



TYPE 61

WILLBRANDT RUBBER EXPANSION JOINT

Type 61 is a handmade low-corrugated rubber expansion joint that achieves very low flow resistance because of its low-corrugated bellow geometry. Both ends of the bellow are cylindrical for fixing clamps. It is also characterised by very high movement absorption in all directions and its variety of rubber qualities, which means that a suitable rubber compound is available for almost every application (see material descriptions on the following pages). Type 61 is used in plant engineering, engine construction, ventilation technology and wastewater technology, where it is specifically used to absorb movement and vibration and to insulate sound.

Bellow design

Low-corrugated rubber bellow with reinforcement. Both ends cylindrical for fixing clamps. The standard bellow is corrugated. Uncorrugated and multi-corrugated versions for greater movement absorption are possible.

Vacuum resistance

Can only be used for vacuum applications with a vacuum supporting spiral/ring.

Connections

Sleeve ends for ISO pipes (standard) for fixing clamps. The clamp width should be at least 20 mm (up to 3 bar: one clamp per side; above 3 bar:

two clamps per side).



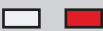



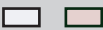











Approvals/Conformity

Drinking water, FDA and EG 1935/2004 conform

Accessories

- Fixing clamps
- Potential equalisation (vulcanised braid)
- Flame-resistant protective covers
- Dust and splash protection covers

SPECIFICATIONS FOR TYPE 61

Colour code	Colour marking	Bellow design			Permissible operating data										
		Core (inner)	Reinforce-ment	Cover (outer)	Max. Temperature °C	bar °C		bar °C		bar °C		bar °C		bar °C	
Red		EPDM	Polyamide	EPDM	100	Expansion joints are designed according to the order.									
Blue		EPDM TW	Polyamide	EPDM	100										
White-red		EPDM beige	Polyamide	EPDM	100										
Red		EPDM AF	Polyamide	EPDM	100										
Green		CSM	Polyamide	CSM	100										
Yellow-grey		NBR	Polyamide	CR	100										
White-grey		NBR beige	Polyamide	CR	100										
Grey		CR	Polyamide	CR	90										
Red-blue-red		EPDM	Aramid	EPDM	100										
Blue-blue-blue		EPDM TW	Aramid	EPDM	125										
White-blue-red		EPDM beige	Aramid	EPDM	125										
Orange-blue-orange		EPDM HT	Aramid	EPDM HT	125										
Red-blue-red		EPDM AF	Aramid	EPDM	125										
Green-blue-green		CSM	Aramid	CSM	125										
Yellow-blue-grey		NBR	Aramid	CR	100										
White-blue-grey		NBR beige	Aramid	CR	100										
Grey-blue-grey		CR	Aramid	CR	90										
Lilac-blue-lilac		FPM	Aramid	FPM	180										
-		Silicone	Aramid	Silicone	180										
-		Silicone	Glas fabric	Silicone	200										

Important information

For aggressive media, please see the resistance table (can be requested separately).

The bellows should not be painted or insulated. Please refer to the installation instructions.

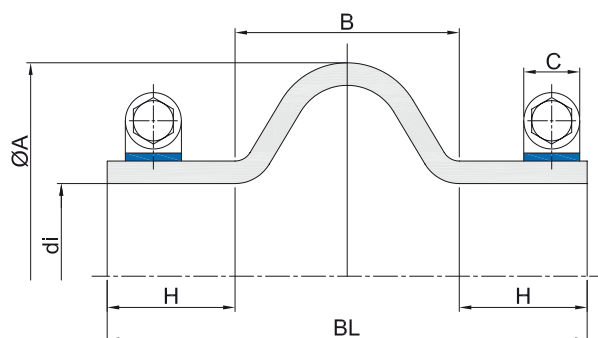
We will be happy to send you further information on the individual types and designs.

Typ 61-1 - single-corrugated

Can be used for movement absorption in any direction (for combined

movements, see the movement diagram in the technical appendix), noise and vibration insulation.

