U110M EPB ⌀ 80 - 4,000 mm

> **Type U110M EPB**
without vacuum rings

> **Type U111M EPB**
with internal vacuum rings

> **Type U112M EPB**
with embedded vacuum rings

Type key > page 22

U1 1 0 M EPB
- Tie rod variant
- Support ring variants
- Number of arches
- Type

Elbow pressure balanced expansion joint

Design:

Elbow pressure balanced expansion joints or corner relief expansion joints are the types of pressure balanced expansion joints, which are used where pressure thrust forces on equipment or piping is unacceptable and the direction of the pipe system also changes.

By installing elbow pressure balanced expansion joints, the pressure thrust force is balanced internally within the expansion joint and only the spring rate force, which is needed to move the pipe expansion joint is transmitted to the pipe system. This arrangement consists of tie devices inter-connecting its main joint section to its opposing balancing joint section and reduces the load acting on the guides/fix points, which further reduces the need for supporting structures.

Elbow pressure balanced rubber expansion joints are high elastic, streamlined, have depending from the expected axial or lateral movements single or multiple wide archs with full faced rubber flanges, have a cycle life in the tens of millions, are constructed with a high-grade leak-proof tube, multiple layers of high-strength cord, a seamless cover, and backing flanges with support collar. Optional with vacuum rings. In compliance with PED 2014/68/EU, FSA Technical Handbook and ASTM F1123 - 87.

Application:
Cooling water systems, desalination plants, drinking water supply, plant constructions e. g. in pipelines, on pumps, valves

CE PED 2014/68/EU · KTW WRAS · FDA · <10⁹ Ohm · EX

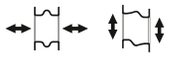
Request assembly instructions at:
www.ditec-adam.de/en/contact

Diameters: ∅ 80 to 4,000 mm, custom diameters possible

Length: Custom length on request

Pressure: Up to 40 bar depending on diameter and length
Vacuum stability on request, with vacuum ring up to 0.05 bar absolute

Movement: For axial and lateral movements

 (> page 212–217)

Spring rate: Axial and lateral spring rates (> page 296)

Bellows elastomers and reinforcements

Elastomer	Fabric	Marking	°C	Application
EPDM	Polyamid		-40 | +100	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDM	Aramid		-40 | +100	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDMht	Aramid		-40 | +120	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDMwras	Polyamid		-40 | +100	Drinking water, foodstuffs
EPDMwras	Aramid		-40 | +100	Drinking water, foodstuffs
EPDMbeige	Polyamid		-40 | +100	Foodstuffs
EPDMbeige	Aramid		-40 | +100	Foodstuffs
IIR	Polyamid		-20 | +100	Hot water, acids, bases, gases
IIR	Aramid		-20 | +100	Hot water, acids, bases, gases
CSM	Polyamid		-20 | +100	Strong acids, bases, chemicals
CSM	Aramid		-20 | +100	Strong acids, bases, chemicals
NBR	Polyamid		-30 | +100	Oils, petrol, solvents, compressed air
NBR	Aramid		-30 | +100	Oils, petrol, solvents, compressed air
NBRbeige	Polyamid		-30 | +100	Oil, fatty foods
NBRbeige	Aramid		-30 | +100	Oil, fatty foods
CR	Polyamid		-20 | +90	Cooling water, slightly oily water, seawater
CR	Aramid		-20 | +90	Cooling water, slightly oily water, seawater
FPM	Aramid		-20 | +180	Corrosive chemicals, petroleum distillates
FPMbeige	Aramid		-20 | +180	Oil, fatty foods
NR	Polyamid		-20 | +70	Abrasive materials
Silicon	Aramid Glass		-60 | +200	Air, saltwater atmosphere, foodstuffs, medical technology

PTFE-lining: Firmly embedded against chemical attacks on the interior at the rubber bellows, available starting at ∅ 300 mm. Take the restriction of the listed movement into account (> page 212–217)

Backing flanges

Design: Single-part integral backing flanges with support collar, clearance holes and tie rod holders (tie rod type M)

Flange norms: DIN, EN, ANSI, AWWA, BS, JIS, special measurements (> page 298)

Materials: Carbon steel, stainless steel

Coating: Primed, hot-dip galvanised, special paint

Accessories

Protective covers: Ground protective shield
Protective shield or cover
Fire protective cover (> page 58)

Flow liners: Cylindrical flow liner
Conical flow liner
Telescoping flow liner (> page 57)

