Rubber compensators

Working parameters of rubber expansion joints

The working parameters of rubber compensators given in the tables (working pressure, working temperature and displacement) are the maximum values and they must not occur simultaneously. The working pressure applies to the expansion joint working in the temperature of up to +50°C. At elevated temperatures, it is required to reduce the values given in the table regarding the maximum working pressure and displacement. The values of permissible vacuum pressure given in the tables apply to the compensators without vacuum supporting rings. A stainless steel ring can be fitted in the bellow of the rubber expansion joint if it is necessary. In that case the compensator can operate in the conditions of vacuum pressure or even close to full vacuum. Please contact Sales or Technical Department in the event of any doubts concerning permissible working parameters of the expansion joints in particular application.

compensator type	working temperature	displacement	bellow maximum working pressure [bar]		
			PN10	PN16	PN25
E-RE, E-CR, E-GR, E-YE, E-YL, E VITON, E-WH, E-BR	+50°C	100%	10	16	-
	+70°C	80%	8	12	-
	+100°C	60%	6	10	-
E-LPG	+50°C	100%	-	-	25
	+70°C	80%	-	-	20
	+100°C	60%	-	-	15
E-RP	+50°C	100%	10	-	-
	+70°C	80%	8	-	-
	+100°C	60%	6	-	-
E-RX	+70°C	100%	10	16	-
	+100°C	75%	7.5	12	-
	+130°C	50%	5	8	-
E-YS	+60°C	100%	10	16	-
	+100°C	60%	6	10	-
115 EPDM, 115NBR	+50°C	100%	10	16	-
	+70°C	80%	8	12	-
	+90°C	60%	6	10	-
T-EPDM, T-NBR, 1504	+40°C	100%	10	16	-
	+60°C	100%	6	10	-
	+80°C	80%	4	6.5	-
	+100°C	60%	2.5	4	-

Installation of rubber compensators

Rubber expansion joints are supplied as ready-to-use solutions. The compensators should not be covered and be accessible to regular maintenance. Rubber parts must not be covered with paint. During any welding work the bellow has to be covered up to protect it against high temperature and sparks. Permissible displacement, temperature, pressure and quality of rubber should be examined before installation. The pipes should be fixed to a base to eliminate any forces resulting from internal pipe pressure. To utilize the permissible displacement the distance between two pipe anchor points should be the same as the length of the compensator.

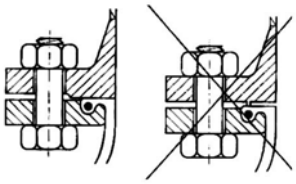


fig. 1 fig. 2

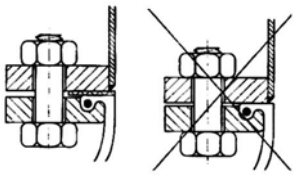


fig. 3 fig. 4

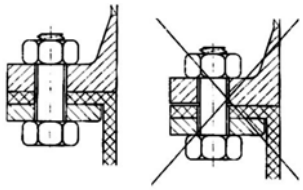


fig. 5 fig. 6

Rubber compensators

Joining screws should be fixed with their heads facing rubber bellow to allow displacements given in technical specifications. If it is not possible, threaded screws should not protrude more than 2 ÷ 3 mm, to avoid damage of the bellow. Nuts should be tightened up one after another diagonally during mounting and again after installation start-up. If the screws and nuts are tightened up too hard, the seal can be crushed.
For safety reasons as well as to ensure the longest service life of an expansion joint, counter flanges have to be mounted properly (fig. 1 ÷ 6).
The seal of a counter flange has to be smooth and cover most of rubber surface (at least 60%) so as to provide right sealing (fig. 1). The compensators with full rubber flanges demand full and perfectly smooth counter flanges (fig. 5).

- fig. 1 - flange with smooth seal,
- fig. 2 - grooved and recess flanges must not be used, they damage rubber,
- fig. 3 - flange with plane seal in order to protect rubber surface,
- fig. 4 - sharp edges of the pipe can damage rubber surface,
- fig. 5 - full rubber flanges require full counter flanges to obtain proper sealing,
- fig. 6 - counter flange with a pad can both damage rubber surface and prevent tight contact.

Never cover rubber parts of a compensator with any paint or lubricant.
During any welding work the bellow has to be covered up to protect it against high temperature and spatter.

