



**EXPANSION
JOINT**

1



Types of Metal Bellowed Expansion Joints

| Type | Design | | Pressure thrust restraint | Movement | | | | |
|-----------------|---|--|---------------------------|----------|----------------------------|-------------|--------------|-------------|
| | | | | Axial | Angular | | Lateral | |
| | | | | | Single plane | Multi plane | Single plane | Multi plane |
| AXIAL | Internally pressurised | | No | Yes | Limited | Limited | Limited | Limited |
| | Externally pressurised | | No | Yes | Limited | Limited | Limited | Limited |
| | In-line pressure balanced | | Yes | Yes | No | No | No | No |
| ANGULAR | Hinge | | Yes | No | Yes | No | No | No |
| | Gimbal | | Yes | No | Yes | Yes | No | No |
| LATERAL | Two tie-bars spherical | | Yes | No | Yes | No | Yes | Yes |
| | Two tie-bars Pinned (plane) | | Yes | No | No | No | Yes | No |
| | Double gimbal | | Yes | No | Yes | Yes | Yes | Yes |
| FIRE PROTECTION | Double gimbal for Fire Protection (FM approved) | | No | Yes | Yes | Yes | Yes | Yes |
| | Loop Joints (FM approved) | | Yes | Yes | Yes | Yes | Yes | Yes |
| UNIVERSAL | Unrestrained One or two bellows | | No | Yes | Yes | Yes | Yes | Yes |
| | | | No | Yes | Yes | Yes | Yes | Yes |
| | Elbow Pressure balanced | | Yes | Yes | Yes with two tie rods only | No | Yes | Yes |

AXIAL EXPANSION JOINTS



Movement Range

Bellow Material
Connection Types
Available Sizes

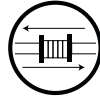
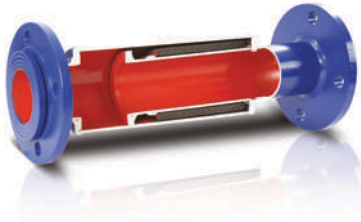
Flange Material
Inner Sleeve
Accessories

Operating Temperature
Operating Pressure

Certificates

30mm (-20 / + 10) innersleeve (opt.)
60mm (-40 / + 20) innersleeve (standard)
AISI 321 Stainless Steel (Opt.304,316L,316Ti,309)
Fixed and Floating Flanged, Welded Ended & Grooved, Threaded
DN15 - DN300 (standard)
Above DN300 on customer request.
PN 16, St.37.2 as standard, the material can be customised on request
AISI 321 Stainless Steel (Opt. 304,316L,316Ti,309)
Inner sleeve, cover, counter flange, gaskets, insulation etc.
are available on request.
-10°C/+550°C
Standard pressure rating is PN16
Can be produced with different pressure rates PN 2,5-63
PN corresponds to the allowable operating pressure at room temperature
Material certificate 3.1 according to EN 10204

AXIAL EXPANSION JOINTS ► X-PRESSED



Movement Range

Bellow Material
Connection Types
Available Sizes

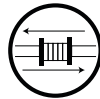
Flange Material
Accessories

Operating Temperature
Operating Pressure

Certificates

30mm (-20 / + 10)
60mm (-40 / + 20)
90mm (-70 / + 20)
120mm (-100 / + 20)
AISI 321 Stainless Steel (Opt.304,316L,316Ti,309)
Fixed and Floating Flanged, Welded Ended & Grooved, Threaded
DN15 - DN300 (standard)
Above DN300 on customer request.
PN 16, St.37.2 as standard, the material can be customised on request
Inner sleeve, cover, counter flange, gaskets, insulation etc.
are available on request.
-10°C/+550°C
Standard pressure rating is PN16
Can be produced with different pressure rates PN 2,5-63
PN corresponds to the allowable operating pressure at room temperature
Material certificate 3.1 according to EN 10204

AXIAL EXPANSION JOINTS ► PIPE EXPANSION JOINTS



Movement Range
Body
Bellow Material
Connection Types
Available Size

Connection Material
Inner Sleeve
Operating Temperature
Operating Pressure

Available Size

50mm (-45 + 5)
Aluminium External Pipe up to DN50 above DN 50 Stainless Steel
Stainless Steel AISI 316L & 321
Welded Ended & Threaded
DN15 - DN150 (standard)
Above DN300 on customer request.
St 37.2 as standard
Built in internal pipe (St 37.2) standard
-10°C/+100°C
Standard pressure rating is PN16
Can be produced with different pressure rates
PN corresponds to the allowable operating pressure at room temperature
DN15 - DN150 (standard)
Above DN300 on customer request.

