

Rubber Expansion Joint Type W55

Type W55 is a low corrugation bellows compensator with good sound insulating characteristics (structure- and liquid-borne noise). It is characterized by a high expansion absorption capability, in particular in the angular plane.

Design:

Low corrugation rubber bellows with reinforcing inserts and integral sealing bead (therefore self-sealing without additional gaskets) for accommodating the swivel flanges. The flanges are provided with through holes.



Details for DN20 - DN600

Bellows		Bellows design			Permissible operating data				Short-term C°	Surface resistance Ro [Ohm cm]				
colour code	colour label	Core (inner)	Reinforcing material	Cover (outer)	°C	bar	°C	bar			°C	bar	°C	bar
red SP	red-red	EPDM	Aramid	EPDM	-40	10	70	16	100	10	130	8	150	3 x 10 ³
red	red	IIR	Nylon cord	EPDM	-40	10	50	16	70	12	100	10	120	7 x 10 ⁶
yellow	yellow	NBR	Nylon cord	CR	-20	10	50	16	70	12	90	10	100	2 x 10 ²
green	green	CSM	Nylon cord	CSM	-20	10	50	16	70	12	100	10	110	3 x 10 ¹¹
yellow ST	yellow-yellow	NBR	Steel cord	CR	-20	10	60	16	70	12	90	10	100	7 x 10 ⁸

Suitable for vacuum up to 0.8 bar abs., without supporting ring.
 Suitable for vacuum up to 0 bar abs., with supporting ring.
 DN 20 - DN 50 suitable for vacuum without supporting ring.
 Burst pressure DN 450 - 1000 > 30 bar
 Burst pressure DN 32 - 400 > 50 bar

Details for DN700 - DN1000

Bellows		Bellows design			Permissible operating data				Short-term C°	Surface resistance Ro [Ohm cm]				
colour code	colour label	Core (inner)	Reinforcing material	Cover (outer)	°C	bar	°C	bar			°C	bar	°C	bar
red SP	red-red	EPDM	Aramid	EPDM	-40	8	70	10	100	7,5	130	6	150	3 x 10 ³
red	red	IIR	Nylon cord	EPDM	-40	8	50	10	70	8	100	6	120	7 x 10 ⁶
yellow	yellow	NBR	Nylon cord	CR	-20	8	50	10	70	8	90	6	100	2 x 10 ²
green	green	CSM	Nylon cord	CSM	-20	8	50	10	70	8	100	6	110	3 x 10 ¹¹

Suitable for vacuum up to 0.8 bar abs., without supporting ring.
 Suitable for vacuum up to 0 bar abs., with supporting ring.
 Burst pressure DN 450 - 1000 > 30 bar
 Burst pressure DN 32 - 400 > 50 bar

Flange: (Design A)

Swivel flanges both sides (design A) with integral rubber profile, so that additional gaskets are not required (self-sealing).

The flanges are drilled to DIN PN10 as standard.
 Other specifications in accordance with DIN, ANSI, BS10, JIS. Special flanges are also available.

Flange material:

Standard S235 JRG2 (RSt 37-2) zinc-plated and yellow passivated. Other materials are available on request (flanges up to DN200 are partly provided with forged collars towards the bellows side.)

Note:

For aggressive media, see resistance table.
 The bellows must not be painted or insulated.
 Further installation information, see Annex.

Vacuum supporting rings:

Expansion joints type W55 are not vacuum-resistant. To prevent the compensator bellows being drawn together by suction at negative pressure, the insertion of a vacuum supporting spiral (up to DN300), or alternatively a vacuum supporting ring (from DN350), is necessary for a suction value above 2 m (-0.2 barG, 20% negative pressure).

Type W55 red SP

For heating systems according to DIN 4809, with corrosion-proofed aramid fabric inserts for permanent use in hot water and high temperature water, cooling water and hot air. Not suitable for oil emulsive media. Resistance to weather, ageing and ozone. Temperature range -40 up to +130°C, temporarily up to 150°C, surface area electrically conductive.

Type W55 red

For drinking water, hot water with DVGW W270 and ACS approval, as well as for sea water, cooling water with chemical additives for water treatment, low concentrated acids and lyes, salt solutions. Resistance to weather, ageing and ozone. Temperature range -40 up to +100°C, temporarily up to 120°C, surface area electrically conductive. Not suitable for oil products of all kinds, or cooling water with additives of oil emulsive mixtures.

Type W55 yellow

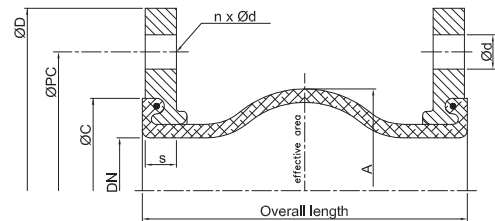
For oil, fuel, gas, fuel-ethanol mixture and DIN EN-fuel with up to 50% aromatic content. Natural and town gas with the exception of liquid gas. Resistance to weather, ageing and ozone. Temperature range -20°C up to +90°C, temporarily up to 100°C, electrically conductive.