Before installation:
- remove dust and any foreign material that entered a compensator,
- a compensator should be secured against accidental or deliberate damage,
- any oil or lubricant must not fall on a compensator.

During start-up:
- check, if there is any leakage,
- if there is a need, check expansion limiters.

During service:
- a compensator must be easily accessible, not covered with any insulating material or paint,
- as soon as compensators start to work, it is essential to be sure its movements do not exceed permissible limits.

Maintenance:
- any kind of changes in the outer layer may indicate serious deformation,
- check screws tightening,
- check the range of compensator movements, that should be within permissible limits.

NOTE!

- the working parameters of compensators listed in the tables are the maximum values and must not occur simultaneously,
- working pressure applies to the compensator operating in the temperature of +20°C,
- the values of permissible vacuum pressure given in the tables apply to the rubber compensators without vacuum supporting rings. A stainless steel ring can be fitted in the bellow of the rubber compensator if it is necessary. In that case the expansion joint can operate in the conditions of vacuum pressure or even close to full vacuum.
- the permissible displacement values given in the tables apply to the compensators operating in the temperature of up to +50°C.

Rubber compensators

T - EPDM

Internal layer: EPDM rubber
Reinforcement: Nylon cord
External layer: EPDM rubber
Flanges: Galvanized carbon steel
Working temp.: Up to +100°C (depending on the medium)

Designed for installations transferring hot and cold water, cooling water with water treatment additives, drinking water, industrial water, chlorine solutions, glycols, acids, whitewash, esters, ketones, seawater. Not suitable for fluids with oil content. PZH (National Institute of Hygiene, Poland) certificate for contact with drinking water.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [mm]	angular movement [degrees]	working pressure [bar]
TG-T-EPDM-032	32	10/16	95	4/8	8	15	16
TG-T-EPDM-040	40	10/16	95	4/8	8	15	16
TG-T-EPDM-050	50	10/16	105	4/8	8	15	16
TG-T-EPDM-065	65	10/16	115	6/12	10	15	16
TG-T-EPDM-080	80	10/16	130	6/12	10	15	16
TG-T-EPDM-100	100	10/16	135	10/18	12	15	16
TG-T-EPDM-125	125	10/16	170	10/18	12	15	16
TG-T-EPDM-150	150	10/16	180	10/18	12	15	16
TG-T-EPDM-200	200	10	205	14/20	18	15	10
TG-T-EPDM-250	250	10	240	14/22	18	15	10
TG-T-EPDM-300	300	10	260	14/24	18	15	10
TG-T-EPDM-350	350	10	265	16/25	18	15	10
TG-T-EPDM-400	400	10	265	16/25	18	15	10
TG-T-EPDM-450	450	10	200	16/20	18	15	10
TG-T-EPDM-500	500	10	200	16/20	18	15	10
TG-T-EPDM-600	600	10	250	16/20	18	15	10

T - NBR

Internal layer: NBR rubber
Reinforcement: Nylon cord
External layer: NBR rubber
Flanges: Galvanized carbon steel
Working temp.: Up to +80°C (depending on the medium)

Designed for installations transferring mineral oils, vegetable or animal fats, aerosol oils, water with anti-corrosion additives.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [mm]	angular movement [degrees]	working pressure [bar]
TG-T-NBR-032	32	10/16	95	4/8	8	15	16
TG-T-NBR-040	40	10/16	95	4/8	8	15	16
TG-T-NBR-050	50	10/16	105	4/8	8	15	16
TG-T-NBR-065	65	10/16	115	6/12	10	15	16
TG-T-NBR-080	80	10/16	130	6/12	10	15	16
TG-T-NBR-100	100	10/16	135	10/18	12	15	16
TG-T-NBR-125	125	10/16	170	10/18	12	15	16
TG-T-NBR-150	150	10/16	180	10/18	12	15	16
TG-T-NBR-200	200	10	205	14/20	18	15	10

115 EPDM

Internal layer: EPDM rubber
Reinforcement: Nylon cord
External layer: EPDM rubber
Flanges: Galvanized carbon steel
Working temp.: From -30°C up to +90°C (depending on the medium)

