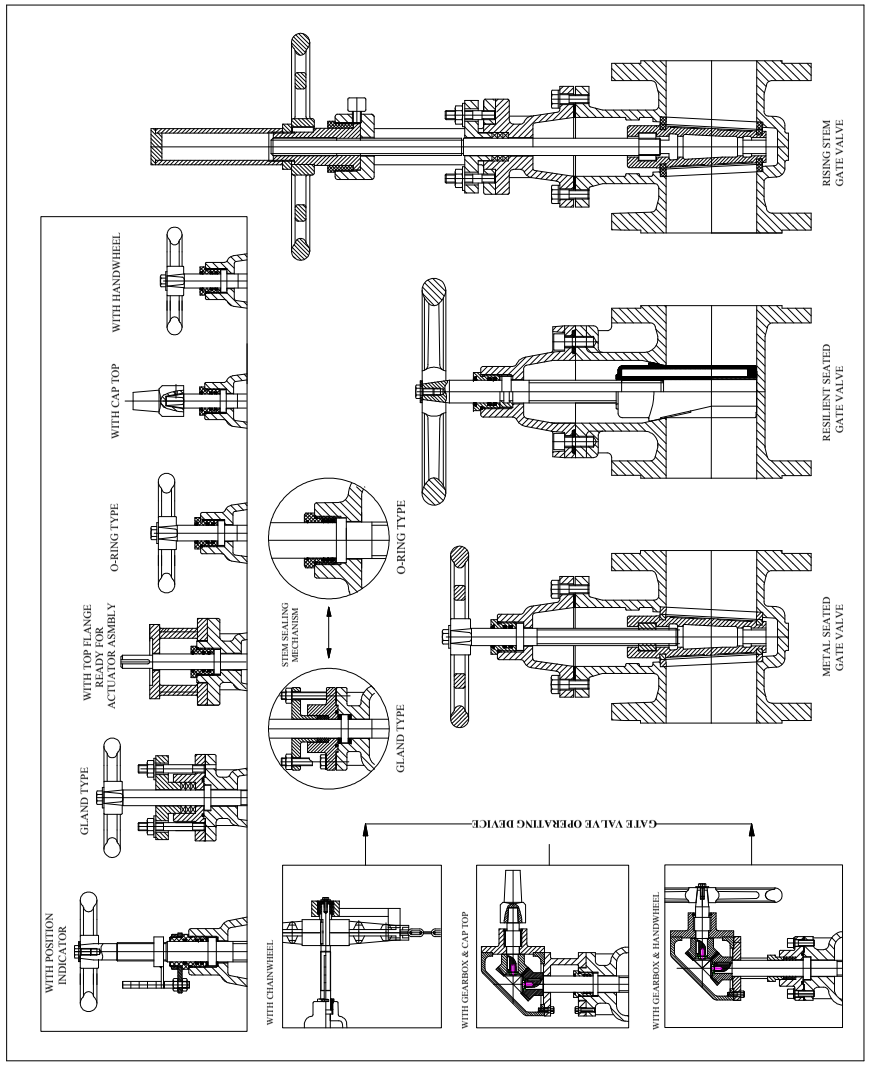
Size: DN40 – DN 1000
Pressure Rating: PN10 – PN 40



GATE VALVES OPERATIONS MANUAL

DESCRIPTION

DVD Gate Valves are of the bonnet type that provides sealing with metal-metal/resilient wedge. They have a revolving stem, provided with a functional thread, which is inside the valve chamber. During operation the stem revolves in the stem nut, which carries along a wedge. The stem is locked against axial movement by a collar fitted between the cover and the gland body. Stem, stem sealing mechanism and the wedge assembly can be dismantled without the body disassembled from the line, and maintenance can be achieved.

Warning: Make sure that the pipeline is not pressured, when removing the valve bonnet.

STORAGE

- Gate valves should be stored in a place where they will not be subjected to sunlight. They should be kept on wooden pallets, avoiding any direct contact of the valves with the ground.
- Gate valves should be protected from any external effects and mechanical damages in the storage place.
- During the storage, it should be assured that the wedges of the gate valves are in closed position.

INSTALLATION

- Allow enough space around the valve assembly for future maintenance/disassembly work.
- Ensure that a valve of correct size, specification and clean out rating is being used.
- During storage, keep the valve fully closed. It should be assembled to the pipeline in fully closed position.
- The flanges which the valve will be assembled should be in the same axis and the flange surfaces should be parallel to each other. Problems with sealing can be seen in case this is not obtained.
- The valve should be assembled by using the flange holes. It is very dangerous for the workers to lift the valve from any other place. Moreover, if the valve is lifted from any other direction, the valve can be damaged.
- The flanges should be connected only with the nuts and bolts that are specified. Otherwise, sealing problems can be seen.
- Before commissioning the pipeline, make sure there are no foreign particles in the pipeline. These particles can damage the sealing rings of metal seated gate valves.