The expansion joint's reaction force must be absorbed using suitable pipes with corresponding fixed, floating and plain bearings.



DIMENSIONS TYPE 61-1

DN	BL	Bellow		Flange PN 10			Movement absorption				Pressure max.
		di	WF*	Cylinder end	gap B	Clamp C	AX +	-	LA +/-	AN ∠° +/-	
	mm	mm	mm ²	mm	mm	mm	mm	mm	mm		bar
50	250	60,3	15500	55	140	20	15	30	25	21,8	6
65	250	76,1	19100	55	140	20	15	30	25	17,1	6
80	250	88,9	22400	55	140	20	15	30	25	14,0	6
100	250	114,1	29700	55	140	20	15	30	25	11,3	6
125	250	139,7	37900	55	140	20	15	30	25	9,1	6
150	250	168,3	48400	55	140	20	15	30	25	7,6	6
200	250	219,1	70300	55	140	20	15	30	25	5,7	6
250	250	273,0	97900	55	140	20	15	30	25	4,6	6
300	250	323,9	128100	55	140	20	15	30	25	3,8	6
350	250	355,6	129200	65	120	25	15	30	15	3,3	6
400	250	406,4	163600	65	120	25	10	30	15	2,9	6
450	250	457,0	202000	65	120	25	10	30	15	2,5	6
500	250	508,0	244500	65	120	25	10	30	15	2,3	6
600	250	610,0	341700	65	120	25	10	30	15	1,9	4
650	250	660,4	396400	65	120	25	10	30	15	1,8	4
700	250	711,0	455100	65	120	25	10	30	15	1,6	4
750	250	762,0	517800	65	120	25	10	30	15	1,5	4
800	250	813,0	584700	65	120	25	10	30	15	1,4	4
900	250	914,0	730500	65	120	25	10	30	15	1,3	4
1000	250	1016,0	892500	65	120	25	10	30	15	1,3	4
1100	250	1117,6	1049600	65	120	25	10	30	15	1,1	3
1200	250	1219,0	1237000	65	120	25	10	30	15	1,0	3
1300	250	1320,8	1442000	65	120	25	10	30	15	0,9	2
1400	250	1422,0	1662700	65	120	25	10	30	15	0,8	2
1500	250	1524,0	1899100	65	120	25	10	30	15	0,8	2

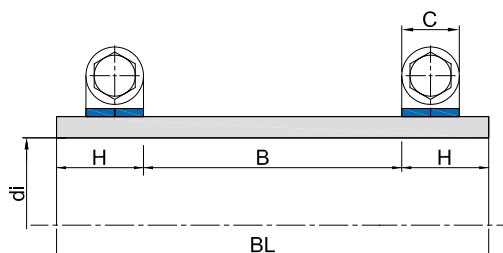
*WF = effective area

- Intermediate sizes and alterations to the overall length are available upon request.
- Greater movement absorption is possible by altering the overall length / corrugation profile and switching to a multi-corrugated type (up to 5 corrugations).
- The use of a vacuum supporting ring (Type 61-...V) reduces the movement absorption by 60 % (axial: +; angular: +/-).

DESIGNS

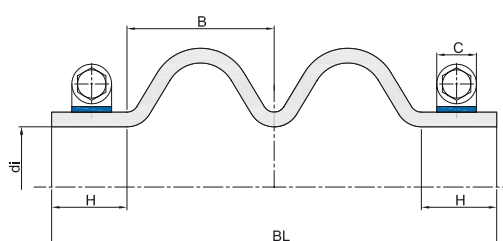
Typ 61-0 - uncorrugated

Can be used to absorb vibration and insulate sound. Cannot be used to absorb axial movement.



Typ 61-2 - double-corrugated

Can be used to absorb movement in any direction, to absorb vibration and to insulate sound.



Important information

Please note the appropriate fixed point constructions and plain bearings in your piping system, as well as the tolerances.

For more information please refer to our installation instructions. We will be happy to send you further information on the individual types and designs.

