

## WILLBRANDT PTFE Expansion Joint Type 80

DN 25 - DN 600

Type 80 is a 3- or 5-corrugated PTFE expansion joint that is hot-formed under pressure from extruded PTFE tubing. The fibers are executed without interruption. It is characterised by its high level of media resistance and movement absorption.

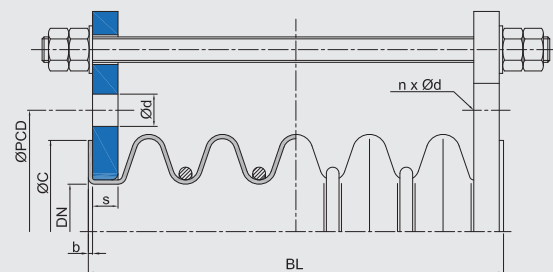
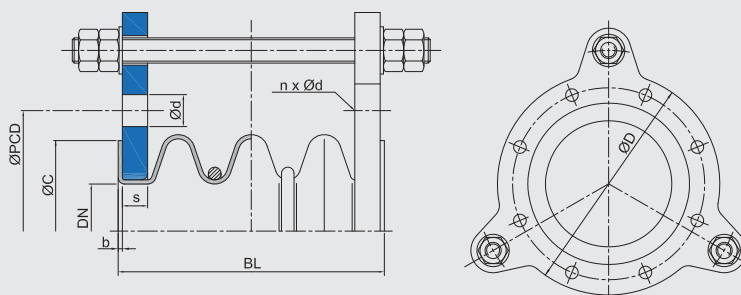
Type 80 is primarily used in chemical plants to absorb movement, insulate sound and compensate offsets. Its high level of elasticity and low stiffness rates means that it can also be used in pipes made from fragile materials such as glass, graphite or enamel.



<b>Bellow design</b>	Multi-corrugated, pure PTFE bellow with external stainless steel supporting rings from 1.4301. PTFE bead on both sides for steel flanges with integrated tie rods. Standard version: white PTFE, electrically insulating. Special version: black PTFE, electrically conductive.	<b>Flange version</b>	Steel S235JRG2, primed. Standard version delivered with flange with tie rods and clearance holes (drilled according to DIN PN 10). Other flange versions and materials are possible.
<b>Pressure resistance</b>	Max. operating pressure: 10 bar, depending on the temperature → see tables	<b>Special accessories</b>	<ul style="list-style-type: none"> <li>- PTFE guide sleeves</li> <li>- Potential equalisation</li> <li>- Flame-resistant protective covers</li> <li>- Dust and splash protection covers</li> <li>- Earth cover/sun protection hoods</li> </ul>
		<b>Conformity</b>	FDA and EG 1935/2004

Standard version, 3-corrugated - with tie rods

Standard version, 5-corrugated - with tie rods



### Important information

No additional seals are required for normal, flat flange connections up to DN 300.  
 From DN 350 and in the case of glass components or other connecting parts it is necessary to use elastic seals made of TFM with reinforcement (please refer to the required surface pressure).  
 PTFE expansion joints may not be subject to torsion or vibration.  
 The bellows should not be painted. Please refer to the installation instructions.  
 ++++ We will be happy to send you further information on the individual types and designs. ++++

## WILLBRANDT PTFE Expansion Joint Type 80

Permissible pressure loading at temperature (3-corrugated)

