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Elaflex

flanges
accessories
rubber expansion joints



Welcome

FlexEJ offers a broad range of pipe expansion joints and pressure fabrications; we are both stockist and manufacturer with factories in the UK and Spain.

- Rubber and metal pipe expansion joints from DN15 to over DN3600
- Metal hose assemblies
- Dosing Pots, Air & Dirt Separators and Low Loss Headers for HVAC applications
- Pressure vessels and fabrications

We are accredited to ISO9001, ISO14000 and the PED. As required we offer full material traceability, documentation and compliance with client specifications – our welders are qualified to both EN and ASME.

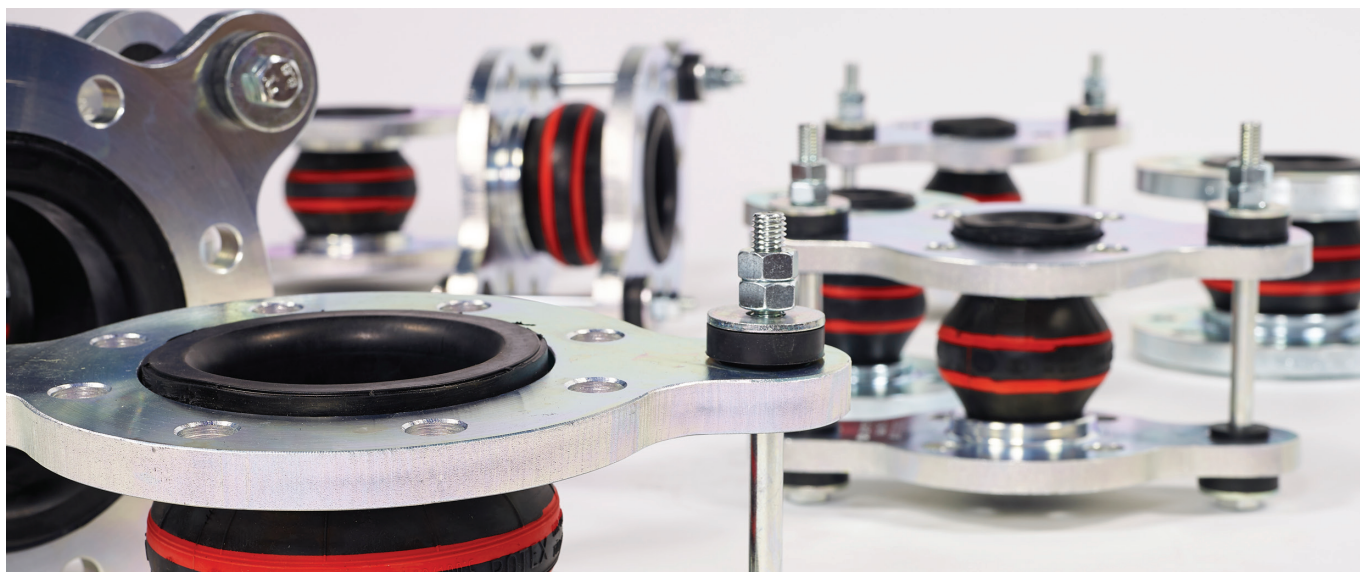
You can also buy a wide range of stock expansion joints and HVAC fabrications direct from our web shop at flexej.co.uk with next day delivery.

We are here to help; please get in touch by phone, email or via the website live chat facility. We will be delighted to assist you in selecting the right stock product through to developing a unique design for your application.

Tim Robinson
Director

FlexEJ Ltd

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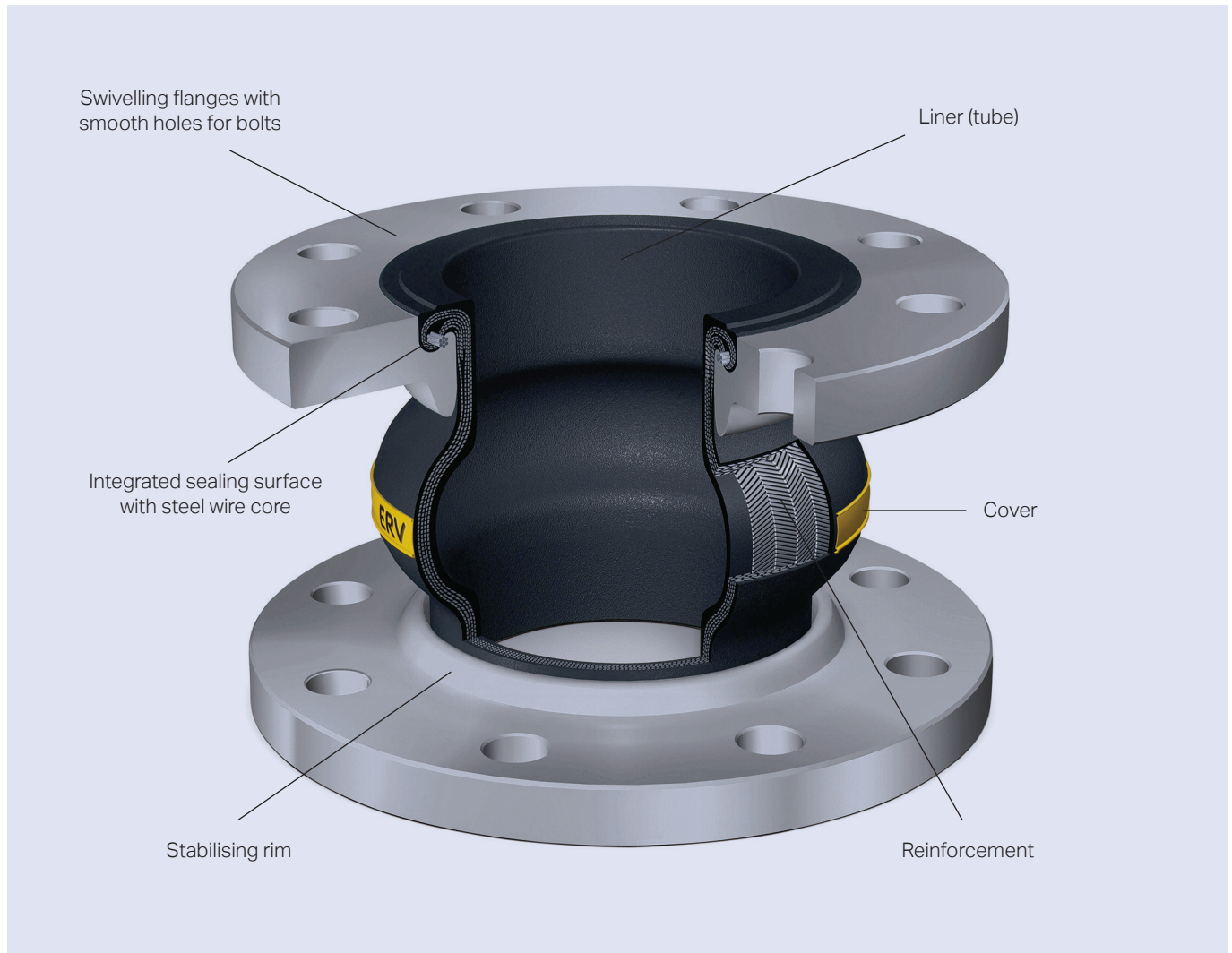
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Why choose Elaflex ERV Expansion Joints?



Elaflex ERV expansion joints are moulded single sphere type rubber bellows with swivelling metal flanges. Their construction and lengths have become the internationally recognised standard.

Premium products come at a price, but the additional cost for ERV pays off in the long run due to its superior operating life and the reduced occurrence of costs arising from product failure – plant downtime, environmental damage and replacement of parts.

Optimal shape and construction of the bellows

- Large axial, lateral and angular range of allowable movement, no double sphere necessary
- Low reaction forces and low inherent resistance
- Noise dampening: the major part of the piping's structure-borne noise and the low-frequency noise generated by fluids is eliminated
- Vibration dampening: ERV efficiently absorb vibrations caused by engines, turbines or compressors

Experience and know-how

- Applications since 1956
- Two highly competent and professional companies working together – ContiTech, one of the leading international rubber product manufacturers (bellows production) and Elaflex (know-how regarding flanges, accessories, assembling, certification, testing and distribution)
- Consistent suppliers and manufacturing methods ensure a constant quality

Customer focus

- Local FlexEJ held stock plus a large warehouse of bellows in Hamburg (>25,000 bellows permanent stock) and flanges/accessories ensure short lead times for standard types
- Technical service: professional advice, documentation, testing certification (audited to European Pressure Equipment Directive)
- Our website www.flexej.co.uk has a bellows finder, online purchasing of Elaflex expansion joints for next day delivery and datasheets for all Elaflex bellows to download
- Global support by local Elaflex distribution partners – FlexEJ in the UK

Easy installation

- Swivelling flanges and smooth bolt holes make assembling easy
- The highly flexible bellow eases installation in problematic locations

Superior lifetime

- HiTech rubber compounds from ContiTech
- Physical properties of compounds and reinforcements are optimised for each bellows type: elongation at break, ozone and UV resistance, cold flexibility, tensile strength, volumetric extension etc.
- Permanent testing of raw material properties – before and during production
- Rubberized reinforcements for superior adhesion of all layers
- Integrated sealing surface with type matched steel wire core
- Made in Germany, Elaflex/ContiTech quality philosophy
- High operational safety, 1:4 safety factor regarding burst pressure

Large product range

- Variety of 13 different types, sizes 1"–40" (DN 25–1000 mm), various lengths and a vast choice of flange type/material and accessories

The bellows

- International quality reference for some applications, eg. ERV-G for tank trucks (fuels), ERV-R for drinking water, ROTEX for heating systems, ERV-OR for LP Gas
- Some unique products such as ERV-GS (ship engine room type approved), ERV-GS HNBR (large application range, temperature, abrasion & fire resistant) and ERV-G LT (low temperature down to -40° C)
- Efficient due to standardised bellows lengths

Flanges

- Modular system – flanges match with all bellows
- Certified materials, EN 10204–3.1
- Standard types with stabilising rim
- Marked with size, standard, material, manufacturer
- Cr (VI)-free corrosion protection for steel flanges long-lasting and environmentally friendly

Certificates

- Various ERV types are certified for civil and navy ship construction, drinking water, foodstuffs, heating and gas supply installations

Elaflex Rubber Expansion Joints

Range & code summary

Type		Liner	Key feature	page
Water and waste water				
ERV-R	Red Band	Butyl (IIR) / EPDM	With drinking water approval	09
Rotex	Rotex	EPDM	TÜV approved for heating systems	11
ERP	Red Spot	Butyl (IIR) / EPDM	Extra flexible	13
ERV-CR	Black Band	CR	The economical option	15
ERV-BR	Blue Spot	BR	For abrasive media	17
Petroleum-based products, Liquid Petroleum Gas				
ERV-G	Yellow Band	NBR	For tank trucks, refineries and petrol stations	19
ERV-GS	Yellow Steel	NBR	Fire resistant for 30 minutes at 800°C	21
ERV-GS	Yellow Steel HNBR	HNBR	For extremely demanding conditions: -35°C to 120°C	23
ERV-G LT	Yellow Band LT	NBR	For low temperatures up to -40°C	25
ERV-OR	Orange Band	NBR	For LPG and other gases up to 25 bar	27
Chemistry and foodstuffs				
ERV-GR	Green Band	CSM	For aggressive acids, lyes and chemicals	29
ERV-W	White Band	NBR light grey	Conforms to foodstuff standards	33
Flanges				35
Dimensions and information for DIN, ASA, SAE, BS, VG, TW, JIS461				
Accessories				39
ZS	Tie rod with outer limitation			
ZSS	Tie rod with inner and outer limitation			
RG	Angular limiter			
SR	Inner protective sleeve			
TA	PTFE lining			
TAS	PTFE lining and PTFE vacuum support ring			
VSD	Vacuum support spiral			
VSR	Vacuum support ring			
VSRV	Bolted vacuum support ring			
FSH	Flame protection cover			

Elaflex Rubber Expansion Joints Checklist

1 Medium

- Chemical composition
- Gaseous, liquid, paste-like
- Abrasion

2 Operation conditions

- Minimum and maximum temperature
- Maximum pressure
- Vacuum
- Axial range of movement (elongation/compression)
- Angular load
- Lateral offset
- Dynamic load

3 Installation site

- Indoor or outdoor installation
- Exposure to sunlight (UV)
- Salt-containing atmosphere

4 Classification according to Pressure Equipment Directive?

The requirements of the Pressure Equipment Directive may apply, especially when gaseous media are used. Further information on page 46.

The following table shows the dependencies of overpressure, range of movement and temperature for ERV expansion joints:

Type	Working temperature max.	Temperature depending on range of movement*	Temperature depending on working pressure		
			PN 10	Bellow PN 16	PN 25
ERV-R, ERV-CR, ERV-G, ERV-G LT, ERV-GR, ERV-W	50°C	100%	10 bar	16 bar	–
	70°C	80%	8 bar	12 bar	–
	100°C	60%	6 bar	10 bar	–
ERV-BR	50°C	100%	10 bar	16 bar	–
	70°C	80%	8 bar	12 bar	–
ERV-OR	50°C	100%	–	–	25 bar
	70°C	80%	–	–	20 bar
	100°C	60%	–	–	15 bar
ERP	50°C	100%	10 bar	–	–
	70°C	80%	8 bar	–	–
	100°C	60%	6 bar	–	–
Rotex	70°C	100%	10 bar	16 bar	–
	100°C	75%	7.5 bar	12 bar	–
	130°C	50%	5 bar	8 bar	–
ERV-GS ERV-GS HNBR	60°C	100%	10 bar	16 bar	–
	100°C	60%	6 bar	10 bar	–

* For type specific range of movement see data sheets.

Depending on media, a reduction of working conditions may be necessary. Please ask our sales team in case of questions.

Elaflex Rubber Expansion Joints

Available types & lengths

DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Red Band 																					
ERV-R 130	•	•	•	•	•	•	•	•	•	•	•	•									
ERV-R 150				•	•	•	•	•	•	•											
ERV-R 160		•	•	•	•	•	•	•	•	•											
ERV-R 175										•	•										
ERV-R 200											•	•	•	•	•	•	•				
ERV-R 250															•				•		
ERV-R 260																		•			
ERV-R 300																				•	•
DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Rotex 																					
Rotex 130	•	•	•	•	•	•	•	•	•	•	•	•									
Rotex 150						•	•	•	•	•											
Rotex 160		•	•	•	•	•	•	•	•	•											
Rotex 175										•	•										
Rotex 200											•	•	•	•	•	•	•				
Rotex 250															•				•		
Rotex 260																		•			
Rotex 300																				•	•
DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Red Spot 																					
ERP 130	•	•	•	•	•	•	•	•	•												
Black Band 																					
ERV-CR 130	•	•	•	•	•	•	•	•	•	•	•	•									
ERV-CR 200													•	•	•	•	•				
ERV-CR 250															•				•		
ERV-CR 260																		•			
ERV-CR 300																				•	•
Blue Spot 																					
ERV-BR 130	•	•	•	•	•	•	•	•	•	•	•	•									

Elaflex Rubber Expansion Joints

Available types & lengths

DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Yellow Band 																					
ERV-G 130	•	•	•	•	•	•	•	•	•	•	•	•									
ERV-G 150				•	•	•	•	•	•	•											
ERV-G 160		•	•	•	•	•	•	•	•	•											
ERV-G 175										•	•										
ERV-G 200											•	•	•	•	•	•	•				
ERV-G 250															•				•		
ERV-G 260																		•			
ERV-G 300																				•	•
DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Yellow Steel 																					
ERV-GS 130	•	•	•	•	•	•	•	•	•	•	•	•									
ERV-GS 150						•	•	•	•												
ERV-GS 175										•	•										
ERV-GS 200												•	•	•	•	•	•				
ERV-GS 250															•						
DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Yellow Steel  HNBR																					
ERV-GS HNBR 130	•	•	•	•	•	•	•	•	•	•	•	•									
ERV-GS HNBR 150						•	•	•	•												
ERV-GS HNBR 175										•	•										
ERV-GS HNBR 200												•	•	•	•	•	•				
ERV-GS HNBR 250															•						
DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
LT 																					
ERV-GLT 130	•	•	•	•	•	•	•	•	•	•	•	•									
DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Orange Band 																					
ERV-OR 130	•	•	•	•	•	•	•	•	•												

Elaflex Rubber Expansion Joints

Available types & lengths

DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Green Band 																					
ERV-GR 130	•	•	•	•	•	•	•	•	•	•	•	•									
ERV-GR 200													•	•	•	•	•				
ERV-GR 250															•						
ERV-GR 260																	•				
DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
White Band 																					
ERV-W 130	•	•	•	•	•	•	•	•	•	•	•	•									
ERV-W 200													•	•	•	•	•				
ERV-W 250															•						

Elaflex Red Band / ERV-R

Specification

For water, drinking water (approval DVGW W 270, ACS as well as WRAS), cold and warm waste water, seawater, cooling water, also with chemical additives for water treatment, low concentrated acids and alkalis, salt solutions, technical alcohols, esters and ketones.

