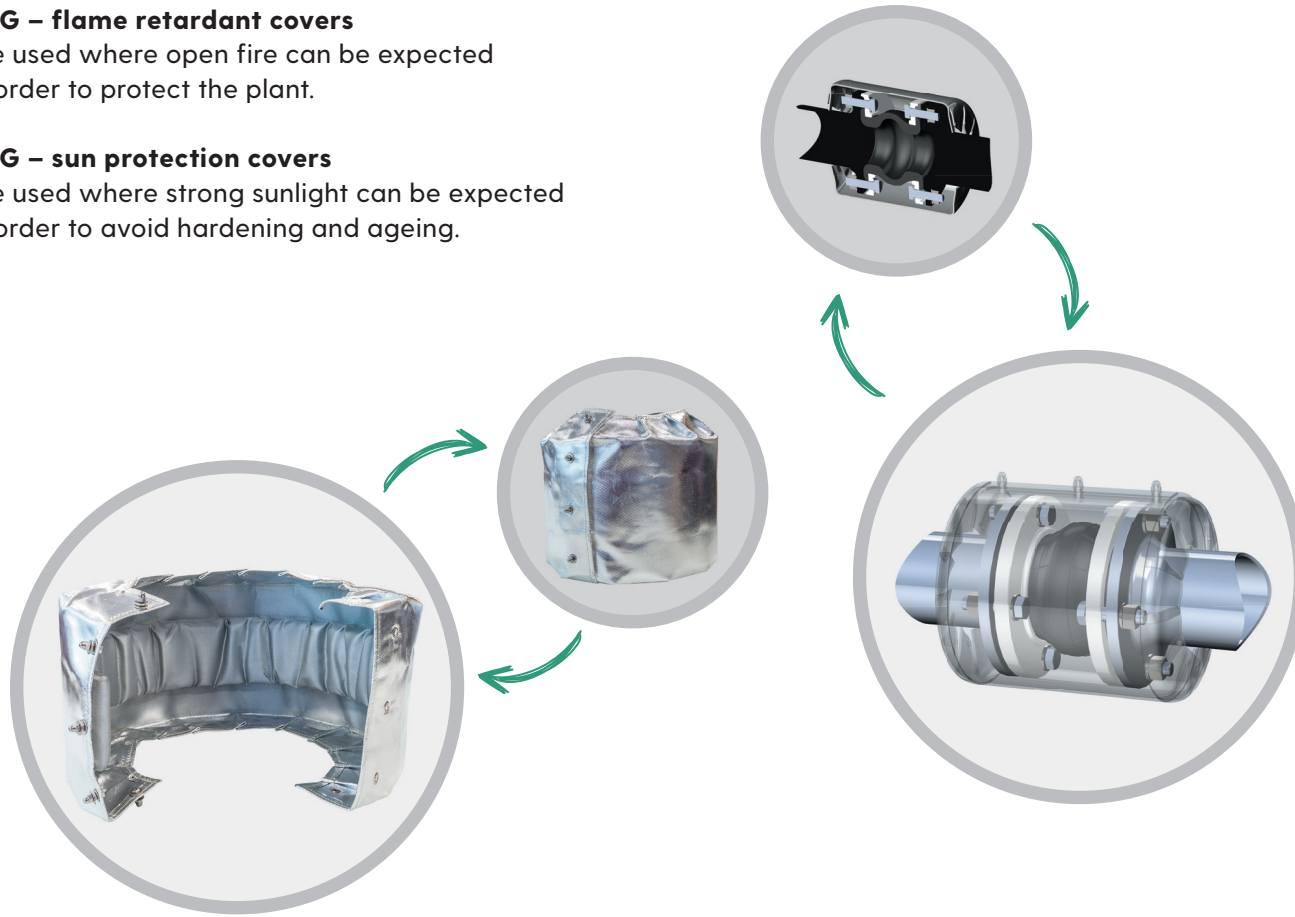


Protective covers

GFG – flame retardant covers
are used where open fire can be expected
in order to protect the plant.

GFG – sun protection covers
are used where strong sunlight can be expected
in order to avoid hardening and ageing.



Technical textiles

In addition to the production of fabric expansion
joints, we also offer a plurality of insulating and
sealing materials. Fabrics, wools, packages, and

cords made of various materials (glass, silicate,
etc.) are used.



