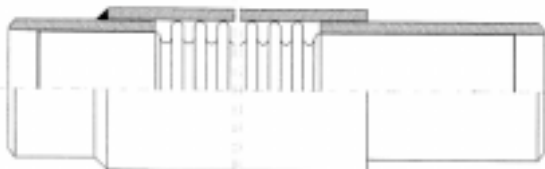


# One-step compensators

by Belman Production A/S



**Belman designs and manufactures one-step compensators.**



## Advantages

- Are supplied pre-stressed to absorb a given negative axial movement.
- Prepared for pre-insulated pipes.
- After absorption of movement the one-step compensator function as an ordinary pipe.

## Application

One-step compensators are often used in district heating systems and in district heating pipelines. This kind of compensator is used in both subsurface pipelines and above ground level pipelines.

## Properties

The one-step compensator is typically installed in the pipeline while it is cold.

When the pipeline is commissioned and heated (the first heat-up) the pipeline will move. The one-step compensator absorbs this movement. After the pipeline is commissioned it will not move further, in which case the compensator would not have to absorb further movements. Because of this the compensator has been given the name; one-step compensator.

One-step compensators are ordinary compensators with an ordinary bellow. The two external casings around the bellow are placed so that one casing lap over the other casing cf. the drawing. They are placed like this because the casings are welded together once the compensator has absorbed the movement occurred from the commissioning. The compensator function as an ordinary pipe and therefore the one-step compensator must be fixed. Therefore there are no maintenance of the compensator beyond the maintenance which are carried out on the pipeline.

## Construction

Medium: Primarily water and steam.

Design temperature: To 150°C, as standard (higher temperatures on request).

Design pressure: 10-25 bar.

Steel quality: On request.

## One-step compensators supplied by Belman Production A/S

### One-step compensators in Moscow

20 pcs. one-step compensators are installed in a newly-built district heating pipeline in Moscow. Delivery was urgent as the construction process was up and running at the time of order placement.

Nominal diameter:	NB 700 mm.
Built-in length:	475 mm.
Medium:	Water.
Design temperature:	150°C.
Design pressure:	25 bar.
Axial movements:	+0/-80 mm.

### Material

Bellow:	W.1.4541.
Welding ends:	St. 37-2.
Casing:	St. 37-2.



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