



# STOURFLEX®

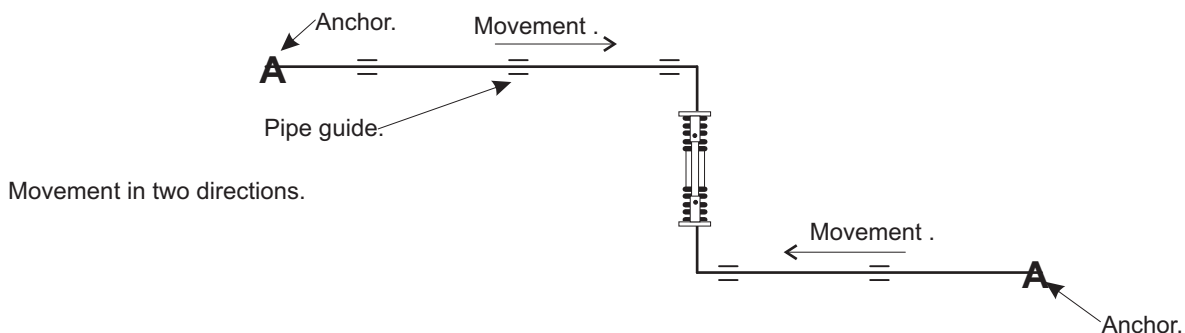
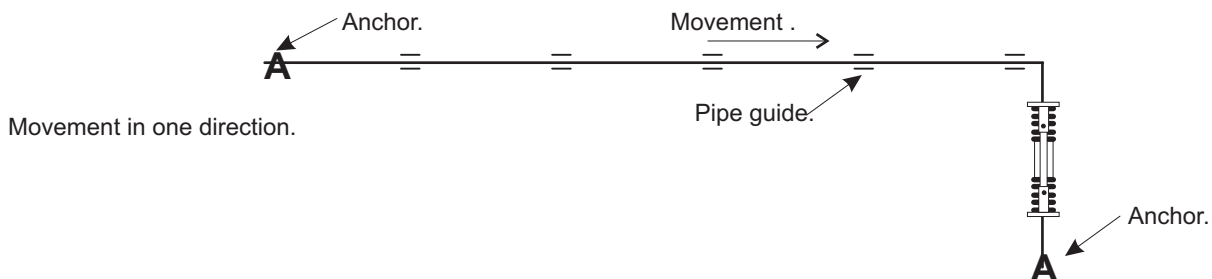
J & P Supplies Ltd

Expansion Joints & Pipeline Equipment

## Installation, Operation and Maintenance Instructions for Stainless Steel Double Hinged Articulated Expansion Joints.

- Storage.** Stainless steel double hinged articulated expansion joints should be stored in a clean dry area and be protected from damage caused by other items of plant and equipment. Care should also be taken in transporting double hinged articulated expansion joints to prevent damage to the bellows convolutions.
- Inspection.** Stainless steel double hinged articulated expansion joints should be inspected for any internal or external damage to the bellows convolutions and hinge assemblies.
- Selection.** The Stourflex range of stainless steel double hinged articulated expansion joints are designed to be used on a wide range of industrial applications. Check that the correct articulated expansion joint has been selected for the operating conditions that exist. Temperature, pressure and movement should all be confirmed as the wrong selection may result in failure of the system. Check that the correct number of articulated expansion joints are being installed to accommodate the total amount of movement on the system.
- Installation.** When lifting or moving stainless steel double hinged articulated expansion joints into position they must be fully supported over their entire length. During installation they must be fully supported over their entire length to prevent damage to the bellows convolutions caused by excess movement. Articulated expansion joints are normally installed in changes in pipework direction. Articulated expansion joints should be fitted at their correct installation length. They should not be extended or compressed. Cold pull can be applied as and when required. If an articulated expansion joint has been supplied with internal flow sleeves, it should be installed with the " → " in the correct flow direction. Bellows convolutions should be protected from damage during installation due to rotation or weld spatter etc. Articulated expansion joints require anchors and guides to ensure their correct performance. For further details on the use of articulated expansion joints see guidance notes.

Typical examples where Stainless steel double hinged articulated expansion joints are used to accommodate thermal expansion in pipework.





