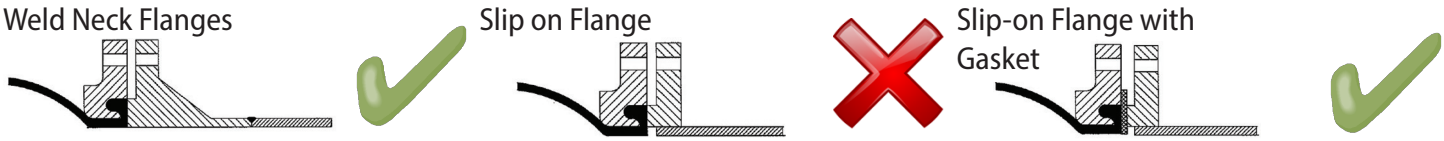
CORE Pump Flexible Installation Instructions

Core values, quality products

Flange Suitability:



Pre-installation Check

1. Selection

Prior to installation, check you have the right flexibles for the particular duty. All CORE Rubber Pump Flexibles have temperature and pressure limitations. Please see the appropriate data sheets for your particular product. This is NOT a product for taking up pipework expansion.

All rubber flexibles will extend under pressure. This creates thrust forces which can be very substantial. We reccommend at pressures above 2 Bar and diameters above 65mm nominal bore size, unless the pipe work can be sufficiently anchored directly after the unit, the CORE Anti-Tamper Tied pump flexibles should be used.

2. Mating Flanges

We recommend the rubber flexibles are mated up against full-bore weld neck flanges. If installed in this manner no additional gaskets are required.

We advise against using slip-on or screwed flanges as mating flanges, as these can damage the rubber bellows. Once the sealing face has been damaged, water/medium will penetrate the reinforcement layers and destroy the integrity of the flexibles.

If it is unavoidable to use this type of mating flange, a gasket must be installed (this should be a hard gasket and be at least 3mm thick). The gasket should reach the internal bore of the rubber bellows. Another option is to fill the gap of the slip-on flange with weld and grind it flush.However, the surface finish must be level and smooth to ensure that the bellow is not damaged once installed.

3. Misalignment

Check the two mating flanges are parallel and that they are in line (maximum allowed offset is 5mm in any direction). The gap between flanges should be within +/- 5mm of the flexibles neutral. Compression or extension should be avoided.

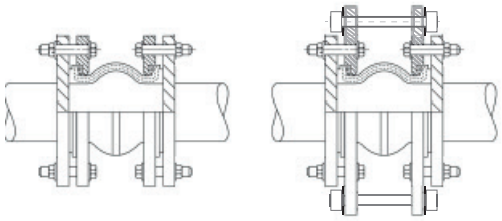
Under no circumstances must the pump flexible be used to take up misalignment. Ensure the pipework is adequately supported. The flexible must not support pipes or plant.

Installation - (To Be Performed by Qualified Personnel)

1. Bolts

Bolts should be inserted from the bellows side (as shown on the diagram below). On some larger bolt lengths this may not be possible. In these cases a bolt of the exact and correct length needs to be selected.

An alternative is to use studding cut to length and fitted with a nut at both sides. Please select the bolt length carefully; even if there is space between the bolt and the rubber body of the bellow in an un-pressurised state, they may foul when pressurized and cause failure. Bolts of the right diameter must be used to ensure correct alignment.



2. Alignment

Take care when inserting the flexibles into the gap between the two mating flanges. Sharp edges can damage the sealing face of the rubber flexibles. Before tightening the bolts, ensure the flexible sits evenly in its flange groove and does not get pinched between flanges. The sealing face of the flexibles must be concentric with the sealing face of the mating flanges.

3. Tightening the Bolts

Great care must be taken with the tightening of the flange bolts. Remember you are tightening against a rubber face. As with gaskets, over tightening will cause the joints to leak and it will damage the bellows. Tighten opposite bolts to get an even pressure all round (check the gap between the flanges). Rubber will set and the bolts will have to be retightened after 24 hours.

4. Tie Bars

Do not fit aftermarket tie bars to a CORE Pump Flexible. CORE Tied Pump Flexibles are supplied with tie bars, if you need to fit tie bars to an untied unit, it should be changed for a CORE Tied Unit. When three or more tie bars are fitted it may be necessary to remove one tie bar to install the bellows. Ensure that washers are re-assembled in the right order and orientation.

* Design life is guidance only. This guidance assumes the unit will not be working at the extremes of its working capacity. This in no way implies a warranty or a guarantee.

** 24 Months warranty is against manufacturing defect only and is limited to the supply only of a replacement product of the same type.

