



RUBBER EXPANSION JOINTS - ADVICE AND WARNINGS

Installation Advice

- The compensation joints are supplied ready for installation. Standard flanges are freely revolving, in order to allow the alignment of their locating holes with the system.
- Additional seals are not needed if the fixing surfaces coincide. Additional seals (as indicated in the **"INSTALLATION"** guide point A) must be used only to avoid damage to the fixing surface of the rubber of the joint when, for example, the connection flange has a larger inner diameter, its edges cut the rubber or there are irregularities in the welding.
- The stated maximum working and test pressures not only depend on the burst pressure of the rubber bellows but they are also affected by the working temperature. The burst pressure (at room temp.) is 3 to 4 times the nominal pressure (PN). Pressure test certificates can be supplied upon request and payment.
- The maximum possible vacuum depends on the dimensions of the compensator, on the operating temperature and on the installation (or not) of vacuum supporting rings. These last items are indispensable accessories if the joint is to work under vacuum whilst conveying liquids. It is important to note that the addition of vacuum supporting rings reduces the range of movement by 50%. Please consult the **"VACUUM SUPPORTING RINGS"** guide for further details.
- The external rubber is resistant to atmospheric agents, abrasion and corrosion, and protects the internal cords against ageing. For operating temperature ranges refer to the technical datasheet for each joint or the summary section in the information brochure.
- The compensation joints with a Neoprene (CR) or Hypalon (CSM) cover are (within specific limits) oil and flame resistant. However, additional external covers can be considered that guarantee protection of the joint against corrosive and incompatible media or against heat and fire. For further information consult the **"FIRE PROTECTION"** guide. The GS marked joint is the only one with internal metallic cords that allow it to be used in fire risk environments without an additional external cover (a useful barrier in other cases of protection) and is RINA and IACS homologated for military naval use.
- The internal design of the compensating joint permits high flow with minimal turbulence so the loss of pressure is usually negligible. Also, thanks to its function, it has good sound insulating characteristics for both structure and liquid borne noise.

General Instructions

- Rubber expansion joints must be installed at accessible positions for visual inspection and possible replacement.
- During the installation no sharp-edged or pointed tools are to be used (refer to points 3 and 7 of the **"INSTALLATION"** guide).
- During the installation it is essential not to subject the compensation joint to torsion by trying to align the flange holes without prior loosening of the bolts.
- After the expansion joints have been installed they should be protected in an appropriate manner against damage, and the protection should only be removed just before putting into operation. Cover the rubber bellows when carrying out welding and torch-cutting work; temperatures in excess of 80°C can cause damage. Consult the **"FIRE PROTECTION"** guide for further information.
- The rubber parts must not be over-painted. Solvents and chemicals will attack the surface and destroy the bellows. Clean them only with water or with water and soap. The rubber section must also never be contaminated by fats or oils.
- If the joint is to be installed outside, make sure that the external elastomer is resistant to ozone, UV rays and the environmental conditions that are present.
- One week after installation (and periodically thereafter) check the condition of the flanges. If necessary tighten the bolts further (refer to the correct method in the **"INSTALLATION"** guide, outline C).
- It is important that the installed joints are regularly inspected for initial signs of ageing, leakage and blister formation. In the event of major maintenance work on the plant, the condition of the interior lining should also be inspected (e.g. check for swelling, hardening, washout and cracks).
- During pressure testing and operation, the permissible test pressure or operating pressure for the expansion joint must not be exceeded. Excessive pressure peaks as a consequence of closing valves too quickly and water hammers, etc. are not permitted.
- **ATTENTION:** in the event that the expansion joint is installed on a system conveying liquids with high temperature and pressure, or conveying dangerous fluids, then suitable shielding barriers must be used.

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