AXIAL EXPANSION JOINTS ► VIBRATION ABSORBER



Movement Range
Bellow Material
Connection Types
Available Size

Flange Material
Accessories

Operating Temperature
Operating Pressure

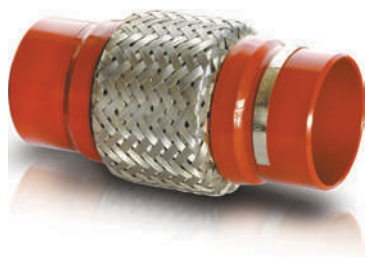
Certificates
Available Size

30mm innersleeve (opt.)
AISI 321 Stainless Steel (Opt.304,316L,316Ti,309)
Fixed and Floating Flanged, Welded Ended & Grooved
DN25 - DN300
Above DN300 on customer request.
PN 16, St.37.2 as standard, the material can be customised on request
Inner sleeve, cover, counter flange, gaskets, insulation etc.
are available on request.
-10°C/+550°C
Standard pressure rating is PN16
Can be produced with different pressure rates PN 2,5-63
PN corresponds to the allowable operating pressure at room temperature
Material certificate 3.1 according to EN 10204
DN25 - DN300
Above DN300 on customer request.

* The materials can be customized on request.

Ayvaz products are subject to technical alterations and deviations resulting from the manufacturing process.

AXIAL EXPANSION JOINTS ► BRAIDED VIBRATION ABSORBER



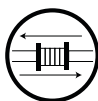
Movement Range
Bellow Material
Connection Types
Available Size
Flange Material
Accessories

Operating Temperature
Operating Pressure

Certificates

20mm (- 20mm)
AISI 321 Stainless Steel (Opt.304,316L,316Ti,309)
Fixed and Floating Flanged, Welded Ended & Grooved
DN32 - DN250
PN 16, St.37.2 as standard, the material can be customised on request
Inner sleeve, cover, counter flange, gaskets, insulation etc.
are available on request.
-10°C/+550°C
Standard pressure rating is PN16
Can be produced with different pressure rates
PN corresponds to the allowable operating pressure at room temperature
Material certificate 3.1 according to EN 10204

AXIAL EXPANSION JOINTS ► EXHAUST EXPANSION JOINTS



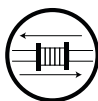
Movement Range
Bellow Material
Connection Types
Available Size
Welded End Material
Inner Sleeve
Accessories

Operating Temperature
Operating Pressure

Certificates

Axial 20 mm / 40 mm or Lateral 7 mm / 15 mm (not combined)
AISI 321 Stainless Steel (Opt.304,316L,316Ti,309)
Welded End
DN40 - DN400
Carbon steel St 37.2 or Stainless Steel
AISI 321 Stainless Steel (Opt. 304,316L,316Ti,309)
Inner sleeve, cover, counter flange, gaskets, insulation etc.
are available on request.
-10°C/+550°C
Standard pressure rating is PN16
Can be produced with different pressure rates PN 2,5-63
PN corresponds to the allowable operating pressure at room temperature
Material certificate 3.1 according to EN 10204

AXIAL EXPANSION JOINTS ► DISTRICT HEATING



Movement Range

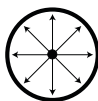
Bellow Material
Connection Types
Available Size
Welded Ends
Inner Sleeve
Accessories

Operating Temperature
Operating Pressure

Certificates

60mm (+ / - 30mm) innersleeve (opt.)
210mm (+ / - 105mm) innersleeve (opt.)
AISI 321 Stainless Steel (Opt.304,316L,316Ti,309)
Fixed and Floating Flanged, Welded Ended & Grooved
DN50 - DN1000
St.37.2 as standard, the material can be customised on request
AISI 321 Stainless Steel (Opt. 304,316L,316Ti,309)
Inner sleeve, cover, counter flange, gaskets, insulation etc.
are available on request.
-10°C/+550°C
Standard pressure rating is PN16
Can be produced with different pressure rates PN 2,5-63
PN corresponds to the allowable operating pressure at room temperature
Material certificate 3.1 according to EN 10204

ANGULAR EXPANSION JOINTS ► DOUBLE GIMBAL EXPANSION JOINTS



Movement Range

Bellow Material
Connection Types
Available Size
Flange Material
Accessories

Operating Temperature
Operating Pressure

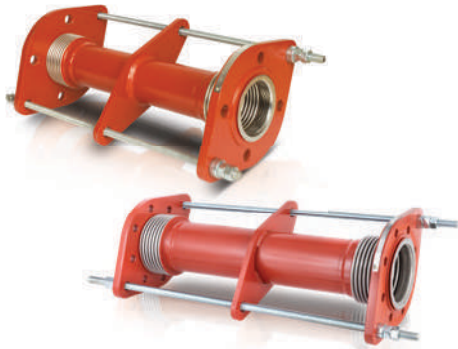
Certificates

50/100/150/200mm Lateral and 50mm Axial
Movements are combined.
AISI 321 Stainless Steel (Opt.304,316L,316Ti,309)
Fixed and Floating Flanged, Welded Ended & Grooved
DN25 - DN300
PN 16, St.37.2 as standard, the material can be customised on request
Inner sleeve, cover, counter flange, gaskets, insulation etc.
Are available on request.
-10°C/+550°C
175 psi & 250 psi
Can be produced with different pressure rates PN 2,5-63
FM approval, Class 1920
Material certificate 3.1 according to EN 10204

* The materials can be customized on request.