Not suitable for mineral oil products, cooling water with added oil containing corrosion preventatives, oily compressor air.

Materials

- Liner Butyl (IIR)/EPDM, seamless, low permeation
- Reinforcement PA textile cord, Butyl rubberized
- Cover EPDM, ozone proof, heat resistant
- Marking Red band, ERV DN ..., PN ..., production date
- Flanges* Swivelling, DIN PN 10/16, carbon steel, zinc plated

Operating conditions

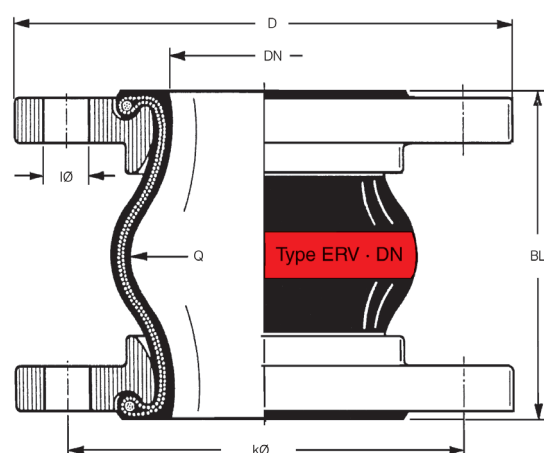
Temperature range (depending on medium) -40°C up to +100°C, temporarily up to +120°C. Electrically dissipative.

Notes

* Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

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Bellow size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm *			Part number *
	in.	mm				D	k Ø	I x Ø	
1"	25	130	16	1.9	15	115	85	4 x 14	ERV-R 25.16 *
1 1/4"	32	130	16	3.4	15	140	100	4 x 18	ERV-R 32.16
1 1/4"	32	160	16	3.6	15	140	100	4 x 18	ERV-R 32x160.16
1 1/2"	40	130	16	4.0	20	150	110	4 x 18	ERV-R 40.16
1 1/2"	40	160	16	4.2	20	150	110	4 x 18	ERV-R 40x160.16
2"	50	130	16	4.6	30	165	125	4 x 18	ERV-R 50.16
2"	50	150	16	4.7	30	165	125	4 x 18	ERV-R 50x150.16
2"	50	160	16	4.8	30	165	125	4 x 18	ERV-R 50x160.16
2 1/2"	65	130	16	5.3	50	185	145	4 x 18	ERV-R 65.16
2 1/2"	65	150	16	5.4	50	185	145	4 x 18	ERV-R 65x150.16
2 1/2"	65	160	16	5.5	50	185	145	4 x 18	ERV-R 65x160.16
3"	80	130	16	6.9	85	200	160	8 x 18	ERV-R 80.16
3"	80	150	16	7.0	85	200	160	8 x 18	ERV-R 80x150.16
3"	80	160	16	7.1	85	200	160	8 x 18	ERV-R 80x160.16
4"	100	130	16	8.0	125	220	180	8 x 18	ERV-R 100.16
4"	100	150	16	8.1	125	220	180	8 x 18	ERV-R 100x150.16
4"	100	160	16	8.2	125	220	180	8 x 18	ERV-R 100x160.16
5"	125	130	16	9.9	185	250	210	8 x 18	ERV-R 125.16
5"	125	150	16	10.1	185	250	210	8 x 18	ERV-R 125x150.16
5"	125	160	16	10.2	185	250	210	8 x 18	ERV-R 125x160.16
6"	150	130	16	12.3	250	285	240	8 x 22	ERV-R 150.16
6"	150	150	16	12.4	250	285	240	8 x 22	ERV-R 150x150.16
6"	150	160	16	12.5	250	285	240	8 x 22	ERV-R 150x160.16
8"	200	130	16	16.5	400	340	295	8 x 22	ERV-R 200.10
8"	200	150	16	16.6	400	340	295	8 x 22	ERV-R 200x150.10
8"	200	160	16	16.7	400	340	295	8 x 22	ERV-R 200x160.10
8"	200	175	16	16.8	400	340	295	8 x 22	ERV-R 200x175.10
10"	250	130	16	21.6	600	395	350	12 x 22	ERV-R 250.10
10"	250	175	16	21.9	600	395	350	12 x 22	ERV-R 250x175.10
10"	250	200	10	22.1	600	395	350	12 x 22	ERV-R 250x200.10
12"	300	130	16	29.3	800	445	400	12 x 22	ERV-R 300.10
12"	300	200	10	29.8	800	445	400	12 x 22	ERV-R 300x200.10
14"	350	200	16	43.0	1000	505	460	16 x 22	ERV-R 350.10
16"	400	200	16	46.0	1375	565	515	16 x 26	ERV-R 400.10
18"	450	200	10	50.0	1780	615	565	20 x 26	ERV-R 450.10
18"	450	250	10	53.0	1780	615	565	20 x 26	ERV-R 450x250.10
20"	500	200	10	57.0	2185	670	620	20 x 26	ERV-R 500.10
24"	600	200	10	70.0	3080	780	725	20 x 30	ERV-R 600.10
28"	700	260	10	117.0	4800	895	840	24 x 30	ERV-R 700.10
32"	800	250	10	129.5	5440	1015	950	24 x 33	ERV-R 800.10
36"	900	300	10	184.0	7100	1115	1050	28 x 33	ERV-R 900.10
40"	1000	300	10	245.0	8700	1230	1160	28 x 36	ERV-R 1000.10

Elaflex Red Band / ERV-R

Range of movement

Red Band ERV-R									
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *	
BL	DN	EL min.	EL max.	L min.	L max.	I			
mm	mm	mm	mm	mm	mm	mm		degree	
130	25-80	120	135	100	150	±30		±30	
130	100-150	120	135	100	150	±30		±20	
130	200	115	140	105	160	±30		±10	
130	250-300	125	140	120	160	±15		± 5	
150	50-200	140	160	115	180	±30		±15	
160	32-200	150	170	130	195	±35		±15	
175	200	165	185	160	210	±15		± 5	
175	250	165	185	160	210	±10		± 5	
200	250-300	190	210	160	235	±30		±10	
200	350-600	190	210	160	235	±30		± 8	
250	450	240	260	210	285	±35		±10	
250	800	240	260	210	285	±35		± 5	
260	700	250	270	220	290	±30		± 5	
300	900-1000	290	310	260	340	±40		± 5	

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	-700	-600	-400	-300	-300	-300	-200	-100									
With VSD			max.	max.	max.	max.	max.	max.	-600	-400	-200									
With VSR							max.	max.	max.	max.	max.	max.	max.	-700	-700	-700				
With VSRV														max.	max.	max.	max.	-700	-700	-700

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Specification

For permanent use with hot heating water, cooling water and hot air. Approved according to DIN up to 100°C at 10 bar and up to 110°C at 6 bar.

Not suitable for drinking water, cooling water with oil containing additives, oily compressor air, permanent effect of steam.

Materials

- Liner EPDM, hot water resistant, seamless, high abrasion resistance
- Reinforcement Polymer textile cord, hot water and hydrolysis proof
- Cover EPDM, ozone proof, heat resistant
- Marking 2 red bands, ERV DN ..., PN ..., production date
- Flanges♦ Swivelling, DIN PN 10/16, carbon steel, zinc plated

Operating conditions

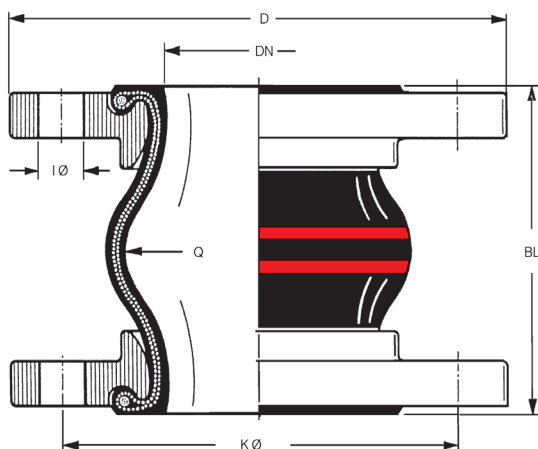
Temperature range (depending on medium) -40°C up to +130°C, temporarily up to +150°C. Electrically dissipative.

Notes

♦ Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

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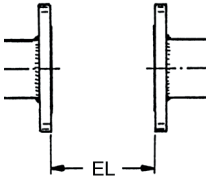
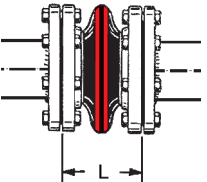
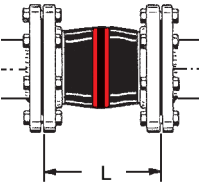
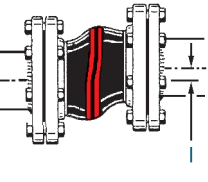
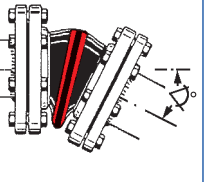
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Bellows size DN	Length BL		PN	Weight approx. kg	Effect. area Q:cm ²	Flange measurements mm *			Part number *
	in.	mm				D	k Ø	I x Ø	
1"	25	130	16	1.9	15	115	85	4 x 14	ROTEX 25.16 *
1 1/4"	32	130	16	3.4	15	140	100	4 x 18	ROTEX 32.16
1 1/4"	32	160	16	3.6	15	140	100	4 x 18	ROTEX 32x160.16
1 1/2"	40	130	16	4.0	20	150	110	4 x 18	ROTEX 40.16
1 1/2"	40	160	16	4.2	20	150	110	4 x 18	ROTEX 40x160.16
2"	50	130	16	4.6	30	165	125	4 x 18	ROTEX 50.16
2"	50	160	16	4.8	30	165	125	4 x 18	ROTEX 50x160.16
2 1/2"	65	130	16	5.3	50	185	145	4 x 18	ROTEX 65.16
2 1/2"	65	160	16	5.5	50	185	145	4 x 18	ROTEX 65x160.16
3"	80	130	16	6.9	85	200	160	8 x 18	ROTEX 80.16
3"	80	150	16	7.0	85	200	160	8 x 18	ROTEX 80x150.16
3"	80	160	16	7.1	85	200	160	8 x 18	ROTEX 80x160.16
4"	100	130	16	8.0	125	220	180	8 x 18	ROTEX 100.16
4"	100	150	16	8.1	125	220	180	8 x 18	ROTEX 100x150.16
4"	100	160	16	8.2	125	220	180	8 x 18	ROTEX 100x160.16
5"	125	130	16	9.8	185	250	210	8 x 18	ROTEX 125.16
5"	125	150	16	9.9	185	250	210	8 x 18	ROTEX 125x150.16
5"	125	160	16	10.0	185	250	210	8 x 18	ROTEX 125x160.16
6"	150	130	16	12.3	250	285	240	8 x 22	ROTEX 150.16
6"	150	150	16	12.4	250	285	240	8 x 22	ROTEX 150x150.16
6"	150	160	16	12.5	250	285	240	8 x 22	ROTEX 150x160.16
8"	200	130	16	16.5	400	340	295	8 x 22	ROTEX 200.10
8"	200	150	16	16.6	400	340	295	8 x 22	ROTEX 200x150.10
8"	200	160	16	16.7	400	340	295	8 x 22	ROTEX 200x160.10
8"	200	175	16	16.8	400	340	295	8 x 22	ROTEX 200x175.10
10"	250	130	16	21.6	600	395	350	12 x 22	ROTEX 250.10
10"	250	175	16	21.9	600	395	350	12 x 22	ROTEX 250x175.10
10"	250	200	10	22.1	600	395	350	12 x 22	ROTEX 250x200.10
12"	300	130	16	29.3	800	445	400	12 x 22	ROTEX 300.10
12"	300	200	10	29.7	800	445	400	12 x 22	ROTEX 300x200.10
14"	350	200	16	43.0	1000	505	460	16 x 22	ROTEX 350.10
16"	400	200	16	46.0	1375	565	515	16 x 26	ROTEX 400.10
18"	450	200	10	50.0	1780	615	565	20 x 26	ROTEX 450.10
18"	450	250	10	53.0	1780	615	565	20 x 26	ROTEX 450x250.10
20"	500	200	10	57.0	2185	670	620	20 x 26	ROTEX 500.10
24"	600	200	10	70.0	3080	780	725	20 x 30	ROTEX 600.10
28"	700	260	10	117.0	4800	895	840	24 x 30	ROTEX 700.10
32"	800	250	10	129.5	5440	1015	950	24 x 33	ROTEX 800.10
36"	900	300	10	184.0	7100	1115	1050	28 x 33	ROTEX 900.10
40"	1000	300	10	245.0	8700	1230	1160	28 x 36	ROTEX 1000.10

Elaflex Rotex

Range of movement

Rotex											
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *			
BL mm	DN mm	EL min. mm	EL max. mm	L min. mm	L max. mm	I mm		°	degree		
130	25-80	120	135	100	150	±30		±30			
130	100-150	120	135	100	150	±30		±20			
130	200	115	140	105	160	±25		±10			
130	250-300	125	140	115	160	±25		± 5			
150	80-200	140	160	120	170	±30		±15			
160	32-200	150	170	130	185	±25		±15			
175	200-250	165	185	145	205	±30		±10			
200	250-300	190	210	170	225	±25		±10			
200	350-600	190	210	160	225	±25		± 8			
250	450	240	260	210	280	±25		±10			
250	800	240	260	210	280	±25		± 5			
260	700	250	270	220	290	±25		± 5			
300	900-1000	290	310	260	335	±30		± 5			

* Allowable static range of movement in service with usage of collar flanges up to 70°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	-700	-600	-400	-300	-300	-300	-200	-100									
With VSD			max.	max.	max.	max.	max.	max.	-600	-400	-200									
With VSR							max.	max.	max.	max.	max.	max.	max.	-700	-700	-700				
With VSRV														max.	max.	max.	max.	-700	-700	-700

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Elaflex Red Spot / ERP

Specification

For sanitary installations, highly flexible for cold and warm water, pool water, sea water and drinking water (WRAS approved).

Not suitable for all kinds of mineral oil products, cooling water with added oil containing corrosion preventatives, oily compressor air, for permanent working pressure > 10 bar.

