



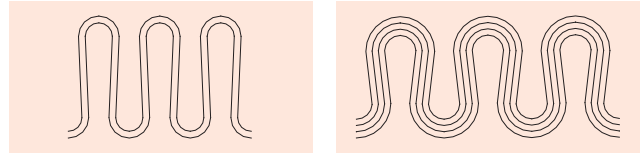
Metal expansion joints



EXPANSION JOINTS ARE FLEXIBLE BELLOWS USED FOR

- elimination of thermal dilatation in pipelines with variable temperature (hot water, steam, gas-fumes)
- absorbing mechanical vibrations from vibrant aggregates (pumps, compressors, gas-engines,...)
- elimination of assembly raggedness and other working movements in pipelines

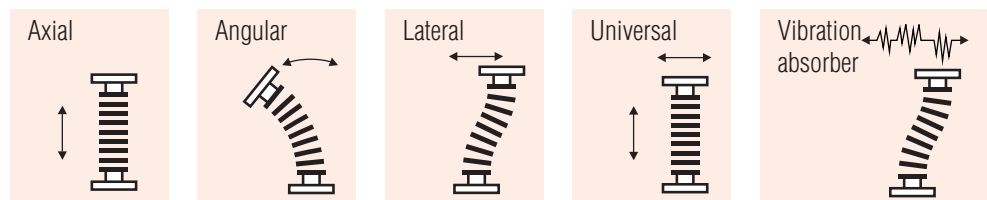
Construction Base of the expansion joint is a flexible bellow to which are welded tubes, flanges or other special fittings (etc. threaded). Bellows is made by forming of quality stainless steel sheets. Bellow could be made from one ply (monolithic) or more plies (multiply).



The advantage of the multiply expansion joints is:

- their lower modulus of elasticity, what has positive impact on the application of load on fixed points
- better ability to absorb bigger deflection at the smaller built-in parametres
- higher flexibility at the bigger pressure load - ability to absorb mechanical vibrations
- schopnosť absorpcie mechanických vibrácií
- possibility to manufacture expansion joints with inner ply from special steels (Inconel, Incoloy, Titanium,.....) for chemically aggressive medium

All expansion joints are designed, manufactured and tested according to EJMA norms. The expansion joints are allocated according to form of stress:



The expansion joint are made with circular section from DN 15 to DN 5000 and also with non-circular (rectangular) section in standard pressure from PN 1 to PN 40. For the increasing stability of bellow, reducing of turbulency flowing medium, increasing of resistance against abrasive elements could expansion joints be manufactured with inner sleeve. This is also recommended in the case that the speed of the flowing fluid medium is higher than 3 m/s and gas medium higher than 7 m/s.

Material The expansion joints are made from the following materials according to working conditions: BELLOWS
standard: AISI 321, AISI 316Ti
special: Inconel 625, Incoloy 825, Monel 400, Titanium, ...
ENDINGS
good welded steels grades 11, 12 and 17, or other according to working conditions
INNER SLEEVE
standard: AISI 304

Control and tests STANDARD
All expansion joints are subjected to dimensional controls during the manufacturing and tightness test before the expedition.
ON REQUEST
pressure test, x-ray, ...
Volume of tests and material documentations must be mentioned in the inquiry.

Assembly At the assembly of the expansion joint must be meet all baseline asseby rules, which are mentioned in the assembly guide which is part of delivery.

ALL ABOVE IS NEEDED

- to protect bellow before mechanical damage
- to keep the correct position and dimension of the adjustable and fixed points of pipeline
- to keep the assembly bias of the expansion joint
- to keep correct orientation of the inner sleeve according to direction of the flowing medium

KW**axial expansion joints with weld-ends**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb axial deflections and fluttering in pipeline.

KLFS**lateral expansion joint with fixed flanges**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb deflections at the plane vertical to the axis of the expansion joint.

KFS**axial expansion joint with fixed flanges**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb axial deflections and fluttering in pipeline.

KLRW**lateral welded plane expansion joint**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb deflections at the plane vertical to the axis of the expansion joint.