OPERATION

- The operating pressure of the gate valve is specified on the product. The operating pressure should never exceed this value in case of commissioning. The gate valve should be protected from possible pressure surges and excessive operating pressures.
- The pressure differential across the valve wedge is an important aspect when considering the operation of the valve and this should not exceed the static

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operating pressure referred above. In order to have an ideal operation, the pressure differential should be kept minimum.

- Although standard valves are designed to withstand the pressures specified, should they be required to be operated against high differential conditions, it may be necessary to utilize anti-friction bearings and/or reduction gearing.
- Gate valves should be used for on-off only. Gate valves should not be used in semi-open position for flow regulation. In case of an operation as mentioned, high velocity of the medium and the foreign particles in the system can damage the sealing system of the valve.
- To **open** the valve, turn the hand-wheel **counter-clock wise**.
- To **close** the valve, turn the hand-wheel **clock wise**.

DISMANTLING

- Valve that is going to be disassembled must be closed and both downstream and upstream sides of the valve should be discharged.
- Valve should be secured to a crane or lifting equipment that is capable of lifting the valve. Valve should be connected to the crane from the lifting eye or from the flange holes. Lifting the gate valve from another direction is extremely dangerous for the workers and may damage the valve beyond repair.
- All flange bolts and nuts must be removed.
- Valve should be lifted with the help of the crane and stored according to storage instructions.

OPTIONS

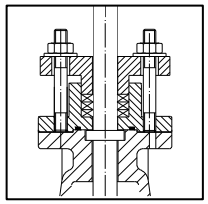
Wedge Material: Metal Seated – Resilient Seated
Stem Movement: Non-rising Stem – Rising Stem
Operation: Cap Top – Hand-wheel – Chain-wheel – Actuator – Gearbox
Accessories: Position Indicator – Extension Spindle – By-pass Valve

MAINTANANCE

- Gate valves are designed to have minimum maintenance.
- Inspect valves regularly and pay attention to the valves that are only operated occasionally. If the valve is not providing sealing even if it is fully closed, a foreign substance could be stuck to the wedge or for the metal seated gate valves the sealing rings could be damaged. Please dismantle the wedge assembly and act accordingly.
- Moving parts should be lubricated every six months, with good quality grease.

Gland Type Stem Sealing Mechanism Maintenance

Inspect gland packing regularly and adjust if necessary. The gland packing may harden, if the valve is inactive for lengthy periods. This requires replacement of packing. When packing the stuffing box stagger the joint rings, ensure the compression of the gland is even. Avoid excessive force when closing the valve.



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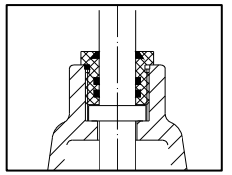
GATE VALVES OPERATIONS MANUAL

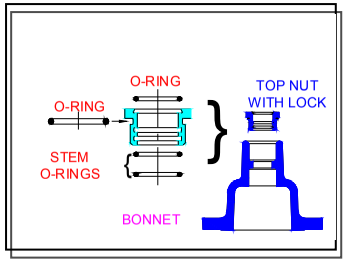
O-Ring Type Stem Sealing Mechanism Maintenance

Brass cap screwed to bonnet and having four o-rings. Four NBR o-ring maintains perfect sealing through the spindle; two of them in the cap and the last two under thrust collar. O-rings can be changed when valve is fully open under service.

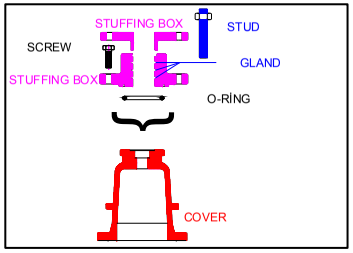


For both of the sealing mechanisms, original parts should be used for replacement. When ordering replacement parts, ensure that the body marking and identification plate details are quote.

Stem Sealing Mechanism Maintenance



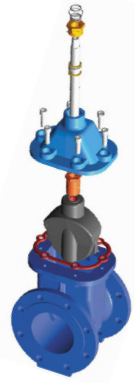
O-Ring Type



Gland Type

Metal Seated Gate

Rising Stem Gate Valve



Resilient Seated Gate Valve

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