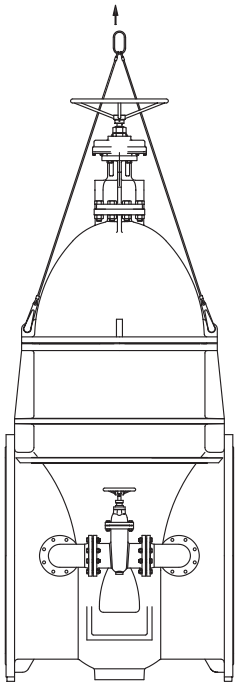
PENTAIR

RMI

Please read these instructions carefully.

This symbol indicates important messages and safety instructions.

Intended valve use
The valve is intended to be used in applications within the limits as indicated in the product manual only.



Storage and handling

1.1. Storage
Storage should be off the ground in a clean, dry, indoor area. Store the valve with the wedge in closed position.

1.2. Handling
The valve may only be handled with the wedge in CLOSED position. To prevent damage during lifting the valves should be lifted with appropriate lifting equipment. Lift the valve with great care from the transport package (crate, pallet). Prevent any damage to the valve, the pneumatic/electric/hydraulic actuator or any other instrumentation. Remove all packaging material prior to installation. Use a spreader if necessary.

2. Spare parts

Only original RMI spare parts are allowed to be used. Safe operation can not be guaranteed if third party spare parts are used.

3. Installation

WARNING

For safety reasons it is important to take the following precautions before starting to work on the valve:

1. Personnel making any adjustment to the valves should utilize suitable equipment. All required personal protection means should be worn.
2. The line must be depressurized before installing the valve.
3. Installation and handling of the valves should only be done by personnel that is trained in all aspects of manual and mechanical handling techniques.
4. Misuse of the valve is not allowed. The valve, handles, actuators and other parts may not be used as 'climbing tools'
5. Ensure that valve pressure/temperature limitations marked on the valves tagplate are within the service conditions. The trim number on the valves tagplate identifies the valve materials.
6. Ensure that valve materials are compatible with the pipeline fluid.

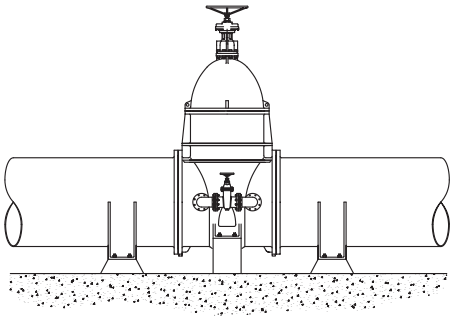
3.1. Visual valve inspection

1. Confirm that the materials of construction listed on the valve are appropriate for the service intended are as specified.
2. Check if valve and actuator are not damaged during transport or handling.

3.2. Flange and pipe compatibility

Check matching of flange drilling pattern of valve and pipe flange before assembly.
Use flange bolting in agreement with appropriate standard.
Check whether the distance between flanges meets the face to face valve dimension. Spread the flanges with adequate tooling for easy installation of the valve.

3.3. Valve installation



Carefully clean and degrease the flange surfaces. Clean the inside of the valve with compressed air. See the actuator user manual to prepare the actuator for installation of the valve.

1. Place the valve between the two spread flanges of the pipe.
2. Insert the gaskets between the flanges. Center the valve body and insert all flange bolts.
3. Maintain the valve flange alignment while gradually removing the flange spreaders and tighten the flange bolts hand tight.
4. Cross tighten all bolting to the proper torque.

Notes

- Gate valves should be installed in a horizontal line with vertical stem. Other orientation of the valve is possible but requires a special construction.
- Do not use the valve as a support for the pipeline construction. Adjacent piping must be positioned so that no piping stresses are transmitted to the valve flanges during or after installation.
- Handling and lifting of the valves during installation MUST be performed following the same instructions described in paragraph '1.2 Handling'.

Important

Mating flange faces should be in good condition and free of dirt and/or inclusions. Both pipe insides to be well cleaned.