KTFS**vibration absorber with tie-rods in washers**

Diameter: DN 40 – DN 1000
Pressure: PN 6 – PN 25
Use: to reduce fluttering and vibrations in pipeline.

KLRFs**lateral plane expansion joint with fixed flanges**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb deflections at the plane vertical to the axis of the expansion joint.

KFB**axial expansion joint with swivel flanges**

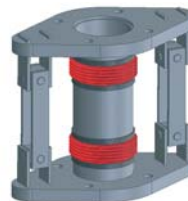
Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 16
Use: to absorb axial deflections and fluttering in pipeline.

KLPW**lateral welded spatial expansion joint**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb deflections at the plane vertical to the axis of the expansion joint.

KKZ**axial threaded expansion joint**

Diameter: DN 15 – DN 50
Pressure: PN 10
Use: to absorb axial tensibility in the central heating, distribution of hot water and steam in elevation buildings.

KLPFS**lateral spatial expansion joint with fixed flanges**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb deflections at the plane vertical to the axis of the expansion joint.

KLW**lateral welded expansion joint**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb deflections at the plane vertical to the axis of the expansion joint.

KAW**angular welded expansion joint**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40
Use: to absorb angular deflections. They are used in double or triple jointed system to absorb big deflections in one plane.

KAFS**angular expansion joint with fixed flanges**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40

Use: to absorb angular deflections. They are used in double or triple jointed system to absorb big deflections in one plane.

KPDK**axial bias welded expansion joint**

Diameter: DN 32 – DN 600
Pressure: PN 1 – PN 40

Use: to absorb big axial deflections in preinsulated pipe systems.

KKW**cardan welded expansion joint**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40

Use: to absorb angular deflections. They are used in double or triple jointed system to absorb big deflections in space.

KTV**pressure balanced expansion joint (welded or with flanges)**

Diameter: on request
Pressure: PN 1 – PN 40

Use: to absorb axial and lateral deflections and no-loads on fixed points.

KKFS**cardan expansion joint with fixed flanges**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40

Use: to absorb angular deflections. They are used in double or triple jointed system to absorb big deflections in space.

KPV**rectangular expansion joint with convolutions in shape V (welded or with flanges)**

Diameter: from 5000 x 14000 mm
Pressure: PN 1 – PN 16

Use: to absorb axial and lateral deflections in pipeline.

KUW**universal welded expansion joint**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40

Use: to absorb deflections and fluttering in all directions.

KD**duplicated expansion joint (welded or with flanges)**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40

Use: to absorb axial deflections and fluttering in pipeline with possibility of warming or cooling of flowing medium.

KUFS**universal expansion joint with fixed flanges**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40

Use: to absorb deflections and fluttering in all directions.

KJ**monolithic expansion joint (welded or with flanges)**

Diameter: DN 25 – DN 5000
Pressure: PN 1 – PN 40

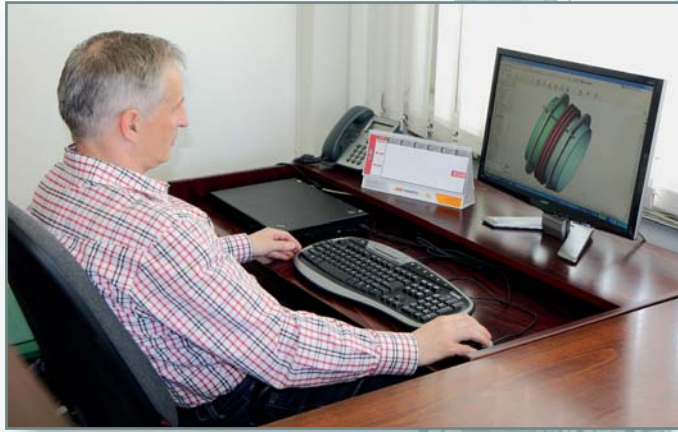
Use: to absorb axial deflections

KJDK**axial one-cycled welded expansion joint**

Diameter: DN 25 – DN 600
Pressure: PN 1 – PN 40

Use: to absorb big axial deflections in bias pipe systems.

design



production



mounting



testing