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PRODUCT PORTFOLIO



Fabric expansion joints

DESCRIPTION

An expansion joint is a flexible element for compensating movements in pipelines, including vibrations in lateral or axial directions, temperature differences, or wall ducts. They are used in pipeline construction as well as in plant and apparatus construction. Depending on the application, expansion joints are made of different materials. We offer soft material expansion joints which are always produced in consideration of certain operating parameters and thus meet the individual, customer-specific requirements.

BENEFITS

- ✓ **High compensating capacity**
- ✓ **Maximum mobility with minimum pipeline spacing**
- ✓ **Large movement absorption with simultaneous sealing function**
- ✓ **Low weight and low reaction resp. adjustment forces**
- ✓ **Easy installation—also by customer-own personnel**
- ✓ **Precise customization due to numerous possible variations of the materials used**
- ✓ **Combination of different functions possible due to multi-layer construction (e. g. tightness, insulation, pressure surge behavior)**
- ✓ **Optimum adaptation to operation-specific thermal, chemical, and mechanical influences**
- ✓ **Cost-effective production and low transport costs for large dimensions**

APPLICATION

Fabric expansion joints are used in all industries, for example in thermal power stations, chemical industry, cement industry, shipbuilding, chimney and fireplace construction, fan construction, ventilation technology, waste incineration plants, dedusting plants, or metallurgical industry. They are primarily used in plants with gaseous media such as flue gas or hot air.

MATERIAL

The numerous possible combinations of the materials allow customized production for operation-specific requirements. In order to be able to design expansion joints optimally, precise specifications are necessary: among other things, pressure and temperature conditions, mechanical loads, movements in the operating state, general information on the medium. The following material groups and the associated tasks determine the design of the expansion joints:

→ INSULATING MATERIAL

Fabrics from ceramic, glass, or silicate are used as insulating material in expansion joints. This prevents the actual sealing foil from being damaged by mechanical or thermal influences. The decisive factors are the quality and strength of the insulating fabric.

→ SEALING FOIL

For the primary sealing element, the sealing foil, foils made of high alloy steel, elastomers, or PTFE are used. The sealing foil is mainly enclosed by two layers of fabric.

→ BACKING FABRIC

For the backing fabric, fabrics from silicate, polyester, glass, or aramid are utilized. The backing fabric is on the outside and is usually coated. It ensures dimensional stability and compressive strength of the expansion joint.

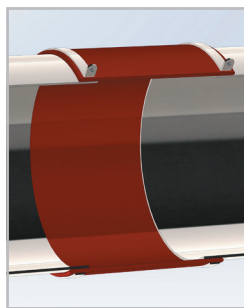
→ COATING

For example, neoprene, silicone, CSM, PTFE, Viton, EPDM, or Hypalon are used to coat the backing fabric. The various elastomers protect the backing fabric and support the shaping. For simpler components, the coating acts as the primary sealing element.

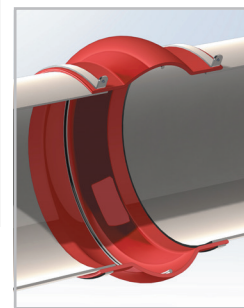
→ MOVEMENT ABSORPTION

The design of the central part (AR) is crucial for the movement absorption of the expansion joint. Primarily, the following variants exist:

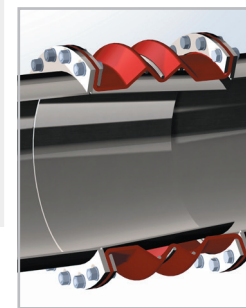
Central part straight
axial $-0,25 \times AR$
lateral $\pm 0,1 \times AR$



Central part curved
axial $-0,3 \times AR$
lateral $\pm 0,15 \times AR$

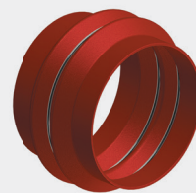


Central part with folds
axial $-0,5 \times AR$
lateral $\pm 0,3 \times AR$



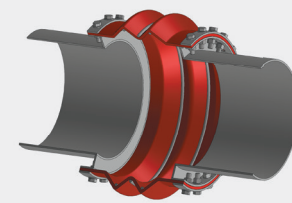
Designs

For our customers, we manufacture each expansion joint individually. In the process, we take into account the respective operation-specific parameters. Substantially, three designs can be distinguished:



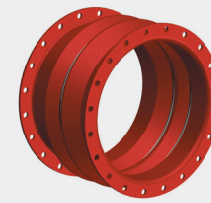
Tube expansion joint I
Mounting directly on the pipeline

The tube expansion joint I serves to absorb movement in the axial, lateral, and angular directions. It is suitable for both oval and round cross sections and, depending on the material, for an operating temperature of up to 350 °C. It is designed for a pressure of ± 0.25 bar. At higher pressures we will evaluate the individual possibilities. If there is negative pressure, the bellows pulls inwards and narrows the cross section of the flow. Support rings can help here. For diameters between 700 and 800 mm, the expansion joint is attached with multi-part hose clamps. If the diameter is over 800 mm, it is advisable to choose a flange mounting.