DN	Temperature / Pressure										
	20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	140 °C	160 °C	180 °C	200 °C	220 °C
20 - 40	10.00 bar	10.00 bar	10.00 bar	10.00 bar	10.00 bar	9.50 bar	8.00 bar	7.50 bar	5.50 bar	5.00 bar	4.50 bar
50	10.00 bar	8.70 bar	7.70 bar	6.70 bar	5.80 bar	5.20 bar	4.30 bar	4.00 bar	3.50 bar	3.20 bar	3.00 bar
65 - 80	10.00 bar	8.70 bar	7.50 bar	6.50 bar	5.60 bar	4.80 bar	4.10 bar	3.50 bar	2.80 bar	2.50 bar	2.20 bar
100 - 150	8.50 bar	7.50 bar	6.50 bar	5.60 bar	4.80 bar	4.30 bar	3.50 bar	2.80 bar	2.40 bar	2.00 bar	1.60 bar
200 - 250	7.00 bar	6.10 bar	5.30 bar	4.50 bar	3.80 bar	3.30 bar	2.70 bar	2.30 bar	1.70 bar	1.40 bar	1.20 bar
300 - 350	6.00 bar	4.90 bar	4.20 bar	3.40 bar	2.80 bar	2.50 bar	2.10 bar	1.70 bar	1.40 bar	1.20 bar	0.90 bar
400 - 450	4.50 bar	3.60 bar	3.00 bar	2.50 bar	2.20 bar	1.80 bar	1.50 bar	1.30 bar	1.00 bar	0.80 bar	0.80 bar
500 - 600	3.00 bar	2.50 bar	2.00 bar	1.60 bar	2.30 bar	1.10 bar	0.80 bar	0.60 bar	0.50 bar	0.40 bar	0.40 bar
700	1.80 bar	1.70 bar	1.60 bar	1.50 bar	1.30 bar	1.20 bar	1.10 bar	0.90 bar	0.80 bar	0.70 bar	0.60 bar
800 - 900	1.50 bar	1.40 bar	1.30 bar	1.20 bar	1.10 bar	1.00 bar	0.90 bar	0.80 bar	0.60 bar	0.50 bar	0.40 bar
1000 - 1200	1.00 bar	0.90 bar	0.80 bar	0.70 bar	0.65 bar	0.60 bar	0.55 bar	0.50 bar	0.40 bar	0.30 bar	0.20 bar

Permissible pressure loading at temperature (5-corrugated)

DN	Temperature / Pressure										
	20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	140 °C	160 °C	180 °C	200 °C	220 °C
20 - 40	7.00 bar	6.00 bar	5.50 bar	5.00 bar	4.50 bar	4.00 bar	3.80 bar	3.10 bar	2.90 bar	2.60 bar	2.30 bar
50	7.00 bar	6.20 bar	5.60 bar	5.10 bar	4.80 bar	4.30 bar	4.00 bar	3.70 bar	3.40 bar	3.00 bar	2.80 bar
65 - 80	4.25 bar	3.75 bar	3.25 bar	2.80 bar	2.40 bar	2.15 bar	1.75 bar	1.40 bar	1.20 bar	1.00 bar	0.80 bar
100 - 150	4.25 bar	3.75 bar	3.25 bar	2.80 bar	2.40 bar	2.15 bar	1.75 bar	1.40 bar	1.20 bar	1.00 bar	0.80 bar
200 - 250	3.50 bar	3.05 bar	2.65 bar	2.25 bar	1.90 bar	1.65 bar	1.35 bar	1.15 bar	0.85 bar	0.70 bar	0.60 bar
300 - 350	3.00 bar	2.45 bar	2.10 bar	1.70 bar	1.40 bar	1.25 bar	1.05 bar	0.85 bar	0.70 bar	0.60 bar	0.45 bar
400 - 450	2.25 bar	1.80 bar	1.50 bar	1.25 bar	1.10 bar	0.90 bar	0.75 bar	0.65 bar	0.50 bar	0.40 bar	0.40 bar
500 - 600	1.50 bar	1.25 bar	1.00 bar	0.80 bar	1.15 bar	0.55 bar	0.40 bar	0.30 bar	0.25 bar	0.20 bar	0.20 bar

Permissible vacuum loading at temperature (3-corrugated)

