



KEYSTONE WINN SURE-SEAL RUBBER LINED BUTTERFLY VALVES

OPERATION, INSTALLATION AND MAINTENANCE INSTRUCTIONS

Before installation these instructions must be fully read and understood



GENERAL

The Winn Sure-Seal is a new generation of high quality butterfly valves which incorporate a bonded resilient liner and give additional benefits of easy replacement and a wide choice of materials.

1 STORAGE

1.1 Storage conditions

Environmental conditions may be particular harmful to vulcanized rubbers, therefore the careful choice of storage conditions is important.

1.2 Temperature

The storage temperature should be between 10°C and 25°C.

1.3 Humidity

Moist conditions should be avoided; storage conditions should be such that condensation does not occur.

1.4 Light

The valve shall be protected from light, in particular direct sunlight and strong artificial light with a high ultra-violet content.

1.5 Ozone

Since ozone is particularly harmful to vulcanized rubber, storage rooms should not contain any equipment that is capable of generating ozone, such as mercury vapor lamps, high voltage equipment, electric motors or other equipment which may give rise to electric sparks or silent electrical discharges.

2 INSTALLATION

2.1 Wafer design

This valve is of the wafer design intended for 'sandwiching' between two pipe flanges by means of through bolting and is supplied with locating holes or lugs to ensure that the valve blade is positioned centrally in the pipeline and does not foul the pipe when opened.

It should be noted that the valve can be positioned either with the valve spindle sitting vertically or horizontally.

As the valve liner extends over the flange faces this forms a 'built in' gasket between the mating flanges, therefore no flange joints are required when using these valves. To ensure a perfect flange seal, the mating flange faces should be bolted up until there is a metal contact between the flange faces and the valve body. Care should be taken to ensure that no sharp edges or burrs are left on the flange face as this may damage the liner.

2.2 Lug design

The foregoing applies when the valve is fitted in a 'line end' situation, spigots on both the body bore and seat outside diameter restrict axial movement of the seat. The valve must be fitted with spigots to the open end, see Fig. 1. The spigotted end can be easily be identified by measuring the radial width of the outer rubber seal, the spigotted end seal being 1/16" (1.5 mm) narrower.

2.3 Manual operators

Valves fitted with manual operators have hand levers or handwheels sized to ensure ease of operation, and under no circumstances should wheel spanners or additional leverage be applied to open or close the valve. All geared operators are fitted with built in stops and these are set in our works before dispatch. These settings should not be altered. Where valves are supplied without handwheels, reference should be made to appropriate contract drawing for recommended operator input torques.

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3 MAINTENANCE

No maintenance is required other than periodic inspection to ensure satisfactory operation and satisfactory sealing of the valve spindle.

If the valve is fitted with an enclosed geared operator, it is recommended that at least once every year, if possible, the gearbox cover can be removed and grease added if necessary (for appropriate grease see gearbox nameplate).

4 DISMANTLING

The valve should be suitably supported and then removed from the pipeline after withdrawal of the flange bolts. Remove the operator by releasing the necessary bolts and lift directly off the valve any mounting plates or brackets, if fitted, being removed next.

WARNING

Before attempting any maintenance, ensure that the system has been depressurized and if necessary, drained of all dangerous chemicals.

4.1 Wafer design

To dismantle the valve, the plastic plug (12) in the tail end should be removed making the tie bar visible. The nut (8) should be removed and discarded.

With the valve in the part open position the upper shaft (5) should be removed either by pulling the shaft from the drive end, or by pushing the bar (7) from the tail end, of the valve.

The lower shaft (6) can now be removed using a piece of bar pushed through the disc from the drive end.

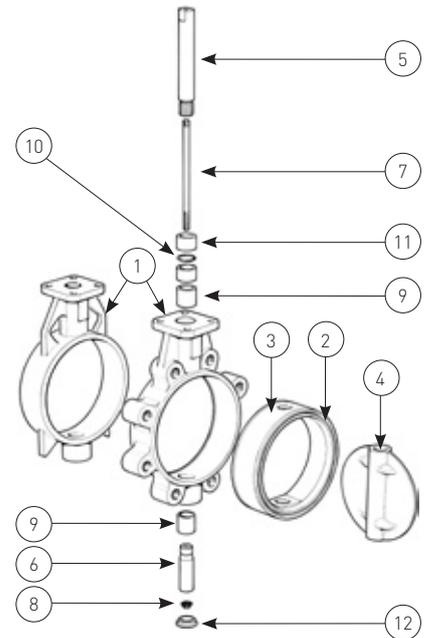
Having removed the lower-shaft, this disc (4) can be removed from the seat using a soft hammer.

The liner (2) can now be removed from the body (1) by simply slicing or knocking it axially through the body bore.

The wiper seal (10) can be prized from its location using a sharp instrument or wire.

4.2 Lug design

The foregoing applies with the exception the liner can only be removed from the body in one direction - see Fig. 1.



Item	Component
1	Body
2	Liner
3	Backing ring
4	Disc
5	Shaft (upper)
6	Shaft (lower)
7	Shaft tie bar
8	Tie bar nut
9	Shaft bearing
10	Wiper ring
11	Ring retainer
12	Body plug

NOTE

DN 350 and above have single piece shaft and pin design.

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5 ASSEMBLY

5.1 Wafer design

The liner (2) should fitted into the body (1), and the shaft bores aligned.

As the dimensions across the disc 'flats' results in an interference fit in the region of the spindle bore, the disc (4) should be carefully pressed into the seat until the drive end of the body.

Apply silicone grease around the seating surface of the liner to aid assembly. Ensure the tie bar (7) is secured by the upper shaft (5).

A missing spline on the upper shaft and disc ensure the keyway is assembled parallel to the disc. Care should be taken to ensure correct fitting of these components. Once the spline has started to enter, the stem may be hit hard down into the disc using a soft hammer.

The lower shaft (6) can now be fitted and also hit hard down into the disc.

Using a retaining compound a new nut (8) should be fitted to the tie bar and tightened using a socket or box key.

Finally a new plastic body plug (12) should be replaced in the tail end.

The operator can now be fitted.

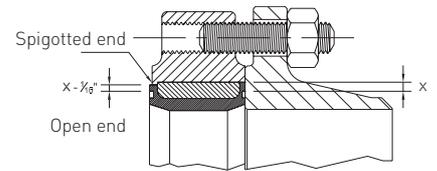
5.2 Lug design

The foregoing applies with the exception that the liner can only be fitted into the body in one direction - see Fig. 1.

6 RECOMMENDED SPARES

- 1 - Seat
- 1 - Wiper seal
- 1 - Locking nut
- 1 - Plastic cap

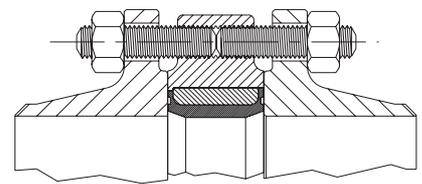
FIGURE 1



Lugged with tapped holes - open ended

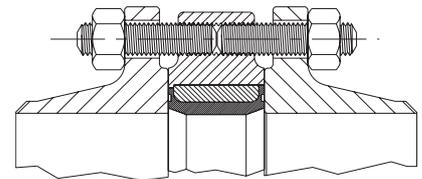
Note: spigotted end must be at the open end side

FIGURE 2



Lugged with tapped holes - flanged both ends

FIGURE 3



Wafer/lugged with plain holes - flanged both ends

