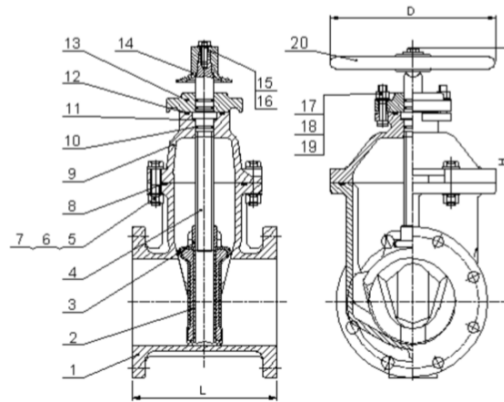


# Installation, Operation and Maintenance Manual

## 802 Series



### PARTS LIST

NO.	PART NAME	MATERIAL
1	BODY	DUCTILE IRON A536 65-45-12
2	WEDGE	DUCTILE IRON A536 65-45-12
3	WEDGE NUT	EPDM ENCAPSULATED
4	STEM	BRONZE C95200
5 / 6 / 7	BOLT / WASHER / NUT	STAINLESS STEEL A2-70 / A2-70 / A4-70
8	O-RING	STAINLESS STEEL 5S304
9	BONNET	NBR
10	O-RING	DUCTILE IRON A536 65-45-12
11	THRUST WASHER	NBR
12	O-RING	BRONZE C95200
13	GLAND	NBR
14	O-RING	DUCTILE IRON A536 65-45-12
15 / 16	BOLT / WASHER	DUCTILE IRON A536 65-45-12
17 / 18 / 19	BOLT / WASHER / NUT	STAINLESS STEEL A2-70 / A2-70 / A4-70
20	HANDWHEEL	DUCTILE IRON A536 65-45-12



### LAYOUT AND SITING

It should be considered at the design stage where valves will be located to give access for operation, adjustment, maintenance and repair.

Valves must be provided with adequate support. Adjoining pipework must be supported to avoid the imposition of pipeline strains on the valve body, which would impair its performance.

Heavy valves may need independent support or anchorage.

Gate valves may be installed in:

- a) Horizontal pipework with stem vertical.
- b) Vertical pipework with stem horizontal.

The valve should not be installed in horizontal pipework with the stem horizontal because shut off performance may be impaired. In the interests of safety, valves installed on end-of-line service in the closed position with infrequent opening should be fitted with a locking device on the operating mechanism. Alternatively, it should be fitted with a blanking flange on the downstream flange of the valve.

## **INSTALLATION**

Prior to installation, a check of the identification plate and body marking must be made to ensure that the correct valve is being installed.

Valves are precision manufactured items and as such, should not be subjected to misuse such as careless handling, allowing dirt to enter the valve through the end ports, lack of cleaning both valve and system before operation and excessive force during bolting and handle operation. All special packaging material must be removed.

Valves must be provided with adequate support. Adjoining pipework must be supported to avoid the imposition of pipeline strains on the valve body, which would impair its performance.

Valves should not be lifted using the stem. Immediately prior to valve installation, the pipework to which the valve is to be fastened should be checked for cleanliness and freedom from debris.

Valve end protectors should only be permanently removed immediately before installation. The valve interior should be inspected through the end ports to determine whether it is clean and free from foreign matter. The mating flange (both valve and pipework flanges) should be checked for correct gasket contact face, surface finish and condition. If a condition is found which might cause leakage, no attempt to assemble should be made until the condition has been corrected.

The gasket should be suitable for operation conditions or maximum pressure/temperature ratings. The gaskets should be checked to ensure freedom from defects or damage.

Care should be taken to provide correct alignment of the flanges being assembled. Suitable lubricant on bolt threads should be used. In assembly, bolts are tightened sequentially to make the initial contact of flanges and gaskets flat and parallel followed by gradual and uniform tightening in an opposite bolting sequence to avoid bending one flange relative to the other, particularly on flanges with raised faces.

Parallel alignment of flanges is especially important in the case of the assembly of a valve into an existing system.

Flanged joints depend on compressive deformation of the gasket material between the flange surfaces. The bolting must be checked for correct size, length, material and that all connection flange bolt holes are utilized.

At the conclusion of installation and before operating, all dust deposits shall be removed from the equipment.

## **OPERATING**

The valve is opened by anti-clockwise rotation of the post indicator to a positive stop. Further effort is not necessary. When fully open it is advantageous to rotate the post indicator clockwise 1/2 turn.

To close the valve, the post indicator is rotated clockwise to a positive stop. Wheelkeys or other similar devices should not be used.

**Note:** When the valve is closed at extreme high temperature and then cooled, the wedge may become tight in the valve and prove difficult to open.

Conversely, a valve closed at room temperature can be difficult to open if there is an increase in fluid temperature causing a linear expansion of the stem, which tightens the wedge further into the body seats.

The valve should only be used in the open or closed position. Regulating or throttling service should be avoided.

## **MAINTENANCE**

The valve should be at zero pressure and ambient temperature prior to any maintenance.

Maintenance Engineers & Operators are reminded to use correct fitting tools and equipment. Tools causing showers of sparks are only permissible if:

No hazardous explosive atmosphere is present. Dust deposits have been removed and no dust cloud is present.

A full risk assessment and methodology statement must be compiled prior to any maintenance. This must include the removal of dust deposits by good housekeeping.

The risk assessment must take into account the possibility of the limits of use being exceeded whereby a potential hazard could result.

A maintenance programmer should therefore include checks on the development of unforeseen conditions, which could lead to failure.

In systems where corrosion could be a potential hazard, wall thickness checks on the body and bonnet should be made. This requires either the removal of the valve from the pipeline or removal of the bonnet with the system at zero pressure. If the wall thickness has reduced by 25%, the valve must be replaced.