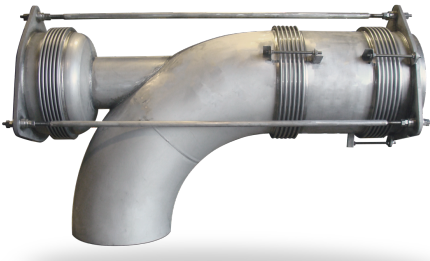


RELY ON EXCELLENCE

HA Type expansion joints

Expansion joints | Metal expansion joints



Features

- Elbow type pressure balanced expansion joints.
- Pressure thrust eliminated by means of force balancing design principle.
- Designed to apply minimum forces on connecting, load sensitive equipment.
- Mainly for axial and lateral movements.

Advantages

- No need for main anchors to obtain pressure thrust load.
- Minimum load transferred onto connecting equipment – force balancing principle not affected by system pressure fluctuations.
- Highly customizable design: Bellows geometry, Material options and combinations.
- Multiply bellows with low spring rate and high cycle life.

Operating range

Diameter: DN 100 ... 1,000 (4" ... 40")
 Temperature: ... 550 °C (1,022 °F)
 Pressure: max. 50 barg (725 PSIG)

Materials

- Bellows: 1.4541 (AISI 321); 1.4301 (AISI 304); 1.4306 (AISI 304L); 1.4401 (AISI 316); 1.4404 (AISI 316L); 1.4571 (AISI 316Ti); 1.4828 (AISI 309); 1.4547 (254 SMO); 2.4816 (Inconel® 600); 2.4856 (Inconel® 625/LCF); 1.4876 (Incoloy® 800/H)
- Connections: 1.0038 – (S235JRG2); 1.0460 – (P250GH); 1.0315 – ; 1.0254 (P235TR1); 1.0425 – (P265GH); 1.5415 – (16Mo3); 1.7335 – (13CrMo4-5); 1.4401 (AISI 316); 1.4404 (AISI 316L); 1.4541 (AISI 321)
- Flanges: 1.0038 – S235JRG2; 1.0425 – P265GH; 1.0315 – P235G2TH; 1.0254 (P235TR1); 1.0425 – P265GH; 1.5415 – 16Mo3; 1.7335 – 13CrMo4-5; 1.4404 (AISI 316L); 1.4436 (AISI 316)

Other materials are available on request.

Standards and approvals

Design codes:
 EJMA 9, PED 97/23/EC acc. to EN 13480, EN 13445, EN 14917, AD2000 and ASME B31.3

NDT and documentation:

According to PED 97/23 EC rules and regulations (declaration of conformity)
 Documentation can be provided per customer request e.g.:

- Test, measurement or calculation reports
- Material, test or inspection certificates
- Design, type or 3rd party approval

Notes

Tied metal expansion joints might require alignment guides to ensure the expansion joint only see the intended movements.