Designed for installations transferring hot and cold water, water with water treatment additives, industrial water, seawater, glycols, weak acids, bases, esters and ketones. Not suitable for fluids with oil content. BV (Bureau Veritas) Certificate.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [mm]	angular movement [degrees]	working pressure [bar]	vacuum [bar]
TG-115E-032	32	10/16	130	12/20	14	15	16	0.88
TG-115E-040	40	10/16	130	12/20	14	15	16	0.88
TG-115E-050	50	10/16	130	12/20	14	15	16	0.88
TG-115E-065	65	10/16	130	12/20	14	15	16	0.88
TG-115E-080	80	10/16	130	12/20	14	15	16	0.88
TG-115E-100	100	10/16	130	12/20	14	15	16	0.88
TG-115E-125	125	10/16	130	12/20	14	15	16	0.88
TG-115E-150	150	10/16	130	12/20	14	15	16	0.88
TG-115E-200	200	10	130	12/25	14	15	10	0.88
TG-115E-250	250	10	130	16/25	22	15	10	0.88
TG-115E-300	300	10	130	16/25	22	15	10	0.88
TG-101E-350	350	10	200	16/25	22	15	10	0.88
TG-101E-400	400	10	200	16/25	22	15	10	0.88
TG-101E-450	450	10	200	16/25	22	15	10	0.88
TG-101E-500	500	10	200	16/25	22	15	10	0.88
TG-100E-600	600	10	265	16/25	22	15	10	0.88

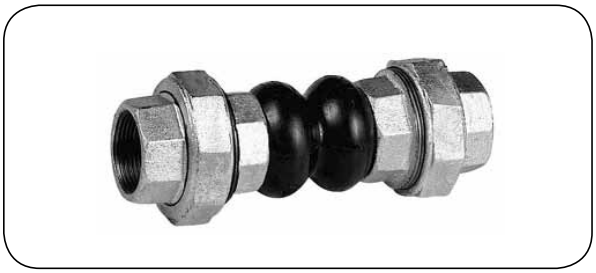
115 NBR

Internal layer: NBR rubber
Reinforcement: Nylon cord
External layer: CR rubber
Flanges: Galvanized carbon steel
Working temp.: From -30°C up to +90°C (depending on the medium)

Designed for installations transferring mineral oils, vegetable or animal fats, aerosol oils, water with anti-corrosion additives.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [mm]	angular movement [degrees]	working pressure [bar]	vacuum [bar]
TG-115N-032	32	10/16	130	12/20	14	15	16	0.88
TG-115N-040	40	10/16	130	12/20	14	15	16	0.88
TG-115N-050	50	10/16	130	12/20	14	15	16	0.88
TG-115N-065	65	10/16	130	12/20	14	15	16	0.88
TG-115N-080	80	10/16	130	12/20	14	15	16	0.88
TG-115N-100	100	10/16	130	12/20	14	15	16	0.88
TG-115N-125	125	10/16	130	12/20	14	15	16	0.88
TG-115N-150	150	10/16	130	12/20	14	15	16	0.88
TG-115N-200	200	10	130	12/25	14	15	10	0.88
TG-115N-250	250	10	130	16/25	22	15	10	0.88
TG-115N-300	300	10	130	16/25	22	15	10	0.88

Rubber compensators



1504

Internal layer: EPDM rubber
Reinforcement: Nylon cord
External layer: EPDM rubber
Connections: BSP male thread, cast iron, zinc-plated
Working temp.: From -10°C up to +100°C (depending on the medium)

Designed to absorb vibration and linear or angular displacement in water installation. Not suitable for fluids with oil content. PZH (National Institute of Hygiene, Poland) certificate for contact with drinking water.

code	nominal diameter [mm]	thread size [inch]	length [mm]	compression [mm]	expansion [mm]	lateral movement [mm]	angular movement [degrees]	working pressure [bar]
TG-1504-E-15	15	1/2	200	22	6	22	45	10
TG-1504-E-20	20	3/4	200	22	6	22	45	10
TG-1504-E-25	25	1	200	22	6	22	45	10
TG-1504-E-32	32	1.1/4	200	22	6	22	45	10
TG-1504-E-38	38	1.1/2	200	22	6	22	45	10
TG-1504-E-50	50	2	200	22	6	22	45	10
TG-1504-E-65	65	2.1/2	220	22	6	22	45	10
TG-1504-E-75	75	3	220	22	6	22	45	10

E - RP

Internal layer: Butyl rubber (IIR) / EPDM
Reinforcement: Nylon cord
External layer: EPDM rubber
Flanges: Galvanized carbon steel
Working temp.: From -40°C up to +90°C (with peaks up to +120°C depending on the medium)