Type W55 yellow ST

For oil, fuel, gas, fuel-ethanol mixture and DIN EN-fuel with up to 50% aromatic content. Natural and town gas with the exception of liquid gas. Resistance to weather, ageing and ozone. Temperature range -20°C up to +90°C, temporarily up to 100°C, flame-resistant up to 30 minutes at 800°C, electrically conductive.

Type W55 green

Especially for chemicals and aggressive chemicals, waste water, oil emulsive compressor air. Regarding the media it is essential to pay attention to the media resistance tables. Resistance to weather, ageing and ozone. Temperature range -20°C up to +100°C, temporarily up to 110°C, electrically insulating.



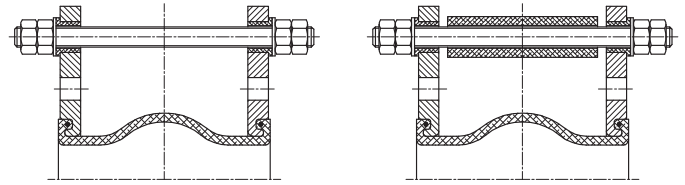
DN	Overall length mm	Bellows		Flange PN 10					Movement absorption				ØC mm
		ØA mm	Eff. area cm ²	ØD mm	ØPC mm	Ød mm	n	s mm	ax + mm	ax - mm	lat +/- mm	∠ ° +/-	
32	125	81	17	140	100	18	4	15	30	30	30	30	65
40	125	86	18	150	110	18	4	15	30	30	30	30	74
50	125	96	32	165	125	18	4	16	30	30	30	30	86
65	125	110	53	185	145	18	4	16	30	30	30	30	105
80	150	122	85	200	160	18	8	18	30	30	30	30	118
100	150	142	128	220	180	18	8	18	30	30	30	20	137
125	150	170	187	250	210	18	8	18	30	30	30	20	166
150	150	196	259	285	240	22	8	18	30	30	30	20	192
200	175	256	409	340	295	22	8	20	30	30	30	12	245
250	175	306	599	395	350	22	12	20	30	30	30	12	295
300	200	410	822	445	400	22	12	22	30	30	30	12	354
350	200	470	1176	505	460	22	16	24	30	40	30	8	412
400	200	480	1547	565	515	26	16	25	30	50	30	8	470
450	250	545	2279	615	565	26	20	25	20	40	30	6	512
500	250	595	2038	670	620	26	20	30	20	40	30	6	570
600	250	695	3310	780	725	30	20	30	20	40	30	6	675
700	275	800	4342	895	840	30	24	35	30	50	30	8	780
800	250	880	5274	1015	950	33	24	40	30	50	30	6	887
900	300	981	7379	1115	1050	33	28	40	30	50	30	5	985
1000	300	1086	8894	1230	1160	36	28	40	30	50	30	5	1085

Permissible % of indicated movement relative to temperature:
 up to 50°C ~ 100%
 up to 70°C ~ 75%
 up to 90°C ~ 60%

Tie bars (Standard designs B and 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 (bellows cross sectional area x working pressure).

Pipework must be properly anchored and guided (with roller bearing, 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.

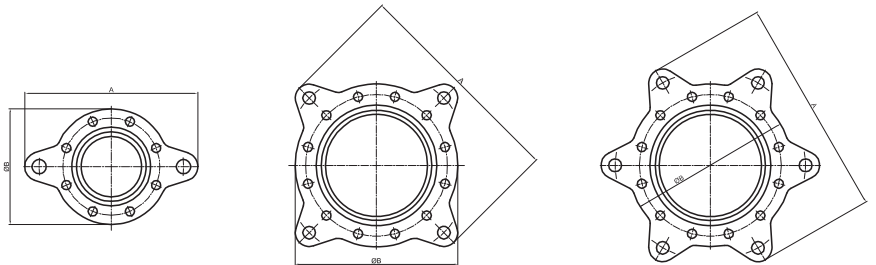


Design B

Design C



Flange shapes for tie bars as per designs B and C



DN 25 - 200

DN 250 - on

Vacuum supporting ring:

Type W55 compensators are not vacuum-resistant. To prevent the compensator bellows being drawn together by suction at negative pressure, the insertion of a vacuum supporting ring is necessary for a suction value above 2 m (-0.2 BarG, 20 % negative pressure).

Note:

For aggressive media, see resistance table.
The bellows must not be painted or insulated.
Further installation information is available.

Accessories:

Tie Bars / Restraints
Internal sleeves
Flameproof protection covers
Earth covers



Example of a hinged flange design for pipe angulation.