KESTNER CHEMICAL PUMPS LIMITED

CONSTRUCTION OF THE MHC PUMP

PLEASE READ CAREFULLY BEFORE OPERATION

GENERAL

1.1 The MHC is designed as a metric, horizontal, close coupled pump manufactured in a variety of materials both metallic and plastic. The same general construction is used for all the MHC pumps with only minor differences to suit the properties of the materials of construction. Metallic pumps are fitted with fully shrouded impellers, while KEEPLUS and KEEBUSH pumps are fitted with semi-open impellers. The use of back vanes on the latter enables the axial thrust on the motor bearings to be minimized. Within each size of pump all non wetted parts are identical and complete sets of wetted end parts of different materials can be interchanged. This design feature gives advantages in the spares inventory both in the factory and in service. Thus a customer who is using pumps of different materials can reduce his spares stock of non-wetted components. This pump utilizes standard mechanical shaft seals and a variety of sealing arrangements can be offered. Item numbers used in the following sections refer to those from sectional arrangement drawing No. L 15609.

ROTATING ASSEMBLY

1.2 Comprises of the impeller (6) keyed and grub-screwed direct to the motor output shaft (in the case of some plastic impellers this might consist of a composite component ie. Metal insert moulded or bonded into the plastic impeller) and the rotating seal assembly.

THE PUMP CASING

1.3 Comprises mounting bracket (10), backplate (5), volute casing (8) and clamp plate (9) which are clamped together by means of 8 clamp bolts (14). The backplate (5) provides the housing for the stationary seat of the mechanical seal.

DISMANTLING (CRANE TYPE 10T MECHANICAL) SEAL DRG NO. L 15726

1.4 If the motor and mounting bracket (10) are to be left in situ, a sufficient length of suction piping must be removed to enable the volute casing (1) to be removed clear of the impeller (4). This length varies with the size of pump, but 0.2m will generally be sufficient in all cases. Otherwise break the suction and discharge joints at the connections to the system pipework, disconnect the electrical connections and remove the pump and motor complete.

Slacken clamp bolts (14) evenly and remove. Carefully break the joint between the volute casing (1) and the backplate (6). The volute casing (1) may now be removed thus exposing the impeller (4). Remove the joint ring (7) and impeller retaining set screw (12) completely. The impeller (4) can now be drawn off the motor shaft complete with the Crane type 10T seal and pump backplate (6). Slacken the two clamping nuts which retain the seal rotating

components onto the impeller sleeve. The impeller (4) may now be pushed right through the seal components. It is very important to ensure that the impeller retaining set screw is completely removed before pushing the impeller through the seal, otherwise there is a danger of damaging the bore of the PTFE bellows. For more information on seal constructions and setting the reader is referred to the Crane leaflet enclosed with these instructions.

The stationary seat of the seal (8) is released by removing the nuts (13) and then the seal clamp plate (9).

RE-ASSEMBLY (CRANE TYPE 10T MECHANICAL SEAL) DRG NO. L 15726

1.5 In general re-assemble in reverse order to 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 impeller (4) and volute casing (1) is adjustable and the following procedure should be adopted.

The stationary seal seat should be fitted into the backplate and the seal clamp plate (9) tightened up carefully and evenly tightening the six nuts (13). It is important to ensure that the sealing ring (15) and the PTFE ring (16) are in position. The impeller stalk is now entered through the backplate (6) and the stationary seat (8). The rotating seal component is now fitted over the impeller stalk and at this stage, **not** pushed fully home. The complete backplate, impeller and seal assembly is now fitted to the motor shaft and mounting bracket (10). Ensure that the drive key is correctly fitted and replace the impeller retaining set screw (12) but do not tighten at this stage. Fit the pump volute casing (1) to the backplate (6) **without** joint ring (7) and clamp up with only two diametrically opposite clamp bolts (14). The impeller should now be pushed forward against the pump casing (1) and the impeller retaining set screw (12) fully tightened. The pump casing is now removed and the joint ring (7) fitted onto the backplate (6). The pump casing may now be refitted and all eight clamp bolts tightened evenly. The suction and discharge pipework may now be reconnected to the pump.

SEAL ADJUSTMENT (TYPE 10T)

1.6 The axial setting of the rotating component of the seal should be carried out in accordance with the manufacturers leaflet enclosed with these instructions.

NOTE

After 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.