
Installation

Each valve has been thoroughly degreased.

Valves for chlorine duty are dried prior to despatch and are supplied with the pipe flange blanked off. Prior to installation care should be taken to ensure that the silica gel sachet in each pipe flange has been withdrawn when removing blanking flanges.

Valves for ammonia duty are supplied with standard flange protectors.

For normal duty the flow direction should be in line with the flow arrow cast on the body. The required valve position for start up, i.e. open or closed, should be checked with reference to the indicator on each pillar.

Operation

This range of valves has been designed to be operated by a normal force of 300N applied by two hands at the handwheel rim. The equivalent torque is therefore $(300)(d)$ Nm, where "d" is the handwheel diameter in metres. To eliminate the risk of mechanical damage to valve parts operating forces in excess of three times this value should not be applied to the handwheel rim and we therefore strongly discourage the use of wheel keys. If operating forces exceeding twice the normal force are experienced and/or if seat leakage is suspected then it is recommended that the valve should be removed for servicing.

The valve is fitted with a back seat arrangement which, when the valve is fully opened firmly, will isolate the gland packing (See Maintenance para. iii). In normal use we recommend that the back seat is left "unseated" by operating the handwheel through one half a turn in the closing direction.

Maintenance

The following procedures will help prolong the effective life of the valve and maintain smooth operation.

- i) Periodic lubrication of the yoke and stem using a good quality grease. Using the grease nipple, this should be applied until it is seen to extrude from both thrust faces. Lubrication of the actuating thread also requires application of grease to the stem with the valve in the closed position – the grease being drawn into the yoke as the valve is opened.

Note:

There is no yoke bush on a rotary actuated valve. Lubrication is via the stem thread only

Recommended Chlorofluorinated Grease is

Performance Fluids PerFluoroLube 18
Rocol Sapphire (BG741)

Recommended Hydrocarbon Grease is

Millers Oils Black Moly MPQ Grease – Lithium base (Grade 2)

On no account should Hydrocarbon Lubricants be allowed to come into contact with the Auxiliary Packing Gland.

Frequency of lubrication should be determined by site conditions such as environment and frequency of operation.

- ii) It is recommended that the paint system should be kept in good condition to prevent external corrosion.

In the event of damage 'in situ' repairs may be effected by ensuring that the damage area is first abraded to remove all traces of rust and/or loose paint.

The area should then be checked to be free from all traces of grease, moisture and dust before application of a good quality zinc phosphate primer followed by either a Hi-build epoxy or urethane based gloss finish in the colour applicable. The following colours have been used:

Golden Cup	–	BS.4800:08E51.
Goosewing Grey	–	BS.4800:10A05.

Note:

It is recommended that whilst remedial work is being carried out to the paint system the operating mechanism and auxiliary packing gland are protected from dust/dirt contamination and from being overpainted.

- iii) **Routine Adjustment of the Auxiliary Gland is not recommended.**

It can lead to overtightening which will result in operating rim forces exceeding the design norm and contribute to excessive gland wear and shortened gland life.

Great care has been taken in the design and manufacture of the gland. In-house tests have shown that glands remain gas tight after 12,500 open/close/open cycles at 57 bar using dry nitrogen.

In the unlikely event that leakage is detected emergency adjustments must be only carried out with the valve back-seated. It is recommended that any valve which has been adjusted to prevent gland leakage is removed for servicing at the earliest opportunity.

Servicing

Servicing of the valves should be carried out after the valves have been certified decontaminated from the service fluid. It is recommended that the components listed in **Table 1** (Page 3) are replaced at each service:~

Servicing Kits comprising of parts listed in **Table 1** are available on request. An additional body/bonnet gasket is provided for hydrostatic test purposes. This must be discarded after the hydrostatic strength test has been completed.

Before re-assembling the new packing and stem, the body and bonnet should be subjected to a hydrostatic strength test* after which the body and bonnet must be thoroughly dried. During re-assembly the following tests shall be undertaken using an oil free test gas having a dryness equivalent to that at a dewpoint of -40°C (we recommend oxygen free dry nitrogen) using a "new dry" gasket.

- 1) Back Seat Test* (without packing fitted).
- 2) Gland and pressure envelope test* (i.e. all body & bonnet external surfaces).
- 3) Seat Test*.

* For Test Pressures and Acceptance Criteria see **Table 2** (Page 3).

Chlorine Service

Valves should be dried using dry heat for a minimum of 3 hours at 130°C and the pipe flanges sealed afterwards to prevent ingress of any moisture or dirt before the valve has cooled below 35°C. We recommend the use of silica gel sachets in each pipe bore.

Note: Soft Seated Valves must be dried in the `open` position.

Ammonia Service

Valves need only have the ends sealed with standard flange protectors.

In the case of metal seated valves only, the valve should be stored in its closed position.

Table 1 Replacement Component Recommendations

Components	Valve Types
Body/Bonnet Gasket	All Valves
All Fasteners	
Gland Packing Set	
Disc	
Stem	With Stainless Steel Stem only.

Table 2 Test Specification Pressures

Valve Flanging	Hydrostatic	Pneumatic		
		Back Seat	Gland/Pressure Envelope	Seat
Class 300	78 BarG	6 BarG	57 BarG	57 BarG
Class 150	30 BarG	6 BarG	22 BarG	22 BarG
PN 40	60 BarG	6 BarG	44 BarG	44 BarG
PN16	24 BarG	6 BarG	18 BarG	18 BarG
BS. 10 Table H	52 BarG	6 BarG	38 BarG	38 BarG

Acceptance Criteria:

Hydrostatic Test:~ no visible leakage after 2 minutes.
Pneumatic Test:~ no visible leakage after 2 minutes.