



General Suppliers

**Flanged Single Rubber Flexible Connector PN16**

**MV600 - 1**

## **Installation & Maintenance Instructions**

### **CE MARKING AND THE PRESSURE EQUIPMENT DIRECTIVE 97/23/EC**

This has been implemented in United Kingdom law by the Pressure Equipment Regulations 1999 (SI 1999/2001).

The regulations apply to all valves with a maximum allowable pressure greater than 0.5 bar.

Valves with a maximum allowable pressure not exceeding 0.5 bar are outside the scope of the Directive.

Valves are categorized in accordance with the maximum working pressure, size and ascending level of hazard, which is dependent on the fluid being transported.

Fluids are classified as Group 1, dangerous fluids or Group 2, all other fluids including steam. Categories are SEP (sound engineering practice) and for ascending levels of hazard, I, II, III or IV. All valves designated as SEP do not bear the CE mark nor require a Declaration of Conformity.

Categories I, II, III or IV carry the CE mark and require a Declaration of Conformity

(Note- all valves up to and including 25mm (1") having a maximum allowable pressure greater than 0.5 bar are designated SEP regardless of fluid group).

### **THE ATEX Directive 94/9/EC**

These flexible joints are excluded from the ATEX Directive since they have no source of ignition, should not be installed in potentially explosive atmospheres and should only transport Group 2 non-hazardous liquids.

### **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.



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#### **LIMITS OF USE**

These products are categorized as SEP for Group 2 Liquid, but are not necessarily suitable for all fluids in this group.

These valves shall not use on Group 2 Gases and Group 1 Liquids.

#### **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.

**Warning:** The maximum surface temperatures are given above. Care should be taken when operating the valve at these temperatures, to avoid severe burns to the skin.

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

#### **PRESSURE / TEMPERATURE RATING**

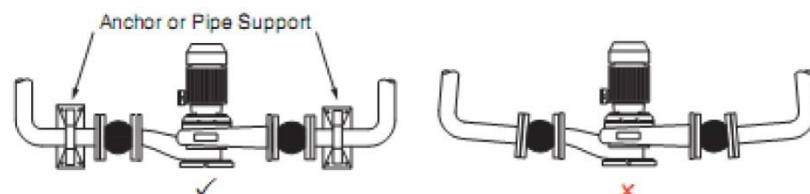
These flexible joints must be installed in a piping system where the normal pressure and temperature do not exceed the above ratings.

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 the valve is used on applications for which it was not designed, a potential hazard could result.

#### **ANCHORING**

The pipe work 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.





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#### 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.

#### LAYOUT AND SITING

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

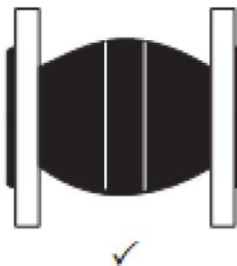
#### INSTALLATION

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

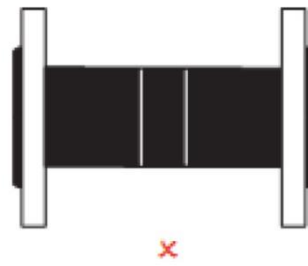
Compressed Length



Max Bellows Length



Over Extended Length



Angular Connections



Out of Line Connections



Bellows Rotated



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.

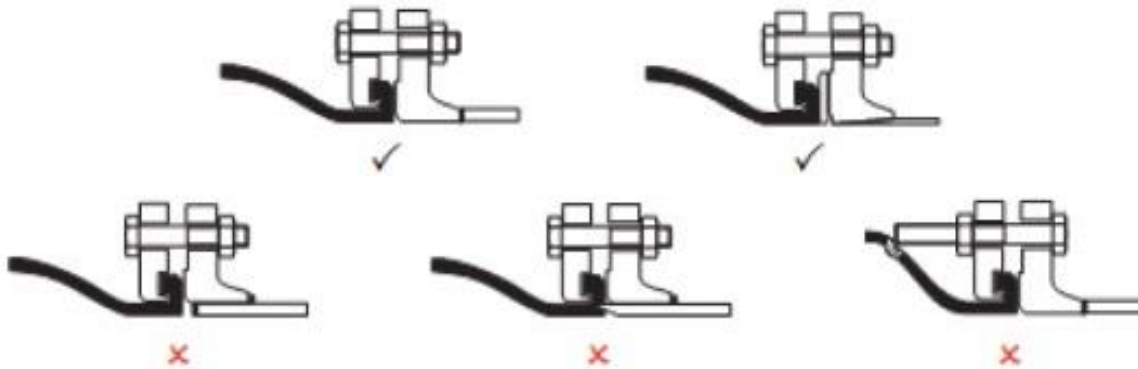


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For mating flanges with different sealing face diameters a metal flange plate should be used to prevent localized over compression of the rubber forming the sealing gasket.

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. Only genuine Maplef bellows should be used.

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