DN	Temperature / Pressure										
	20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	140 °C	160 °C	180 °C	200 °C	220 °C
20 - 40	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-0.96 bar
25 - 50	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-0.96 bar	-0.91 bar	-0.85 bar	-0.79 bar	-0.70 bar	-0.63 bar	-
65 - 80	-1.00 bar	-1.00 bar	-1.00 bar	-1.00 bar	-0.96 bar	-0.91 bar	-0.85 bar	-0.79 bar	-0.70 bar	-0.63 bar	-
100 - 150	-1.00 bar	-1.00 bar	-0.96 bar	-0.90 bar	-0.81 bar	-0.74 bar	-0.66 bar	-0.58 bar	-0.46 bar	-0.35 bar	-
200 - 250	-1.00 bar	-0.91 bar	-0.85 bar	-0.79 bar	-0.70 bar	-0.62 bar	-0.53 bar	-0.43 bar	-0.30 bar	-0.20 bar	-
300 - 350	-0.80 bar	-0.74 bar	-0.66 bar	-0.59 bar	-0.49 bar	-0.40 bar	-0.28 bar	-0.18 bar	-	-	-
400 - 450	-0.75 bar	-0.69 bar	-0.61 bar	-0.55 bar	-0.45 bar	-0.32 bar	-0.22 bar	-0.13 bar	-	-	-
500 - 600	-0.69 bar	-0.64 bar	-0.56 bar	-0.49 bar	-0.39 bar	-0.29 bar	-0.18 bar	-	-	-	-
700	-	-	-	-	-	-	-	-	-	-	-
800 - 900	-	-	-	-	-	-	-	-	-	-	-
1000 - 1200	-	-	-	-	-	-	-	-	-	-	-

Note: Type 80 (5-corrugated) is not suitable for vacuum loading.

Important information

**Type 80 (5-corrugated) is not suitable for vacuum loading.**

**For higher pressures, please refer to Type 80 HD.**

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



## WILLBRANDT PTFE Expansion Joint Type 80

### Dimensions - Type 80 (3-corrugated)

DN	Length BL mm	Bellow		Flange PN 10*2						Movement absorption*3			Stiffness rates*4		Weight kg
		b mm	WF*1 mm <sup>2</sup>	ØD mm	ØPCD mm	Ød mm	n	s mm	ØC mm	axial + mm	axial - mm	lateral ± mm	axial N/mm	lateral N/mm	
20	45	3.0	2400	105	75	M12	4	10	58	10	10	6	18	20	1.9
25	45	3.0	2400	115	85	M12	4	10	68	10	10	6	18	20	1.9
32	50	3.0	3300	140	100	M16	4	10	78	10	10	6	38	25	2.3
40	50	3.0	4000	150	110	M16	4	12	88	15	15	6	44	28	2.9
50	75	3.5	4200	165	125	18	4	15	98	15	15	15	50	45	6.0
65	75	3.0	5500	185	145	18	8	15	118	22	22	17	40	50	7.0
80	100	3.0	9000	200	160	18	8	15	122	25	25	17	40	60	8.0
100	100	3.5	13500	220	180	18	8	15	148	25	25	18	50	90	10.0
125	125	4.0	19000	250	210	18	8	18	174	28	28	18	60	110	12.0
150	150	4.0	29500	285	240	22	8	18	200	28	28	20	100	150	15.0
200	150	4.0	46000	340	295	22	8	20	256	28	28	10	150	180	20.0
250	150	4.0	67000	395	350	22	12	25	303	28	28	8	150	200	35.0
300	150	4.0	94000	445	400	22	12	25	360	30	30	6	150	200	48.0
350	150	4.5	108000	505	460	22	16	25	402	30	30	6	200	270	57.0
400	150	4.0	140000	565	515	26	16	25	453	30	30	5	200	270	70.0
450	150	3.5	180000	615	565	26	20	25	513	30	30	5	250	290	78.0
500	150	4.0	210000	670	620	26	20	25	564	30	30	4	300	350	86.0
600	175	4.0	310000	780	725	30	20	30	658	30	30	2	300	350	125.0
700	190	3.0	441500	895	840	30	24	35	800	35	35	2	350	410	136.0
800	190	3.0	570000	1015	950	33	24	35	905	35	35	2	380	490	146.0
900	215	3.0	712000	1115	1050	33	28	35	1005	35	35	2	400	530	184.0
1000	240	3.0	874000	1230	1160	36	28	35	1110	35	35	2	425	570	214.0
1200	190	3.0	1256100	1455	1380	39	32	35	1330	35	35	2	460	620	275.0

\*1 WF = effective area

\*2 Other dimensions (e.g. according to DIN PN 6, 16, ANSI b16,5 150 lbs) are available upon request.

