

*The simplest ideas are often the best*

## Flotronic 'One - Nut' pumps

### Installation Operation and Maintenance Manual

### H Series 3-A Marked Sanitary Slim Pump



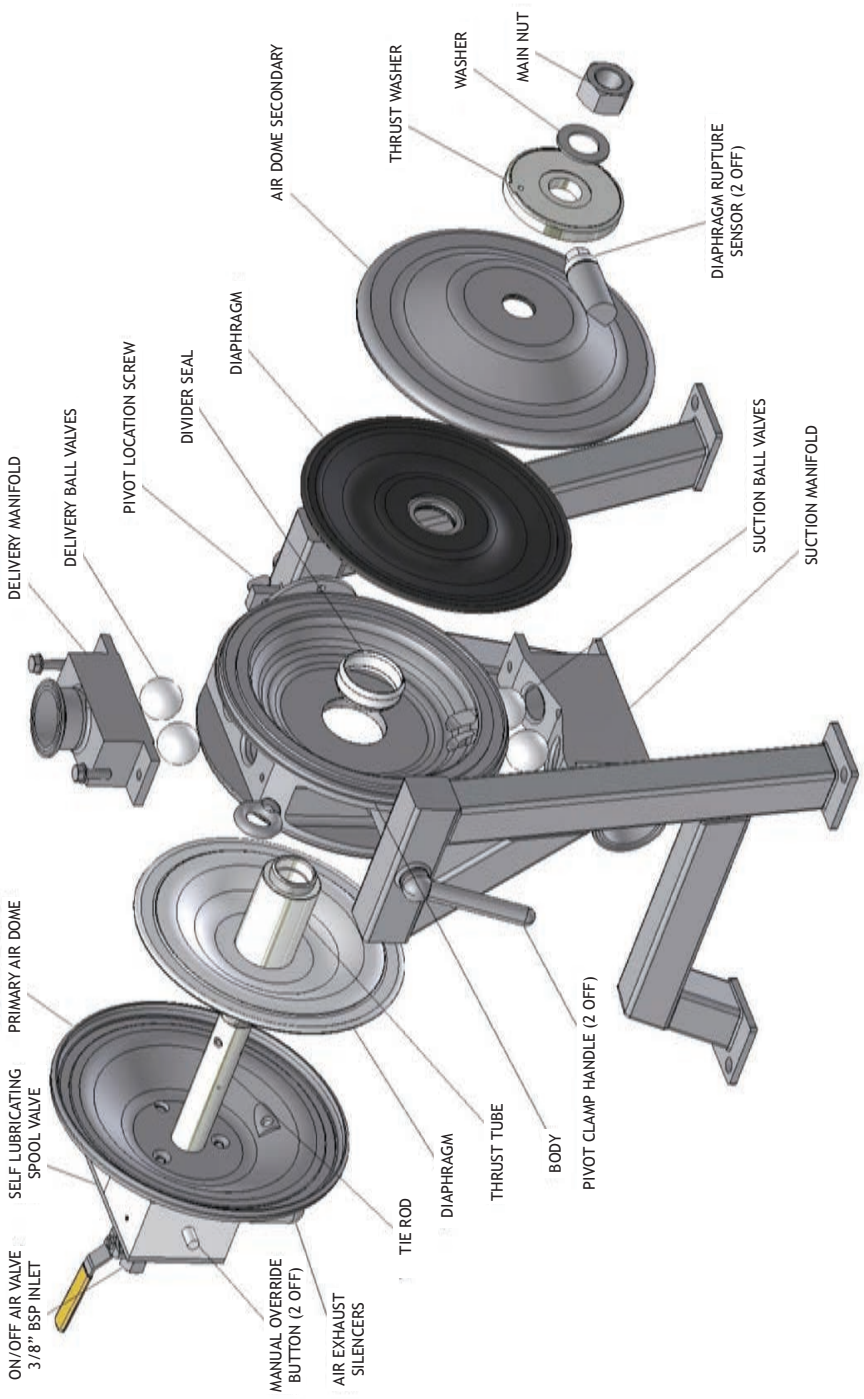
ATEX APPROVED PUMPS

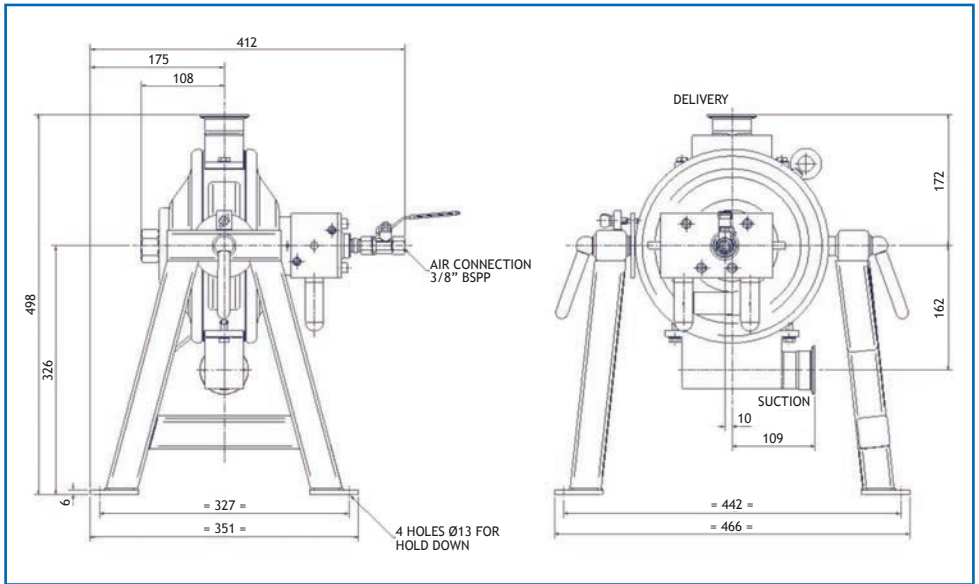


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## INSTALLATION, OPERATION AND MAINTENANCE

It is strongly recommended that the pump is bolted securely to a rigid frame or surface using the bolt down holes provided. A gasket must be fitted between each footplate and the mounting surface of sufficient thickness to prevent ingress of liquid.

All installation, maintenance and other instructions stated in the Installation Operation and Maintenance Manual up to and including Section 10 apply. In addition the following procedures apply.

## PUMP BODY AND MANIFOLD DRAINING

The pump may be inverted for draining with the suction pipework connected or disconnected as appropriate.

To achieve this, unscrew the single pivot location screw until clear of the plate. Then loosen the two pivot clamp handles allowing the pump body to rotate freely. **Do not unscrew the pivot clamps completely.** The pump body may then be rotated to 90° or 180°. At the desired position screw in the location screw and retighten the clamp handles.

## ACCESS TO BALL VALVES

The suction and delivery balls may be accessed with the pump body remaining attached to the stand.

For the delivery balls, the pump should be positioned in the normal operating orientation. Remove the two manifold bolts and detach the manifold exposing the balls and seat 'O' rings which can now be inspected. The balls may be reused if serviceable but it is always recommended to fit new 'O' rings on reassembly.

For the suction balls, the pump should be inverted on its stand in the drainage position. In a similar fashion to the delivery manifold, remove the two bolts and detach the manifold. With the manifolds detached the seat faces should be carefully inspected for any signs of damage which could affect pump performance and possibly hygienic integrity.

Reassembly is a reverse of the above ensuring that the 'O' rings remain seated correctly in their corresponding grooves and the manifold bolts are tightened to the correct torque as stated in Section 8 of the IOM.

