

# INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS FOR BEVELS AND SPURS GEAR OPERATORS

This range of gearboxes is supplied to suit the order requirements but, unless specifically requested at the ordering stage, the output sleeve will be supplied blank and must be machined to suit the equipment to be operated.

The sleeve can be easily removed from the gearbox by first removing the loose piece spigot ring from the baseplate. It is imperative that the thrust bearings in the output are fitted correctly, along with the output sleeve and the spigot ring - That is: the needle thrust bearings **MUST** have a thrust washer at each side of the needle race. A bearing / washer assembly **MUST** be fitted at each side of the output sleeve thrust shoulder. All thrust elements and bearing cavities must be packed with grease of the correct specification.

## MOUNTING TO THE VALVE

1. The valve spindle must be greased before assembly of the gearbox to the valve.
2. Thrust element retention device to be removed prior to assembly to the valve.
3. Do not pack the spindle cover tube with grease as this can lead to pressure build up in the gearbox.
4. Flanges to be sealed on assembly with silicone sealant.
5. Spindle cover tubes and plugs to be sealed with suitable sealant.

If the gearbox has been supplied with a handwheel, it is recommended that this be fitted to the gearbox before mounting on the valve. This will make it easier to rotate the gearing to pick up the start of a thread or key location.

On a keyed valve shaft, once the key and keyway are lined up, the gearbox can be lowered onto the mounting flange and bolted down.

On a screwed valve shaft, rotating the handwheel will cause the gearbox to screw itself down the spindle. Once in the correct position it can be bolted down.

For large Gearboxes, IB8 to IB14 and IS7 to IS20, we do recommend to fit the Thrust elements separately onto the Valve first. That means the Spigot Ring and one set of Thrust Bearings can be placed onto the Valve first, then the Drive Sleeve can be screwed down or fitted onto a keywayed shaft, with the second set of Thrust Bearings to follow. The Gearbox then can be lowered onto the Valve, taking care that the splines do not get damaged.

If an electric actuator is fitted to the gearbox, a suitable input adaptor will have been supplied. After mounting the actuator to the gearbox, the limit and torque switch settings must be made in accordance with the manufacturer's instructions.

**NB.** Mounting bolts or studs must be high tensile steel - 850 N/mm<sup>2</sup>

## HANDLING

Combined valve and gearbox must **NOT** be slung from the gearbox.

## MAINTENANCE

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 baseplate 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, unless fitted with an O ring.

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

<b>Manufacturer</b>	<b>Name</b>	<b>Temperature Range</b>
Fuchs	Renolit CL-X2	-54°C to +120°C
Shell	Alvania EP1	-15°C to +90°C
Esso	Beacon EP2	-30°C to +125°C

An equivalent extreme pressure lubricant may be used.

For extreme temperature applications, please consult the factory.

## SPARES

Spare parts must be selected from the spare parts lists.

