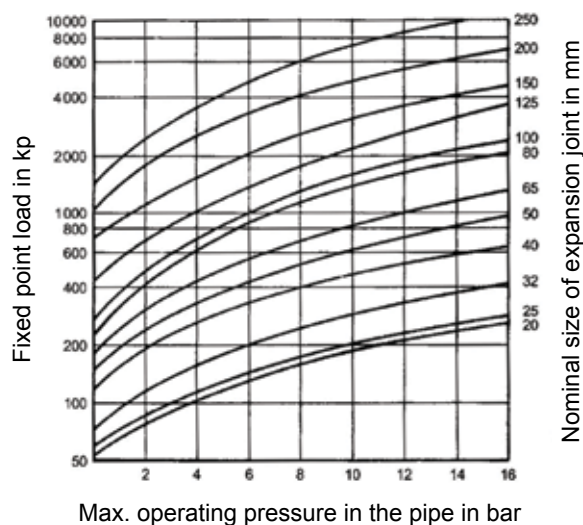


**Caution:**

1. The piping must be exactly aligned and well supported to avoid break-out of the expansion joint.
2. Only one bellows expansion joint should be installed between two fixed points and the expansion in this section must be less than the absorption joint.
3. Fit the expansion joint as near as possible to a fixed support, as then it is only necessary to fit a single sliding support on the other side of the joint where, otherwise two sliding supports close to the expansion joint would be needed. The distance from the support to the bellows joint should be around twice the nominal diameter of the pipe.
4. Design the fixed support to carry the maximum forces occurring.
5. The use of external protection tubing or internal guide tubes does not replace the need for fixed and sliding supports.
6. The sliding support should be of adequate length to ensure that there is no jamming.
7. No torsional stress may be applied to the bellows joints. This is particular importance in the case of the installation of types with fixed flanges or with screw connections.
8. Ensure, that no undesirable pipe tension applies a torsional load on the joint.

9. When using as vibration- or sound-dampers, install without pre-tension, i.e.  $LE=L$ .
10. When installing bellows expansion joints with internal guide tubes, always note the direction of flow.
11. Only undertake pressure and leakage tests once the fixed and sliding supports are properly installed.
12. Care should be taken during installation work, that the bellow of the expansion joint will not be damaged, (e.g. through welding parts) and that no foreign bodies lodge between the corrugations. These must be kept free if the expansion joint is to fulfil its function.
13. Pressure shocks should be avoided.

Fixed Point Forces of Steel Expansion Joints



Examples of installation