APPLICATION

Typ 61 red (EPDM)

For water, sea water, cooling water with glycol or other chemical additives for treating water, saline solutions, weak acids and weak alkali solutions. Unsuitable for aliphatic, aromatic and chlorinated hydrocarbons, oil or oily media.

Typ 61 blue (EPDM TW)

Like Type 61 red, but approved for drinking water.

Typ 61 white-red (EPDM beige)

Like Type 61 red, but with light-coloured rubber in food-grade.

Typ 61 red AF (EPDM AF)

Like Type 61 red, but with abrasion-resistant EPDM rubber compound.

Typ 61 green (CSM)

For chemicals, aggressive, chemical wastewater and compressor air containing oil.

Typ 61 yellow-grey (NBR)

For oils, fats, gases, diesel fuels, kerosene and crude oil. Not suitable for aromatic and chlorinated hydrocarbons, esters and ketones.

Typ 61 white-grey (NBR white)

Like Type 61 yellow-grey, but with light-coloured internal rubber in food-grade. Not approved for drinking water!

Typ 61 grey (CR)

For water, wastewater, swimming pool water, salt water, cooling water with anti-corrosive products containing oil, oil mixtures and compressed air containing oil.

Typ 61 red-blue-red (EPDM/Aramid)

Like Type 61 red, but with aramid fabric.

Typ 61 blue-blue-blue (EPDM TW/Aramid)

Like Type 61 blue, but with aramid fabric.

Typ 61 white-blue-red (EPDM beige/Aramid)

Like Type 61 white-red, but with aramid fabric.

Typ 61 orange-blue-orange (EPDM HT/Aramid)

Like Type 61 red, but with aramid fabric and for temperatures up to +125 °C.

Typ 61 red-blue-red AF (EPDM AF/Aramid)

Like Type 61 red AF, but with aramid fabric.

APPLICATION - cont.

Type 61 green-blue-green (CSM/Aramid)

Like Type 61 red AF, but with aramid fabric.

Type 61 green-blue-green (CSM/Aramid)

Like Type 61 green, but with aramid fabric.

Type 61 yellow-blue-grey (NBR/Aramid)

Like Type 61 yellow-grey, but with aramid fabric.

Type 61 white-blue-grey (NBR

white/Aramid)

Like Type 61 white-grey, but with aramid fabric.

Type 61 grey-blue-grey (CR/Aramid)

Like Type 61 grey, but with aramid fabric.

Type 61 lilac-blue-lilac (FPM/Aramid)

For flue gas desulphurisation systems and bio-diesel. High chemical resistance to benzene, xylene, toluene, aromatic, chlorinated hydrocarbons, mineral acids and fuels with an aromatic content of more than 50 %. For

temperatures of up to +180 °C.

Type 61 Silicone (Silicone/Glas fibre or aramid)

Suitable for hot air, acetic acid. Satisfactory resistance to aliphatic engine and gear oils. Also available in foodstuff quality. Excellent resistance to ageing, UV, ozone and weather. Very good radiation resistance. Not for use with steam above 120 °C. No resistance to fuels.

TOLERANCES

DN	Internal dimension	External flange dimension	Pitch circle diameter	Hole diameter	Overall length				Flange thickness			Flange hole alignment	
≤ 500	±5	±6	±5	±2	≤ 150	≤ 300	≤ 600	> 600	≤ 10	≤ 15	>15	LF ≤350	LF ≤350
> 550 - ≤ 1150	± 10	± 13	± 5	± 2	± 5	± 5	± 5	± 1,0%	± 2	± 3	± 4	± 3	± 5
> 1150 - ≤ 1750	± 10/-12	± 19/-13	± 6	± 2	± 5	± 5	± 5	± 1,0%	± 2	± 3	± 4	± 3	± 5
> 1750	± 10/-16	± 25/-14	± 6	± 2	± 6	± 10	± 10	± 1,5%	± 2	± 4	± 4	± 4	± 6
					± 6	± 10	± 10	± 1,5%	± 2	± 4	± 4	± 4	± 6