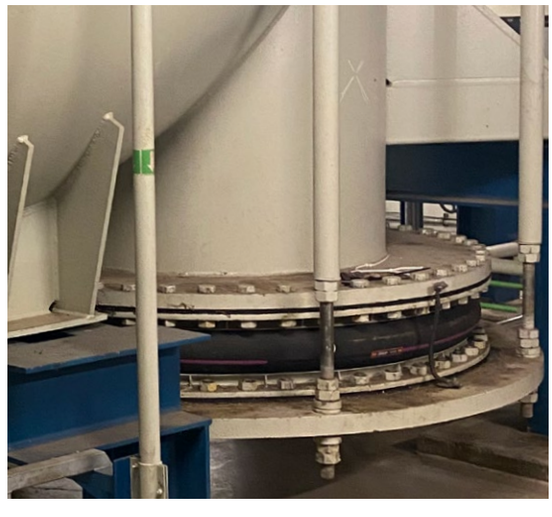
Tie rods

Design: Dimensioning according to design pressure (test pressure) based on the Pressure Equipment Directive

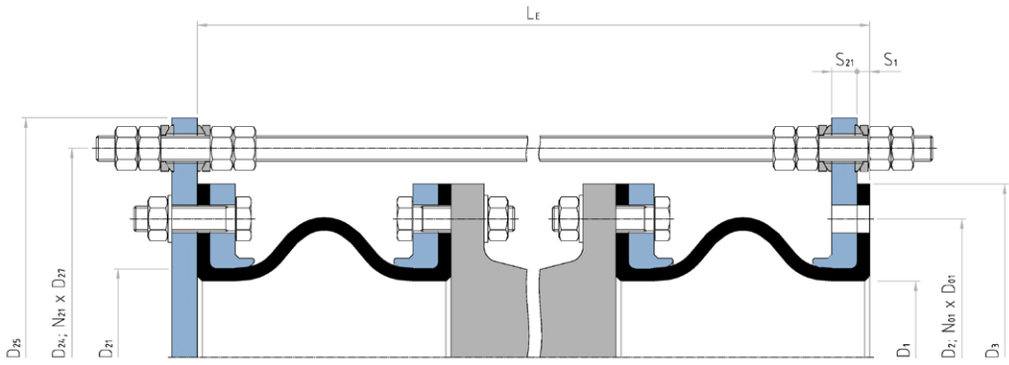
Materials: Carbon steel
Stainless steel

Coating: Spherical washers/ball disks: PTFE coated
Tie rods: galvanised, hot-dip galvanised or PTFE-coated

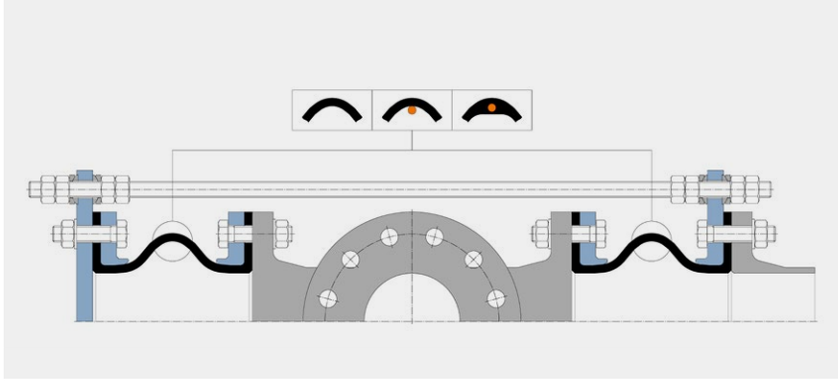
Example: Type U112M EPB

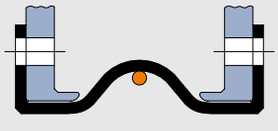


Cross section U110M EPB



Support rings



TYPE	Support rings	Vacuum ring	Pressure	Movement
U110M EPB		None	Depending on the diameter up to 40 bar, vacuum stability on request	> page 212–213
U111M EPB		Medium contact, inside the arch apex	Depending on the diameter up to 40 bar, for vacuum up to 0.05 bar absolute	> page 214–215
U112M EPB		No medium contact, embedded in the arch	Depending on the diameter up to 25 bar, for vacuum up to 0.05 bar absolute	> page 216–217

Materials		
Stainless steel	Carbon steel, rubberised	Carbon steel, embedded