iNPOTEKNiK

EXPANSION JOINTS

ABOUT US

INPOTEKNIK has been supplying high quality expansion joints to European and Turkish industry for over 7 years. Located on the Asian side of İstanbul, only minutes away from SAW (Sabiha Gökçen Airport) Inpoteknik is known for;

- Quick and efficient manufacturing,
- Fast sales response times,
- Its commitment to quality and customer satisfaction,
- Competitive pricing,
- Engineering and design capabilities.

INPOTEKNIK combines decades of manufacturing, sales and engineering experience of its team. We at **INPOTEKNIK** understand that expansion joints are specialty products and we listen to customer needs to find the right solution.

At over 1.000 sqm of production and office space, our manufacturing capabilities are very flexible. We can manufacture;

- EJMA type expansion joints from DN25 to DN2600,
- Lens type of expansion joints up to DN5000 and with thicknesses about 6mm,
- Multi layer bellows.

Our most commonly used bellows material is 321SS (1.4541) and 316/316L (1.4401/1.4404) while we manufacture bellows from various grades of stainless steels and nickel alloys such as 304/304L, 309, 310, SMO254, Alloy 625, Alloy 800H, Alloy C22, Duplex 2205, Super Duplex 2507.

Please contact us at **info@inpoteknik.com.tr** for your inquiries and questions.

QUALITY

INPOTEKNIK operates a quality asurance system for the design, manufacture, final inspection and testing of the Pressure Equipment Directive (PED)2014/68/EU-MODULE H. All bellows are leak or pressure tested and visually inspected before they leave the factory. Other non destructive tests such as dye penetrant testing and radiographic testing are available upon request.

CE

TÜV NORD
ISO 9001-2015

TSE

Expansion Joints

Single expansion joints is the most common type of expansion joints. They consist of one bellows (flexible element) and end connections. This type of expansion joint is capable of absorbing all three (axial, lateral, angular) types of movements but they are primarily used for axial displacements.

As opposed to single expansion joint, **universal expansion joints** have "two" bellows separated by a pipe. They are preferred when large lateral movements need to be absorbed. This configuration allows each bellows to move less due to large lateral movements. Increasing the distance between bellows, increases the lateral movement absorbing capacity of the expansion joint. These expansion joints can also be used for axial displacements.

Standard Design Pressure
2.5 barg, 6 barg, 10 barg, 16 barg, 25 barg
Units can be designed for higher pressures.

fixed flange expansion joint

These units come with welded flanges on both ends. This type of assembly provides easy connection in the field (no welding required), easy replacement and can be used at high pressures. Flanges can be manufactured from carbon steel, stainless steel or nickel alloys conforming to many industry standards such as ASME, EN, JIS, etc.

rotating flange expansion joint

This type of expansion joints are also called as "Vanstone" or "floating flange" type. Flanges are not welded to a bellows or pipe, they simply rotate over the bellows "neck" or pipe. Suitable for lower pressures, carbon steel flanges can be used at internally corrosive environments since the bellows material separates the flanges from internal medium. Rotating flanges eliminates the problem of flange bolt misalignment during installation.

weld end expansion joint

Bellows is welded to pipes on both ends in this type of assembly. While welding is required in the field, this type is the safe choice for high pressures where leakage can be of concern. Various types of materials can be used while weld end material of the expansion joint should be the same as of the piping system of the customer. Although industry standard pipes is the choice of connection, plates can be rolled to fit diameter of customer's piping.

vibration absorbing expansion joints

Vibration absorbers are manufactured from minimum two or three layer bellows for high cycle life and dampening of the vibrations. This type of expansion joint is an excellent choice for higher temperatures and pressures where rubber expansion joints cannot be used. They can be supplied with rods to prevent pressure forces applied on the equipment or piping system. Higher design temperatures, design pressures, different end connections are available upon request

Design Pressure
16 barg

Design Temperature
300 degC

Movements
Axial and/or lateral vibration

End Connections
Fixed or floating carbon steel flange

externally pressurized expansion joints

Externally pressurised expansion joints absorb large axial movements at high pressures where standard types cannot be used. This type of expansion joints also come with an outer cover that protects the bellows from external damages and an inner sleeve that smooths the flow as a part of the overall design. This is a very solid design offering many advantages to the user. Higher design temperatures, design pressures, different end connections are available upon request

Design Pressure
16 barg – 25 barg

Design Temperature
300 degC

Movements
Axial,

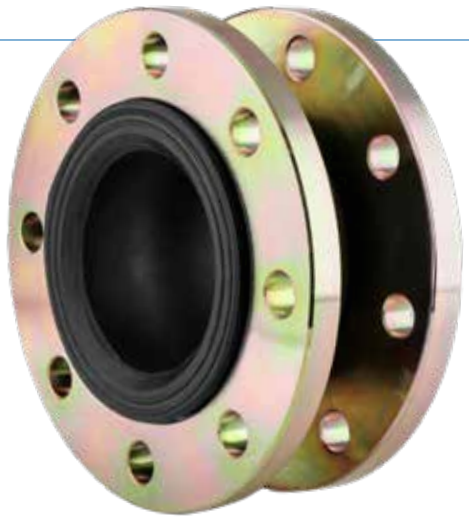
End Connections
Fixed or floating flanges, weld ends

rubber expansion joints

Flexible part of these units is manufactured from EPDM, NBR, CR or SBR while flange connections are most commonly manufactured from stainless steel or carbon steel. They can absorb large movements within a short length and is an excellent choice for absorbing vibrations. These expansion joints are standard products making them inexpensive and readily available on stock. They can be supplied with rods to prevent pressure forces applied on the equipment or piping system.

