ERV-D rubber expansion joints are highly flexible, custom made compensators with full face rubber flanges. They show high expansion compensation and low pressure drop. Made in Germany.

Construction:

Bellows with single or multiple spheres. Reinforcement of textile layers. Full face rubber flanges with backing support flanges of steel which ensure tightness of the flange connection without the need for additional seals. Bellows with two or more spheres are chosen if a maximum expansion compensation is required. ERV-D are designed depending on operating conditons according to Pressure Equipment Directive 2014/68/EU.

Application:

Use in power plants, chemical industry, gas and water distribution, incineration plants, ship building, machine and engine construction as well as other large-scale plants. ERV-D absorb static or dynamic movements, reduce vibration and noise and compensate assembling inaccuracies or construction settlement – in axial, lateral and angular direction.

Sizes:

Nominal diameter DN 200 up to DN 4200 mm, lengths 150 up to 500 mm. Other sizes available on request.

Type ERV-D
- single sphere bellows -

Type ERV-D-2
- double sphere bellows -

Characteristics for Type ERV-D:

Bellows Colour Code	Key Feature	Liner	Reinforcement	Cover	max. WP [bar]	max. Temp. [°C]
	For cooling water, hot water, seawater, acids	EPDM	Polyamide	EPDM	18	100
	For cooling water, hat water, seawater, acids	EPDM	Aramid	EPDM	27	100
	With drinking water approval	EPDM	Polyamide	EPDM	18	100
	With FDA approval	EPDM FDA beige	Polyamide	EPDM	18	100
	For oil containing cooling water	CR	Polyamide	CR	18	90
	For aggressive acids, lyes and chemicals	CSM	Polyamide	CSM	18	100
	For aggressive acids, lyes and chemicals	CSM	Aramid	CSM	27	100
	For petroleum based products	NBR	Polyamide	NBR	18	100
	For petroleum based products	NBR	Aramid	NBR	27	100
	For aggressive chemikalis, petroleum distillates	FPM	Aramid	FPM	27	180
	For abrasive media / highly flexible	NR	Polyamide	NR	18	70
none	Temperature range -50° C up to 180° C	Silicone	Aramid	Silicone	27	180

The pressure indication states a max. value which depends on length, nominal diameter and temperature. ERV-D are resistant to vacuum up to 0,8 bar absolute, with installed vacuum support rings up to 0,05 bar absolute. On request, vacuum support ring can be vulcanised into the bellows.

Flanges for Type ERV-D:

Standard support flanges are DIN PN 10 of steel S235JRG2 or S355J2G3, hot-dip galvanised. Other standards (such as ANSI, AWWA, BS, JIS) or materials are possible on request.

Depending on the working pressure, the support flanges are designed with or without support stabilising rim.

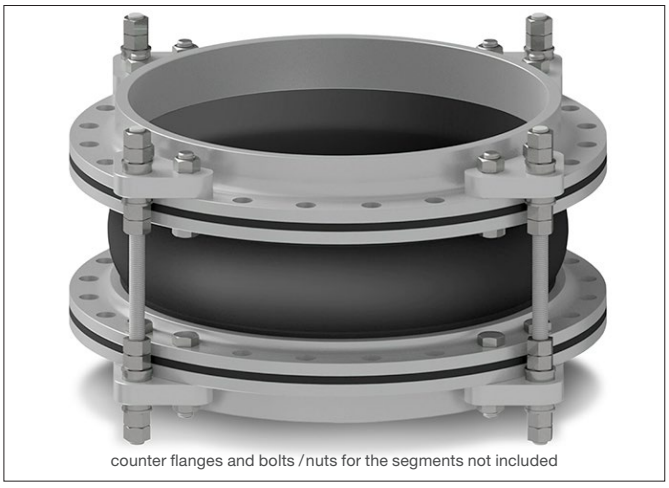
Tie Rods and Angular Limiters:

During operation, the bellows of the compensator produces a pressure thrust force (reaction force) in axial direction towards the nearest fixed points (effective surface area x operating pressure).

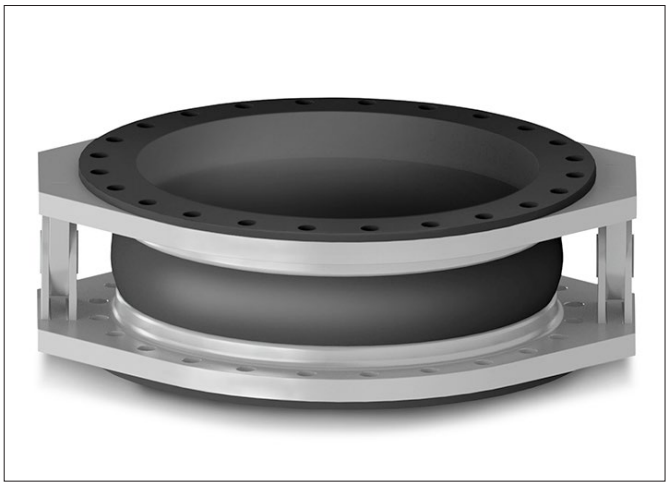
The use of tie rods reduces reaction forces at fixed points and hence protects the piping system.

Tie rods with outer limitation type **ZS**
in spherical discs and conical seats.
– elongation limitation, lateral movement possible –

Tie rods with inner and outer limitation type **ZSS**
inside and outside in spherical discs and conical seats.
– elongation & compression limitation, lateral movement possible –



Segments and tie rods with inner and outer limitation type **LSS**
inside and outside in sperical discs and conical seats.
Suitable for retrofitting to the counter flanges.
– elongation & compression limitation, lateral movement possible –



Angular limiter type **RG**.
– elongation & compression limitation, angular movement possible –

Accessories:

- Vacuum support ring
- Pressure support ring for multi-sphere bellows
- Inner protection sleeves, cylindrical or conical
- Earth cover
- UV protection cover
- Flame protection sleeves
- Equipotential bonding

Technical Advice:

Our sales team is at your disposal for all questions e. g. regarding available types, sizes, applications, temperature dependent allowable pressure, range of movement and pressure thrust forces.