

Installation

Turnable Flanges Expansion Joints

» Key factors for installation

Trelleborg rubber expansion joints are supplied ready for installation. Following advises are however to be taken into consideration in order to obtain a good performance and prolonged service life of the expansion joint.

» Fixed points

An expansion joint acts as a piston by the forces arising from the internal pressure. To prevent the pipes from damage they are to be properly anchored in order to take care of these reaction forces (F_r). The reaction force of an expansion joint is calculated by the following formula:

$$F_r = Q \times P \times 0.01$$

F_r = reaction force in kN.

Q = effective cross sectional area in cm^2 .

P = actual pressure in bar or kp/cm^2

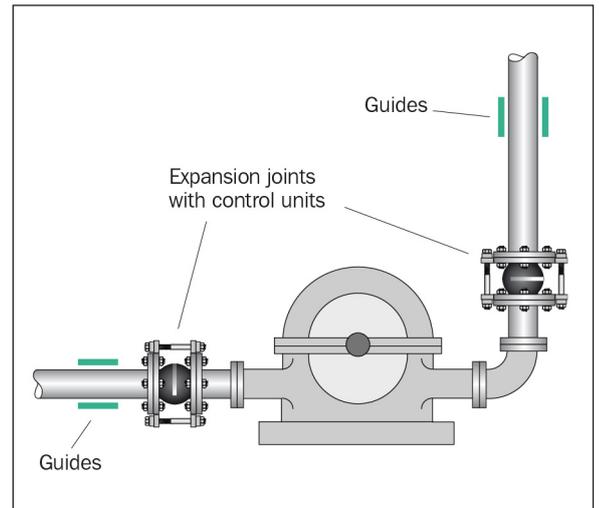
» Installation

The turnable metal flanges make installation easier and eliminate twist.

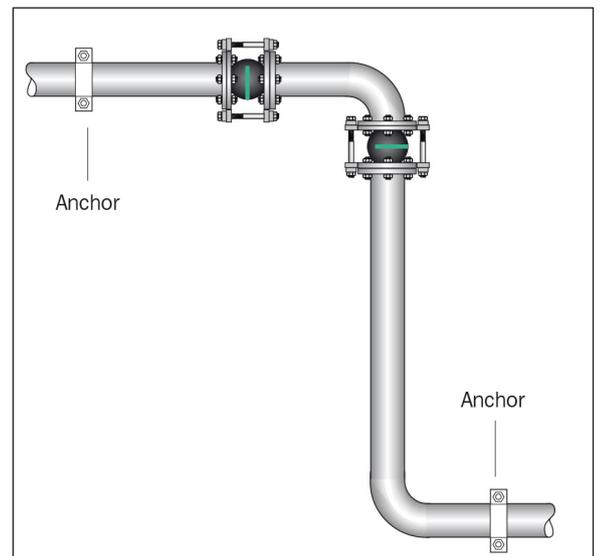
The low inherent rigidity of Trelleborg TF expansion joints make for easier accommodation of installation dimensions.

The expansion joints shall be easily accessible and open to regular supervision. It is recommended to let the expansion joints work in compression rather than stretching. Torsion is not permitted.

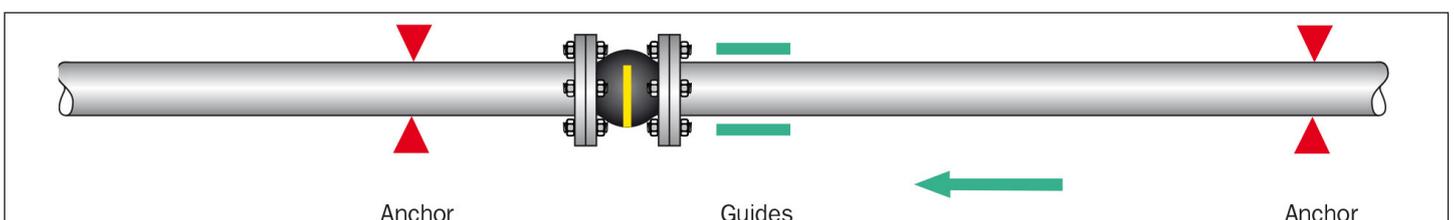
Check the permissible movements, temperature, pressure and proper rubber quality before installation!



