

INSTALLATION AND TESTING

INSPECTION PRIOR TO INSTALLATION:

1. Visually inspect each valve for any foreign material in the interior of the valve, and remove it if present.
2. Inspect each valve in a similar manner as described in the "INSPECTION AFTER UNLOADING" section of this manual.

INSTALLATION:

1. All bolts should be checked for proper tightness and protected by the installer to prevent corrosion, either with a suitable paint or by a polyethylene wrapping.
2. Valves in water distribution lines shall, where practical, be located in easily accessible areas.
3. During installation there is the possibility of foreign materials inadvertently entering the valve. Foreign material can damage the internal working parts during operation of the gate valve. For this reason, gate valves should be installed in the closed position. Each valve should be placed on firm footing in the trench to prevent settling and excessive strain on the connection to the pipe. Piping systems should be supported and aligned to avoid damage to the valve.
4. A valve box or vault should be provided for each valve in a buried-service application. The valve box should be installed so as to not transmit shock loads or stress to the valve. The valve box should be centered over the operating nut of the valve with the box cover flush with the surface of the finished area or such other level as directed as directed by the owner. Valve boxes should be of such design that a traffic load on the top of the box is not transmitted to the valve.
5. Valves buried in unusually deep trenches should have special provisions for operating the valve. Either a riser on the stem to permit use of a normal key or a notation on the valve records that a long key will be required.
6. When valves with exposed gearing or operation mechanisms are buried below ground, a vault designed to allow pipe clearance and prevent settling on the pipe should be provided. The operating nut should be accessible from the top opening of the vault with a valve key. The size of the vault should provide for easy removal of the valve bonnet and internal parts of the valve for purposes of repair. Consideration should be given to the possibility of groundwater and/or surface water and to the need to provide the disposal of such water.
7. Valves installed above ground or in a plant piping system should be supported and aligned to avoid damage to the valves. Valves should not be used to correct the misaligned piping.
8. If installing a larger valve that uses a smaller bypass valve, install a second valve box over the bypass valve operating nut.
9. Tighten the bolts and nuts in the crossover method shown in Fig. 2, to load the pipe and valve evenly and prevent stress on the joints.

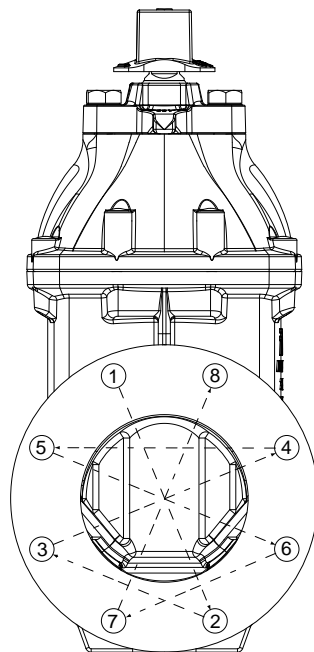


Fig. 2

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TESTING AFTER INSTALLATION:

In order to prevent time searching for leaks, it is recommended that valve excavations not be backfilled until after pressure tests have been made. After installation it is desirable to test newly installed piping sections, including valves, at some pressure above the system designed pressure. The test pressure should not exceed the rated working pressure of the valve. After the test, steps should be taken to relieve any trapped pressure in the body of the valve. The resilient-seated gate valve should not be operated in either the opening or closing direction at differential pressures above the rated working pressure. It should be noted that valves seat better at or near the rated working pressure of the valve. It is also recognized that wear or foreign material may damage valve seating surfaces and may cause leakage.

On completion of the installation, valve location, size, make, type, date of installation, number of turns to open, direction of opening, and other information deemed pertinent should be entered on permanent records.

APPLICATION HAZARDS:

1. Resilient-seated gate valves should not be installed in lines where service pressure will exceed the rated working pressure of the valve.
2. Resilient-seated gate valves should not be used for throttling service unless the design is specifically recommended for that purpose or approved in advance by the manufacturer.
3. Resilient-seated gate valves should not be used in applications that are exposed to freezing temperatures unless sufficient flow is maintained through the valve or other protection is provided to prevent freezing.
4. Pipe, fittings, and valves installed in underground pipelines are generally joined with push-on or mechanical joints. These joints are considered unrestrained-type joints since no considerable restraint against longitudinal separation is provided.
5. Gate valves should not be installed in a dead end or near a bend in a pipeline without proper and adequate restraint to support the valve and prevent it from blowing off the end of the line.
6. It is good engineering practice to consider during the design whether or not thrust blocks, restrained joints, or other means of restraint are needed on or adjacent to valves on pipelines and/or where unusual conditions exist, such as high internal pressures, adjacent fittings, or unsuitable soils.
7. To prevent damage, 3-in. (75mm) and 4-in. (100mm) NPS resilient-seated gate valves should not be operated with input torques greater than 200 ft-lb (270 Nm). Gate valves 6-in. (150mm) NPS to 16-in. (300mm) NPS should not be operated with input torques greater than 300 ft-lb (406Nm), Gate Valves 18-in. (450mm) NPS to 24-in. (600 mm) should not be operated with input torques greater than 375 ft-lb. Valves equipped with gearing should not be over loaded as this may damage the valve. As a general rule, valves equipped with gearing should not be operated at a torque exceeding 1/3 of the operating torques mentioned above.