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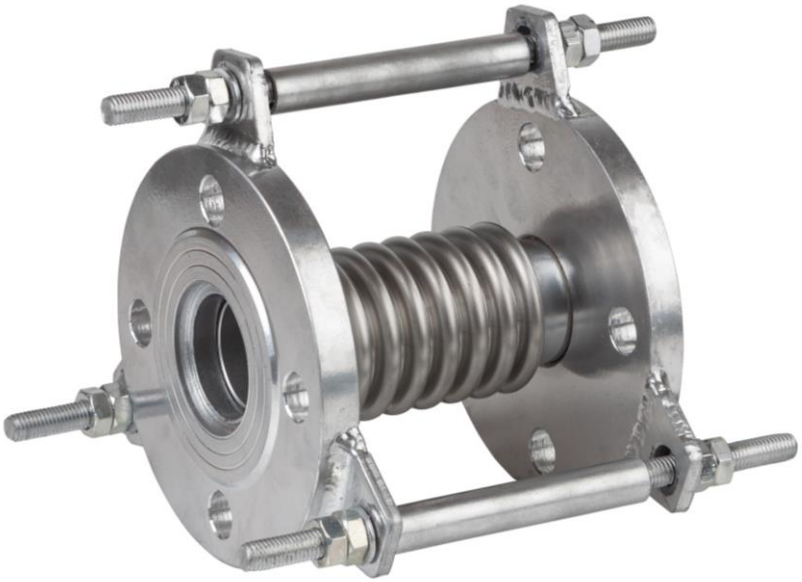
INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Metal expansion joints



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Installation, Operation and Maintenance Instructions

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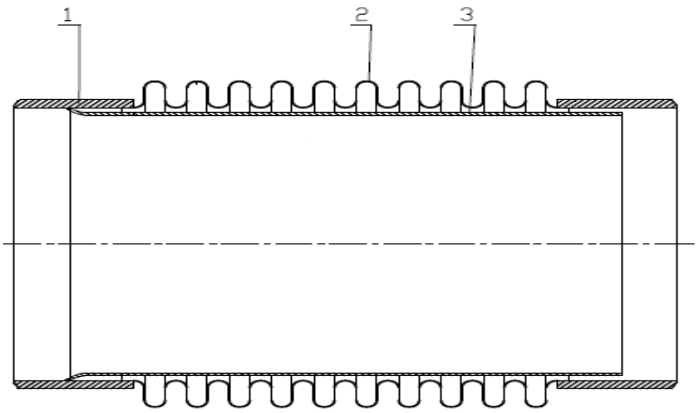
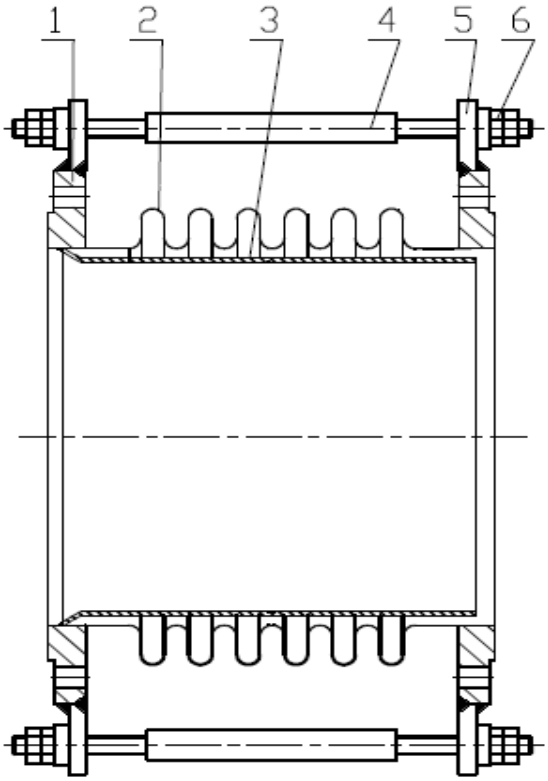
1) Exploded view

1.1) Drawing



Art. 2834



Art. 2835E / Art. 2835AE

1.2) Parts list

Art. 2834

Nº	*Name*	Material	*Surface Treatment*
1	*End Pipe*	*Stainless Steel 304*	------
2	*Bellows*	*Stainless Steel 1.4301*	------
3	*Inner Sleeve*	*Stainless Steel 1.4301*	------

Art. 2835E / Art. 2835AE

Nº	*Name*	Material	*Surface Treatment*
1	*Flange*	*Carbon Steel*	*Galvanized*
2	*Bellows*	*Stainless Steel 1.4301*	------
3	*Inner Sleeve*	*Stainless Steel 1.4301*	------
4	*Pipe and Rod*	*Carbon Steel*	*Galvanized*
5	*Pipe and Rod Support*	*Carbon Steel*	*Galvanized*
6	*Nut*	*Carbon Steel*	*Galvanized*

2) Storage

During storage it is recommended not to expose the product to humid, dusty or corrosive atmospheres or direct sunlight. Do not remove the protective packaging until the lap joint is going to be installed to prevent against blows or the accumulation of dirt. Where possible, the equipment must be stored in a dry clean place.

