HOW TO ALIGN THE UNIT

First check that the pump has not been damaged during transport.
Place the foundation bolts loosely in the holes of the base plate and align the plate by using shims.
Check alignment with a spirit level.
It is very important that the pump/motor alignment is carried out correctly. Following the procedure below.
The values for Ø and S2 can be found in the next table.
The value for S1 is 0,0 mm.
HOW TO ALIGN THE UNIT

The distance between the shaft ends must correspond to the value for S2 stated in the above table. Displace the shaft keys 180°.
HOW TO ALIGN THE UNIT

Check the alignment.

Repeat the alignment check, 90° displaced.
HOW TO ALIGN THE UNIT

Tighten the screws holding the pump and motor to the base plate

Check the alignment. The tolerance for S1 is ±0.1 mm, go to slide n°10

The picture shows that the pump must be raised
HOW TO ALIGN THE UNIT

Cut out the foil in adequate size

Place the foil where needed
HOW TO ALIGN THE UNIT

Retighten the screws

Check the alignment carefully once more
HOW TO ALIGN THE UNIT

The air-gap width $S_2$ must correspond to the value stated on the table. The tolerance of each of the four points to be checked is ±0.1 mm

<table>
<thead>
<tr>
<th>ø (mm)</th>
<th>Standard coupling</th>
<th>Spacer coupling</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø80</td>
<td>4 0/-1</td>
<td>6 0/-1</td>
</tr>
<tr>
<td>ø95</td>
<td>4 0/-1</td>
<td>6 0/-1</td>
</tr>
<tr>
<td>ø110</td>
<td>4 0/-1</td>
<td>6 0/-1</td>
</tr>
<tr>
<td>ø125</td>
<td>4 0/-1</td>
<td>6 0/-1</td>
</tr>
<tr>
<td>ø140</td>
<td>4 0/-1</td>
<td>6 0/-1</td>
</tr>
<tr>
<td>ø160</td>
<td>4 0/-1</td>
<td>7 0/-1</td>
</tr>
</tbody>
</table>

4mm - std coupling
6mm - with spacer
HOW TO ALIGN THE UNIT

Tighten the screw in the coupling half

Fit the coupling guard
Alignment checks

**Initial alignment (cold alignment)**

Before grouting of base plate: To ensure alignment can be obtained
After grouting of base plate: To ensure that no charges have occurred during grouting process
After connection to piping: To ensure that piping strains have not altered alignment. If changes have occurred, alter piping to remove strains on pump flanges.

**Initial alignment (cold alignment)**

After first run: To obtain correct alignment when both pump and driver are at operating temperature. Thereafter alignment should be checked periodically in accordance with plant operating procedures.

**NOTE:** Alignment check must be made if process temperature changes, piping changes or the pump is serviced.
HOW TO ALIGN THE UNIT

Suction piping

The suction piping should be as direct and short as possible.
If a long suction line is required, the pipe size should be increased to reduce frictional losses.
Where the pump must lift the liquid from a lower level, the suction piping be laid out with continual rise toward the pump, avoiding high spots in the line to prevent the formation of air pockets. Where the static suction head will exist, the suction piping should slope continuously downward to the pump.
Eccentric reducers with a change in diameter greater than 10 cm (4 in) may disturb flow. If such a change is necessary, it is advisable to use properly vented concentric reducers.
Elbows and other fitting next to the pump suction should be carefully arranged; or the flow into the pump impeller will be disturbed. Long-radius elbows are preferred for suction lines because they create less friction and provide a more uniform flow distribution than standard elbows.
Is extremely important to avoid the formation of vortices at the suction of both wet-pit and dry-pit pump installations
Discharge piping

Generally both a check valve and a gate valve are installed in the discharge line.

The check valve is placed between the pump and the gate valve and protects the pump from reverse flow in the event of unexpected driver failure or from reverse flow from another pump. The gate valve is used when priming the pump or when shutting it down for inspection and repairs.
HOW TO ALIGN THE UNIT

- Delivery pipe fastening collar
- Long radius elbow
- Expanse Joint
- Removable gaskets
- Electric Supply
- Armoured and air tight cable
- Non-return valve
- Ground slope 1cm per meter
- Concrete block
- Connected to the main drainage
- Isolation material cork or rubber

Tank

Direct flow valve

Long radius elbow

Suction line with constant slope of 2 cm per meter up to the flange

Strainer - Valve

Suction pipe with structural supports
HOW TO ALIGN THE UNIT

Piping strains

Piping should not impose excessive forces and moments on the pump to which it is connected, since these might damage the pump or pull it out of position.

Piping flanges must be brought squarely together before the bolts are tightened.

The suction and discharge piping and all associated valves, strainers, etc., should be supported and anchored near to but independent of the pump, so that no strain will be transmitted to the casing.