Materials

- Liner Butyl (IIR)/EPDM, seamless
- Reinforcement PA textile cord
- Cover EPDM
- Marking Red spot, ERV DN ..., PN 10, production date
- Flanges♦ Swivelling, DIN PN 10 carbon steel, zinc plated

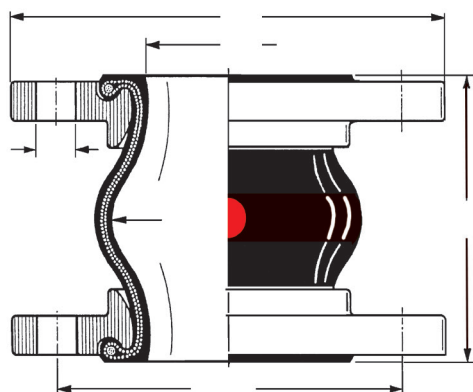
Operating conditions

Temperature range (depending on medium)
-40°C up to +90°C, temporarily up to +120°C.
Electrically dissipative.

Notes

- ♦ Table shows PN10/16 flanges – many other flange types are available
 - * For rubber expansion joints DN 25 bellows DN 32 are used
- Specifications subject to change without notice © ELAFLEX

Bellow size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm ♦			Part number ♦
	in.	mm				D	k Ø	I x Ø	
1"	25	130	10	1.8	15	115	85	4 x 14	ERP 25.10 *
1¼"	32	130	10	3.3	15	140	100	4 x 18	ERP 32.10
1½"	40	130	10	3.9	20	150	110	4 x 18	ERP 40.10
2"	50	130	10	4.5	30	165	125	4 x 18	ERP 50.10
2½"	65	130	10	5.2	50	185	145	4 x 18	ERP 65.10
3"	80	130	10	6.8	85	200	160	8 x 18	ERP 80.10
4"	100	130	10	7.9	125	220	180	8 x 18	ERP 100.10
5"	125	130	10	9.8	185	250	210	8 x 18	ERP 125.10
6"	150	130	10	12.2	250	285	240	8 x 22	ERP 150.10



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Elaflex Red Spot / ERP

Range of movement

Red Spot ERP									
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *	
BL	DN	EL min.	EL max.	L min.	L max.	I			
mm	mm	mm	mm	mm	mm	mm		degree	
130	25-80	120	135	100	150	± 30		± 30	
	100-150	120	135	100	150	± 30		± 20	

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	500	600	700	800	900	1000
Without VSD/VSR	-300	-300	-300	-300	-200	-200	-200	-100											
With VSD			-500	-500	-400	-400	-400	-300											
With VSR							-500	-400											

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Specification

For cold and warm water, swimming pool water, sea water, waste water (weakly sour or alkaline) also oil containing, cooling water with protective oils against corrosion, lubricating oil, grease and air, compressed air.

Not suitable for drinking water, acids, alkalis, chemicals, heating oil, diesel, gasoline and jet fuel, petroleum, solvents, other hydrocarbons and hot compressed air.

Materials

- Liner Chloroprene CR, seamless, abrasion resistant
- Reinforcement PA textile cord
- Cover Chloroprene CR
- Marking White imprint 'CR', ERV DN ..., PN ..., production date
- Flanges* Swivelling, DIN PN 10/16 carbon steel, zinc plated

Operating conditions

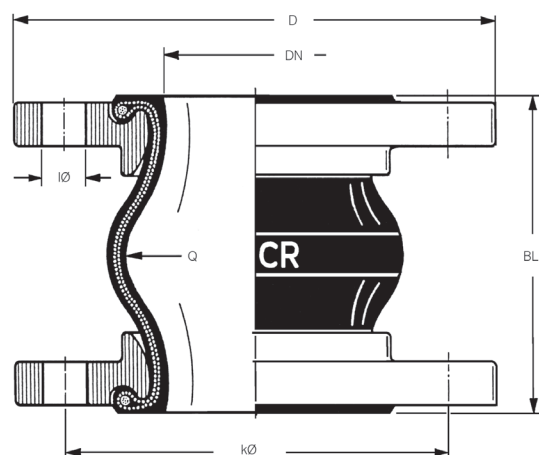
Temperature range (depending on medium)
-25°C up to +90°C, temporarily up to +100°C.
Electrically non-conductive.

Notes

* Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

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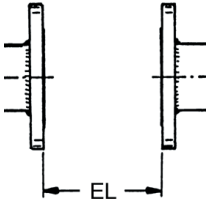
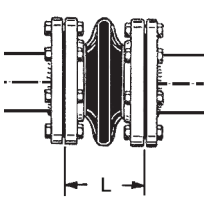
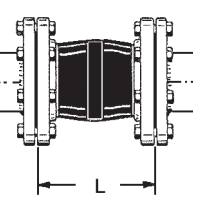
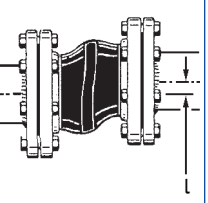
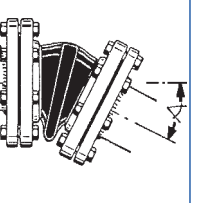
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Bellows size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm *			Part number *
	in.	mm				D	kØ	I x Ø	Type
1"	25	130	16	1.5	15	115	85	4 x 14	ERV-CR 25.16 *
1 1/4"	32	130	16	3.4	15	140	100	4 x 18	ERV-CR 32.16
1 1/2"	40	130	16	4.0	20	150	110	4 x 18	ERV-CR 40.16
2"	50	130	16	4.6	30	165	125	4 x 18	ERV-CR 50.16
2 1/2"	65	130	16	5.3	50	185	145	4 x 18	ERV-CR 65.16
3"	80	130	16	6.9	85	200	160	8 x 18	ERV-CR 80.16
4"	100	130	16	8.0	125	220	180	8 x 18	ERV-CR 100.16
5"	125	130	16	9.9	185	250	210	8 x 18	ERV-CR 125.16
6"	150	130	16	12.3	250	285	240	8 x 22	ERV-CR 150.16
8"	200	130	16	16.5	400	340	295	8 x 22	ERV-CR 200.10
10"	250	130	16	21.6	600	395	350	12 x 22	ERV-CR 250.10
12"	300	130	16	29.3	800	445	400	12 x 22	ERV-CR 300.10
14"	350	200	16	43.0	1000	505	460	16 x 22	ERV-CR 350.10
16"	400	200	16	46.0	1375	565	515	16 x 26	ERV-CR 400.10
18"	450	200	10	50.0	1780	615	565	20 x 26	ERV-CR 450.10
18"	450	250	10	53.0	1780	615	565	20 x 26	ERV-CR 450x250.10
20"	500	200	10	57.0	2185	670	620	20 x 26	ERV-CR 500.10
24"	600	200	10	70.0	3080	780	725	20 x 30	ERV-CR 600.10
28"	700	260	10	117.0	4800	895	840	24 x 30	ERV-CR 700.10
32"	800	250	10	129.5	5440	1015	950	24 x 33	ERV-CR 800.10
36"	900	300	10	184.0	7100	1115	1050	28 x 33	ERV-CR 900.10
40"	1000	300	10	245.0	8700	1230	1160	28 x 36	ERV-CR 1000.10

Elaflex Black Band / ERV-CR

Range of movement

ERV-CR											
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *			
BL	DN	EL min.	EL max.	L min.	L max.	I					
mm	mm	mm	mm	mm	mm	mm		degree			
130	25-80	120	135	100	150	±30		±30			
130	100-150	120	135	100	150	±30		±20			
130	200	115	140	105	160	±30		±10			
130	250-300	125	140	120	160	±15		± 5			
200	350-600	190	210	160	235	±30		± 8			
250	450	240	260	210	285	±35		±10			
250	800	240	260	210	285	±35		± 5			
260	700	250	270	220	290	±30		± 5			
300	900-1000	290	310	260	340	±40		± 5			

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	-700	-600	-400	-300	-300	-300	-200	-100									
With VSD			max.	max.	max.	max.	max.	max.	-600	-400	-200									
With VSR							max.	max.	max.	max.	max.	max.	max.	-700	-700	-700				
With VSRV														max.	max.	max.	max.	-700	-700	-700

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Elaflex Blue Spot / ERV-BR

Specification

For abrasive media such as sludges, slurries, solid/liquid mixtures and emulsions, dust-like or powdery products (eg. carbon-blacks). Also suitable for all kinds of water (non oil containing) as well as various chemicals.

Not suitable for petroleum based products or any kind of mineral oil. For extreme strain (eg. sharp and rough-edged matter) we suggest the use of ERV with inner protection sleeve type SR, see page 39.

Materials

- Liner BR/NR, seamless, high abrasion resistant
- Reinforcement Polyester textile cord
- Cover BR/NR
- Marking Blue spot, ERV DN ..., PN 16, production date
- Flanges* Swivelling, DIN PN 10/16, carbon steel, zinc plated

Operating conditions

Temperature range (depending on medium)
-50° C up to +70° C, temporarily up to + 90° C.
Electrically dissipative.

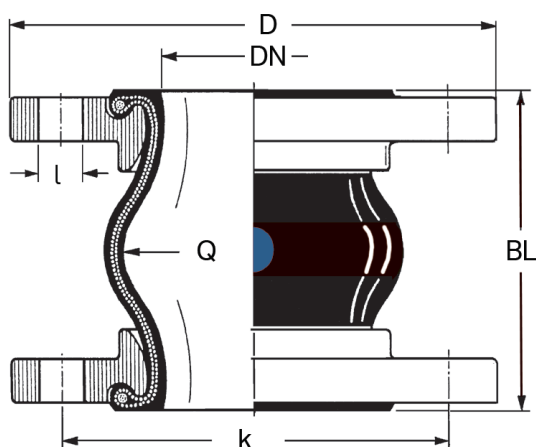
Notes

* Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

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Bellows size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm *			Part number *
	in.	mm				D	k Ø	I x Ø	
1"	25	130	16	1.9	15	115	85	4 x 14	ERV-BR 25.16 *
1¼"	32	130	16	3.4	15	140	100	4 x 18	ERV-BR 32.16
1½"	40	130	16	4.0	20	150	110	4 x 18	ERV-BR 40.16
2"	50	130	16	4.6	30	165	125	4 x 18	ERV-BR 50.16
2½"	65	130	16	5.3	50	185	145	4 x 18	ERV-BR 65.16
3"	80	130	16	6.9	85	200	160	8 x 18	ERV-BR 80.16
4"	100	130	16	8.0	125	220	180	8 x 18	ERV-BR 100.16
5"	125	130	16	9.9	185	250	210	8 x 18	ERV-BR 125.16
6"	150	130	16	12.3	250	285	240	8 x 22	ERV-BR 150.16
8"	200	130	16	16.5	400	340	295	8 x 22	ERV-BR 200.10
10"	250	130	16	21.6	600	395	350	12 x 22	ERV-BR 250.10
12"	300	130	16	29.3	800	445	400	12 x 22	ERV-BR 300.10



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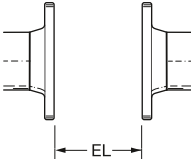
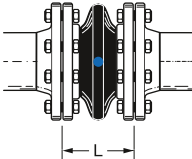
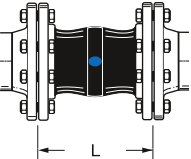
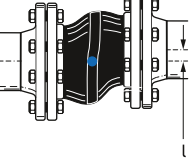
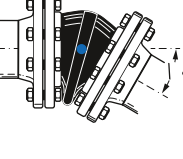
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Elaflex Blue Spot / ERV-BR

Range of movement

ERV-BR											
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *			
BL	DN	EL min.	EL max.	L min.	L max.	I					
mm	mm	mm	mm	mm	mm	mm		degree			
130	32-80	120	135	100	150	±30		±25			
130	100-150	120	135	100	150	±30		±15			
130	200	115	140	110	155	±30		± 5			
130	250-300	125	140	120	155	±15		± 5			

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	-700	-600	-400	-300	-300	-300	-200	-100									
With VSD			max.	max.	max.	max.	max.	max.	-600	-400	-200									
With VSR							max.	max.	max.	max.	max.									

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Elaflex Yellow Band / ERV-G

Specification

For petroleum based products with aromatic content up to 50%, fuels (ethanol content up to 85%), aviation fuels, town gas and natural gas except liquefied petroleum gas.

Materials

- Liner NBR (nitrile), seamless, abrasion resistant
- Reinforcement PA textile cord
- Cover Chloroprene CR
- Marking Yellow band, ERV DN..., PN ..., production date
- Flanges* Swivelling, DIN PN 10/16, carbon steel, zinc plated

Operating conditions

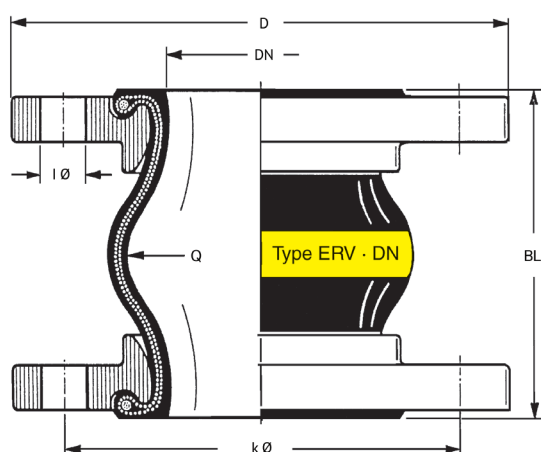
Temperature range (depending on medium)
-20°C up to +90°C, temporarily up to +100°C.
Electrically dissipative.

Notes

* Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

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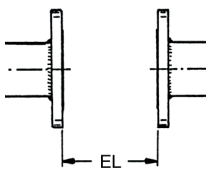
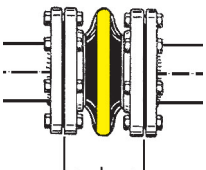
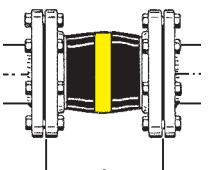
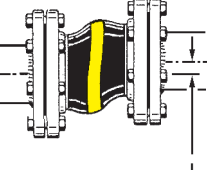
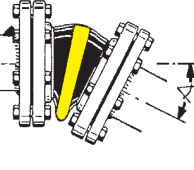
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Bellows size DN		Length BL	PN	Weight approx.	Effect. area	Flange measurements mm *			Part number *
in.	mm	mm	bar	kg	Q, cm²	D	k Ø	I x Ø	Type
1"	25	130	16	1.9	15	115	85	4 x 14	ERV-G 25.16*
1¼"	32	130	16	3.4	15	140	100	4 x 18	ERV-G 32.16
1¼"	32	160	16	3.6	15	140	100	4 x 18	ERV-G 32x160.16
1½"	40	130	16	4.0	20	150	110	4 x 18	ERV-G 40.16
1½"	40	160	16	4.2	20	150	110	4 x 18	ERV-G 40x160.16
2"	50	130	16	4.6	30	165	125	4 x 18	ERV-G 50.16
2"	50	150	16	4.7	30	165	125	4 x 18	ERV-G 50x150.16
2"	50	160	16	4.8	30	165	125	4 x 18	ERV-G 50x160.16
2½"	65	130	16	5.3	50	185	145	4 x 18	ERV-G 65.16
2½"	65	150	16	5.4	50	185	145	4 x 18	ERV-G 65x150.16
2½"	65	160	16	5.5	50	185	145	4 x 18	ERV-G 65x160.16
3"	80	130	16	6.9	85	200	160	8 x 18	ERV-G 80.16
3"	80	150	16	7.0	85	200	160	8 x 18	ERV-G 80x150.16
3"	80	160	16	7.1	85	200	160	8 x 18	ERV-G 80x160.16
4"	100	130	16	8.0	125	220	180	8 x 18	ERV-G 100.16
4"	100	150	16	8.1	125	220	180	8 x 18	ERV-G 100x150.16
4"	100	160	16	8.2	125	220	180	8 x 18	ERV-G 100x160.16
5"	125	130	16	9.9	185	250	210	8 x 18	ERV-G 125.16
5"	125	150	16	10.1	185	250	210	8 x 18	ERV-G 125x150.16
5"	125	160	16	10.2	185	250	210	8 x 18	ERV-G 125x160.16
6"	150	130	16	12.3	250	285	240	8 x 22	ERV-G 150.16
6"	150	150	16	12.4	250	285	240	8 x 22	ERV-G 150x150.16
6"	150	160	16	12.5	250	285	240	8 x 22	ERV-G 150x160.16
8"	200	130	16	16.5	400	340	295	8 x 22	ERV-G 200.10
8"	200	150	16	16.6	400	340	295	8 x 22	ERV-G 200x150.10
8"	200	160	16	16.7	400	340	295	8 x 22	ERV-G 200x160.10
8"	200	175	16	16.8	400	340	295	8 x 22	ERV-G 200x175.10
10"	250	130	16	21.6	600	395	350	12 x 22	ERV-G 250.10
10"	250	175	16	21.9	600	395	350	12 x 22	ERV-G 250x175.10
10"	250	200	10	22.1	600	395	350	12 x 22	ERV-G 250x200.10
12"	300	130	16	29.3	800	445	400	12 x 22	ERV-G 300.10
12"	300	200	10	29.8	800	445	400	12 x 22	ERV-G 300x200.10
14"	350	200	16	43.0	1000	505	460	16 x 22	ERV-G 350.10
16"	400	200	16	46.0	1375	565	515	16 x 26	ERV-G 400.10
18"	450	200	10	50.0	1780	615	565	20 x 26	ERV-G 450.10
18"	450	250	10	53.0	1780	615	565	20 x 26	ERV-G 450x250.10
20"	500	200	10	57.0	2185	670	620	20 x 26	ERV-G 500.10
24"	600	200	10	70.0	3080	780	725	20 x 30	ERV-G 600.10
28"	700	260	10	117.0	4800	895	840	24 x 30	ERV-G 700.10
32"	800	250	10	129.5	5440	1015	950	24 x 33	ERV-G 800.10
36"	900	300	10	184.0	7100	1115	1050	28 x 33	ERV-G 900.10
40"	1000	300	10	245.0	8700	1230	1160	28 x 36	ERV-G 1000.10