3) Installation Instructions

3.1) Preparation

Before installation:

- check the application and the chemical compatibility of the process fluids with the construction materials of the compensator. Check that the rating of the expansion joint is greater than or equal to the maximum pressure and temperature of the installation (see product Data Sheet).

- verify the condition of the compensator for possible damage during transport and/or handling. Inspect both the interior of the compensator as well as any neighbouring pipework. It is very important to check that there is no foreign matter that could damage the expansion joint.

- protect the expansion joint from damage as a result of heating or protrusions originating from nearby welds (or others) prior to commissioning.

- make sure there is sufficient space for future maintenance operations.

3.2) Assembly

Pipe guidance ⟶ Metal expansion joints only permit axial movements, therefore, the pipe must be guided in order to permit only this type of movement. Sliding or rolling supports must be used in order to permit sliding of the pipe. The two ends of the pipe section between which the compensator is placed must be anchored using fixed points. **Only one compensator must be fitted between two fixed points**. The fixed points must be of a suitable size to absorb the reaction force of the compensator due to the internal pressure in addition to the friction force of the axial guides. Movement restriction points must be installed for changes in direction.

Axial stroke ⟶ The values of the compensation parameters of the metal expansion joints are indicated in the corresponding Data Sheet. Please consult the Data Sheet of each article to be installed.

Rod limiters (art. 2835E / art. 2835AE)⟶Their function is to control the possible excessive expansion/contraction of the compensator as well as guide its movement in an axial direction. Only available in DN50 (2") or above.

IMPORTANT:

- IT IS THE RESPONSIBILITY OF THE INSTALLER/USER TO ENSURE COMPLIANCE WITH THE SAFETY REQUIREMENTS REQUIRED FOR INSTALLATION.

- Genebre, S.A. expansion joints are designed for fitting between DIN PN16 flanges (art. 2835E), ANSI 150 flanges (art. 2835AE) or even to be butt welded according to ASME B16.25 (art. 2834).

- never install more than one compensator between two fixed points.

- the torque of the screws and nuts of the flanges must be done in a gradual and uniform criss-cross fashion. For further information, consult the table of maximum torques for flanges in point 7.1 of this manual.

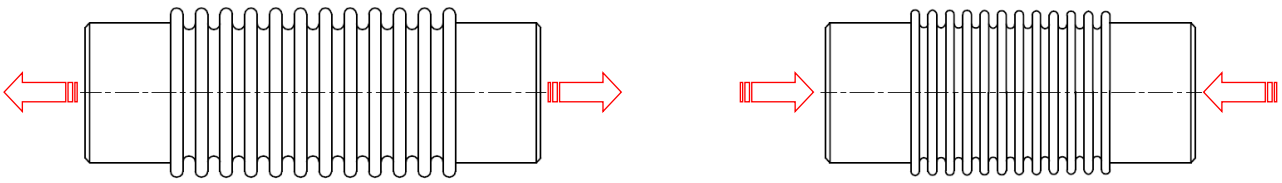
- do not paint or lubricate the bodies of the expansion joints.

- pay special attention to the assembly position. The expansion joints have an inner sleeve, therefore the flow direction is marked with an arrow.

4) Operating Instructions

4.1) Operation

The Genebre metallic expansion joints provide optimum results when used in accordance with the pressure / temperature values for which they have been designed.
The displacements to be absorbed by the compensator will depend fundamentally on the calculation performed during the design of the installation These movements may arise in two different forms:



EXPANSION CONTRACTION

Consult the displacement limits on the table included in the product Data Sheet.

5) Maintenance Instructions

The expansion joints do not require lubrication or periodic maintenance. It must be taken into consideration that its useful life is limited and largely depends on parameters such as pressure, temperature, environmental conditions, number of cycles, compatibility of materials, range of movement and correct anchoring and guidance.

However, the following periodic checks will aid in prolonging the useful life of the equipment and reduce problems on the installation:

- verify that all the fastening and threaded joins to check whether they are loose or rusty. In the event of leakage, tighten accordingly.

- If the leak persists, dismantle and check the condition of the contact surfaces, and replace the damaged parts as required..

- in the event of detecting any excessive deformation or rusting on the compensator body, completely replace the product.

NOTE: when using any cleaning product, check that it is compatible with the construction materials of the expansion joint.

6) Repair Instructions

Before removing a valve or accessory from any piping, always ensure that the line is completely drained and depressurised.

For design reasons, in the event of the expansion joint being partially or totally damaged, it must be replaced completely.

7) Torques

7.1) Maximum recommended torque for tightening the flange screws

SIZE	Maximum torque (N.m)
1 ¼" ~ 4"	50
5" ~ 6"	60
8" ~ 14"	80
16" ~ 20"	100

8) Health and Safety

8.1) The fluids that pass through a valve or accessory can be corrosive, toxic, flammable or of a contaminating nature. When handling the valves, take the necessary safety measures and it is advisable to use personal protective equipment:

1) Wear eye protection.
2) Wear appropriate gloves and work clothes.
3) Wear safety shoes.
4) Wear a helmet.
5) Check the availability of running water.
6) In the case of flammable fluids, ensure that the appropriate extinguisher is available.

8.2) Before removing a valve or accessory from any piping, always ensure that the line is completely drained and depressurised.

8.3) Any valve that has been used in toxic services must have a certificate of cleaning before it is handled.