Intended for sanitary installations, cold or hot water, swimming pool water, seawater and drinking water. Not suitable for mineral oils, cooling water with oil-based anti-corrosion additives, oily air and any installation where the constant working pressure exceeds 10 bar. Marked with a single red dot on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-RP-025	25	10	130	20/30	30	30	10	0.3
TG-E-RP-032	32	10	130	20/30	30	30	10	0.3
TG-E-RP-040	40	10	130	20/30	30	30	10	0.3
TG-E-RP-050	50	10	130	20/30	30	30	10	0.3
TG-E-RP-065	65	10	130	20/30	30	30	10	0.3
TG-E-RP-080	80	10	130	20/30	30	30	10	0.2
TG-E-RP-100	100	10	130	20/30	30	20	10	0.2
TG-E-RP-125	125	10	130	20/30	30	20	10	0.2
TG-E-RP-150	150	10	130	20/30	30	20	10	0.1

Rubber compensators

E - CR

Internal layer: CR rubber
Reinforcement: Nylon cord
External layer: CR rubber
Flanges: Galvanized carbon steel
Working temp.: From -25°C up to +90°C (with peaks up to +100°C depending on the medium)

Designed for installations transferring hot and cold water (not drinking water), seawater, cooling water with water treatment additives, municipal sewage, oily water, compressed air (not hot). Not suitable for heating oil, diesel, petrol or other petrochemical products, acids and bases. Marked with CR letters on a bellow, no stripe.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-CR-025	25	16	130	20/30	30	30	16	1
TG-E-CR-032	32	16	130	20/30	30	30	16	1
TG-E-CR-040	40	16	130	20/30	30	30	16	1
TG-E-CR-050	50	16	130	20/30	30	30	16	1
TG-E-CR-065	65	16	130	20/30	30	30	16	0.7
TG-E-CR-080	80	16	130	20/30	30	30	16	0.6
TG-E-CR-100	100	16	130	20/30	30	20	16	0.4
TG-E-CR-125	125	16	130	20/30	30	20	16	0.3
TG-E-CR-150	150	16	130	20/30	30	20	16	0.3
TG-E-CR-200	200	10	130	30/25	30	10	10	0.3
TG-E-CR-250	250	10	130	30/10	15	5	10	0.2
TG-E-CR-300	300	10	130	30/10	15	5	10	0.1

E - RE

Internal layer: Butyl rubber (IIR) / EPDM
Reinforcement: Nylon cord
External layer: EPDM rubber
Flanges: Galvanized carbon steel
Working temp.: From -40°C up to +100°C (with peaks up to +120°C depending on the medium)

Designed for installations transferring water, seawater, cooling water with water treatment additives, drinking water, low concentration acids and bases, solutions of salts, esters and ketones. Not suitable for mineral oils, cooling water with oil-based anti-corrosion additives, oily air. Marked with a single red stripe on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-RE-025	25	16	130	20/30	30	30	16	1
TG-E-RE-032	32	16	130	20/30	30	30	16	1
TG-E-RE-040	40	16	130	20/30	30	30	16	1
TG-E-RE-050	50	16	130	20/30	30	30	16	1
TG-E-RE-065	65	16	130	20/30	30	30	16	0.7
TG-E-RE-080	80	16	130	20/30	30	30	16	0.6
TG-E-RE-100	100	16	130	20/30	30	20	16	0.4
TG-E-RE-125	125	16	130	20/30	30	20	16	0.3
TG-E-RE-150	150	16	130	20/30	30	20	16	0.3
TG-E-RE-200	200	10	130	30/25	30	10	10	0.3
TG-E-RE-250	250	10	130	30/10	15	5	10	0.2
TG-E-RE-300	300	10	130	30/10	15	5	10	0.1

Rubber compensators

E - YE

Internal layer: NBR rubber
Reinforcement: Nylon cord
External layer: CR rubber
Flanges: Galvanized carbon steel
Working temp.: From -20°C up to +90°C (with peaks up to +100°C depending on the medium)