Design Temperature
Max. 110 degC

Design Pressure
Max. 10 barg



seismic expansion joints

Large movements in industrial or residential piping systems can occur due to ground settlement over time or due to earthquakes. These events can cause significant stresses on the piping system and can cause failure. Seismic expansion joints designed with their large axial and lateral movement absorption capability is a very good preventive solution for this problem. These universal type joints come with either gimbal or limit rod accessories limiting excessive movements.

Design Pressure
16 barg

Design Temperature
300 degC

Movements
Axial, Lateral and Angular

End Connections
Fixed or floating flange, weld end

district heating expansion joints

This type of unit is designed specifically for using indoors with central heating systems where large axial displacements are present. It has an outer cover to match indoor looks and protection against damages. Inner sleeve prevents "whistling" noise due to high flow velocities and minimizes pressure losses. They are easy to install and a good solution for pipe expansions and contractions. All stainless steel expansion joints available upon request. Product ranges are DN15 to DN100

Design Pressure
16 barg

Design Temperature
400 degC

Movements
+/-25mm Axial
(50mm Range)

End Connections
Floating carbon steel flanges

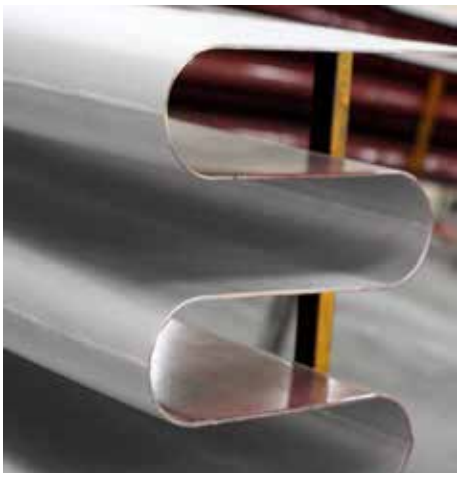
braided hoses

Braided metal hoses are used for high pressure applications where lateral flexibility is needed. External braid gives pressure resistance to flexible hose while protecting it from external damages. They are standard designs, readily available on stock. They can be supplied with fixed/floating flanges and weld end type connections. Unbraided hoses are also available for applications such as boilers and heat exchangers.

hose material
316/316L, 304SS

braid material
304SS

lens expansion joints



Manufactured from single thick layer sheets, this type of expansion joint is circumferentially welded on the top and bottom of each convolution. They offer several advantages over typical thin layered bellows.

Advantages

- High resistance to damages that occur during installation and shipping,
- Can be manufactured from carbon steel,
- Repair of bellows can be performed,
- Drain couplings can be added to the convolutions
- Thick manufacturing materials make corrosion less of a concern,
- They can be shipped in sections and assembled in field.

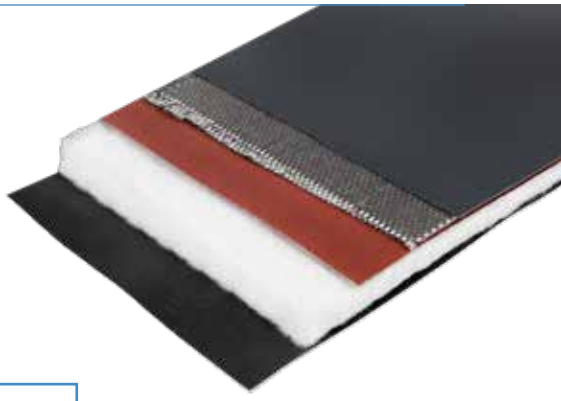
These units can be manufactured from carbon steels, stainless steels and nickel alloys. Our manufacturing capabilities range from 2mm to 6mm thickness and from DN250 to over DN5000.

fabric expansion joints

Ideal for large diameters and low pressures, these units are manufactured from layers of fabric, each layer with a special purpose. While some layers provide resistance to various types of chemicals, other layers can provide resistance to high temperatures. These expansion joints are extremely flexible and can be used at very high temperatures. They can be supplied with rods to prevent pressure forces applied on the equipment or piping system.

Design Pressure
Max.0,5 barg

Design Temperature
Max. 850 degC



Please consult with us for custom design solutions,
for higher pressure and higher temperatures.
info@inpoteknik.com.tr

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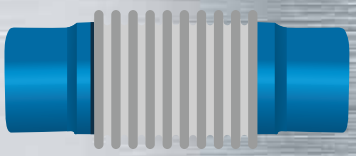

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