\*3 The movement absorption values are maximum values and must not occur in combination. Please refer to the movement diagram in the technical appendix.

\*4 The stiffness rates are valid for 20 °C +/- 25 %. At higher temperatures the stiffness rate can fall by up to 50 %.

### Dimensions - Type 80 (5-corrugated)

DN	Overall length BL mm	Bellow		Flange PN 10*2						Movement absorption*3			Stiffness rates*4		Weight kg
		b mm	WF*1 mm <sup>2</sup>	ØD mm	ØPCD mm	Ød mm	n	s mm	ØC mm	axial + mm	axial - mm	lateral ± mm	axial N/mm	lateral N/mm	
20	70	3.0	2400	105	75	M12	4	10	58	15	15	8	11	18	1.9
25	70	3.0	2400	115	85	M12	4	10	68	15	15	8	11	18	1.9
32	75	3.0	3300	140	100	M16	4	10	78	15	15	8	23	25	2.3
40	75	3.0	4000	150	110	M16	4	12	88	20	20	8	27	32	2.9
50	100	3.5	4200	165	125	18	4	15	98	20	20	25	30	35	6.5
65	100	3.0	5500	185	145	18	8	15	118	35	35	30	35	40	7.5
80	125	3.0	9000	200	160	18	8	15	122	40	40	30	35	45	9.0
100	150	3.5	13500	220	180	18	8	15	148	40	40	30	35	60	11.0
125	175	4.0	19000	250	210	18	8	18	174	45	45	32	40	80	13.0
150	225	4.0	29500	285	240	22	8	18	200	45	45	32	80	120	17.0
200	225	4.0	46000	340	295	22	8	20	256	45	45	32	100	150	22.0
250	225	4.0	67000	395	350	22	12	25	303	45	45	15	100	170	37.0
300	225	4.0	94000	445	400	22	12	25	360	50	50	10	120	170	50.0
350	225	4.5	108000	505	460	22	16	25	402	50	50	8	160	250	59.0
400	225	4.0	140000	565	515	26	16	25	453	50	50	8	200	230	72.0
450	225	3.5	180000	615	565	26	20	25	513	50	50	7	200	240	80.0
500	225	4.0	210000	670	620	26	20	25	564	50	50	7	250	300	89.0
600	250	4.0	310000	780	725	30	20	30	658	50	50	6	250	300	130.0

\*1 WF = effective area

\*2 Other dimensions (e.g. according to DIN PN 6, 16, ANSI b16,5 150 lbs) are available upon request.

\*3 The movement absorption values are maximum values and must not occur in combination. Please refer to the movement diagram in the technical appendix.

\*4 The stiffness rate are valid for 20 °C +/- 25 %. At higher temperatures the stiffness rate can fall by up to 50 %.

### Important information

Please note the appropriate fixed point constructions and plain bearings in your piping system! For more information please refer to our installation instructions.

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

# WILLBRANDT PTFE Expansion Joint Type 80 HD

DN 25 - DN 600

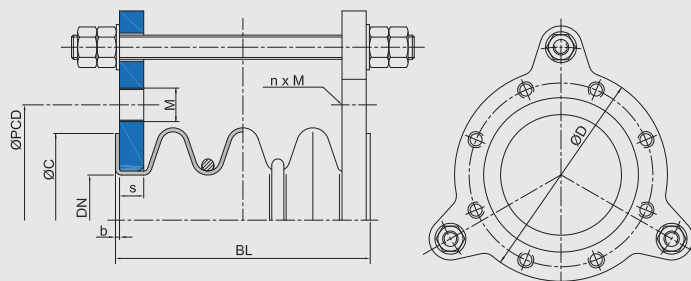
Type 80 is a 2- to 10-corrugated PTFE expansion joint that is hot-formed from wound foil piping under pressure. The material is homogeneous, has no pores and the forming process ensures a redirection of the material fibers without interruption. It is characterised by its high level of pressure resistance, media resistance and movement absorption.