Elaflex Yellow Band / ERV-G

Range of movement

ERV-G											
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *			
BL	DN	EL min.	EL max.	L min.	L max.	I					
mm	mm	mm	mm	mm	mm	mm	degree				
130	25-80	120	135	100	150	±30		±30			
130	100-150	120	135	100	150	±30		±20			
130	200	115	140	105	160	±30		±10			
130	250-300	125	140	120	160	±15		± 5			
150	50-200	140	160	115	180	±30		±15			
160	32-200	150	170	130	195	±35		±15			
175	200-250	165	185	160	210	±10		± 5			
200	250-300	190	210	160	235	±30		±10			
200	350-600	190	210	160	235	±30		± 8			
250	450	240	260	210	285	±35		±10			
250	800	240	260	210	285	±35		± 5			
260	700	250	270	220	290	±30		± 5			
300	900-1000	290	310	260	340	±40		± 5			

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	-700	-600	-400	-300	-300	-300	-200	-100									
With VSD			max.	max.	max.	max.	max.	max.	-600	-400	-200									
With VSR							max.	max.	max.	max.	max.	max.	max.	-700	-700	-700				
With VSRV														max.	max.	max.	max.	-700	-700	-700

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Specification

For petroleum based products, DIN EN fuels up to 50% aromatic content, cooling water with oily anticorrosion additives, lubrication and hydraulic oil, seawater.

Materials

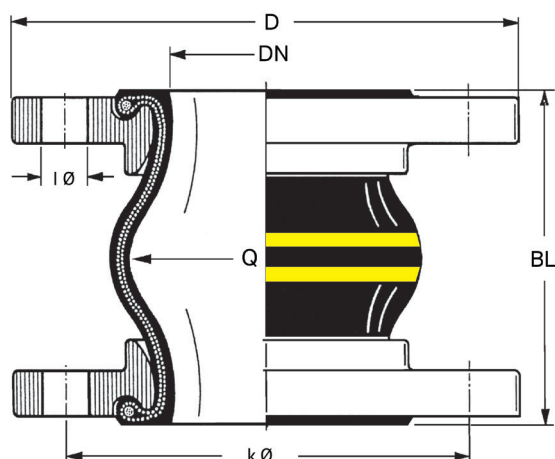
- Liner NBR (nitrile), seamless, abrasion resistant
- Reinforcement Steel wire cord
- Cover Chloroprene CR
- Marking 2 yellow bands, ERV DN ..., PN ..., production date
- Flanges* Swivelling, DIN PN 10/16, carbon steel, zinc plated

Operating conditions

Temperature range (depending on medium)
-20°C up to +90°C, temporarily up to +100°C.
Fire resistant (to ISO 15540) up to 30 min. and +800°C.
Electrically dissipative.

Notes

- * Table shows PN10/16 flanges – many other flange types are available
 - * For rubber expansion joints DN 25 bellows DN 32 are used
- Specifications subject to change without notice © ELAFLEX



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Bellows size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm *			Part number *
	in.	mm				D	k Ø	l x Ø	
1"	25	130	16	2.0	10	115	85	4 x 14	ERV-GS 25.16*
1¼"	32	130	16	3.5	15	140	100	4 x 18	ERV-GS 32.16
1½"	40	130	16	4.0	20	150	110	4 x 18	ERV-GS 40.16
2"	50	130	16	5.0	30	165	125	4 x 18	ERV-GS 50.16
2½"	65	130	16	5.5	50	185	145	4 x 18	ERV-GS 65.16
3"	80	130	16	7.1	85	200	160	8 x 18	ERV-GS 80.16
3"	80	150	16	7.2	85	200	160	8 x 18	ERV-GS 80x150.16
4"	100	130	16	8.3	125	220	180	8 x 18	ERV-GS 100.16
4"	100	150	16	8.4	125	220	180	8 x 18	ERV-GS 100x150.16
5"	125	130	16	10.1	185	250	210	8 x 18	ERV-GS 125.16
5"	125	150	16	10.2	185	250	210	8 x 18	ERV-GS 125x150.16
6"	150	130	16	12.6	250	285	240	8 x 22	ERV-GS 150.16
6"	150	150	16	12.7	250	285	240	8 x 22	ERV-GS 150x150.16
8"	200	130	16	16.9	400	340	295	8 x 22	ERV-GS 200.10
8"	200	175	16	17.2	400	340	295	8 x 22	ERV-GS 200x175.10
10"	250	130	16	22.3	600	395	350	12 x 22	ERV-GS 250.10
10"	250	175	16	22.6	600	395	350	12 x 22	ERV-GS 250x175.10
12"	300	130	16	29.9	800	445	400	12 x 22	ERV-GS 300.10
12"	300	200	16	30.4	800	445	400	12 x 22	ERV-GS 300x200.10
14"	350	200	16	44.0	1000	505	460	16 x 22	ERV-GS 350.10
16"	400	200	16	47.5	1375	565	515	16 x 26	ERV-GS 400.10
18"	450	200	10	51.0	1780	615	565	20 x 26	ERV-GS 450.10
18"	450	250	10	54.0	1780	615	565	20 x 26	ERV-GS 450x250.10
20"	500	200	10	57.5	2185	670	620	20 x 26	ERV-GS 500.10
24"	600	200	10	70.0	3080	780	725	20 x 30	ERV-GS 600.10

Elaflex Yellow Steel / ERV-GS

Range of movement

ERV-GS							
Length	Bellow size	Installation length		Axial *		Lateral *	Angular *
BL	DN	EL min.	EL max.	L min.	L max.	I	degree
mm	mm	mm	mm	mm	mm	mm	
130	25-80	120	135	100	145	± 15	±20
130	100-150	120	135	100	145	± 15	±15
130	200-300	125	140	115	150	± 10	± 5
150	80-150	140	160	115	170	± 15	±15
175	200-250	165	185	150	195	± 15	± 5
200	300-350	190	210	170	230	±25	±10
200	400-600	190	210	160	230	±25	± 5
250	450	240	260	210	280	±30	± 5

* Allowable static range of movement in service with usage of collar flanges up to 60°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	max.	-900	-800	-700	-700	-700	-700	-600	-400	-400	-300	-300	-200				
With VSD			max.	max.	max.	max.	max.	max.	max.	max.	-800									
With VSR							max.	max.	max.	max.	max.	max.	max.	-800	-800	-700				
With VSRV														max.	max.	max.				

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Elaflex Yellow Steel / ERV-GS HNBR

Specification

For petroleum based products, DIN EN fuels up to 50% aromatic content, cooling water with oily anticorrosion additives, lubrication and hydraulic oil, seawater. Very good aging, weathering and ozone resistance.

Materials

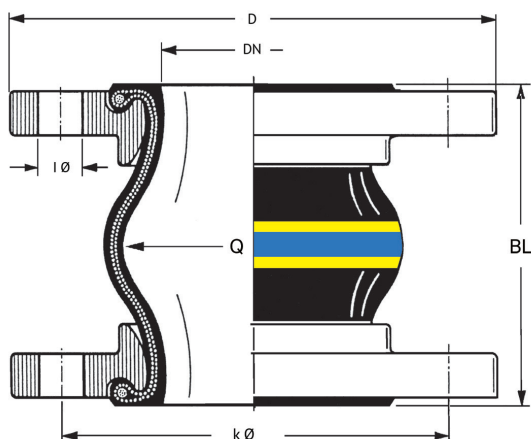
- Liner HNBR (nitrile), seamless, high abrasion resistance
- Reinforcement Steel wire cord
- Cover Chloroprene CR
- Marking Yellow-blue-yellow bands, ERV DN ..., PN ..., production date
- Flanges* Swivelling, DIN PN 10/16, carbon steel, zinc plated

Operating conditions

Temperature range (depending on medium)
-35°C up to +100°C, temporarily up to +120°C.
Fire resistant (to ISO 15540) up to 30 min. at +800°C.
Electrically dissipative.

Notes

- * Table shows PN10/16 flanges – many other flange types are available
 - * For rubber expansion joints DN 25 bellows DN 32 are used
- Specifications subject to change without notice © ELAFLEX



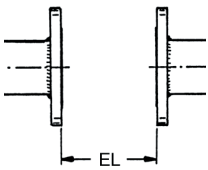
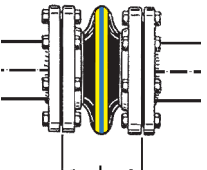
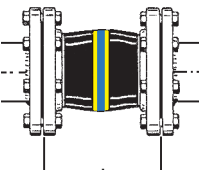
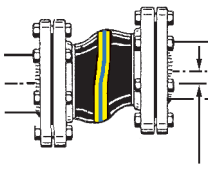
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Bellows size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm *			Part number *
	in.	mm				D	k Ø	l x Ø	
1"	25	130	16	2.0	10	115	85	4 x 14	ERV-GS HNBR 25.16*
1¼"	32	130	16	3.5	15	140	100	4 x 18	ERV-GS HNBR 32.16
1½"	40	130	16	4.0	20	150	110	4 x 18	ERV-GS HNBR 40.16
2"	50	130	16	5.0	30	165	125	4 x 18	ERV-GS HNBR 50.16
2½"	65	130	16	5.5	50	185	145	4 x 18	ERV-GS HNBR 65.16
3"	80	130	16	7.1	85	200	160	8 x 18	ERV-GS HNBR 80.16
3"	80	150	16	7.2	85	200	160	8 x 18	ERV-GS HNBR 80x150.16
4"	100	130	16	8.3	125	220	180	8 x 18	ERV-GS HNBR 100.16
4"	100	150	16	8.4	125	220	180	8 x 18	ERV-GS HNBR 100x150.16
5"	125	130	16	10.1	185	250	210	8 x 18	ERV-GS HNBR 125.16
5"	125	150	16	10.2	185	250	210	8 x 18	ERV-GS HNBR 125x150.16
6"	150	130	16	12.6	250	285	240	8 x 22	ERV-GS HNBR 150.16
6"	150	150	16	12.7	250	285	240	8 x 22	ERV-GS HNBR 150x150.16
8"	200	130	16	16.9	400	340	295	8 x 22	ERV-GS HNBR 200.10
8"	200	175	16	17.2	400	340	295	8 x 22	ERV-GS HNBR 200x175.10
10"	250	130	16	22.3	600	395	350	12 x 22	ERV-GS HNBR 250.10
10"	250	175	16	22.6	600	395	350	12 x 22	ERV-GS HNBR 250x175.10
12"	300	130	16	29.9	800	445	400	12 x 22	ERV-GS HNBR 300.10
12"	300	200	16	30.4	800	445	400	12 x 22	ERV-GS HNBR 300x200.10
14"	350	200	16	44.0	1000	505	460	16 x 22	ERV-GS HNBR 350.10
16"	400	200	16	47.5	1375	565	515	16 x 26	ERV-GS HNBR 400.10
18"	450	200	10	51.0	1780	615	565	20 x 26	ERV-GS HNBR 450.10
18"	450	250	10	54.0	1780	615	565	20 x 26	ERV-GS HNBR 450x250.10
20"	500	200	10	57.5	2185	670	620	20 x 26	ERV-GS HNBR 500.10
24"	600	200	10	70.0	3080	780	725	20 x 30	ERV-GS HNBR 600.10

Elaflex Yellow Steel / ERV-GS HNBR

Range of movement

ERV-GS HNBR									
Length	Bellow size	Installation length		Axial *		Lateral *	Angular *		
BL	DN	EL min.	EL max.	L min.	L max.	I			
mm	mm	mm	mm	mm	mm	mm	degree		
130	25-80	120	135	100	145	± 15	± 20		
130	100-150	120	135	100	145	± 15	± 15		
130	200-300	125	140	115	150	± 10	± 15		
150	80-150	140	160	115	170	± 15	± 15		
175	200-250	165	185	150	195	± 15	± 15		
200	300-350	190	210	170	230	± 25	± 10		
200	400-600	190	210	160	230	± 25	± 15		
250	450	240	260	210	280	± 30	± 15		

* Allowable static range of movement in service with usage of collar flanges up to 60°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	max.	-900	-800	-700	-700	-700	-700	-600	-400	-400	-300	-300	-200				
With VSD			max.	max.	max.	max.	max.	max.	max.	max.	-800									
With VSR							max.	max.	max.	max.	max.	max.	max.	-900	-800	-700				
With VSRV															max.	max.				

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Elaflex Yellow Band / ERV-G LT

Specification

For low temperature applications for standard-conform petroleum based products, eg. diesel, heating oil up to +90°C, aviation fuels, petroleum up to +60°C and gasoline up to +40°C.

Materials

- Liner NBR (nitrile), seamless, high abrasion resistance
- Reinforcement PA textile cord
- Cover Chloroprene CR
- Marking Yellow band with white 'LT' print, ERV DN., PN 16, production date
- Flanges♦ Swivelling, DIN PN 10/16, carbon steel, zinc plated

Operating conditions

Temperature range (depending on medium)
-40°C up to +90°C, temporarily up to +100°C.
Electrically dissipative.