Tube expansion joint II
Mounting on pulled out mounting flanges

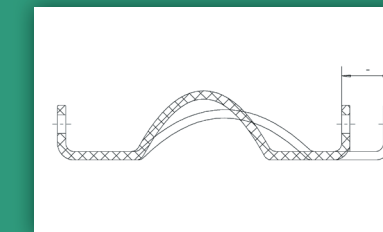
The tube expansion joint II also serves to absorb movement in the axial, lateral, and angular directions. In contrast to the tube expansion joint I, however, it is suitable for all sizes and cross sections. The optimum temperature emission in the mounting area allows the expansion joint to be used without pre-insulation at 400 to 500 °C and with pre-insulation at 600 to 700 °C. Depending on the material and special design measures, it is even suitable for media temperatures of up to 1,000 °C. This expansion joint is also designed for an operating pressure of ± 0.25 bar.



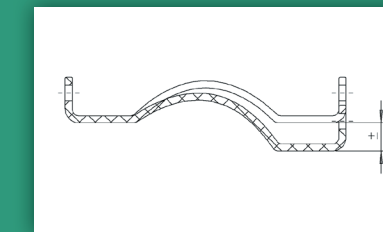
Flange expansion joint
Suitable for oval, round, and rectangular cross sections, this design absorbs expansions in axial, lateral, and angular directions. We offer the flange expansion joint with self-sealing flanges and single or multi-part backing flanges. It is particularly used at higher pressure, extreme dimensions, or where maximum tightness is required. If larger flanges are mounted with additional insulation, it is suitable for media temperatures of up to 650 °C. The ideal temperature is between 450 and 500 °C. In addition, the expansion joint is configured for a pressure of ± 0.50 bar.

Possible movement absorption

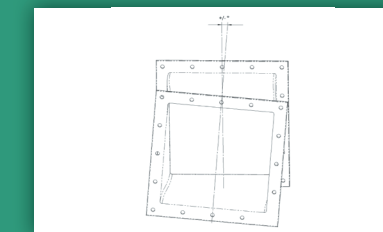
- also possible in combination -



Axial Minus
(compression)



Lateral resp. sideward misalignment



Twist resp. torsion

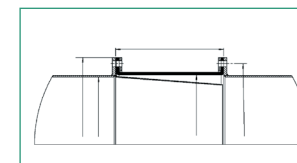


REQUIRED INFORMATION

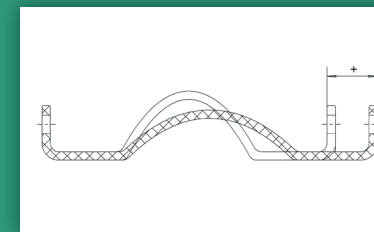
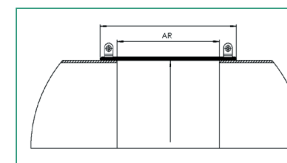
In order to implement customized requirements and wishes precisely, we require some information in advance:

1. Operating conditions such as medium, operating pressure and temperature, and movement absorption.
2. The following dimensions are to be taken on site: inner diameter, outer diameter, installation height.

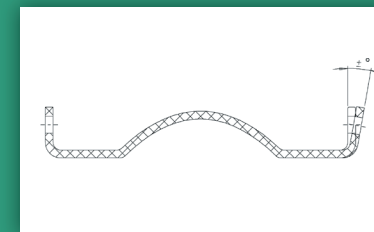
Flange expansion joint



Tube expansion joint



Axial Plus
(expansion)



Angular misalignment

Full service „Everything from a single source“

Benefit from our extensive service. From personal advice and plant inspection, over the measurement up to the production and installation you receive everything from a single source. Our experienced and optimally equipped specialists take on the complete installation for new construction or revision measures. On request, we will gladly

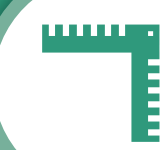
provide you with a chief fitter who will support you, instruct your personnel, and supervise the installation activities.

You don't have to worry about anything and have more time for your day-to-day business.

Advice



Measurement



Production



Installation

