Steamco Valve Company

Installation, Operating and Inspection Manual

This manual has been prepared by The Steamco Valve Company with the objective of assisting the valve user in obtaining years of satisfactory service with our line of Cast Iron Gate, Globe, Swing Check and Lubricated Plug Valves.

Before beginning any major work, we recommend that you carefully read this booklet at least once to understand the valve's physical construction.

Responsibilities:
As stated in "MSS-SP-92", there are a vast variety of valve types that are offered by the valve industry. Some types of valves may or may not be suitable for the intended purpose required by the end user. It is the responsibility of the purchasing agent to insure that the required valve is purchased correctly and that the valve supplied is correct for the intended service.

Our company has the responsibility to supply the product that is required, and that it is machined, tested and shipped according to our customer's purchase order. The valves we supply shall meet or exceed the industry standards. Our valves are guaranteed against poor quality and workmanship.

Steamco Valves are designed and manufactured in accordance with MSS-SP-92 and all dimension are in inches.

Bending Strength.
Cast Iron Valves at no time should be subjected to any extra mechanical constraints of the piping system.
Care should be taken to insure that in the design of the piping system no bending, contraction, expansion or any additional force shall be applied to the valve.

Fire Safety.
Steamco cast iron valves are <u>not</u> fire safe. They are not designed to be installed in a FM or UL service.

Materials and Tests.
Steamco Valves are manufactured with materials that conform to or exceed industry standards. Metallurgical laboratory reports are prepared from each heat along with a test sample for tensile and yield strength. Customers can request Material Test Reports and Physical Test Samples for their review if required. Test Reports can be supplied.

Testing.
All valves are tested to API 598. We can also perform Anchor Pattern, Coating Thickness and Holiday Testing of coatings

Independent Testing.
Third party examiners have audited the Steamco Valve Company and it is through this rigorous testing and inspection that Steamco Valve Company ensures High Quality and Reliability of our products.
Auditing Party:
Haile and Associates, Inc.
Telephone (281) 448-9725
Fax# (281) 448-8722

Coating.
Coatings can be supplied per customer request. The working surface of each component is coated with Dupont "25P" gray epoxy coating. This coating has an excellent resistance to abrasion and corrosion and is also non-toxic. Other coatings are available upon request.

Transportation Preparation.
Every Steamco valve is properly prepared for shipment with ends protected and covered to impede the entrance of any foreign matter into the valve as well as protecting the machined surfaces of the flange face. All discs in Swing Check valves are held in place with a wooden brace, so there will be no movement during shipment that could cause damage to seating surfaces of the seat ring or disc.
All valves are either packaged in a wood crate or banded to a pallet and covered with a plastic sheet.

Handling and Preparation.
On large valves, a hoist is needed to assist installation. A sling should be placed under the valve body so that the unit can be lifted vertically. (sling should not be placed around the valve stem or under the hand wheel).
End protectors must be removed and flange facings checks for cleanliness. Any visible foreign matter must be removed.

Special Instructions for Gate Valves.
The flow from gate valves can be from either end. There may be exceptions to this when a by-pass piping is attached to the valve body. Check piping layout drawing to ensure correct position and direction of flow. Gate valves should be installed in the pipeline with the wedge or disc in the fully closed position, to insure no dirt can damaged the seating surfaces.

Special Instructions for Globe Valves.
Globe type valves are usually installed with the inlet below the valve seat. This has to be checks carefully to prevent incorrect installation. Globe type valves should be installed with the disc in the fully closed position to prevent damage to the valve during installation.

Special Instruction for Swing Check Valves.
Check valves must first have the wooden brace removed. Check valves must be installed with the inlet in direction of the arrow and with the cover vertical. This has to be checked carefully before installing the valve. The placement of a check valve in the opposite direction will prevent the disc from swinging free and, therefore prevent normal operation of the valve.

Pressure Surge.
With Swing Check Valves the closure is instantaneous and consequently a pressure surge may occur. A Weight & Lever designed Swing Check Valve can be adjusted for minimum pressure surge in the line.

Special Instructions for Lubricated Plug Valves.
The flow can be through either end of the valve. Plug valves should be installed in a closed position to insure that no debris will damage the seating surface or attach to the lubricant damaging the valve.

Bolting in Place.
Lower strength should be used with Cast Iron Flanges to reduce the risk of over stressing the flanges by applying excessive bolt pre load. Full-face gaskets are recommended. The flanges of the piping system should be parallel to each other. Measurements should be taken to insure that the flanges are parallel. Failure to do this could cause damage to the flanges.
Operation.
All valves require checking before being placed into operation. In addition, regular inspection is recommended during operation. Prompt attention should be paid when trouble arises. As a general rule, valves should be subjected to a scheduled maintenance program. In addition regular inspection is recommended.

Smoothness of Operation.
Lubrication of yoke nut, gearing and other working components outside the fluid area should be performed frequently and at least once every six months. Valves that are not operated frequently and which may remain open or closed for long periods of time should be worked even if only partially about once a month.
Important: Excessive hand wheel effort can indicate the following:
Improperly lubricated or damaged valve stem
Valve packing compression too tight
Faulty or damaged valve parts

Seat Tightness - Closing Torques
Even a new valve with seating faces lapped to perfection and a full seat wedge or disc contact will be pressure tight only when sufficient stem load is applied. The minimum stem load for each size valve and operating pressure varies, of course, but should be known by the operating personnel in order to seat the valve properly. Slight over-torquing should not damage a properly designed valve.
<u>Caution: Do Not Use Cheaters (Rim Wrenches) on hand wheel</u>

Packing Chamber Leakage.
If moisture or dripping occurs around the stem or the I.D. packing chamber the following points must be investigated before removing the packing.

1) Check if the packing flange is torqued down to the correct torque.
2) Check if the gland bushing is binding against the packing chamber wall or stem. If so open the valve to the backseat position and firmly tighten up on the seat. Loosen the packing flange and realign the gland bushing. Tighten up the packing flange a little at a time on each side, then torque down to the correct torque.
3) After retightening, cycle the valve 3 to 5 times and retighten the nuts to original torque values

Removal of Packing Rings.
Use of Backseat
Steamco Valve Company is provided with stem backseats. However, valve manufactures in general do not recommend this practice due to the inability of determining the effectiveness of the backseat seal.
The decision of the effectiveness basically lies with the user. To backseat a valve, it is necessary to open the valve fully and tighten the stem against the backseat firmly.

Removal of old packing using a special flexible removal tool. The removal tools have special hooks, which screw into the packing ring. Removal of the packing rings is a difficult and time-consuming operation. Care has to be taken not to scratch the stem of the walls of the packing chamber during the removal of the packing rings.