

# **KESTNER CHEMICAL PUMPS LIMITED**

## **MAINTENANCE OF THE MHC PUMP**

### **PLEASE READ CAREFULLY BEFORE OPERATION**

#### **GENERAL**

- 1.1 Normal running maintenance of this pump is restricted to the motor bearing lubrication. However, leakage of the mechanical shaft seal and/or wear of the parts in contact with the liquor will necessitate maintenance or replacement of parts. Wear is usually indicated by a gradual falling of the pumps performance. The running time for this to occur will depend upon the corrosive or abrasive nature of the liquor being pumped. Item numbers used in the following sections refer to those from the sectional arrangement drawing L 15609.

#### **DISMANTLING (CRANE TYPE 1A MECHANICAL SEAL) DRG NO. L 15609**

- 1.2 If the motor (1) and mounting bracket (10) are to be left in situ, then sufficient length of suction piping must be removed to enable the volute casing (8) to clear the impeller (6). This length varies with the size of the pump, but 0.2m will generally be sufficient in all cases. Otherwise break the suction and discharge joints, disconnect the electrical connections and remove the pump and motor complete. Disconnect the seal flushing pipe (15) if fitted. Slacken off the clamp bolts (14) evenly and remove. Remove the clamp plate (9). Break the joint between volute casing (8) and backplate (5). The volute casing (8) can now be removed exposing the impeller (6). Remove the joint ring (12) and the impeller retaining grub screw (13) completely. The impeller (6) can now be drawn off the motor shaft complete with the rotating seal assembly. Ensure that the separate rotating seat is removed with the seal assembly. Remove the backplate (5) complete with the stationary seat of the mechanical seal. This seat is a press fit in the backplate (5) and if replacement is necessary, it should be pressed home evenly. In the case of ceramic seats a suitable mandrel **must** be used. Before pressing home lubricate the rubber sealing ring with silicone grease or similar to assist fitment.

#### **RE-ASSEMBLY (CRANE TYPE 1A MECHANICAL SEAL) DRG NO. L 15609**

- 1.3 In general re-assemble in reverse order to the previous section. The diametral clearances are fixed by the spigot location of the pump components and no adjustment is necessary or provided. However, the axial clearance between the impeller (6) and volute casing (8) is adjustable and the following procedure should be adopted. Fit the backplate (5) to the mounting bracket (10). Position the rotating seal assembly on the impeller. Position the motor shaft key so that the keyway is uppermost and then fit the shaft key. Making sure that the separate rotating face of the rotating seal assembly is not misplaced apply impeller to the motor shaft and press fully home against the mechanical seal spring pressure so that the impeller (6) contacts the pump backplate (5).

Holding the impeller in this position place the impeller retaining grub screw and temporarily nip-up. Fit the pump casing (8) to the backplate **without** joint ring (12) and clamp up with only two diametrically opposite pump clamp bolts. Slacken the impeller retaining grub screw so that the impeller (6) springs forward against the pump volute casing (8). Finally tighten the impeller retaining grub screw (13). Remove the pump casing (8) and fit the body joint ring (12) to the backplate. Fit the pump volute casing (8) eight body clamp bolts (14) and tighten evenly. Re-connect the suction and discharge pipework and electrical supply. Ensure that the correct direction is obtained, rotation is clockwise looking on the motor end.

#### **NOTE**

After a re-build, check that the pump is fully primed with liquor before starting the electric motor or seal damage will occur. The pump must not be run dry, otherwise serious damage to the seal faces will be inevitable.