3.4. Valve verification

Check the operation of the valve by operating it to 'full open' and 'full close' to verify the valve operation. The disc position indicator (if present) should move between the 'full open' and 'full close' indicators. In case of rising spindle valve type make sure the rising spindle does not interfere with surroundings and can move freely. Tighten stuffing box nuts just enough to prevent leakage. Do not over tighten. Follow instructions of actuators manufacturer for verification of actuator. Check if there is not leakage between body and bonnet. Tighten bolts if necessary. See table I for maximum tightening torque.

3.5. Sources of possible danger

This section contains some examples of possible foreseen danger sources.

3.5.1. Mechanical

Available space should be checked in order to avoid interference between moving parts and surroundings. Mechanical or electrical sparks caused on impact of valve and e.g. tooling or from the actuator are a potential source of ignition of surrounding atmosphere.

3.5.2. Electrical (if applicable)

If static charges or stray electric currents can initiate explosions the valve should be grounded to earth.

3.5.3. Thermal

If the valve is used in applications with a fluid temperature > 40°C or <-20°C the outside of the body should be protected by means of isolation against touching to avoid burning.
In case the valve is used in hot gas/fluid applications that might give exothermic reactions, precautions should be taken that the surface of the valve can not lead to danger for people or the direct environment

3.5.4. Operational

Closing a valve to fast may result in water hammer in the upstream part of the pipeline. Waterhammer results in excessive stresses in the valve and causes severe damage. Waterhammer should be avoided under all circumstances.
The wedge of a gate valve will drop when the valve operating mechanism is removed. Make sure that the wedge is in the closed position before removing the actuator.

3.6. Troubleshooting guide

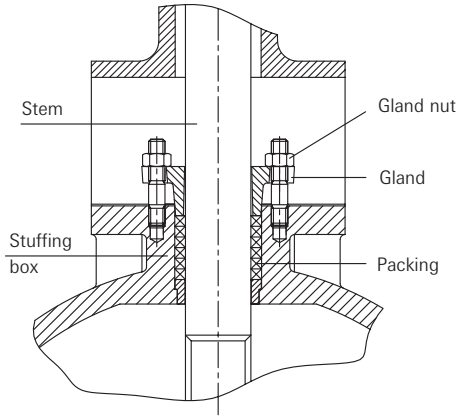
Symptom	Possible cause	Solution
Wedge will not move	Differential pressure too high	Lower pressure differential
	Valve packed with debris	Flush or clean to remove debris
Valve leaking	Valve not fully closed	Close valve
	Debris trapped in valve	Cycle and flush (with valve open) to remove debris
	Seat leakage	Check seat for damage
	Seat is damaged	If possible rework seat and re-adjust
Jerky operation	Debris trapped in valve	Cycle and flush (with valve open) to remove debris
	Air supply actuator inadequate	Increase air supply pressure and/or volume

For trouble with the actuator refer to the actuator manual

4. Maintenance

4.1. Routine maintenance

Verify monthly there is no leakage from gland or body-bonnet gasket. If the stuffing box is leaking: tighten nuts. (If leaking does not stop: see stuffing box maintenance) Regrease the spindle every three months with a good quality grease, for example Shell Rhodina 2. Open and closed the valve 1 to 2 times every six months to ensure proper functioning. Refer to the actuators manual for maintenance to the Actuator.



4.2. Stuffing box maintenance

Overtightening the gland nuts will increase the friction on the spindle, causing possible malfunction. The nuts should only be fastened slightly to stop leakage. If the nuts can not be fastened any further, the packing must be renewed.