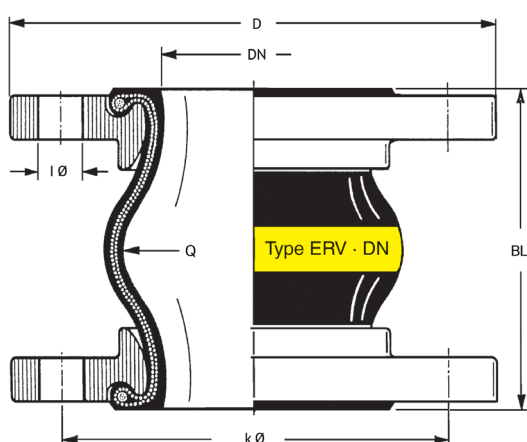
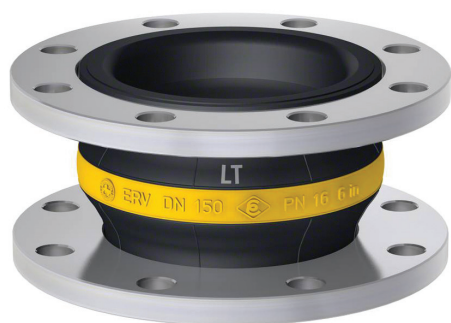
Notes

♦ Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

Specifications subject to change without notice © ELAFLEX

Bellow size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm ♦			Part number *
	in.	mm				D	k Ø	l x Ø	
1"	25	130	16	1.9	15	115	85	4 x 14	ERV-G LT 25.16 *
1¼"	32	130	16	3.4	15	140	100	4 x 18	ERV-G LT 32.16
1½"	40	130	16	4.0	20	150	110	4 x 18	ERV-G LT 40.16
2"	50	130	16	4.6	30	165	125	4 x 18	ERV-G LT 50.16
2½"	65	130	16	5.3	50	185	145	4 x 18	ERV-G LT 65.16
3"	80	130	16	6.9	85	200	160	8 x 18	ERV-G LT 80.16
4"	100	130	16	8.0	125	220	180	8 x 18	ERV-G LT 100.16
5"	125	130	16	9.9	185	250	210	8 x 18	ERV-G LT 125.16
6"	150	130	16	12.3	250	285	240	8 x 22	ERV-G LT 150.16
8"	200	130	16	16.5	400	340	295	8 x 22	ERV-G LT 200.10
10"	250	130	16	21.6	600	395	350	12 x 22	ERV-G LT 250.10
12"	300	130	16	29.3	800	445	400	12 x 22	ERV-G LT 300.10



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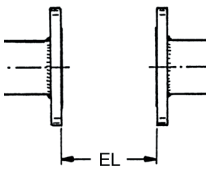
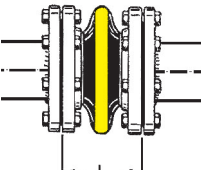
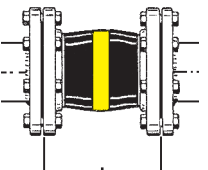
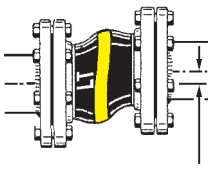
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Elaflex Yellow Band / ERV-G LT

Range of movement

ERV-G LT									
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *	
BL	DN	EL min.	EL max.	L min.	L max.	I			
mm	mm	mm	mm	mm	mm	mm		degree	
130	25-80	120	135	100	150	±30		±30	
	100-150	120	135	100	150	±30		±20	
	200	115	140	105	160	±30		±10	
	250-300	125	140	120	160	±15		± 5	

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	-700	-600	-400	-300	-300	-300	-200	-100								
With VSD			max.	max.	max.	max.	max.	max.	-600	-400	-200								
With VSR							max.	max.	max.	max.	max.								

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Elaflex Orange Band / ERV-OR

Specification

For Liquid Petroleum Gas (LPG) according to EN 589.
For tank trucks and refuelling stations.

Materials

- Liner NBR (nitrile), seamless
- Reinforcement PA textile cord
- Cover Chloroprene CR, pricked
- Marking Orange band, ERV DN ..., PN 25, production date
- Flanges* Swivelling, DIN 2635/PN 40 carbon steel, zinc plated

Operating conditions

Temperature range (depending on medium)
-20°C up to +90°C, temporarily up to 100°C.
Electrically dissipative.

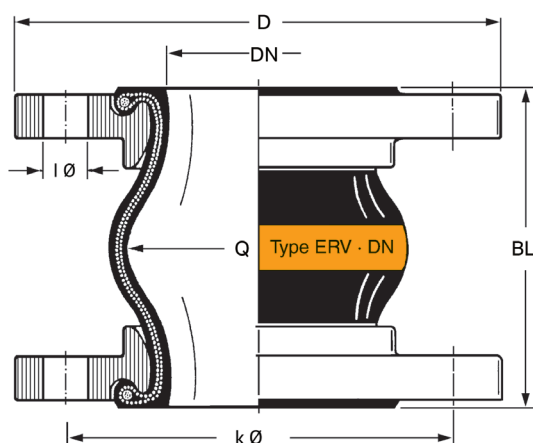
Notes

* Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

Specifications subject to change without notice © ELAFLEX

Bellow size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm *			Part number *
	in.	mm				D	k Ø	l x Ø	
1"	25	130	25	2.0	15	115	85	4 x 14	ERV-OR 25.25 *
1¼"	32	130	25	3.0	15	140	100	4 x 18	ERV-OR 32.25
1½"	40	130	25	3.5	20	150	110	4 x 18	ERV-OR 40.25
2"	50	130	25	5.0	30	165	125	4 x 18	ERV-OR 50.25
2½"	65	130	25	6.0	50	185	145	8 x 18	ERV-OR 65.25
3"	80	130	25	7.5	85	200	160	8 x 18	ERV-OR 80.25
4"	100	130	25	10.0	125	235	190	8 x 22	ERV-OR 100.25
5"	125	130	25	12.0	185	270	220	8 x 26	ERV-OR 125.25
6"	150	130	25	16.0	250	300	250	8 x 26	ERV-OR 150.25



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Elaflex Orange Band / ERV-OR

Range of movement

ERV-OR													
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *					
BL	DN	EL min.	EL max.	L min.	L max.	I							
mm	mm	mm	mm	mm	mm	mm		degree					
130	25-100	120	135	100	160	±30		±30					

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	max.	max.	max.	max.	max.											
With VSD			max.	max.	max.	max.	max.	max.											

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Specification

For chemicals, acids, alkalis and aggressive chemical waste water. For oil-contaminated compressed air up to +90°C.

Materials

- Liner Hypalon® CSM, seamless, high abrasion resistance
- Reinforcement PA textile cord
- Cover Hypalon® CSM
- Marking Green band, ERV DN ..., PN ..., production date
- Flanges♦ Swivelling, PN 10/16, carbon steel, zinc plated

Operating conditions

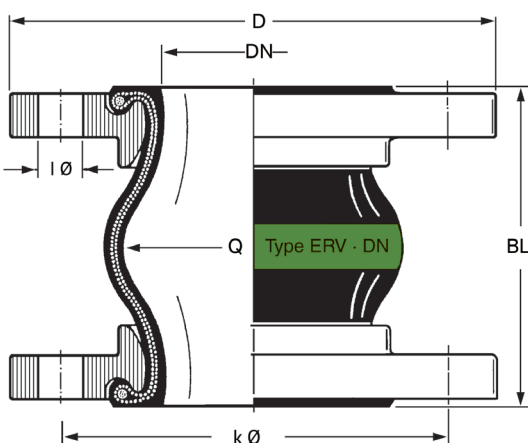
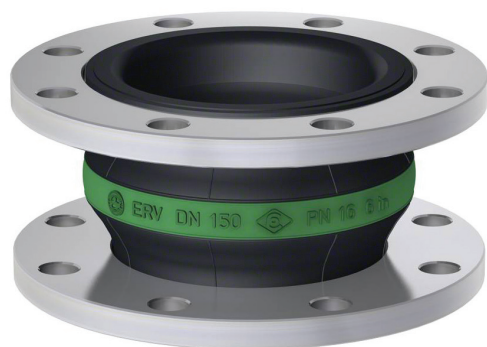
Temperature range (depending on medium)
-20°C up to +100°C, temporarily up to 110°C.
Electrically non-conductive.

Notes

♦ Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

Specifications subject to change without notice © ELAFLEX



Bellow size DN	Length BL		PN	Weight approx.	Effect. area	Flange measurements mm ♦			Part number *
	in.	mm				D	k Ø	l x Ø	
1"	25	130	16	1.9	15	115	85	4 x 14	ERV-GR 25.16 *
1¼"	32	130	16	3.4	15	140	100	4 x 18	ERV-GR 32.16
1½"	40	130	16	4.0	20	150	110	4 x 18	ERV-GR 40.16
2"	50	130	16	4.6	30	165	125	4 x 18	ERV-GR 50.16
2½"	65	130	16	5.3	50	185	145	4 x 18	ERV-GR 65.16
3"	80	130	16	6.9	85	200	160	8 x 18	ERV-GR 80.16
4"	100	130	16	8.0	125	220	180	8 x 18	ERV-GR 100.16
5"	125	130	16	9.9	185	250	210	8 x 18	ERV-GR 125.16
6"	150	130	16	12.3	250	285	240	8 x 22	ERV-GR 150.16
8"	200	130	16	16.5	400	340	295	8 x 22	ERV-GR 200.10
10"	250	130	16	21.6	600	395	350	12 x 22	ERV-GR 250.10
12"	300	130	16	29.3	800	445	400	12 x 22	ERV-GR 300.10
14"	350	200	16	43.0	1000	505	460	16 x 22	ERV-GR 350.10
16"	400	200	16	46.0	1375	565	515	16 x 26	ERV-GR 400.10
18"	450	200	10	50.0	1780	615	565	20 x 26	ERV-GR 450.10
18"	450	250	10	53.0	1780	615	565	20 x 26	ERV-GR 450x250.10
20"	500	200	10	57.0	2185	670	620	20 x 26	ERV-GR 500.10
24"	600	200	10	70.0	3080	780	725	20 x 30	ERV-GR 600.10
28"	700	260	10	117.0	4800	895	840	24 x 30	ERV-GR 700.10



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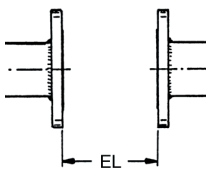
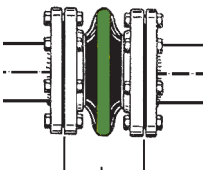
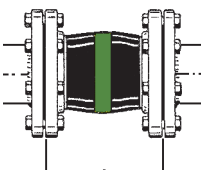
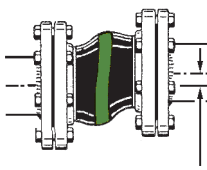
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Elaflex Green Band / ERV-GR

Range of movement

ERV-GR									
Length	Bellow size	Installation length		Axial *		Lateral *	Angular *		
BL	DN	EL min.	EL max.	L min.	L max.	I	°		
mm	mm	mm	mm	mm	mm	mm	degree		
130	25-80	120	135	100	150	±30	±30		
130	100-150	120	135	100	150	±30	±20		
130	200	115	140	105	160	±30	±10		
130	250-300	125	140	120	160	±15	± 5		
200	350-600	190	210	160	235	±30	± 8		
250	450	240	260	205	285	±35	±10		
260	700	250	270	220	290	±30	± 5		

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	-700	-600	-400	-300	-300	-300	-200	-100									
With VSD			max.	max.	max.	max.	max.	max.	-600	-400	-200									
With VSR							max.	max.	max.	max.	max.	max.	max.	-700	-700	-700				
With VSRV														max.	max.	max.				

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47



Elaflex White Band / ERV-W

Specification

For foodstuffs, also oil and fat containing food.
Liner conforms to Recommendation XXI of BfR
and FDA-21CFR 177.2600.

Not approved for drinking water.

Materials

- Liner NBR light grey, seamless, abrasion resistant
- Reinforcement PA textile cord
- Cover Chloroprene (CR)
- Marking White band, ERV DN ..., PN ..., production date
- Flanges* Swivelling, PN 10/16, carbon steel, zinc plated

Operating conditions

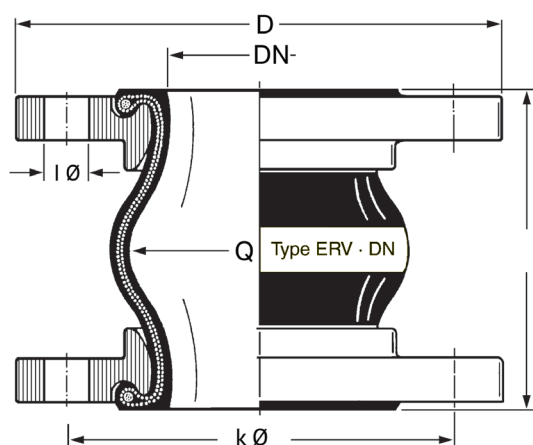
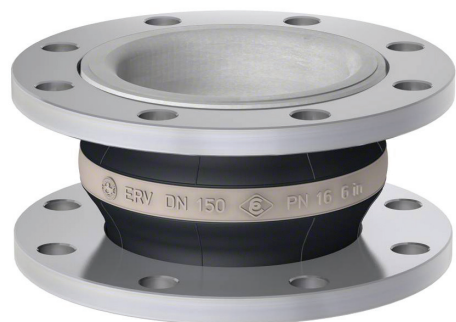
Temperature range (depending on medium)
-20°C up to +90°C, temporarily up to 100°C.
Electrically non-conductive.

Notes

* Table shows PN10/16 flanges – many other flange types are available

* For rubber expansion joints DN 25 bellows DN 32 are used

Specifications subject to change without notice © ELAFLEX



Bellow size DN	Length BL		PN	Weight approx. kg	Effect. area Q:cm ²	Flange measurements mm *			Part number *
	in.	mm	mm	bar		D	k Ø	I x Ø	
1"	25	130	16	1.9	15	115	85	4 x 14	ERV-W 25.16 *
1¼"	32	130	16	3.4	15	140	100	4 x 18	ERV-W 32.16
1½"	40	130	16	4.0	20	150	110	4 x 18	ERV-W 40.16
2"	50	130	16	4.6	30	165	125	4 x 18	ERV-W 50.16
2½"	65	130	16	5.3	50	185	145	4 x 18	ERV-W 65.16
3"	80	130	16	6.9	85	200	160	8 x 18	ERV-W 80.16
4"	100	130	16	8.0	125	220	180	8 x 18	ERV-W 100.16
5"	125	130	16	9.9	185	250	210	8 x 18	ERV-W 125.16
6"	150	130	16	12.3	250	285	240	8 x 22	ERV-W 150.16
8"	200	130	16	16.5	400	340	295	8 x 22	ERV-W 200.10
10"	250	130	16	21.6	600	395	350	12 x 22	ERV-W 250.10
12"	300	130	16	29.3	800	445	400	12 x 22	ERV-W 300.10
14"	350	200	16	43.0	1000	505	460	16 x 22	ERV-W 350.10
16"	400	200	16	46.0	1375	565	515	16 x 26	ERV-W 400.10
18"	450	200	10	50.0	1780	615	565	20 x 26	ERV-W 450.10
18"	450	250	10	53.0	1780	615	565	20 x 26	ERV-W 450x250.10
20"	500	200	10	57.0	2185	670	620	20 x 26	ERV-W 500.10
24"	600	200	10	70.0	3080	780	725	20 x 30	ERV-W 600.10



Product by FlexEJ Ltd

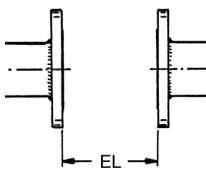
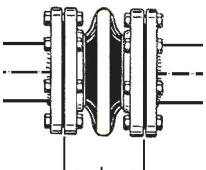
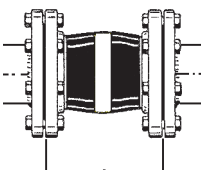
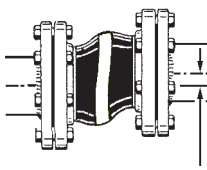
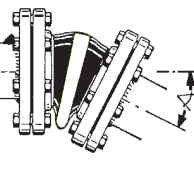
For technical assistance & sales

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Elaflex White Band / ERV-W

Range of movement

ERV-W											
Length	Bellow size	Installation length		Axial *		Lateral *		Angular *			
BL	DN	EL min.	EL max.	L min.	L max.	I					
mm	mm	mm	mm	mm	mm	mm		degree			
130	25-80	120	135	100	150	±30		±30			
130	100-150	120	135	100	150	±30		±20			
130	200	115	140	105	160	±30		±10			
130	250-300	125	140	120	160	±15		± 5			
200	350-600	190	210	160	235	±30		± 8			
250	450	240	260	205	285	±35		±10			

* Allowable static range of movement in service with usage of collar flanges up to 50°C
Please note: Data not valid for *combined* movements

Permissible vacuum [mbar]

DN	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
Without VSD/VSR	max.	max.	max.	-700	-600	-400	-300	-300	-300	-200	-100									
With VSD			max.	max.	max.	max.	max.	max.	-600	-400	-200									
With VSR							max.	max.	max.	max.	max.	max.	max.	-700	-700	-700				
With VSRV														max.	max.	max.				