Designed for installations conveying petrochemical products with aromatic content up to 50%, oily air, natural gas (not LPG), oily water, cooling water with anti-corrosion additives. Marked with a single yellow stripe on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-YE-025	25	16	130	20/30	30	30	16	1
TG-E-YE-032	32	16	130	20/30	30	30	16	1
TG-E-YE-040	40	16	130	20/30	30	30	16	1
TG-E-YE-050	50	16	130	20/30	30	30	16	1
TG-E-YE-065	65	16	130	20/30	30	30	16	0.7
TG-E-YE-080	80	16	130	20/30	30	30	16	0.6
TG-E-YE-100	100	16	130	20/30	30	20	16	0.4
TG-E-YE-125	125	16	130	20/30	30	20	16	0.3
TG-E-YE-150	150	16	130	20/30	30	20	16	0.3
TG-E-YE-200	200	10	130	30/25	30	10	10	0.3
TG-E-YE-250	250	10	130	30/10	15	5	10	0.2
TG-E-YE-300	300	10	130	30/10	15	5	10	0.1

E - YL

Internal layer: NBR rubber
Reinforcement: Nylon cord
External layer: CR rubber
Flanges: Galvanized carbon steel
Working temp.: From -40°C up to +90°C (with peaks up to +100°C depending on the medium)

Designed for installations conveying petrochemical products, petrol, diesel, heating oil, JET A1 jet fuel, kerosene. Marked with a single yellow stripe and white LT letters on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-YL-025	25	16	130	20/30	30	30	16	1
TG-E-YL-032	32	16	130	20/30	30	30	16	1
TG-E-YL-040	40	16	130	20/30	30	30	16	1
TG-E-YL-050	50	16	130	20/30	30	30	16	1
TG-E-YL-065	65	16	130	20/30	30	30	16	0.7
TG-E-YL-080	80	16	130	20/30	30	30	16	0.6
TG-E-YL-100	100	16	130	20/30	30	20	16	0.4
TG-E-YL-125	125	16	130	20/30	30	20	16	0.3
TG-E-YL-150	150	16	130	20/30	30	20	16	0.3
TG-E-YL-200	200	10	130	30/25	30	10	10	0.3
TG-E-YL-250	250	10	130	30/10	15	5	10	0.2
TG-E-YL-300	300	10	130	30/10	15	5	10	0.1

Rubber compensators

E - GR

Internal layer: CSM rubber (Hypalon)
Reinforcement: Nylon cord
External layer: CSM rubber (Hypalon)
Flanges: Galvanized carbon steel
Working temp.: From -20°C up to +100°C (with peaks up to +110°C depending on the medium)

Intended for installations conveying chemical or petrochemical products with aromatic content up to 50%, acids, bases, oily air (up to +90°C), natural gas (not LPG), oily water, cooling water with anti-corrosion additives. Marked with a single green stripe on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-GR-025	25	16	130	20/30	30	30	16	1
TG-E-GR-032	32	16	130	20/30	30	30	16	1
TG-E-GR-040	40	16	130	20/30	30	30	16	1
TG-E-GR-050	50	16	130	20/30	30	30	16	1
TG-E-GR-065	65	16	130	20/30	30	30	16	0.7
TG-E-GR-080	80	16	130	20/30	30	30	16	0.6
TG-E-GR-100	100	16	130	20/30	30	20	16	0.4
TG-E-GR-125	125	16	130	20/30	30	20	16	0.3
TG-E-GR-150	150	16	130	20/30	30	20	16	0.3
TG-E-GR-200	200	10	130	30/25	30	10	10	0.3
TG-E-GR-250	250	10	130	30/10	15	5	10	0.2
TG-E-GR-300	300	10	130	30/10	15	5	10	0.1

E - WH

Internal layer: White NBR rubber
Reinforcement: Nylon cord
External layer: CR rubber
Flanges: Galvanized carbon steel
Working temp.: From -20°C up to +90°C (with peaks up to +100°C depending on the medium)

Intended for installations conveying food products, also oil and fat containing foods. Not suitable for drinking water. Marked with a single white stripe on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-WH-025	25	16	130	20/30	30	30	16	1
TG-E-WH-032	32	16	130	20/30	30	30	16	1
TG-E-WH-040	40	16	130	20/30	30	30	16	1
TG-E-WH-050	50	16	130	20/30	30	30	16	1
TG-E-WH-065	65	16	130	20/30	30	30	16	0.7
TG-E-WH-080	80	16	130	20/30	30	30	16	0.6
TG-E-WH-100	100	16	130	20/30	30	20	16	0.4
TG-E-WH-125	125	16	130	20/30	30	20	16	0.3
TG-E-WH-150	150	16	130	20/30	30	20	16	0.3
TG-E-WH-200	200	10	130	30/25	30	10	10	0.3
TG-E-WH-250	250	10	130	30/10	15	5	10	0.2
TG-E-WH-300	300	10	130	30/10	15	5	10	0.1

