GENERAL OPERATING AND INSTALLATION INSTRUCTIONS FOR HYDRA® EXPANSION JOINTS

HYDRA®
Quality by Witzenmann

1. Operating instructions

HYDRA expansion joints are maintenance-free. They are designed exclusively for the conditions specified in the order. Long-term reliable operation is only guaranteed when they are properly incorporated and mounted in systems, and when they can operate without being damaged or hindered. See also "Installation of expansion joints" in our manual.

2. Installation instructions

2.1 General installation instructions

- Check the expansion joint for possible damage before installation
- Do not damage the bellows – no harsh knocks or blows – do not throw
- Do not attach chains or cables to the bellows
- Protect the bellows against weld spatter – cover with non-conductive material
- Use a welding electrode, ground cable, etc. to prevent an electrical short-circuit; the bellows may otherwise suffer irreparable damage
- Keep inside and outside of the bellows corrugations free from foreign bodies (dirt, cement, insulation material) – check before and after installation
- Before insulating with mineral wool, cover with sheet metal all round
- Do not use insulating material with corrosive substances
- Avoid torsion at all costs, both during installation and operation (Fig. 1)

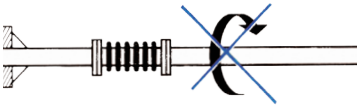


Fig. 1

- Remove the pretensioning bracket and transport safety lock after installation – not before
- Make sure that the fixed points at the ends of pipeline sections fitted with expansion joints are of adequate size. They must be able to to withstand not only the axial compressive force, which can be very large, but also the adjustment force of the expansion joint and the friction forces of the pipe guides and supports (Fig. 2)

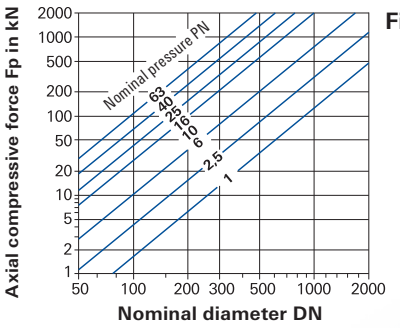


Fig. 2

Axial compressive force in pipeline with axial expansion joint

- Preload expansion joints and articulated systems after installation (except for versions that are preloaded by the manufacturer) – normally 50% of total movement taking into account direction of movement and installation temperature.

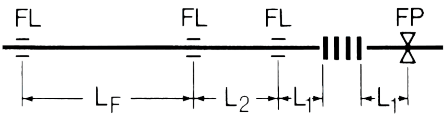
- Before pressurising the pipeline, check that guides, fixed and movable supports have been installed properly and are functioning correctly
- A pressure test outside the system or a pressure test on expansion joints sealed with blind flanges is only permitted following consultation with the manufacturer
- The permissible test pressure and permissible deflection must not be exceeded under any circumstances

2.2 Installation instructions for axial and universal expansion joints

- Install only one axial expansion joint between two fixed points
- If several axial expansion joints are installed in a straight pipe section, subdivide the section using (light) intermediate fixed points
- Pipelines with axial expansion joints must be guided. Guides are required on both sides of the axial expansion joint; fixed points undertake the guidance function (See Figs. 3 and 4 for spacings)

L_1 = < 4 DN **Fig. 3**

L_2 = < 14 DN



Guide spacings of pipelines with axial expansion joints

- The incoming pipeline ends must be in alignment with the position of the expansion joint
- If connecting to vibrating units, secure the pipeline directly after the expansion joint

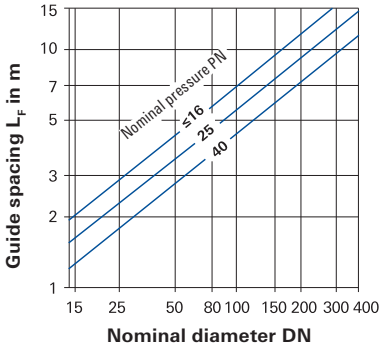


Fig. 4

Recommended spacings for pipe guides in pipelines with axial expansion joints

2.3 Installation instructions for anchored expansion joints

- Provide suitable pipe guides or suspension points close to the expansion joint system – take into account lateral movements of the pipeline
- Ensure correct position of the axes of rotation during installation: parallel to one another and perpendicular to the direction of movement
- When installing lateral expansion joints ensure that the tie rods are correctly positioned so that they can function properly (see “Installation of expansion joints” in our manual)

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EDITION 12/2012
1801uk/4/03/14/pdf