

Rubber Expansion Joint Type W49

Type W49 is a heavy duty rubber compensator of a highly flexible design. Its high corrugation allows an extremely short overall length with excellent noise and vibration absorbing characteristics, as well as high expansion absorption in all directions at very low movement forces.

Design:

High corrugated bellows body with integral sealing profile (therefore self-sealing without additional gaskets) for mating with swivel flanges. The flanges are provided with threaded holes as the bellows rubber body is too wide to allow bolts with nuts.



Details for DN 32 - DN 80

Bellows		Design of the bellows			Permissible operating pressure				Short-term C°	Electrical resistance [Ohm cm]
colour code	colour label	Core inner	Reinforcing material	Cover outer	°C bar	°C bar	°C bar	°C bar		
red	red	EPDM	Aramid	EPDM	-40 16	70 20	100 16	120 10	150	3 x 10 ³
blue	blue	IIR	Nylon cord	EPDM	-40 16	50 20	70 16	100 10	120	7 x 10 ⁶
yellow	yellow	NBR	Nylon cord	CR	-20 16	50 20	70 16	90 10	100	1 x 10 ²
white	white	NBR	Nylon cord	CR	-20 16	50 20	70 16	90 10	100	1 x 10 ⁹
green	green	CSM	Nylon cord	CSM	-20 16	50 20	70 16	100 10	110	3 x 10 ¹¹
black	-	IIR	Nylon cord	EPDM	-40 10	50 10	70 8	100 6	110	7 x 10 ⁶

Suitable for vacuum up to 0.8 bar abs. without supporting ring (2 m suction)

Suitable for vacuum up to 0 bar abs. with supporting ring (10 m suction)

All compensators can be delivered with earthing straps.

Details for DN 100 - DN 500

Bellows		Design of the bellows			Permissible operating pressure				Short-term C°	Electrical resistance [Ohm cm]
colour code	colour label	Core inner	Reinforcing material	Cover outer	°C bar	°C bar	°C bar	°C bar		
red	red	EPDM	Aramid	EPDM	-40 16	70 25	100 18	120 12	150	3 x 10 ³
blue	blue	IIR	Nylon cord	EPDM	-40 16	50 25	70 18	100 12	120	7 x 10 ⁶
yellow	yellow	NBR	Nylon cord	CR	-20 16	50 25	70 18	90 12	100	1 x 10 ²
white	white	NBR	Nylon cord	CR	-20 16	50 25	70 18	90 12	100	1 x 10 ⁹
green	green	CSM	Nylon cord	CSM	-20 16	50 25	70 18	100 12	110	3 x 10 ¹¹
black	-	IIR	Nylon cord	EPDM	-40 10	50 10	70 8	100 6	110	7 x 10 ⁶

Suitable for vacuum up to 0.8 bar abs. without supporting ring (2 m suction)

Suitable for vacuum up to 0 bar abs. with supporting ring (10 m suction)

All compensators can be delivered with earthing straps.

Approvals:

Type 49 red

with TÜV/DIN 4809

for heating installation, Technical Control Number **3 E001**

Type 49 white

with quality assurance as per DIN 7725 Suitable for foodstuff - RAL-C 53

Type 49 blue

with Drinking Water Approval RAL-C 52 and 1986 Federal Health Bureau KTW Rubber Committee

Type 49 all

Ship Licence with or without flame protective cover, depending on installation location.

PED 97/23/EG



Flange: (Design A)

Swivel flanges on both sides with integral rubber profile, so that an additional gasket is not required (self-sealing). The flange holes are DIN PN10 standard, with threaded bolt-holes. Other flange specifications in accordance with DIN, ANSI, BS10. Special flanges are also available.

The flange is produced with appropriate threaded holes; through-bolts cannot be used.

Flange material: Standard S235 JRG2 (RSt37-2) zinc plated.

Other materials available on request.

Applications:

Type 49 red **For heating systems, as per DIN 4809**
 For continuous duty in warm and hot water heating at 100 °C/110 °C and 10 bar / 6 bar working pressure over life.
 Not suitable for oil-related media.

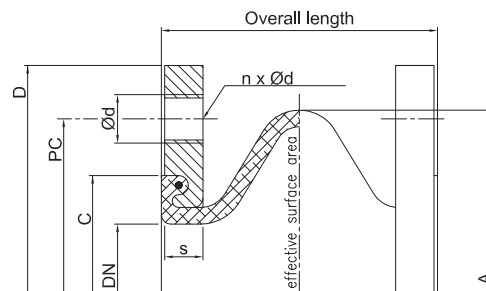
Type 49 blue **For drinking water / warm water**
 For cold and warm water, also with the addition of chemicals for water treatment. Industrial water, acids, lyes, alcohols, esters and ketones. Not suitable for oil-related media.

Type 49 white **For the food and beverage industry**
 Also suitable for oil- and fat-containing foodstuffs.