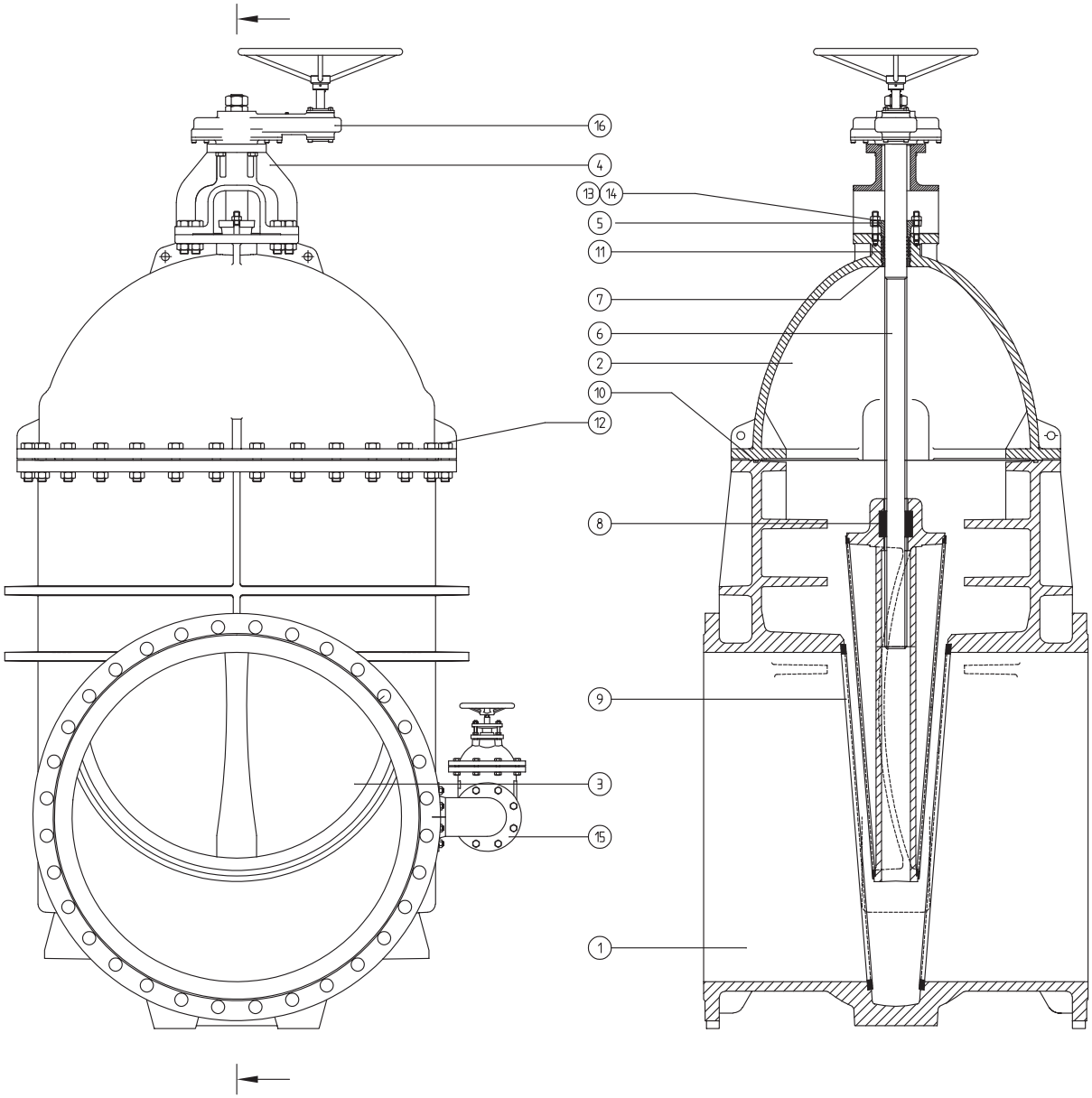
1. Turn the wedge in the 'fully open' position.
2. Depressurize the pipeline.
3. Remove gland nuts and slide gland upward.
4. Remove old packing.
5. Clean stem and stuffing box.
6. Insert new packing rings one by one. Make sure to rotate each next ring 60°.
7. Replace gland and gland nuts.
8. Tighten the gland nuts until leakage stops. Do not over tighten the nuts.

4.3. Valve (dis)assembly

Contact factory for complete valve (dis)assembly instructions and illustrated parts.

Maximum allowable bolt torques (8.8 quality bolts)

Bolt	Torque (Nm)
M12	79
M16	195
M20	390
M24	740
M27	1100
M30	1600
M33	2200



Parts list	
1.	Body
2.	Bonnet
3.	Wedge
4.	Column
5.	Gland
6.	Spindle
7.	Neck ring / bearing
8.	Spindle nut
9.	Wedge / body seat ring
10.	Gasket / O-ring
11.	Packing
12.	Bolts and nuts
13.	Stud bolts
14.	Nuts
15.	By pass (optional)
16.	Gear box

Actual valve can look different. Depicted one is RGH 1200 with by-pass.