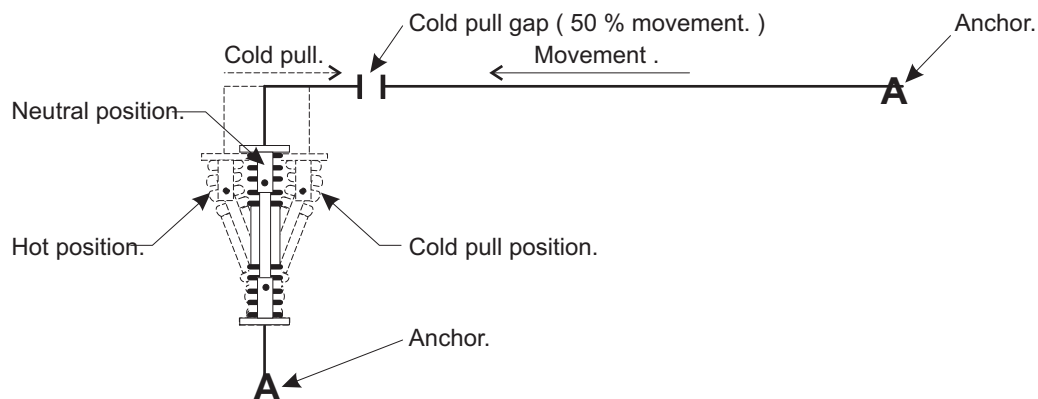
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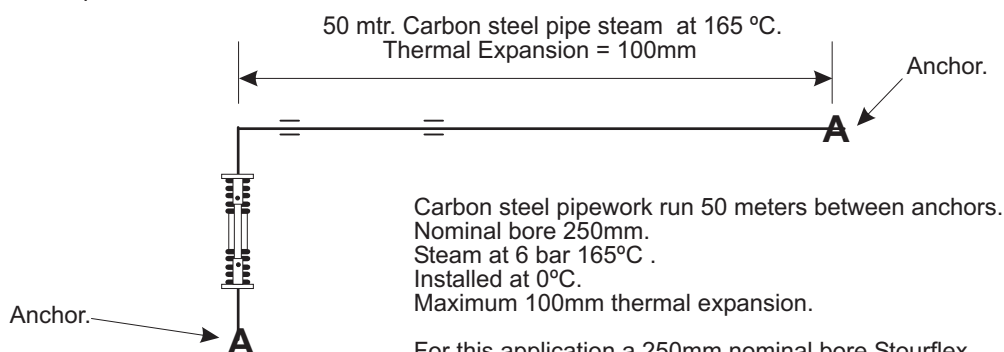
**Installation Continued.** Pipework should be correctly aligned. Articulated expansion joints bellows should be installed at their correct installation length. Pipework should be guided to direct movement into the articulated expansion joints. Pipe guides should be installed as per specification or details given in guidance notes. If cold pull is to be applied the necessary gap should be left in the pipework after anchors and articulated expansion joints have been installed.



**Test Pressure.** If a hydraulic pressure test is to be carried out on a system containing stainless steel double hinged articulated expansion joints ensure that anchors and guides have been correctly fitted before the test is carried out. Ensure that the test pressure ( usually 1.5 x working pressure ) does not exceed the test pressure of the articulated expansion joint being installed. A visual inspection of the articulated expansion joints and associated pipework should be carried out during and after the test to ensure the installation is operating correctly.

**Anchoring.** Stainless steel double hinged articulated expansion joints must be securely anchored and adequately guided to ensure their correct performance. See guidance notes for details and calculations on anchoring of pipework. Anchors are used to divide the system into manageable sections. Anchors must be spaced to suit the lateral expansion joints being installed.

Example



Carbon steel pipework run 50 meters between anchors.  
Nominal bore 250mm.  
Steam at 6 bar 165°C .  
Installed at 0°C.  
Maximum 100mm thermal expansion.

For this application a 250mm nominal bore Stourflex **Type JP124** Stainless steel double hinged articulated expansion joint should be selected.  
Movement capability  $\pm 50\text{mm}$  ( 100mm total ) lateral movement.  
Installed with 50 % cold pull.

**Maintenance** When properly installed and used at their correct operating temperature and pressure, stainless steel double hinged articulated expansion joints will give many years of trouble free service. However the articulated expansion joints should be periodically inspected for signs of deterioration. Anchors and pipe alignment should also be examined. Anchor failure can result in a breakdown of the system. If insulation is to be used it should be removable to allow inspection to be carried out.