Data measured at room temperature with new expansion joints of standard length and non swelling media. For swelling media use a safety factor. A compressed installation improves the table listed vacuum resistance. The maximum permissible elongation (L max.) reduces the vacuum resistance by 50%.

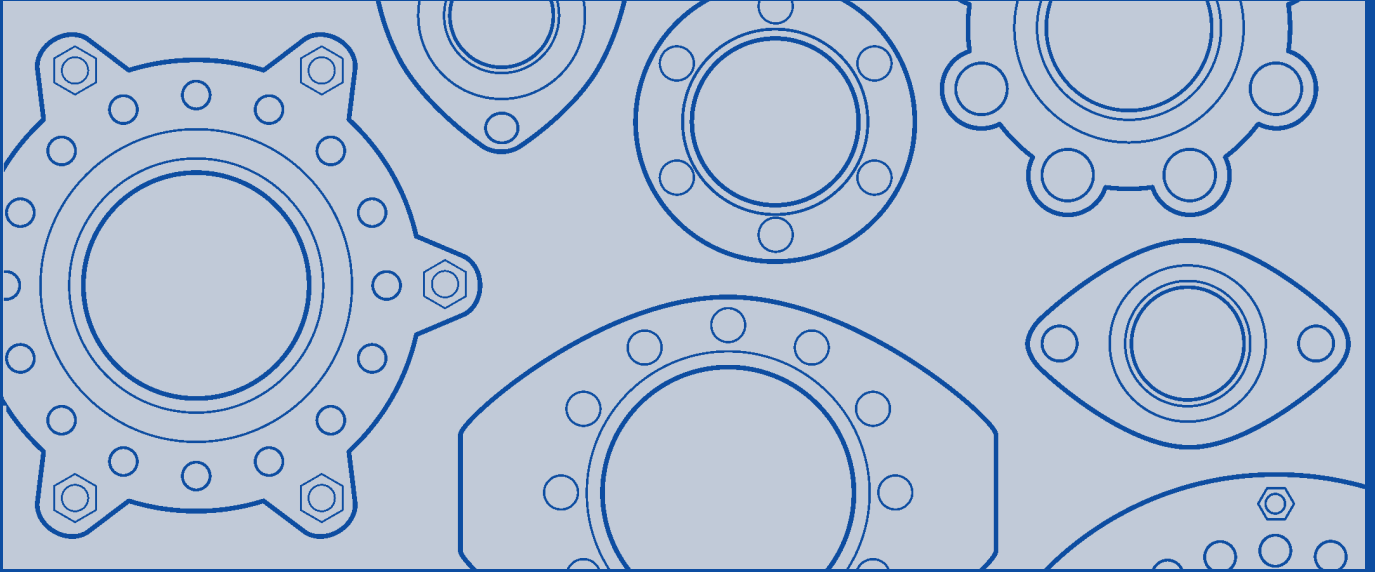
In this case we recommend using vacuum support spirals or vacuum support rings (see page 41).

For dependencies of overpressure, range of movement and temperature please see table on page 7.

Approvals

These certificates can be obtained from sales@flexej.co.uk
There is an overview of all certificates on page 47





Flanges & Accessories

Flanges

Commonly used measurements

Flange standard		DIN PN 6				DIN PN 10				DIN PN 16				DIN PN 25				DIN PN 40			
Part number		.6				.10				.16				.25				.40			
DN		D Ø	k Ø	n	I Ø	D Ø	k Ø	n	I Ø	D Ø	k Ø	n	I Ø	D Ø	k Ø	n	I Ø	D Ø	k Ø	n	I Ø
mm	in	mm	mm		mm	mm	mm		mm	mm	mm		mm	mm	mm		mm	mm	mm		mm
25	1"					115	85	4	14	115	85	4	14	115	85	4	14	115	85	4	14
32	1¼"	120	90	4	14	140	100	4	18	140	100	4	18	140	100	4	18	140	100	4	18
40	1½"	130	100	4	14	150	110	4	18	150	110	4	18	150	110	4	18	150	110	4	18
50	2"	140	110	4	14	165	125	4	18	165	125	4	18	165	125	4	18	165	125	4	18
65	2½"	160	130	4	14	185	145	4	18	185	145	4	18	185	145	8	18	185	145	8	18
80	3"	190	150	4	18	200	160	8	18	200	160	8	18	200	160	8	18	200	160	8	18
100	4"	210	170	4	18	220	180	8	18	220	180	8	18	235	190	8	22	235	190	8	22
125	5"	240	200	8	18	250	210	8	18	250	210	8	18	270	220	8	26	270	220	8	26
150	6"	265	225	8	18	285	240	8	22	285	240	8	22	300	250	8	26	300	250	8	26
200	8"	320	280	8	18	340	295	8	22	340	295	12	22	360	310	12	26	375	320	12	30
250	10"	375	335	12	18	395	350	12	22	405	355	12	26	425	370	12	30	450	385	12	33
300	12"	440	395	12	22	445	400	12	22	460	410	12	26	485	430	16	30	515	450	16	33
350	14"	490	445	12	22	505	460	16	22	520	470	16	26	555	490	16	33	580	510	16	36
400	16"	540	495	16	22	565	515	16	26	580	525	16	30	620	550	16	36	660	585	16	39
450	18"	595	550	16	22	615	565	20	26	640	585	20	30	670	600	20	36	685	610	20	39
500	20"	645	600	20	22	670	620	20	26	715	650	20	33	730	660	20	36	755	670	20	42
600	24"	755	705	20	26	780	725	20	30	840	770	20	36	845	770	20	39				
700	28"	860	810	24	26	895	840	24	30	910	840	24	36	960	875	24	42				
800	32"	975	920	24	30	1015	950	24	33	1025	950	24	39	1085	990	24	48				
900	36"	1075	1020	24	30	1115	1050	28	33	1125	1050	28	39	1185	1090	28	48				
1000	40"	1175	1120	28	30	1230	1160	28	36	1255	1170	28	42	1320	1210	28	56				

A wide range of common flange types is available from stock in carbon steel with zinc plating.

Any flange drilling, material or coating can be supplied to order, please enquire.

It is also possible to have two different flange types on the same rubber bellows, making the product an ideal way to connect between equipment with different flanges.

The following pages list basic dimensions for the most common type we provide, please see the Flange Finder www.flexej.co.uk for a wider range of data.

Flanges

Commonly used measurements

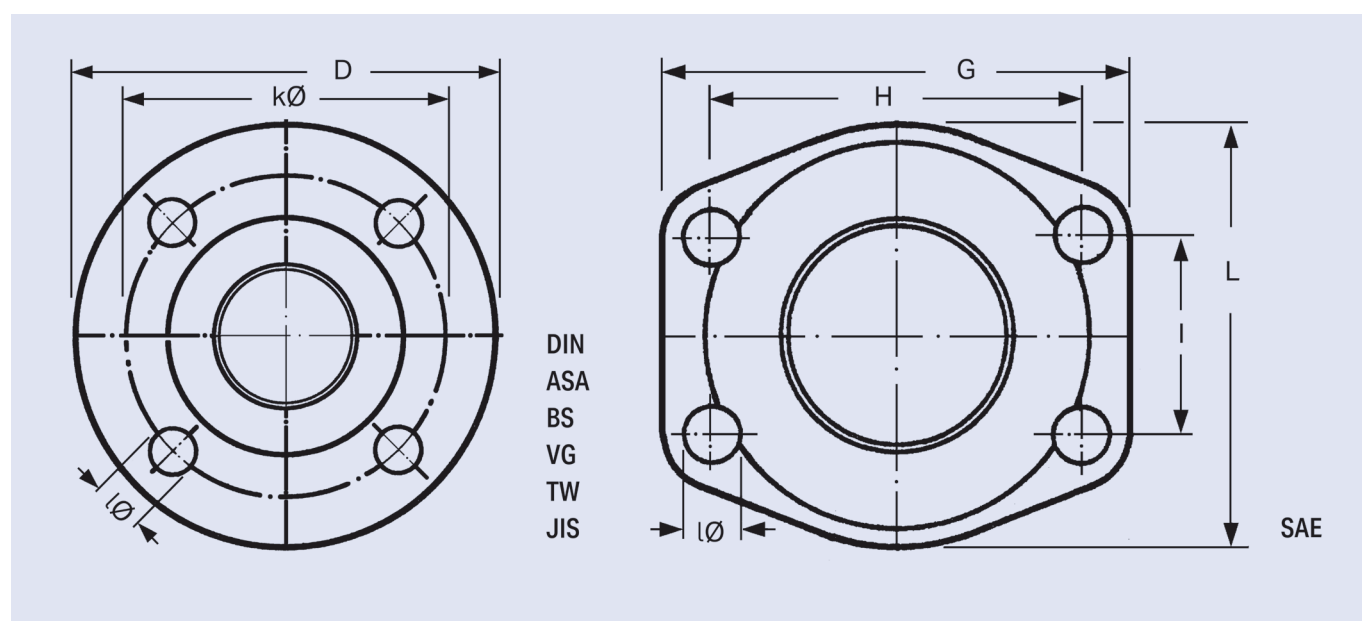
Flange standard		ANSI B 16.5 150 lb/sq in.								ANSI B 16.5 300 lb/sq.in.								SAE J518c							
Part number		.ASA 150								.ANSI 300								.SAE							
DN		D Ø		k Ø		n	l Ø		D Ø		k Ø		n	l Ø		G	H	I	L	n	l Ø				
mm	in.	mm	in.	mm	in.		mm	in.	mm	in.	mm	in.		mm	in.							mm	mm	mm	mm
25	1"	108.0	4½"	79.4	3⅝"	4	15.9	⅝"	123.8	4⅞"	88.9	3½"	4	19.0	¾"										
32	1¼"	117.5	4⅞"	88.9	3½"	4	15.9	⅝"	133.4	5¼"	98.4	3⅞"	4	19.0	¾"	79	58.7	30.2	73	4	13				
40	1½"	127.0	5"	98.4	3⅞"	4	15.9	⅝"	155.6	6⅝"	114.3	4¾"	4	22.2	⅞"	94	70.0	35.7	83	4	13				
50	2"	152.4	6"	120.7	4¾"	4	19.0	¾"	165.1	6½"	127.0	5"	8	19.0	¾"	102	78.0	42.9	97	4	13				
65	2½"	177.8	7"	139.7	5½"	4	19.0	¾"	190.5	7½"	149.2	5⅞"	8	22.2	⅞"	114	89.0	50.8	115	4	13				
80	3"	190.5	7½"	152.4	6"	4	19.0	¾"	209.6	8¼"	168.3	6⅝"	8	22.2	⅞"	135	106.4	61.9	131	4	17				
100	4"	228.6	9"	190.5	7½"	8	19.0	¾"	254.0	10"	200.0	7⅞"	8	22.2	⅞"	162	130.2	77.8	152	4	17				
125	5"	254.0	10"	215.9	8½"	8	22.2	⅞"	279.4	11"	235.0	9¼"	8	22.2	⅞"	184	152.4	92.1	181	4	17				
150	6"	279.4	11"	241.3	9½"	8	22.2	⅞"	317.5	12½"	269.9	10⅝"	12	22.2	⅞"										
200	8"	342.9	13½"	298.5	11¾"	8	22.2	⅞"	381.0	15"	330.2	13"	12	25.4	1"										
250	10"	406.4	16"	361.9	14¼"	12	25.4	1"	444.5	17½"	387.3	15¼"	16	28.6	1⅝"										
300	12"	482.6	19"	431.8	17	12	25.4	1"	520.7	20½"	450.8	17¾"	16	31.7	1¼"										
350	14"	533.4	21"	476.2	18⅝"	12	28.6	1⅝"	584.2	23"	514.3	20¼"	20	31.7	1¼"										
400	16"	596.9	23½"	539.7	21¼"	16	28.6	1⅝"	647.7	25½"	571.5	22½"	20	34.9	1⅝"										
450	18"	635.0	25"	577.9	21¾"	16	31.7	1¼"	711.2	28"	628.7	24¾"	24	34.9	1⅝"										
500	20"	698.5	27½"	635.0	25"	20	31.7	1¼"	774.7	30½"	685.8	27"	24	34.9	1⅝"										
600	24"	812.8	32"	749.3	29½"	20	34.9	1⅝"	914.4	36"	812.8	32"	24	41.3	1⅝"										

Flange standard		BS 10 table D										BS 10 table E										BS 10 table F									
Part number		.BS 10D										.BS 10E										.BS 10F									
DN		D Ø		k Ø		n	l Ø		D Ø		k Ø		n	l Ø		D Ø		k Ø		n	l Ø										
mm	in	mm	in	mm	in		mm	in.	mm	in.	mm	in.		mm	in.	mm	in.	mm	in.		mm	in.	mm	in.							
25	1"	114.3	4½"	82.5	3¼"	4	14.3	⅝"	114.3	4½"	82.5	3¼"	4	14.3	⅝"	120.6	4¾"	87.3	3⅞"	4	17.5	1⅜"									
32	1¼"	120.6	4¾"	87.3	3⅞"	4	14.3	⅝"	120.6	4¾"	87.3	3⅞"	4	14.3	⅝"	133.3	5¼"	98.4	3⅝"	4	17.5	1⅜"									
40	1½"	133.3	5¼"	98.4	3⅝"	4	14.3	⅝"	133.3	5¼"	98.4	3⅝"	4	14.3	⅝"	139.7	5½"	104.8	4⅝"	4	17.5	1⅜"									
50	2"	152.4	6"	114.3	4½"	4	17.5	1⅜"	152.4	6"	114.3	4½"	4	17.5	1⅜"	165.1	6½"	127.0	5"	4	17.5	1⅜"									
65	2½"	165.1	6½"	127.0	5"	4	17.5	1⅜"	165.1	6½"	127.0	5"	4	17.5	1⅜"	184.1	7¼"	146.0	5¾"	8	17.5	1⅜"									
80	3"	184.1	7¼"	146.0	5¾"	4	17.5	1⅜"	184.1	7¼"	146.0	5¾"	4	17.5	1⅜"	203.2	8"	165.1	6½"	8	17.5	1⅜"									
100	4"	215.9	8½"	177.8	7"	4	17.5	1⅜"	215.9	8½"	177.8	7"	8	17.5	1⅜"	228.6	9"	190.5	7½"	8	17.5	1⅜"									
125	5"	254.0	10"	209.5	8¼"	8	17.5	1⅜"	254.0	10"	209.5	8¼"	8	17.5	1⅜"	279.4	11"	234.9	9¼"	8	22.2	⅞"									
150	6"	279.4	11"	234.9	9¼"	8	17.5	1⅜"	279.4	11"	234.9	9¼"	8	22.2	⅞"	304.8	12"	260.3	10¼"	12	22.2	⅞"									
200	8"	336.5	13¼"	292.1	11½"	8	17.5	1⅜"	336.5	13¼"	292.1	11½"	8	22.2	⅞"	368.3	14½"	323.9	12¾"	12	22.2	⅞"									
250	10"	406.4	16"	355.6	14"	8	22.2	⅞"	406.4	16"	355.6	14"	12	22.2	⅞"	431.8	17"	381.0	15"	12	25.4	1"									
300	12"	457.2	18"	406.4	16"	12	22.2	⅞"	457.2	18"	406.4	16"	12	25.4	1"	489.0	19¼"	438.1	17¼"	16	25.4	1"									

