

SAFETY

Safety - consult Blakeborough publication 'Safety' before starting any maintenance work.

The valve and actuator should be handled and installed with care. Consult publication 'Good Installation Practices' for details.

Before any maintenance work it is essential to ensure that the actuator is isolated and depressurised.

PRINCIPLE OF OPERATION

The actuator is of manual design. Operation of the valve is achieved through the rotation of the handwheel which in turn operates a gear mechanism to ultimately move the valve upwards or downwards, depending on the direction of rotation of the handwheel.

ACTUATOR DISASSEMBLY

It is recommended that all parts be labeled to facilitate correct re-assembly. Use only labels or marker pen, not centre pops, as this could damage components or disturb the painting.

1. Remove the stem connector screws and stem connector (9).
2. Remove the hamerlug clampnut (see valve instructions) and lift the actuator from the valve.
3. Unscrew the spindle cover (1) from the gearbox (3).
4. Unscrew the stop nut (8) from the actuator stem (2).
5. Remove the gearbox capscrews (6) and spring washers (5) and separate the gearbox assembly (3) from the yoke assembly.
6. The drive sleeve retaining plate (18), drive sleeve (4) and stem (2) should pull out of the gearbox (3).
7. Unscrew the drive sleeve (4) from the stem (2).
8. If necessary, the handwheel can be removed from the gearbox by unscrewing the screw (17) and sliding the handwheel (16) off the gearbox.

ACTUATOR ASSEMBLY

1. Make sure all parts are clean and lubricated where necessary.
2. Screw the actuator stem (2) into the drive sleeve (4).
3. Grease the drive sleeve and stem and insert into the gearbox and locate the retaining plate on top of the drive sleeve.
4. Locate the gearbox assembly on top of the yoke and ensure the spigot is mated with the top plate of the yoke.
5. Secure the gearbox in position using washers (5) and capscrews (6).
6. Screw the spindle cover (1) onto the top of the gearbox.
7. Screw the stop nut (8) onto the stem (2)
8. If the handwheel was removed during dis-assembly, slide the handwheel (16) onto the gearbox and lock in position screw (17).
9. Mount the actuator onto the valve and secure by fitting the hammer lug clamp nut (see valve instructions).
10. Ensure the plug is in its lowest position of travel and press the halves of the stem connector (9) against the actuator and plug stem threads. It may be necessary to move the valve plug a slight distance in order to mesh the plug and lower stem connector threads.
11. Clamp the stem connector halves together, making sure the stem connector threads are in proper engagement with the actuator stem and valve plug theads. Insert the stem connector screws but do not fully tighten at this stage.
12. Lift the valve off its seat and unscrew the valve plug stem one full turn from the stem connector. This should ensure positive seating when the valve is in the closed position.
13. Tighten the stem connector screws.

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14. Ensure the valve is fully seated and adjust the travel indicator scale so the shut mark lines up with the mark on the stem connector.
15. Tighten the plug stem lock nuts against the underside of the stem connector.
16. With the plug firmly seated, establish the valve stroke length valve the nameplate.
17. Screw the stopnut (8) up the actuator stem (2) until the distance from of the gearbox mounting flange is equal to the valve stroke.
18. Lock the stopnut (8) in position.

Parts List	
1	Spindle Cover
2	Stem
3	Gearbox
4	Drive Sleeve
5	Spring Washer
6	Capscrew
8	Stop Nut
9	Stem Connector
14	Travel Indicator Plate
15	Travel Plate Screws
16	Handwheel
17	Grubscrew
18	Retaining Plate

GEARBOX MAINTENANCE

The drive sleeve can easily be removed from the gearbox by first removing the loose retaining plate (18) from the baseplate. It is imperative that the thrust bearings in the output are fitted correctly, along with the drive sleeve and retaining plate. The needle thrust bearings must have the thrust washer at either side of the needle race. All thrust elements and bearing cavities must be packed with grease of the correct specification.

All gear cavities are lubricated for life with Fuchs Renolit CL-X2 grease. Under normal operating conditions, no maintenance is required for the gearbox but should the valve be taken out of service for overhaul, the gearbox may be removed and the grease changed using one of the following recommended lubricants. The baseplate must be sealed using silicone sealant on re-assembly.

NB. All thrust elements and bearing cavities must be re-greased and refitted in the correct order.

Manufacturer	Name
Fuchs	Renolit CL-X2
Shell	Alvania EP1
Esso	Beacon EP2