Rubber compensators

E - RX

Internal layer: EPDM rubber
Reinforcement: Polymer cord
External layer: EPDM rubber
Flanges: Galvanized carbon steel
Working temp.: From -40°C up to +130°C (with peaks up to +150°C depending on the medium)

Designed for installations conveying hot water, cooling water, hot air. Not suitable for mineral oils, cooling water with oil-based anti-corrosion additives, oily air. Marked with a double red stripe on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-RX-025	25	16	130	20/30	30	30	16	1
TG-E-RX-032	32	16	130	20/30	30	30	16	1
TG-E-RX-040	40	16	130	20/30	30	30	16	1
TG-E-RX-050	50	16	130	20/30	30	30	16	1
TG-E-RX-065	65	16	130	20/30	30	30	16	0.7
TG-E-RX-080	80	16	130	20/30	30	30	16	0.6
TG-E-RX-100	100	16	130	20/30	30	20	16	0.4
TG-E-RX-125	125	16	130	20/30	30	20	16	0.3
TG-E-RX-150	150	16	130	20/30	30	20	16	0.3
TG-E-RX-200	200	10	130	30/25	30	10	10	0.3
TG-E-RX-250	250	10	130	30/10	15	5	10	0.2
TG-E-RX-300	300	10	130	30/10	15	5	10	0.1

E - LPG

Internal layer: Conductive NBR rubber
Reinforcement: Nylon cord
External layer: Conductive CR rubber
Flanges: Galvanized carbon steel
Working temp.: From -20°C up to +90°C (with peaks up to +100°C depending on the medium)

Designed for application in tankers, fuel installations and petrol stations to transfer LPG (Liquid Petroleum Gas) according to EN 589. Germanisher Lloyd Certificate. Available with ASA 300 flanges. Marked with a single orange stripe on a bellow.

code	I.D. [mm]	DIN 2635 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-OR-025	25	40	130	30	30	30	25	1
TG-E-OR-032	32	40	130	30	30	30	25	1
TG-E-OR-040	40	40	130	30	30	30	25	1
TG-E-OR-050	50	40	130	30	30	30	25	1
TG-E-OR-065	65	40	130	30	30	30	25	1
TG-E-OR-080	80	40	130	30	30	30	25	1
TG-E-OR-100	100	40	130	30	30	30	25	1

Rubber compensators

E - VITON

Internal layer: FPM (Viton)
Reinforcement: Rubber-coated Nylon cord
External layer: Conductive ECO rubber
Flanges: Galvanized carbon steel
Working temp.: From -15°C up to +90°C (with peaks up to +130°C depending on the medium)

Designed for chemical and petrochemical installations, sulphur removal, application in power plants, etc. Extremely resistant to the influence of hot oils, benzene, xylene, products with aromatic content up to 50%, biodiesel and other aggressive media. Marked with a white-green-white stripe on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-VI-025	25*	16	130	20/30	30	30	16	1
TG-E-VI-032	32	16	130	20/30	30	30	16	1
TG-E-VI-040	40	16	130	20/30	30	30	16	1
TG-E-VI-050	50	16	130	20/30	30	30	16	1
TG-E-VI-065	65	16	130	20/30	30	30	16	0.7
TG-E-VI-080	80	16	130	20/30	30	30	16	0.6
TG-E-VI-100	100	16	130	20/30	30	20	16	0.4
TG-E-VI-125	125	16	130	20/30	30	20	16	0.3
TG-E-VI-150	150	16	130	20/30	30	20	16	0.3
TG-E-VI-200	200	10	130	30/25	30	10	10	0.3

E - YS

Internal layer: HNBR rubber
Reinforcement: Steel cord
External layer: CR rubber
Flanges: Galvanized carbon steel
Working temp.: From -35°C up to +100°C (with peaks up to +120°C depending on the medium)

Intended for installations conveying chemical or petrochemical products with aromatic content up to 50%, cooling water with oil-based anti-corrosion additives, lubricating and hydraulic oil, seawater. Marked with a yellow-blue-yellow stripe on a bellow.