Type 80 HD is primarily used in chemical plants to absorb movement, insulate sound and compensate offsets. Its high level of elasticity and low stiffness rates means that it can also be used in pipes made from fragile materials such as glass, graphite or enamel.

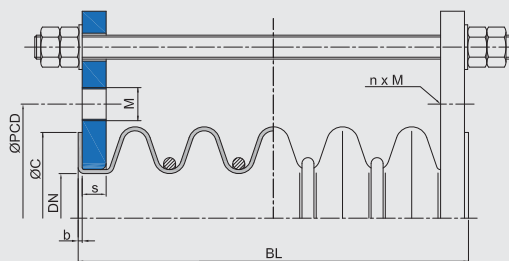


<b>Bellow design</b>	Multi-corrugated, pure PTFE bellow with stainless-steel external stainless-steel supporting rings from 1.4301. PTFE bead on both sides for steel flanges with integrated tie rods. Standard version: white PTFE, electrically insulating. Special version: black PTFE, electrically conductive.	<b>Pressure resistance</b>	Max. operating pressure: 16 bar (depending on the temperature → see tables)
<b>Flange version</b>	Spheroidal graphite iron GGG40, primed. Standard version delivered with flange and tie rods and threaded bolt holes (drilled according to DIN PN 10). Other flange versions and materials are possible.	<b>Special accessories</b>	<ul style="list-style-type: none"> <li>- PTFE guide sleeves</li> <li>- Potential equalisation</li> <li>- Flame-resistant protective covers</li> <li>- Dust and splash protection covers</li> <li>- Earth cover/sun protection hoods</li> </ul>
		<b>Conformity</b>	FDA and EG 1935/2004

Standard version, 3-corrugated - with tie rods



Standard version, 5-corrugated - with tie rods



## Important information

No additional seals are required for normal, flat flange connections up to DN 300. From DN 350 and in the case of glass components or other connecting parts it is necessary to use elastic seals made of TFM with reinforcement (please refer to the required surface pressure). PTFE expansion joints may not be subject to torsion or vibration. Please refer to the installation instructions.

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

## WILLBRANDT PTFE Expansion Joint Type 80 HD

### Permissible pressure loading at temperature

Quantity Waves	Temperature / Pressure												
	-40 °C	-20 °C	20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	140 °C	160 °C	180 °C	200 °C	220 °C
2	12.0 bar	14.0 bar	16.0 bar	16.0 bar	15.0 bar	14.1 bar	12.5 bar	10.7 bar	10.0 bar	8.8 bar	7.1 bar	5.5 bar	3.0 bar
3	12.0 bar	14.0 bar	16.0 bar	16.0 bar	15.0 bar	14.1 bar	12.5 bar	10.7 bar	10.0 bar	8.8 bar	7.1 bar	5.5 bar	3.0 bar
4	6.0 bar	8.0 bar	10.0 bar	10.0 bar	9.5 bar	9.0 bar	8.0 bar	6.8 bar	6.1 bar	5.2 bar	4.7 bar	3.5 bar	2.0 bar
5	6.0 bar	8.0 bar	10.0 bar	10.0 bar	9.5 bar	9.0 bar	8.0 bar	6.8 bar	6.1 bar	5.2 bar	4.7 bar	3.5 bar	2.0 bar
6	6.0 bar	8.0 bar	10.0 bar	10.0 bar	9.5 bar	9.0 bar	8.0 bar	6.8 bar	6.1 bar	5.2 bar	4.7 bar	3.5 bar	2.0 bar
7	2.0 bar	4.0 bar	6.0 bar	6.0 bar	5.8 bar	5.3 bar	4.8 bar	4.0 bar	3.7 bar	3.0 bar	2.7 bar	2.0 bar	1.0 bar
8	2.0 bar	4.0 bar	6.0 bar	6.0 bar	5.8 bar	5.3 bar	4.8 bar	4.0 bar	3.7 bar	3.0 bar	2.7 bar	2.0 bar	1.0 bar
9	2.0 bar	4.0 bar	6.0 bar	6.0 bar	5.8 bar	5.3 bar	4.8 bar	4.0 bar	3.7 bar	3.0 bar	2.7 bar	2.0 bar	1.0 bar
10	2.0 bar	4.0 bar	6.0 bar	6.0 bar	5.8 bar	5.3 bar	4.8 bar	4.0 bar	3.7 bar	3.0 bar	2.7 bar	2.0 bar	1.0 bar

