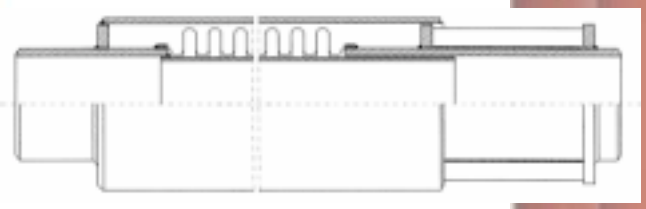
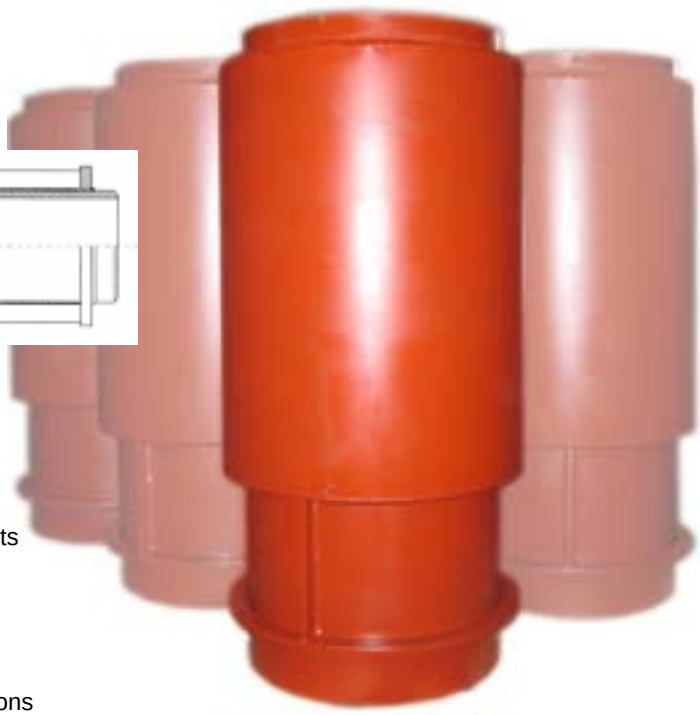
District heating compensators

by Belman Production A/S

Belman designs and manufactures district heating compensators.





Properties
The highly flexible bellow of the compensator ensures absorption of large axial movements. The casing, guides and rings of the compensator contribute high stability. The casing likewise absorbs eventual misalignments in the pipeline, which can occur if the pipeline hangs a bit in the compensator. This should however be avoided.
An internal inner sleeve protects the bellow against internal abrasive degradation and prevents dirt particles to settle in the convolutions and prevent the bellow from working as intended. The integrated safeguard against torsion in the protective casing and the limiter protects the bellow from unintended loads and in that way a longer service life is achieved.

Pre-stressing
The district heating compensators are delivered pre-stressed and this pre-stressing bursts automatically once the plant is commissioned, after the installation. After this the compensator works as intended. The pre-tensioning device is installed so that it, after the burst, is still fixed and not adversely affects the work of the compensator.

The reason for pre-stressing a compensator is that the service life is significantly prolonged and the absorption of movements is increased. As the compensators often are installed in cold pipelines they are pre-stressed to absorb larger movements. Likewise this is done to ensure that the compensator has a correct migration and even more a correct use during service/operation.

Pre-insulation
District heating compensators are prepared for pre-insulated pipes which mean that the compensators can be insulated right after installation like the rest of the pipeline. Foam can be placed directly on the casing of the compensator and subsequently plastic can be mounted around it. The safeguard against torsion and the limiters makes the compensator suitable for covering. Pre-insulated district heating compensators is supplied if required.

Leak indicator
The pre-insolated district heating compensators are supplied with a leak indicator. After the district heating pipeline is subsurface this leak indicator will indicate if the pipeline is leaky and/or the insulation is wet and thereafter remedial actions can take place.

Construction
Welding ends: Minimum 150 mm.
Medium: Primarily water and steam.
Design pressure: 10-25 bars.
Design temperature: To 150ºC as standard (higher temperatures on request).
Material: Pipe parts of the compensator are made from carbon steel. The bellow is comprised of several layers of stainless steel, of which the quality is determined by the medium and the surroundings.
Compensators are designed according to the pipeline and its operating data.

Advantages
- Safeguard against torsion.
- Absorption of axial movements.
- Prepared for automatic welder.
- Are delivered pre-stressed for absorption of a given negative axial movement.
- Prepared for pre-insulated pipes.

Application
District heating compensators are especially developed for applications like district heating systems, power plants and district heating pipelines. This kind of compensator is used in both subsurface pipelines and above ground level pipelines.

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