

Fig. KFC16 Single Sphere Rubber Flexible Joints Installation & Maintenance Instructions

PRODUCT LIFE CYCLE

The life of the joint is dependent on its application, frequency of use and freedom from misuse.

The properties of the fluid being transported such as pressure and temperature must be taken into account to avoid premature failure.

Before commissioning a system, it should be flushed to eliminate debris and chemically cleaned as appropriate to eliminate contamination, all of which will prolong the life of the joint.

Operating pressures and temperatures

Maximum non shock pressure and temperature range:

Nylon reinforced EPDM liner - 16 bar from -10°C to 120°C

Water hammer and other shock conditions should be avoided.

Not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive service or transporting abrasive solids.

Movement of the pipework should be confirmed as the wrong selection may result in failure of the joint.

PRESSURE / TEMPERATURE RATING

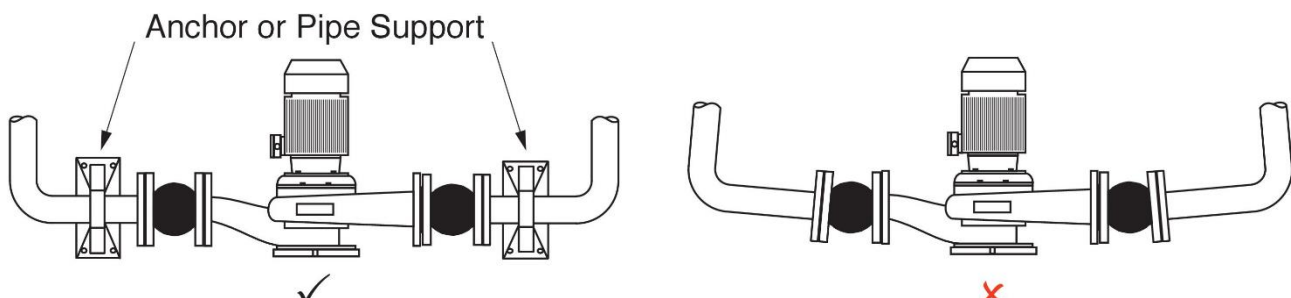
These flexible joints must be installed in a piping system where the normal pressure and temperature do not exceed the above ratings.

If system testing will subject the joints to pressures in excess of the working pressure rating, this should be within the test pressure for the rubber bellows.

If the limits of use specified in these instructions are exceeded or if used on applications for which it was not designed, a potential hazard could result.

ANCHORING

The pipework should be anchored prior to system testing and to ensure correct performance of the rubber bellows. Tied rubber bellows should be selected for sizes DN80 and above and where the working pressure exceeds 3 bar.



STORAGE

Flexible joints contain a rubber bellows which should be stored in a cool, dark and clean area to prevent sunlight damage and general deterioration.

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LAYOUT AND SITING

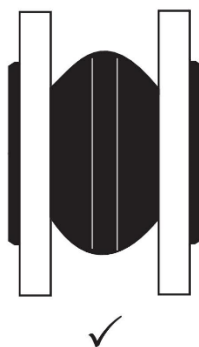
It should be considered at the design stage where joints will be located to give access for inspection and replacement.

INSTALLATION

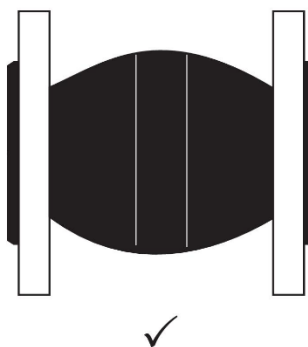
Flexible joints should be installed with the bellows at its relaxed length and pipework should be in-line and straight. The pipework should be adjusted if the dimensions and movement capabilities of the bellows are exceeded.