A guide sleeve should be used for flow rates of over 3 m/s. This can be made from PTFE for rates of up to 5 m/s.  
A stainless steel guide sleeve should be used for flow rates of over 5 m/s.

### Permissible vacuum loading at temperature

Quantity Waves	Temperature / Pressure												
	-40 °C	-20 °C	20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	140 °C	160 °C	180 °C	200 °C	220 °C
2	-0.5 bar	-0.8 bar	-1.0 bar	-1.0 bar	-1.0 bar	-1.00 bar	-1.00 bar	-1.0 bar	-0.9 bar	-0.7 bar	-0.4 bar	-0.1 bar	-
3	-0.5 bar	-0.8 bar	-1.0 bar	-1.0 bar	-1.0 bar	-1.00 bar	-1.00 bar	-0.9 bar	-0.7 bar	-0.4 bar	-0.1 bar	-	-
4	-0.5 bar	-0.8 bar	-1.0 bar	-1.0 bar	-0.9 bar	-0.72 bar	-0.65 bar	-0.5 bar	-0.3 bar	-	-	-	-
5	-0.5 bar	-0.8 bar	-1.0 bar	-0.9 bar	-0.8 bar	-0.65 bar	-0.50 bar	-0.3 bar	-	-	-	-	-
6	-	-0.3 bar	-0.3 bar	-0.2 bar	-	-	-	-	-	-	-	-	-
7	-	-0.3 bar	-0.3 bar	-0.2 bar	-	-	-	-	-	-	-	-	-
8	-	-0.3 bar	-0.3 bar	-0.2 bar	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-

A guide sleeve should be used for flow rates of over 3 m/s. This can be made from PTFE for rates of up to 5 m/s.  
A stainless steel guide sleeve should be used for flow rates of over 5 m/s.

### Stiffness rates

Direction of movement		DN / Stiffness rates																
		25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
axial	(N/mm)	21	32	42	58	84	111	147	189	235	286	347	413	576	546	597	658	791
lateral	(N/mm)	45	68	90	124	124	237	315	405	782	952	1156	1377	1581	1819	1989	2193	2635

The stiffness rates are valid for 20 °C +/-50 %. At higher temperatures the stiffness rates can fall by up to 50 %

### Factor for wave number

Number of waves	2	3	4	5	6	7	8	9	10
Factor	1,4	1,0	0,8	0,65	0,55	0,45	0,4	0,35	0,3