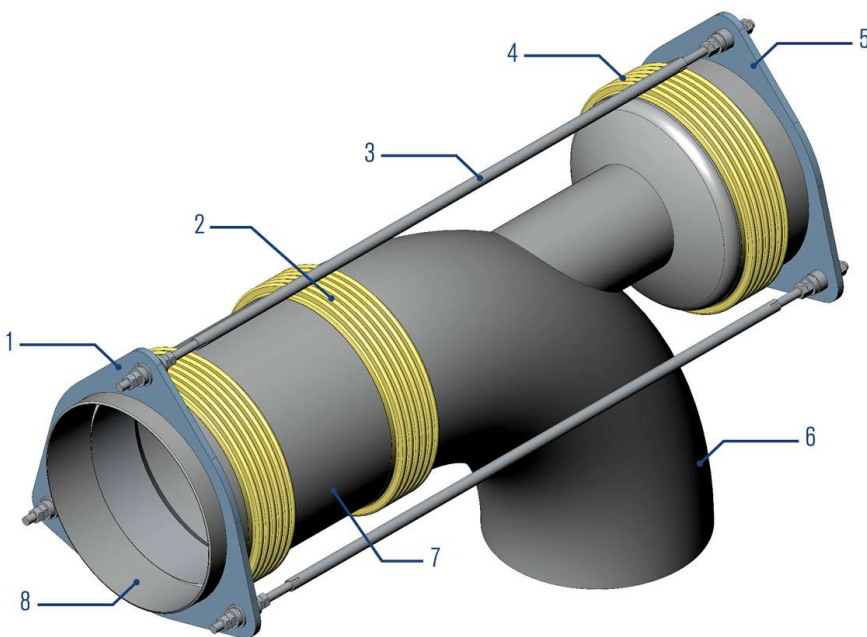
Recommended applications

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- Oil and gas industry
- Refining technology
- Power plant technology
- Pulp and paper industry
- Water and waste water technology
- Metal production and processing
- Shipbuilding
- Steam turbines
- Water cooling systems
- Steam transport lines
- Compressor / pumping stations
- Lubrication systems
- Storage tanks

Item Description

- | | |
|---|-------------------|
| 1 | Carrier ring |
| 2 | Line bellows |
| 3 | Tie rod |
| 4 | Balancing bellows |
| 5 | Flange |
| 6 | Elbow section |
| 7 | Centre spool |
| 8 | Internal liner |



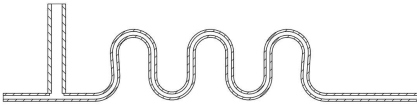
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Installation, details, options

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2-ply testable bellows

2-ply (redundant ply) bellows, enables monitoring of the bellows inner/ outer ply integrity. Both plies are designed for full pressure.



Connection option:

Weld ends

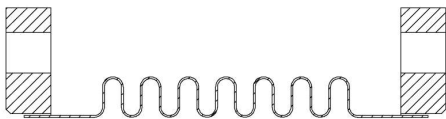
Each connection end can be defined individually.



Connection option:

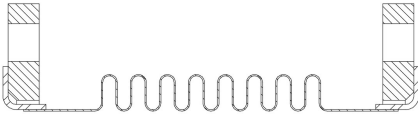
Fixed flange

Each connection end can be defined individually.



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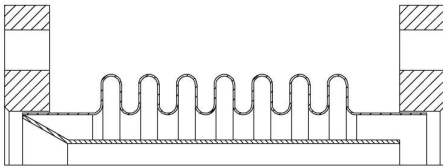
Welding collar and loose / swivel flange



Internal liner option:

Fixed liner

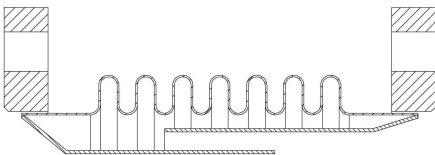
Liners protect the bellows from particles in the medium and provide a smoother flow at high velocities.



Internal liner option:

Fixed telescopic liner

Liners protect the bellows from particles in the medium and provide a smoother flow at high velocities.

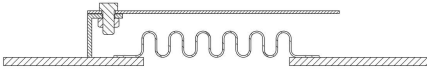


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External cover option:

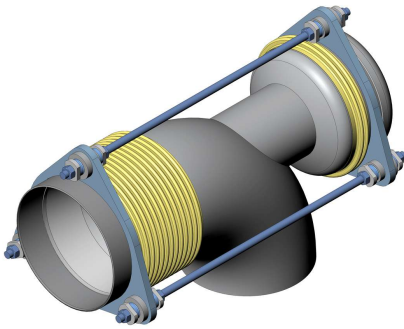
Protective cover, installed on the expansion joint.

Metal covers are installed on the expansion joint to protect the thin metal bellows.



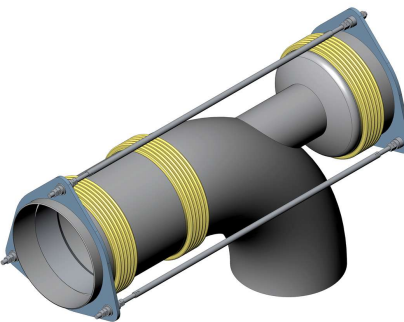
RELY ON EXCELLENCE

Product variants



HA1: Elbow type pressure balanced expansion joints

Equipped with min. 2 bellows, internally pressurized.
Mainly intended for axial movement.
Shown with weld ends.



HA2: Universal, elbow type pressure balanced expansion joints

Equipped with min. 3 bellows, internally pressurized.
Intended for axial and lateral movement.
Shown with weld ends.