Type 49 green **For chemical plants**
 For heavy chemical use.

Type 49 yellow **For oil, fuel, gas**
 Application range: natural and town gas, blast furnace gas, fuels, lubricants, heating, cooling water emulsions.

Type 49 black **For water pipes**
 For cold and warm water, water with detergents, sea water, swimming pool water, waste water.
 Not suitable for oil-related media.



DN	Overall length mm	Bellows		Flange PN 10					Movement absorption				ØC mm	Weight kg
		ØA mm	Effect. area cm ²	ØD mm	ØPC mm	Ød	n	s mm	axial + mm	axial - mm	lat. +/- mm	∠ ° * +/-		
32	100	110	18	140	100	M16	4	16	20	30	30	7	79	3.0
40	100	110	18	150	110	M16	4	16	20	30	30	7	79	3.6
50	100	120	35	165	125	M16	4	16	20	30	30	7	89	4.4
65	100	135	56	185	145	M16	4	16	20	30	30	7	104	5.3
80	100	150	87	200	160	M16	8	18	20	30	30	7	119	6.5
100	100	170	130	220	180	M16	8	18	20	30	30	7	142	7.3
125	100	195	190	250	210	M16	8	18	20	30	30	7	169	8.9
150	100	260	263	285	240	M20	8	20	20	30	30	7	195	12.3
175	100	310	416	315	270	M20	8	20	20	30	30	7	245	16.2
200	100	310	416	340	295	M20	8	20	20	30	30	7	245	16.2
250	100	360	607	395	350	M20	12	20	20	30	30	7	295	20.3
300	100	410	830	445	400	M20	12	20	20	30	30	7	345	23.1
350	100	460	1100	505	460	M20	16	20	20	30	30	7	396	30.1
400	110	515	1385	565	515	M24	16	25	20	30	30	7	450	43.2
500	110	615	2091	670	620	M24	20	25	20	30	30	7	550	53.8

Permissible % of indicated movement relative to temperature:
 up to 50°C ~ 100%
 up to 70°C ~ 80%
 up to 90°C ~ 70%

* Only valid for an assembly shortened by about 10 mm (90/100mm).

Note:

For aggressive media please refer to the resistance tables.
 The bellows must not be painted or insulated.
 See further installation information in the Annex.

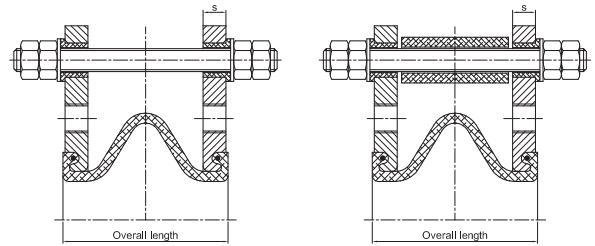
Accessories:

- Tie Bars / Restraints
- Internal sleeves
- Flameproof protective covers
- Earth Covers

Tie bars (Standard Designs B + C):
 Since the rubber bellows is a soft flexible component, under pressure the compensator will always try to move in the axial direction because of its reaction force (cross section area x working pressure).

Pipework must be properly anchored & guided (with roller bearings, restraining or anchor points) ; and tie bars fitted on the compensator so that any over-extension of the bellows is avoided.

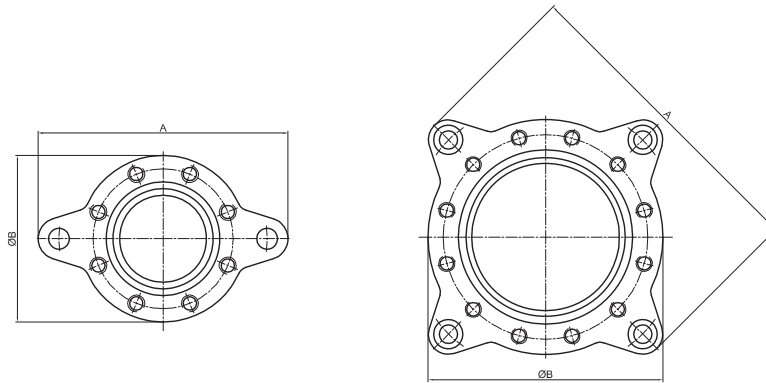
See our range of tie bars.



Design B

Design C

Flange shapes for tie bars as per designs B and C at 10 bar



DN 25 - 200

DN 250 - 500



DN	Main dimensions for PN10			
	Overall length mm	s mm	A mm	ØB mm
32	100	16	230	140
40	100	16	240	150
50	100	16	255	165
65	100	16	275	185
80	100	18	290	200
100	100	18	310	220
125	100	18	340	250
150	100	20	375	285
175	100	20	405	315
200	100	20	440	340
250	100	20	509	395
300	100	20	559	445
350	100	20	619	505
400	110	25	700	565
500	110	25	810	670