CORE Pump Flexible Installation Instructions

Core values, quality products

Taking Care of Rubber Flexibles:

1. Paint - Do not paint rubber flexibles. The paint will attack the rubber (this also applies to paint splatter).
2. Welding - Protect the rubber from weld spatter.
3. Lagging - Do not lag rubber flexibles on heating systems. The increased temperature will reduce life.
4. Tie Bar Check - Once the system is filled but not under pressure, check the tie bars are still tight (pipe work on springs may have dropped due to the weight of the water).

Note: Tied Pump Flexibles are supplied with anti-tamper tie bars, therefore the tie bars cannot be slackened off and should not be removed, doing so could lead to, major damage to the unit thus damaging equipment.

5. Water Treatment – The pump flexible range incorporates an EPDM inner liner. EPDM is a proven material in heat ing and chilled water systems. It is resistant to glycol and to most chemicals used in water treatment, when used in normal concentrations. We cannot approve any specific chemical, and suggest you always check with the chemical supplier that the additives are suitable for use with EPDM rubber.

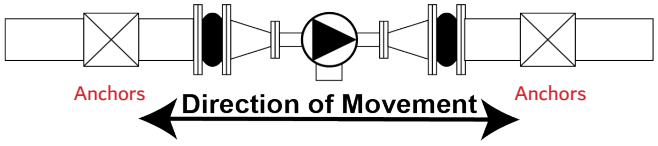
Best Practice

The following are only recommendations but if followed they will ensure proper installation and maximum service life of the rubber bellows. We recommend the use of spool pieces to align mating flanges and to ensure the correct gap.

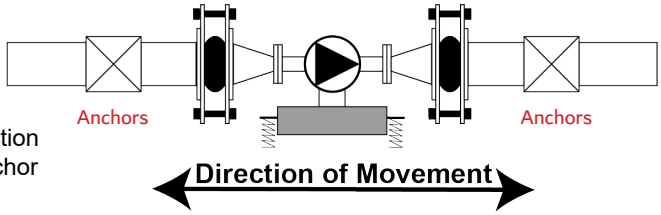
1. Pump flexibles should NEVER be used to counter misalignment in pipework.

2. Pump flexibles should never be used to support the pipework. Correct guiding and anchoring should be installed close to the pump flexibles.

3. PUMPS - When the pump flexibles are installed on rotating equipment, such as pumps, to absorb noise and vibration, the first bracket position after the flexibles should be an anchor. This allows the flexibles to absorb vibration but limits their ability to extend under pressure acting as an acoustic break. If pumps are not mounted on springs or inertia bases untied pump flexibles can be used.

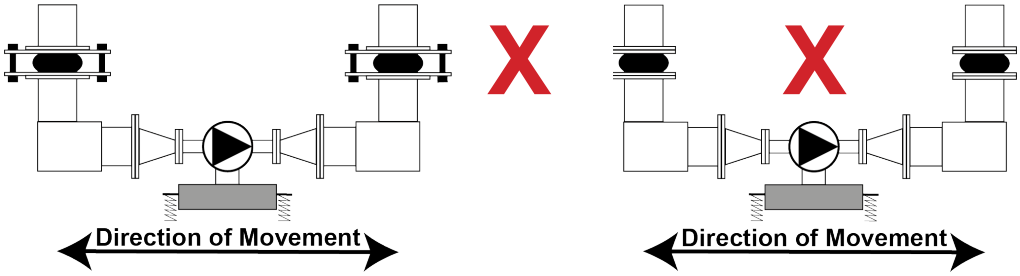


4. INERTIA BASES - Where pumps are installed on inertia bases, Tied Pump Flexibles Should be used. The flexible connection should be directly onto the pump or as near as possible, with anchor points installed after the flexible.



5. IN A RISE - Where pumps are installed on inertia bases, care should be taken NOT to install pump flexibles in vertical pipework on either the return to the pump or flow from the pump. the reasons for this are
   - i. The movement direction changes from axial to lateral.
   - ii. As a result, dependant upon where in the rise the flexibles are, a greater amount of movement can be expressed on the unit laterally, and can be a compound movement with angulation too.
   - iii. Pipe has a greater tendancy to use the flexible as a support, as any rigid support would stop the inertia base from working.

In there circumstances neither tied or untied versions are suggested, although, if there is no alternative, a tied unit will offer a better degree of protection.



5. PIPE RUNS - Where pump flexibles are being installed to compensate for pipe bourne vibration, the flexible still requires anchor on each side to restrict the possiblity of extension under pressure. All pipework should be correctly supported between anchors with slide guides to allow movement.