code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-YS-025	25	16	130	15/30	15	20	16	1
TG-E-YS-032	32	16	130	15/30	15	20	16	1
TG-E-YS-040	40	16	130	15/30	15	20	16	1
TG-E-YS-050	50	16	130	15/30	15	20	16	1
TG-E-YS-065	65	16	130	15/30	15	20	16	1
TG-E-YS-080	80	16	130	15/30	15	20	16	1
TG-E-YS-100	100	16	130	15/30	15	15	16	0.8
TG-E-YS-125	125	16	130	15/30	15	15	16	0.7
TG-E-YS-150	150	16	130	15/30	15	15	16	0.7
TG-E-YS-200	200	10	130	20/15	10	5	10	0.7
TG-E-YS-250	250	10	130	20/15	10	5	10	0.7
TG-E-YS-300	300	10	130	20/15	10	5	10	0.6

Rubber compensators

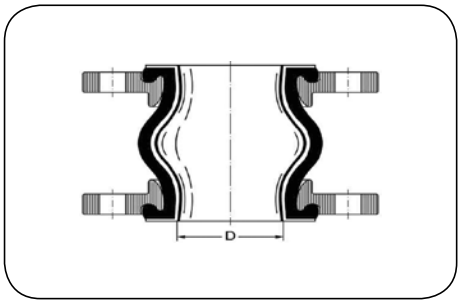
E - BR

Internal layer: BR/NR rubber
Reinforcement: Polyester cord
External layer: BR/NR rubber
Flanges: Galvanized carbon steel
Working temp.: From -50°C up to +70°C (with peaks up to +90°C depending on the medium)

Due to superior abrasion resistance compensators are suitable for the transfer of such media as: suspensions, sediment, emulsion, water with all kinds of additives, with solid particles, with abrasive effect. They are not designed to transfer media containing oils, fats or petrochemical products. Marked with a single blue dot on a bellow.

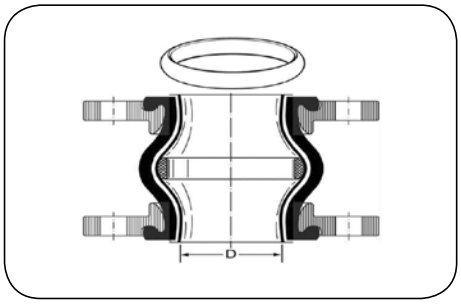
code	I.D. [mm]	DIN 2501 flange PN	length [mm]	axial movement [± mm]	lateral movement [± mm]	angular movement [± degrees]	working pressure [bar]	vacuum [bar]
TG-E-BR-025	25	16	130	20/30	30	25	16	1
TG-E-BR-032	32	16	130	20/30	30	25	16	1
TG-E-BR-040	40	16	130	20/30	30	25	16	1
TG-E-BR-050	50	16	130	20/30	30	25	16	1
TG-E-BR-065	65	16	130	20/30	30	25	16	0.7
TG-E-BR-080	80	16	130	20/30	30	25	16	0.6
TG-E-BR-100	100	16	130	20/30	30	15	16	0.4
TG-E-BR-125	125	16	130	20/30	30	15	16	0.3
TG-E-BR-150	150	16	130	20/30	30	15	16	0.3
TG-E-BR-200	200	10	130	30/25	30	5	10	0.3
TG-E-BR-250	250	10	130	30/10	15	5	10	0.2
TG-E-BR-300	300	10	130	30/10	15	5	10	0.1

Rubber compensators - accessories for E type



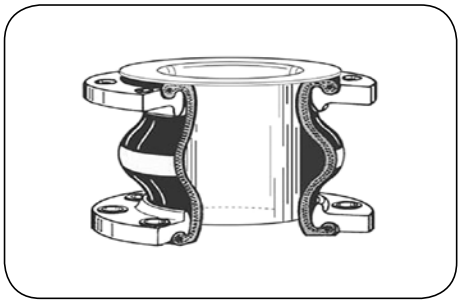
Internal PTFE liner

PTFE liner is applied when chemical resistance of rubber bellows is not sufficient for the medium. Suitable for almost all media. Available for compensators in the range of DN25 ÷ DN300 in diameter. Supplied integrated with a rubber compensator (factory-mounted). If the liner is used, displacement values given in the catalogue must be reduced by about 50%. Suitable for working pressure up to 6 bar. Not suitable for vacuum.