Flanges

Commonly used measurements

Flange standard		VG 95959-1				DIN 28460 'TW'				JIS 5 K				JIS 10 K				JIS 16 K			
Part number		.VG-1				.TW				.JIS 5 K				.JIS 10 K				.JIS 16 K			
DN		D Ø	k Ø	n	l Ø	D Ø	k Ø	n	l Ø	D Ø	k Ø	n	l Ø	D Ø	k Ø	n	l Ø	D Ø	k Ø	n	l Ø
mm	in.	mm	mm		mm	mm	mm		mm	mm	mm		mm	mm	mm		mm	mm	mm		mm
25	1"													125	90	4	19	125	90	4	19
32	1¼"	100	76	6	11					115	90	4	15	135	100	4	19	135	100	4	19
40	1½"	108	84	6	11					120	95	4	15	140	105	4	19	140	105	4	19
50	2"	120	96	6	11	154	130	8	11.5	130	105	4	15	155	120	4	19	155	120	8	19
65	2½"	140	116	8	11	154	130	8	11.5	155	130	4	15	175	140	4	19	175	140	8	19
80	3"	150	126	8	11	154	130	8	11.5	180	145	4	19	185	150	8	19	200	160	8	23
100	4"	172	148	10	11	174	150	8	14	200	165	8	19	210	175	8	19	225	185	8	23
125	5"	200	176	10	11	204	176	8	14	235	200	8	19	250	210	8	23	270	225	8	25
150	6"	226	202	12	11	240	210	12	14	265	230	8	19	280	240	8	23	305	260	12	25
200	8"	288	264	16	11	308	274	16	16	320	280	8	23	330	290	12	23	350	305	12	25
250	10"									385	345	12	23	400	355	12	25	430	380	12	27
300	12"									430	390	12	23	445	400	16	25	480	430	16	27
350	14"									480	435	12	25	490	445	16	25	540	480	16	33
400	16"									540	495	16	25	560	510	16	27	605	540	16	33
450	18"									605	555	16	25	620	565	20	27	675	605	20	27
500	20"									655	605	20	25	675	620	20	27	730	660	20	33
600	24"									770	715	20	27	795	730	24	33	845	770	24	30



Accessories

ERV tie rods and angular limiters

Tied Flanges – Type ZS

The table shows that the pressure thrust forces in small ERV bellows up to DN 50 are low and tie rods normally are not necessary.

Tie rods are required when it is not possible to restrain the pipe system with sufficient fixed points or when the load on some of the fixed points needs to be decreased.

Generally, axial restraint is best achieved with good quality adjustable tie rods in conjunction with single piece flanges, which include the tie rod lugs. The tie rods can be adjusted to suit actual installed conditions.

The tie rods are rated for the force at test pressure and are supplied complete with noise reducing bushes made of weatherproof rubber. For DN 350 and larger the tie rods have spherical washers.

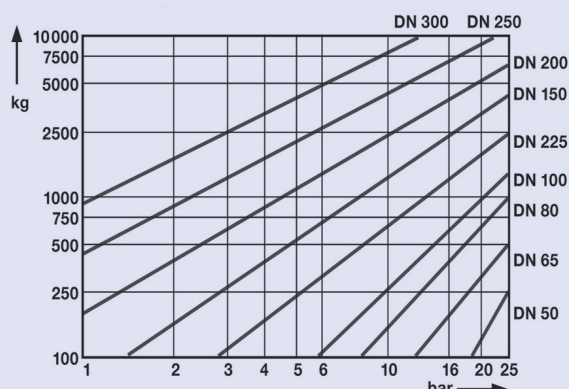
When assembling ERV ZS / ZSS ensure that the nuts on the tie rods are locked with the supplied lock nuts. When installing check the maximum and minimum installation lengths for the specific bellows – refer to the data in this catalogue.

DN mm	Number of tie rods ♦	Part number type
25	2	ERV 25 ... ZS
32	2	ERV 32 ... ZS
40	2	ERV 40 ... ZS
50	2	ERV 50 ... ZS
65	2	ERV 65 ... ZS
80	2	ERV 80 ... ZS
100	2	ERV 100 ... ZS
125	2	ERV 125 ... ZS
150	2	ERV 150 ... ZS
200	2	ERV 200 ... ZS
250	2	ERV 250 ... ZS
300	4	ERV 300 ... ZS
350	4	ERV 350 ... ZS
400	4	ERV 400 ... ZS
450	4	ERV 450 ... ZS
500	4	ERV 500 ... ZS
600	4	ERV 600 ... ZS

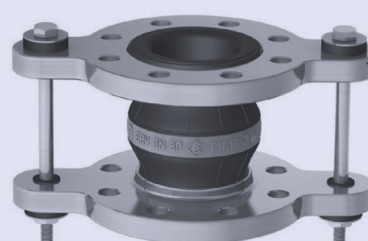
♦ Values for flanges DIN PN 10, number of tie rods may change with different flange standards.

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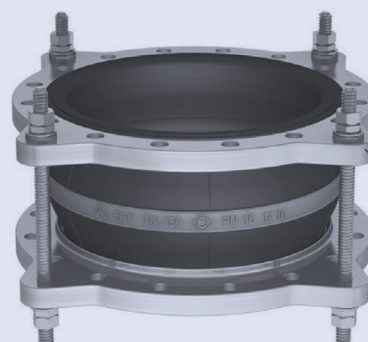
Pressure thrust forces of ERV Expansion Joints
(installation length = 130mm)



Type ... ZS

Tie rods with outer
limitation in rubber
bushings

(PN16 up to DN 200)
(PN10 up to DN 300)

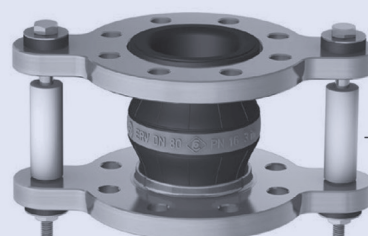


Type ... ZS

Tie rods with outer
limitation in spherical
discs and conical seats

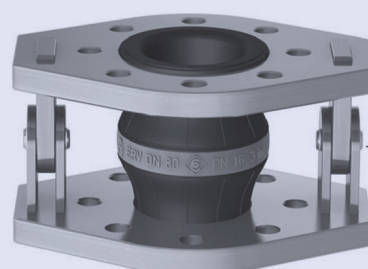
(PN16 from DN 250)
(PN10 from DN 350)

Special designs



Type ... ZSS

Tie rods with inner
and outer limitation
(up to DN 300)

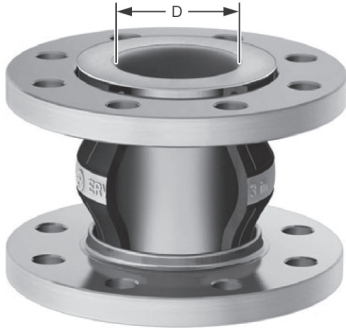
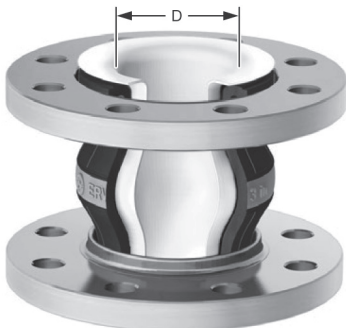
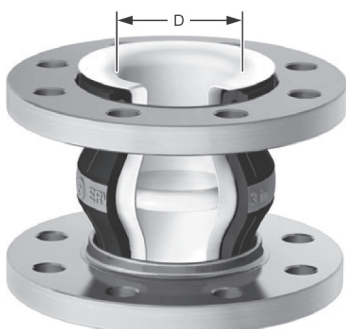


Type ... RG

Angular limiter
(up to DN 300)

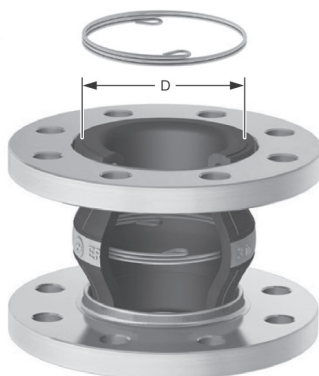
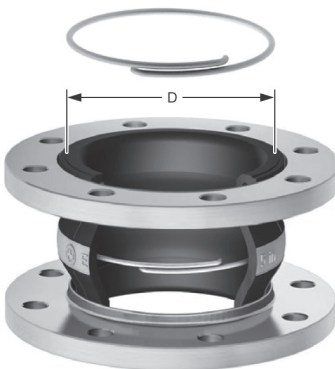
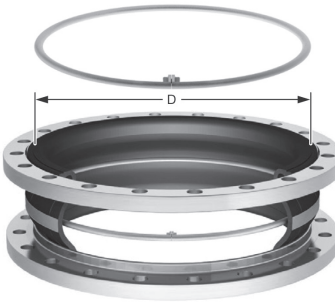
Accessories

ERV inner sleeves and PTFE linings

Type SR		DN mm	D ≈ mm	Part number type
ERV inner protection sleeve on stainless steel AISI 316 Ti to prevent abrasion of the rubber liner, ie. for media containing abrasive components or flow with cavitation. Available for all ERV types DN 25–600. Wall thickness of stainless steel sleeve depending on DN, between 1 and 3mm. Lateral and angular movements are significantly reduced. Conical sleeves available on request. Please note: • The nominal bore is reduced. • A gasket is required between the outer face of the sleeve and the mating flange. The rubber face of the bellows seals to the inner face of the sleeve. * For rubber expansion joints DN 25 bellows DN 32 are used.		25	22	ERV... 25...SR ♦
		32	22	ERV... 32...SR
		40	30	ERV... 40...SR
		50	38	ERV... 50...SR
		65	53	ERV... 65...SR
		80	72	ERV... 80...SR
		100	88	ERV...100...SR
		125	112	ERV...125...SR
		150	138	ERV...150...SR
		200	190	ERV...200...SR
		250	235	ERV...250...SR
		300	290	ERV...300...SR
		350	320	ERV...350...SR
		400	390	ERV...400...SR
		450	440	ERV...450...SR
		500	490	ERV...500...SR
		600	590	ERV...600...SR
Type TA		DN mm	D ≈ mm	Part number type
ERV white PTFE lining. Used when the chemical resistance of the chosen ERV type is insufficient. Resistant to all commonly used liquids. Electrically isolating, therefore not suitable for flammable liquids in Ex-Zones. Allowable working temperature of expansion joint has to be observed. For maximum pressure of 6 bar – not suitable for vacuum. Available for DN 25–300. Seamless lining with sealing surface, PTFE, approx. 1mm thickness. Delivered only as complete factory mounted unit with flanges. Unmounted lining not available. The allowable movement range of the ERV is restricted by approximately 50%. Conforms to FDA. * For rubber expansion joints DN 25 bellows DN 32 are used.		25	26	ERV... 25...TA ♦
		32	26	ERV... 32...TA
		40	34	ERV... 40...TA
		50	44	ERV... 50...TA
		65	59	ERV... 65...TA
		80	72	ERV... 80...TA
		100	92	ERV...100...TA
		125	115	ERV...125...TA
		150	138	ERV...150...TA
		200	187	ERV...200...TA
		250	235	ERV...250...TA
		300	285	ERV...300...TA
Type TAS		DN mm	D ≈ mm	Part number type
ERV with PTFE lining and PTFE vacuum support ring. Properties as type TA, but also suitable for vacuum service, up to 70°C. Available for DN 50–300. Seamless PTFE lining as type TA but additionally with factory mounted support ring of solid PTFE. The allowable movement range is restricted by approximately 50%. Conforms to FDA.		50	44	ERV...50...TAS
		65	59	ERV...65...TAS
		80	72	ERV...80...TAS
		100	92	ERV...100...TAS
		125	115	ERV...125...TAS
		150	138	ERV...150...TAS
		200	187	ERV...200...TAS
		250	235	ERV...250...TAS
		300	285	ERV...300...TAS

Accessories

Vacuum support spirals and rings for ERV

Type VSD		DN mm	D ≈ mm	Part number type
ERV with vacuum support spiral. Spiral of AISI 316 Ti, used when the vacuum resistance (see data sheet for each bellows type) is not sufficient. Available for DN 50–300. Number of turns and material thickness vary with DN. The vacuum support spiral can be easily installed. No restriction of admissible pressure for ERV. Movement range restricted by approximately 50%.		50	85	ERV... 50...VSD
		65	110	ERV... 65...VSD
		80	130	ERV... 80...VSD
		100	180	ERV...100...VSD
		125	230	ERV...125...VSD
		150	270	ERV...150...VSD
		200	320	ERV...200...VSD
		250	420	ERV...250...VSD
		300	500	ERV...300...VSD
Type VSR		DN mm	D ≈ mm	Part number type
ERV with vacuum support ring. Ring of AISI 316 Ti, used when the vacuum resistance (see data sheet for each bellows type) is not sufficient. Available for DN 125–600. The vacuum support rings can be easily installed. No restriction of admissible pressure for ERV. Movement range restricted by approx. 50%.		125	175	ERV...125...VSR
		150	190	ERV...150...VSR
		200	260	ERV...200...VSR
		250	300	ERV...250...VSR
		300	350	ERV...300...VSR
		350	410	ERV...350...VSR
		400	480	ERV...400...VSR
		450	440	ERV...450...VSR
		500	580	ERV...500...VSR
		600	680	ERV...600...VSR
Type VSRV		DN mm	D ≈ mm	Part number type
ERV with bolted vacuum support ring. For maximum vacuum resistance (see data sheet for each bellows type) is not sufficient. Bolted ring in stainless steel AISI 316 Ti. Available for DN 500–1000. The vacuum support rings can be easily installed. No restriction of admissible pressure for ERV. Movement range restricted by approx. 50%.		500	545	ERV...500...VSRV
		600	640	ERV...600...VSRV
		700	780	ERV...700...VSRV
		800	850	ERV...800...VSRV
		900	1000	ERV...900...VSRV
		1000	1085	ERV...1000...VSRV

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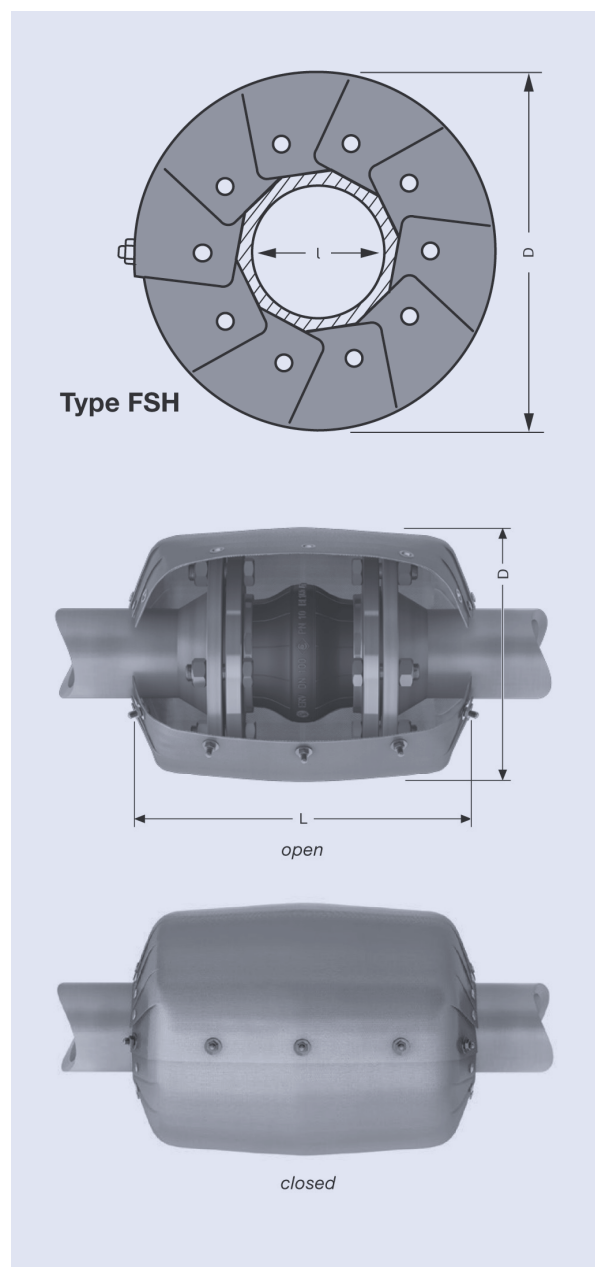
Accessories

Flame protection covers

FSH

Flame protection cover for ERV rubber expansion joints, made of several layers of glass fibre fabric with a surface cover of silver coloured high temperature resistant silicone-aluminium-glass fabric (certified acc. MED A1 / 3.13). Screws, nuts and washers of brass. It reliably protects the expansion joint against radiation heat and direct flames up to + 800°C for 30 minutes (ISO 15540).