Pressure-restrained expansion joint on pump (with tie bar). Absorb vibrations and thus relieve pressure on the machine housing.



Arrangement with lateral expansion joints.



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» Mounting

- In order to provide the movement capabilities indicated in the technical specifications, the assembly bolts should be mounted with bolts heads towards expansion joint body. (1)
- If this is for any reason impossible, ensure that the threaded bolts project as little as possible (no more than 2 or 3 mm) to avoid damage to the body.
- Tightening must be progressive and crosswise in diagonal sequence with bolting pressure evenly distributed.
- The design of the expansion joints secures a sealing to the counter flange. That is why no sealing gasket is required.

Note: If the bolts and nuts are tightened too strongly, the sealing face might be crushed causing improper function!

» Counter flanges

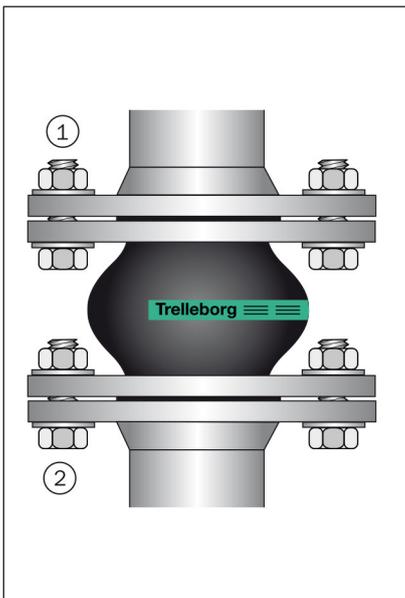
It is very important for the safe operating and life expectancy of the expansion joint to make a proper installation of the counter flanges(Fig. 2 to 5). The sealing face of the counter flange must be machined smooth and cover most of the rubber sealing face (or at least 60%) to ensure a good sealing (Fig.2).

» Precaution

Do not paint or lubricate rubber parts of expansion joints!

When welding work is to take place the bellow has to be protected from welding heat and sparks!

Right



Arrangement with lateral expansion joints.

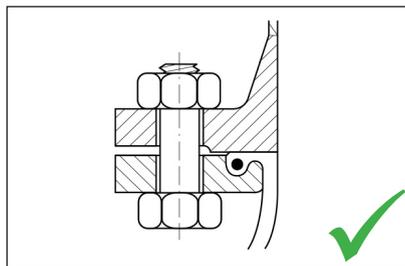


Fig. 2 Flange provided with smooth sealing surface

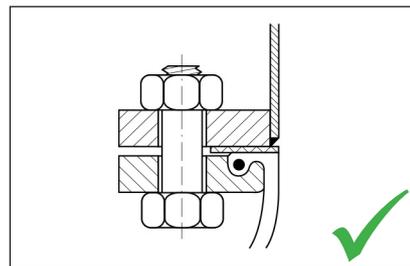


Fig. 4 Flange provided with flat sealing gasket to protect the rubber surface.

Wrong

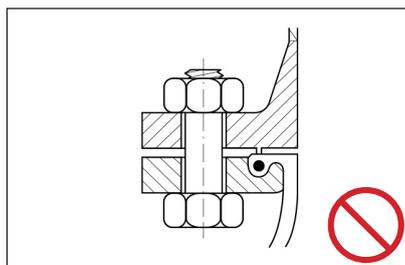


Fig. 3 Do not use flange with tongue or groove which will damage the rubber.

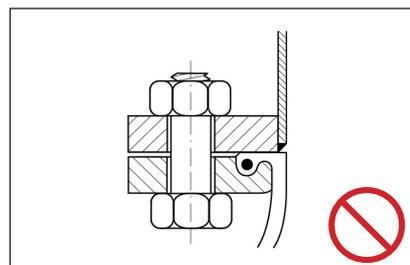


Fig. 5 Sharp edge pipe ends will damage the rubber face.