INSTALLATION

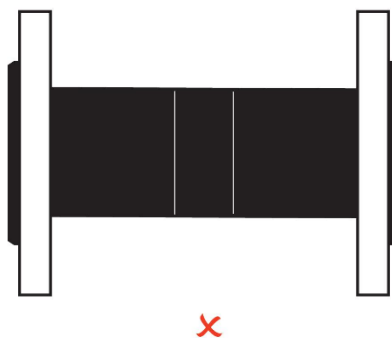
Compressed Length



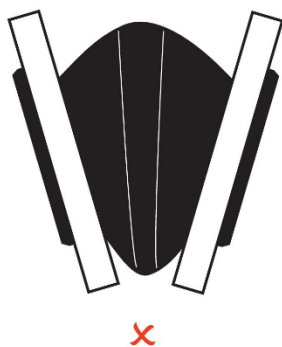
Max Bellows Length



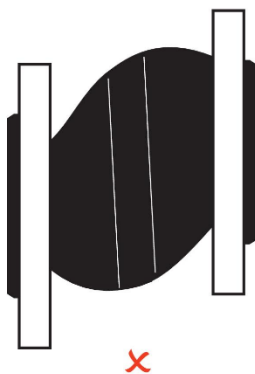
Over Extended Length



Angular Connections



Out of Line Connections



Bellows Rotated

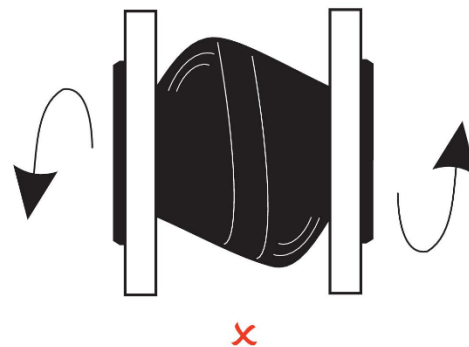
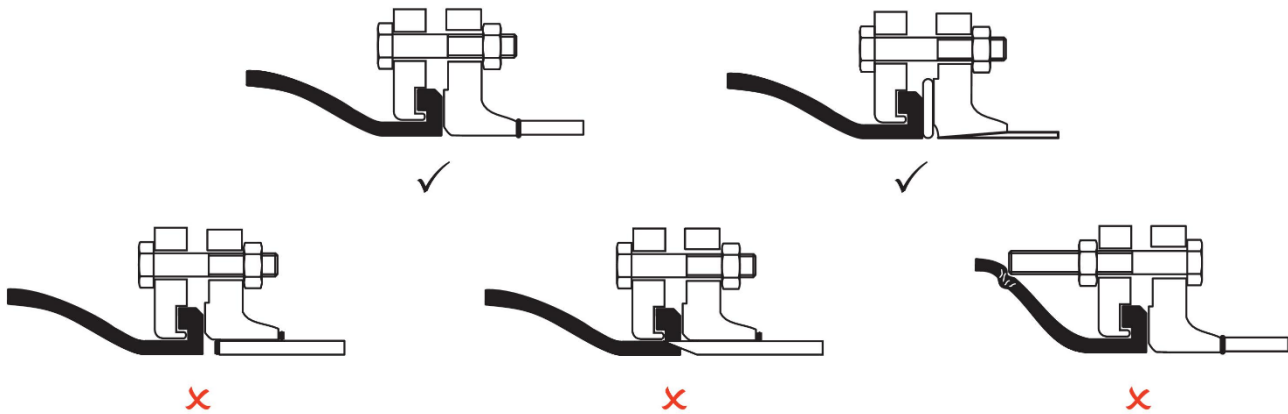


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INSTALLATION

Pipe flanges must be compatible with the flanges on the flexible joint. They must be clean, free from debris, sharp edges and any feature that could damage the sealing faces of the bellows.



For mating flanges with different sealing face diameters a metal flange plate should be used to prevent localised over compression of the rubber forming the sealing gasket.

During assembly bolts should initially be hand tightened sequentially to make the initial contact ensuring sealing faces of the bellows are concentric with the pipe ports and that the flanges are parallel.

Finally tighten the bolts gradually and uniformly in an opposing sequence to ensure even compressure of the sealing faces of the bellows.

After 7 days check the flange joints for leakage and bolt tightness.

MAINTENANCE

When selected and installed correctly flexible joints will give many years of trouble free service.

They should be periodically inspected for any signs of aging or if hairline cracks have appeared as this indicates the bellows is nearing the end of its service life.

Rubber bellows should not be painted as this may cause the bellows to deteriorate.