The flame protection cover is resistant against oil and chemical influences as well as against ageing and weathering. Because of its split design the flame protection cover can be mounted after installation of the bellows or re-opened. The dimensions have been chosen in such a way that the counter flanges are also completely covered. The allowed range of movement is not restricted.



Type for ERV with flanges according to DIN PN 10/16

DN mm	I Ø mm	D Ø mm	Length L mm	Part number type
25	30	170	260	FSH for ERV 25x130
32	40	190	260	FSH for ERV 32x130
40	45	195	260	FSH for ERV 40x130
50	60	210	260	FSH for ERV 50x130
65	75	225	260	FSH for ERV 65x130
80	90	240	260	FSH for ERV 80x130
100	110	260	260	FSH for ERV 100x130
125	135	285	260	FSH for ERV 125x130
150	160	330	260	FSH for ERV 150x130
200	220	385	260	FSH for ERV 200x130
250	265	435	260	FSH for ERV 250x130
300	315	485	260	FSH for ERV 300x130
25	30	170	300	FSH for ERV 25x160
32	40	190	300	FSH for ERV 32x160
40	45	195	300	FSH for ERV 40x160
50	60	210	300	FSH for ERV 50x160
65	75	225	300	FSH for ERV 65x160
80	90	240	300	FSH for ERV 80x160
100	110	260	300	FSH for ERV 100x160
125	135	285	300	FSH for ERV 125x160
150	160	330	300	FSH for ERV 150x160
200	220	385	300	FSH for ERV 200x160
250	265	435	340	FSH for ERV 250x200
300	315	485	340	FSH for ERV 300x200



Hints & Information

Hints for the pipework designer

ERV rubber expansion joints are delivered ready for installation. The swivelling flanges can be fitted in any desired position and have stabilising rims to ease the assembly. Flanges with stabilising rim (collar) also helps to maintain a safety gap between the ends of the screws and the bellow throughout the whole range of movement and avoids injuries.

Correct mating flanges

Seals are not required if the sealing surface of the mating flanges of the pipework are of the same size. Seals (as shown in Fig. E) should be only used in order to prevent damage to the rubber sealing surface, for example if the mating flanges either have a larger internal diameter, sharp edges or irregularities eg. welding beads.

Crushing strength

The maximum operating pressure and test pressure not only depends on the burst pressure of the rubber bellow but can also be affected by operating temperature and design pressure/nominal pressure of the used flanges. For full details please see page 7. The burst pressure (at room temperature) is at least 3–4 times the nominal pressure (PN). Pressure test certificates can be issued upon request.

Vacuum resistance

The maximum vacuum depends on size, operating temperature, length of installation and the installation of vacuum support rings (page 41). Please see type specific data sheets for details. The vacuum resistance can be slightly increased even without vacuum support rings if the installation length is shortened (eg. by 20mm). The vacuum resistance decreases if a longer installation length is chosen, or the expansion joint is lengthened in operation.

Weather and heat resistance

The outer rubber (cover) is resistant against weathering and protects the reinforcements against ageing, abrasion and corrosion. For the permitted temperature range please see type specific data sheets. For permanently warm operating conditions including external radiation heat please see page 7.

ERV types with an outer rubber of CR or Hypalon (CSM) are (within limits) oil proof and flame resistant. An additional flame protection can be achieved by using a flame protection cover conforming to the 'Germanischer Lloyd' standard, see page 42.

Pressure loss

The internal design of the ERV bellows allows a high flow with little turbulence. Therefore the pressure loss is usually neglectible, even when dealing with high flow rates.

Noise levels

Due to their design, ERV expansion joints reduce noise in pipelines. An even better reduction is achieved if the total installation length is shortened in a range of 5–10mm.

Installation

For the allowable range of movement please see type specific data sheets. If possible, the length of the installation gap is designed to be equal to the recommended installation length, or slightly shorter. The low inherent resistance of ERV allows a compression by hand and makes fitting into smaller gaps easy.

For larger installation gaps or lateral offset, not more than 50% of the maximum area of movement should be used up in order to leave a reserve for operation. If the bellows is lengthened during operation, a jolted (compressed) installation is recommended. The position of installation must be accessible for visual examination. When installing the unit, installation hints (page 45) must be observed.

Restraint

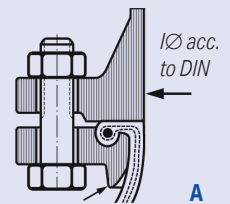
The inherent resistance of ERV bellows is negligible in respect of calculations for anchorage points. Under pressure the bellow acts like a plunger, thus requiring to fix anchorage points for larger size expansion joints. Since the ERV construction absorbs part of these forces, the anchorage points may be correspondingly weaker. If such anchorage points cannot be provided, or if the stability of the other fittings is insufficient, the pressure thrust forces have to be absorbed by tie rods. For available types see page 39.

Identification

All ERV bellows have a vulcanised coloured type marking and an embossed text stating manufacturers mark, nominal width DN, nominal pressure PN as well as the manufacturing date.

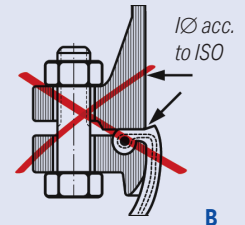
Right

Flanges with correct ID to help prevent damage to rubber



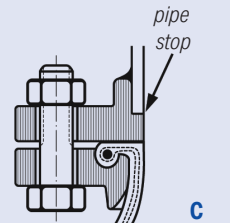
Wrong

Flanges with too large female diameter can damage rubber



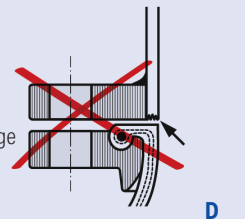
Right

Weld neck flanges with correct ID prevent damage to rubber



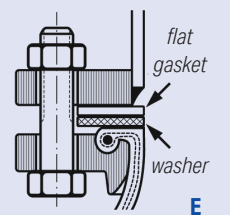
Wrong

Uneven end of pipe can cause damage to rubber



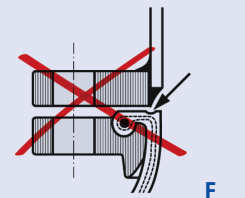
Right

In case of B, D or F an additional flat seal can be used to prevent damage to rubber



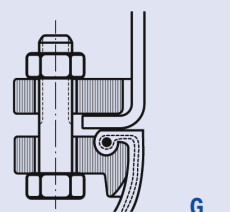
Wrong

Inner edge of flanges damages rubber



Right

Well rounded smooth edge prevents damage to rubber



Elaflex expansion joints are provided ready for installation. The standard flanges can be turned into any desired position. Additional sealings usually are not necessary. For installation please observe the following:

- 1 Prior to the installation of the expansion joint ensure that the mating flanges have satisfactory sealing surfaces. Protruding pipe ends, grooves and tongues are not permitted as the sealing surface of the bellows might be destroyed (see hints for the pipework designer, page 44).

Attention: When using slip-on flanges the outside diameter must be larger than the sealing surface of the expansion joint.

- 2 Pay attention to the correct installation length: The pulling of expansion joints into installation gaps which are too large will lengthen the rubber bellow and might lead to the collar being drawn out of the flange groove (see diagram). During the subsequent tightening of the screws the collar of the bellows would be crushed asymmetrically.

Please note: A considerable lengthening during installation decreases the allowable range of movement during operation. To shorten installation gaps, distance flanges are available.

- 3 If possible install the expansion joints in such way that the date of production is visible.
- 4 Screws should be inserted from the expansion joint side. If this is not feasible, it must be assured that the bellows may not touch the screws in all operating conditions.
- 5 We recommend to use bolts of property class 8.8. The bolts have to be fastened crosswise in three uniform steps.

When using a torque wrench:

Step 1: Tighten bolts equally by hand (pay attention to parallel sealing surfaces!).

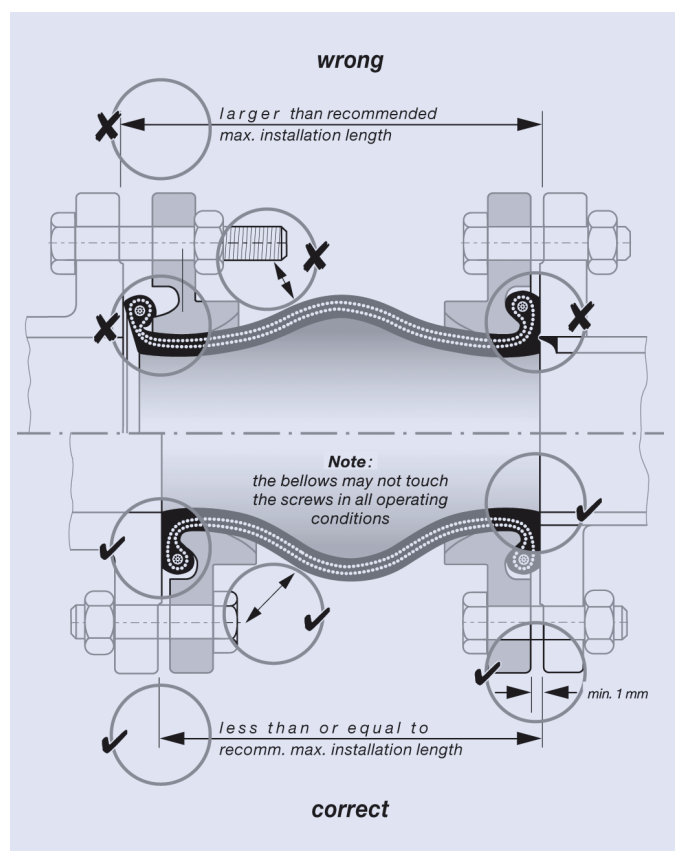
Step 2: Fasten crosswise with torque 50 Nm

Step 3: Fasten crosswise

Do not use any sharp-edged tools which might damage the rubber bellow in case the tool slips.

- 6 If no torque wrench can be used during installation, the screws may only be tightened to an extent that between the metal flanges a distance 'y' of at least 1 mm remains (see picture).
- 7 The test pressure of a bellow or flange is $1.5 \times P_N$. This value depends on which component is weaker.
- 8 The rubber bellow of the expansion joint must not be painted! Solvents can damage the rubber cover, furthermore the colour coat impedes a proper visual inspection.
- 9 When welding and cutting, the rubber bellow must be protected against heat by all means. For electric welding it must be insured that the electric current does not pass through the bellows.
- 10 Permanent radiation heat above 90°C must be avoided. If necessary flame protection covers should be used (see page 42).
- 11 Rubber expansion joints are subject to wear and must be included to routine inspection of the pipe system (visual inspection of the expansion joint regarding damages as well as inspection for hardening by pushing in with a thumb).

Diameter	approx torque
up to DN 80	max. 80 Nm
up to DN 300	max. 100 Nm
up to DN 500	max. 130 Nm
DN 700	250 Nm
DN 800	300 Nm
DN 900	310 Nm
DN 1000	340 Nm



Information concerning the Pressure Equipment Directive

Elaflex rubber expansion joints are 'pressure equipment' according to this directive. Below we list those expansion joints which fall under category I-III:

Expansion joints for liquid chemicals and petroleum based products				
DN	WP Barg <=	Category	WP Barg <=	Category
<=125	16	n/a		n/a
150	10	n/a		n/a
200	10	n/a		n/a
250	8	n/a	10	I
300	7	n/a	10	I
350	6	n/a	10	I
400	5	n/a	10	I
500	4	n/a	10	I
600	3.5	n/a	10	I
700	3	n/a	10	I
800	2.5	n/a	10	I
900	2	n/a	10	I
1000	2	n/a	10	I

Expansion joints for LP Gas (liquefied gases)		
DN	WP Barg <=	Category
<=40	25	I
50-125	25	II
150	25	III

Expansion joints for gas/natural gas ²		
DN	WP Barg <=	Category
<=25		n/a
32-50	16	I
65-125	16	II
150-350	10	II
>=400		III

Expansion joints for air ³		
DN	WP Barg <=	Category
<=100	10	n/a
125-200	5	n/a
250	4	n/a
>=300	3.5	I

Requirements

No category (n/a)

These expansion joints only have to conform to 'sound engineering practice' (SEP). No declaration of conformity is necessary. For these expansion joints the CE marking must not be used.

Category I

A certificate of conformity for the materials (at least EN 10204-2.2), a random pressure test, a declaration of conformity¹ and a CE marking of the expansion joints are necessary.

Category II

A specific test report for the materials (at least EN 10204-3.1, the pressure test of every joint, the declaration of conformity¹ and a CE marking of the expansion joint with code number of the notified body etc. are necessary.

The manufacturer of the expansion joints is responsible for the adherence to these requirements. Rubber bellows or flanges alone are not pressure equipment according to this directive.

For the manufacturing of expansion joints Elaflex has been certified by Germanischer Lloyd. A copy of the certificate no. 77 314 - 10 HH is available on request.

Category III

As category II, but requires additional inspection by the notified body and individual approval.

Footnotes

¹ According to the PED, Elaflex customers may directly download the necessary declarations of conformity. Please use this free service by contacting sales@flexej.co.uk

² If the expansion joint is intended for use with gas/natural gas, this has to be stated when ordering.

³ If the expansion joint is intended for the use with air, this has to be stated when ordering.

To define the right category for all dangerous fluids or pressures not mentioned here, please enquire by contacting sales@flexej.co.uk stating medium, dimension, pressure, temperature and application.

Overview of certificates

please request from sales@flexej.co.uk

Approvals		ERV-GS	ERV-GS HBNR	ERV-G	ERV-R	Rotex	ERV-CR	Other
DNV · GL (Det Norske Veritas/Germanischer Lloyd)		✓	✓	✓	✓	✓	✓	✓ ALL
Lloyd's Register		✓	✓	✓	✓	✓		
Bureau Veritas		✓	✓	✓	✓		✓	
RINA Services S.p.A		✓	✓	✓	✓	✓		
American Bureau of Shipping		✓	✓					
Nippon Kaiji Kyokai		✓	✓					
China Classification Society		✓	✓	✓	✓		✓	
Technischer Überwachungs-Verein						✓ DIN 4809		
Bundesamt für Wehrtechnik und Beschaffung				✓	✓			
Deutscher Verien des Gas- und Wasserfachs				✓ GAS	✓ DRINKING WATER			
Attestation de Conformité Sanitaire					✓ DRINKING WATER			
Water Regulations Advisory Scheme					✓			✓ ERP
Dienststelle Schiffssicherheit BG Verkehr (ex. See-Berufsgenossenschaft)		✓		✓				

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