## ACCESS TO DIVIDER SEAL

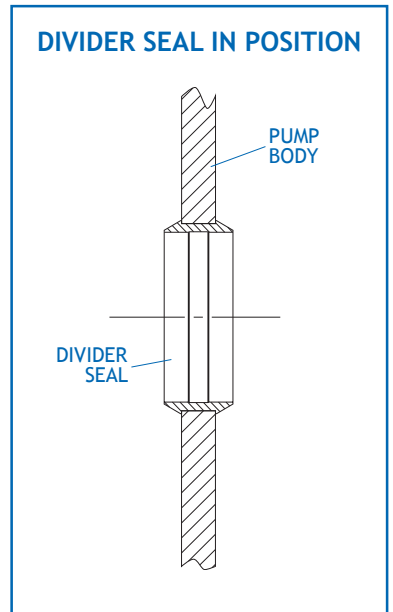
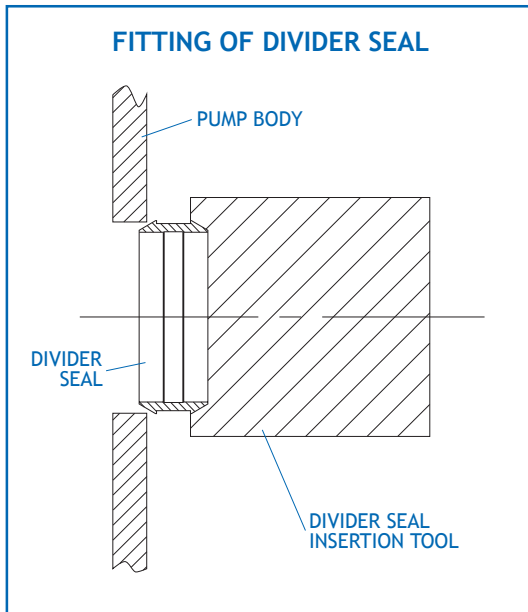
Dismantle the air system and remove the diaphragms and thrust tube as described in Section 10 of the IOM.

The divider seal may then be inspected for condition in situ or removed and replaced as appropriate. In any event it is recommended that the divider seal be checked and if necessary replaced according to site protocol.

If replacement is deemed necessary, it will be easier to undertake this with the body rotated and locked in the intermediate position, so that the centre line through the body is vertical.

The divider seal may be pushed out with a suitable blunt tool whilst taking care not to damage the face of the body. The body can then be cleaned and dried ready for the replacement divider seal.

Position the new seal into the bore and using the insertion tool T-020, apply a sharp tap with a light mallet or similar, ensuring that the seal is held central and square to the body. The raised edges of the seal must be checked to ensure that they have engaged fully and correctly on the body faces.



When reinserting the thrust tube, it is important to use the insertion tool T-017 in order to avoid damaging the divider seal edges.

The pump body may then be returned to its operating position when required. Reassemble the diaphragms and other air system components as described in Section 10 of the IOM, tightening all fasteners to the torque specified in Section 8. Note that the pivot location screw should be in position to facilitate correct tightening of the main nut. Failure to do this may result in the pump attempting to rotate against the tightening torque.

## **PUMP CLEANING**

FPL 3-A pumps for food and pharmaceutical applications have been designed for clean in place (CIP), allowing internal cleaning without the need for dismantling.

The pump may be cleaned by flushing with a suitable CIP fluid dependent upon the application and compatibility with the pump wetted component materials.

The fluid used may typically include sodium hydroxide (caustic) with mild acid and sanitizers for rinsing.

CIP fluid temperatures are normally up to about 90°C although a maximum of 100°C may be used if required. Steam up to 135°C may also be used for sterilization.

CIP may be performed solely by operation of the pump which may then use standard diaphragms, or by an independently pressurized system.

If the latter is employed, where pressure at the inlet of the pump exceeds 0.8 barg, the diaphragms should be of the reinforced type with separate load bearing backing plates.

In either case the CIP fluid must pass through the pump at a minimum velocity of 1.5m/s in the normal flow direction.

It is recommended that the pump shall be operated slowly with low air pressure while CIP is carried out.

## **PUMP DRAINING**

After CIP has been performed the pump may be drained by means of rotation on the support stand.

Full 360° rotation is possible with the process pipes disconnected, or alternatively the suction may remain connected, in which case rotation in excess of 180° is still possible.

For pump rotation the two clamp handles must be loosened and the clamp location screw disengaged.

After draining it is essential that the pump is returned to its operating position with the location screw engaged and the clamp handles tightened before pump operation.



### **Flotronic Pumps**

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