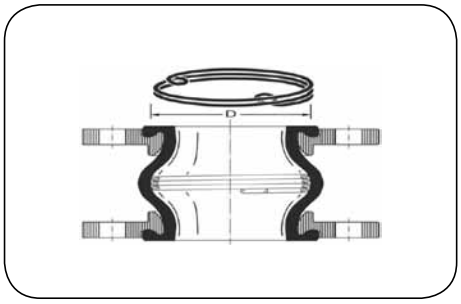
Internal PTFE liner + PTFE vacuum ring

Parameters are the same as for PTFE liner (see above) although with an additional PTFE ring it can be used for vacuum but only in the temperature up to +70°C.



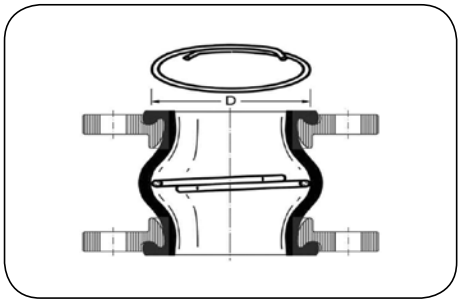
Internal flow liner

Made of 1.4571(AISI 316Ti) steel as a standard, applied when abrasive media may mechanically damage a rubber bellow (e.g. granules). Available for compensators in the range of DN 25÷ DN600 in diameter. It can be from 1 to 3 mm thick depending on a diameter. The flow liner significantly reduces angular and lateral movement of the compensator.
Note: When the flow liner is used, the working diameter of the compensator is reduced. It is crucial to put a gasket between the flow liner and counter flange of a pipeline.



Internal supporting steel spiral

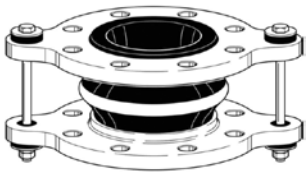
Applied when the value of working vacuum in a pipeline is higher than the vacuum of a particular compensator. Available for compensators in the range of DN50 ÷ DN300 in diameter. Made of 1.4571(AISI 316Ti) steel. The number and thickness of convolutions depend on the nominal diameter of the compensator. If the spiral is used, displacement values given in the catalogue must be reduced by about 50%.



Internal supporting steel ring

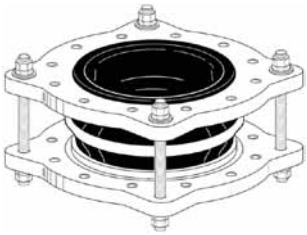
Applied when the value of working vacuum in a pipeline is higher than the vacuum of a particular compensator. Available for compensators in the range of DN125 ÷ DN600 in diameter. Made of 1.4571(AISI 316Ti) steel. If the ring is used, displacement values given in the catalogue must be reduced by about 50%.

Rubber compensators - accessories for E type

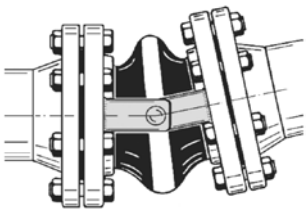


Tie rods

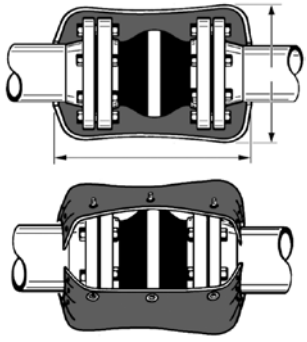
Tie rods are recommended when no sufficiently solid fix points can be built into an installation in order to transmit the reactive force from this installation. The force comes from the internal pressure. Available as a set integrated with the flanges of a compensator. For diameters up to DN300 they include rubber washers that additionally dampen noise and vibration.



For diameters above DN350 tie rods include steel washers (spherical and conical).



Custom made (only for angular displacement).



Fire-retardant protective cover

Made of several layers of fibreglass fabric with external silicone-aluminum-fibreglass layer. Designed for overall protection of a rubber compensator against direct impact of a very high temperature or even flame in the temperature up to +800°C for up to 30 minutes. The cover is also resistant to oil, chemicals and weather conditions. It is big enough to protect counter flanges of the installation as well. It has no impact on the permissible displacement of the compensator.