Ayvaz products are subject to technical alterations and deviations resulting from the manufacturing process.

LATERAL EXPANSION JOINTS ► UNIVERSAL TIED



Movement Range
Bellow Material
Connection Types
Available Size
Flange Material
Inner Sleeve
Accessories

Operating Temperature
Operating Pressure

Certificates

25/50/75/100mm Lateral
AISI 321 Stainless Steel (Opt.304,316L,316Ti,309)
Fixed and Floating Flanged, Welded Ended & Grooved
DN25 - DN300
PN 16, St.37.2 as standard, the material can be customised on request
AISI 321 Stainless Steel (Opt. 304,316L,316Ti,309)
Inner sleeve, cover, counter flange, gaskets, insulation etc.
are available on request.
-10°C/+550°C
Standard pressure rating is PN16
Can be produced with different pressure rates PN 2,5-63
PN corresponds to the allowable operating pressure at room temperature
Material certificate 3.1 according to EN 10204

BRAIDED LOOP JOINTS ► FIRE PROTECTION EXPANSION JOINTS



V-FLEX



U-FLEX



Movement Range
Bellow Material
Braiding Material
Connection Types
Available Size
Flange Material
Operating Temperature
Operating Pressure

Certificates

+/- 40mm (1.5") - +/- 600mm (24")
AISI 304 Stainless Steel (opt.321,316L,316Ti,309)
AISI 304 Stainless Steel
Floating Flanged, Welded Ended, Grooved & Threaded
DN25 - DN250
PN 16, St.37.2 as standard, the material can be customised on request
-10°C/+550°C
175 psi & 250 psi
Can be produced with different pressure rates
FM approval, Class 1920
Material certificate 3.1 according to EN 10204

RUBBER EXPANSION JOINTS ► THREADED



Movement Range
Bellow Material
Connection Types
Available Size
Nominal Diameter

Operating Temperature
Operating Pressure

Certificates

(-22 / +6) Axial and (-22 / +22) Lateral
Special Synthetic Rubber
Floating Flanged, Threaded
DN15 - DN80
DN 20 (3/4") - DN 80 (3") - DKK-10
DN32 (1 1/4") - DN600 (24")- LKA-10
-10°C/+90 °C
Max. to 10 bar - It depends on the nominal diameter
and the operating temperature.
Material certificate 3.1 according to EN 10204

RUBBER EXPANSION JOINTS ► FLANGED



Movement Range
Bellow Material
Connection Types
Available Size
Nominal Diameter

Operating Temperature
Operating Pressure

Certificates

(-20 / +12) Axial and (-18 / +18) Lateral
Special Synthetic Rubber
Floating Flanged, Threaded
DN32 - DN600
DN 20 (3/4") - DN 80 (3") - DKK-10
DN32 (1 1/4") - DN600 (24")- LKA-10
-10°C/+90 °C
Max. to 10 bar - It depends on the nominal diameter
and the operating temperature.
Material certificate 3.1 according to EN 10204

* The materials can be customized on request.

Ayvaz products are subject to technical alterations and deviations resulting from the manufacturing process.





SPECIAL DESIGNED EXPANSION JOINTS



HEAD OFFICE - MAIN FACTORY
Atatürk Sanayi Bölgesi Hadımköy Mahallesi
Mustafa İnan Caddesi No: 44 Arnavutköy - İSTANBUL
Tel: +90 212 771 01 45 (pbx) | Fax: +90 212 771 47 27
info@ayvaz.com | www.ayvaz.com



Cona
Caserta / Italy
Tel : +39 0823 187 3988
rmolaro@ayvaz.com



Ayvaz Ukraine
Kiev / Ukraine
Tel : +380 44 390 57 57
info@ayvaz.com.ua



Tricorr
Warsaw / Poland
Tel : +48-32-783-295-1
tricorr@tricorr.eu



Ayvaz Germany
Viernheim / Germany
Tel : +49 62046014399
germany@ayvaz.com



Ayvaz Serbia
Belgrade / Serbia
Tel : +381 61 658 70 52
yakbiyik@ayvaz.com



Ayvaz Azerbaijan
Baku / Azerbaijan
Tel : +99(455)579-84-32
ahayatov@ayvaz.com



Ayvaz Kazakhstan LLP
Almaty / Kazakhstan
Tel : +7 (727) 327 97 57
www.ayvaz.kz



Ayvaz N
Isperih / Bulgaria
Tel : +359 8431 27 32
office@ayvaz-n.eu



Ayvaz Vietnam
HCMC / Vietnam
Tel : +84 89 8508345
ggursoy@ayvaz.com



Ayvaz China
Ningbo / China
Tel : +86 152 5830 7361
msahin@ayvaz.com



Ayvaz Egypt
Cairo / Egypt
Tel : +20 122 819 78 29
andrew.eid@ayvaz.com



Ayvaz Gulf
Dubai / U.A.E.
Tel : +971 563550822
+971 501306871
mideast@ayvaz.com



Ayvaz Americas
Rhode Island
Tel : +1 401 737 8380
americas@ayvaz.com