### Factor for temperatures

Temperature	25 °C	80 °C	120 °C	150 °C
Factor	1,0	0,65	0,5	0,4

### Important information

**Type 80 (5-corrugated) is not suitable for vacuum loading.**

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



## WILLBRANDT PTFE Expansion Joint Type 80 HD

### Dimensions - Type 80 HD (2-corrugated / 3-corrugated)

DN	Overall length		Bellow		Flange PN 10*2						Movement absorption*3						Weight 3 corrugations kg
	2 corrugations mm	3 corrugations mm	b mm	WF*1 mm <sup>2</sup>	ØD mm	ØPCD mm	Ød mm	n	s mm	ØC mm	2 corrugations			3 corrugations			
											axial ± mm	lateral ± mm	angular*4 ± ∠°	axial ± mm	lateral ± mm	angular*4 ± ∠°	
25	45	55	3.7	1000	115	85	14	4	12	68	9.0	6.0	13.5	9.0	6.0	13.5	2.5
32	55	65	3.8	1430	140	100	18	4	16	78	9.0	6.0	12.0	9.0	6.0	12.0	3.0
40	55	70	4.0	2500	150	110	18	4	16	88	10.5	7.5	12.0	10.5	7.5	12.0	4.0
50	60	70	4.2	3500	165	125	18	4	16	102	10.5	7.5	10.5	10.5	7.5	10.5	6.0
65	60	80	4.4	6000	185	145	18	8	16	118	12.0	9.0	10.5	12.0	9.0	10.5	7.0
80	65	90	4.7	9000	200	160	18	8	17	122	12.0	9.0	10.5	12.0	9.0	10.5	8.0
100	70	95	5.0	12000	220	180	18	8	18	148	13.5	9.0	9.0	13.5	9.0	9.0	10.0
125	75	100	5.2	19500	250	210	18	8	19	174	13.5	9.0	9.0	13.5	9.0	9.0	12.0
150	75	105	5.5	25500	285	240	22	8	20	200	15.0	9.0	7.5	15.0	9.0	7.5	15.0
200	80	110	5.7	42500	340	295	22	8	20	256	15.0	10.5	6.0	15.0	10.5	6.0	20.0
250	90	120	6.0	63000	395	350	22	12	21	303	16.5	10.5	6.0	16.5	10.5	6.0	35.0
300	95	125	6.3	79000	445	400	22	12	22	360	16.5	10.5	4.5	16.5	10.5	4.5	48.0
350	100	125	6.5	116500	505	460	22	16	22	402	18.0	10.5	4.5	18.0	10.5	4.5	57.0
400	100	135	6.8	145000	565	515	26	16	24	453	18.0	10.5	4.5	18.0	10.5	4.5	70.0
450	100	135	7.0	193200	615	565	26	20	27	533	18.0	10.5	4.5	18.0	10.5	4.5	78.0
500	105	140	7.3	222000	670	620	26	20	27	564	19.5	12.0	4.5	19.5	12.0	4.5	86.0
600	105	140	7.6	312000	780	725	30	20	30	658	19.5	12.0	3.0	19.5	12.0	3.0	125.0

\*1 WF = effective area

\*2 Other dimensions (e.g. according to DIN PN 6, 16, ANSI b16,5 150 lbs) are available upon request.

\*3 The movement absorption values are maximum values and must not occur in combination.

Please refer to the movement diagram in the technical appendix.

\*4 Angular movement absorption only possible without tie rods.

### Dimensions for Type 80 HD (basic and expansion values 4 to 10 corrugations [max. 10 corrugations])

DN	Overall length		Bellow		Flange PN 10*2						Movement absorption per corrugation*3		
	4 corrugations mm	b mm	WF*1 mm <sup>2</sup>	ØD mm	ØPCD mm	Ød mm	n	s mm	ØC mm	BL per corrugation mm	axial ± mm	lateral ± mm	angular*4 ± ∠°
25	67	3.7	1000	115	85	14	4.0	12	62	12	3.0	2.0	4.5
32	78	3.8	1430	140	100	18	4.0	16	72	13	3.0	2.0	4.0
40	85	4.0	2500	150	110	18	4.0	16	80	15	3.5	2.5	4.0
50	86	4.2	3500	165	125	18	4.0	16	98	16	3.5	2.5	3.5
65	100	4.4	6000	185	145	18	8.0	16	118	20	4.0	3.0	3.5
80	114	4.7	9000	200	160	18	8.0	17	122	24	4.0	3.0	3.5
100	120	5.0	12000	220	180	18	8.0	18	148	25	4.5	3.0	3.0
125	125	5.2	19500	250	210	18	8.0	19	174	25	4.5	3.0	3.0
150	130	5.5	25500	285	240	22	8.0	20	200	25	5.0	3.0	2.5
200	135	5.7	42500	340	295	22	8.0	20	256	25	5.0	3.5	2.0
250	146	6.0	63000	395	350	22	12.0	21	303	26	5.5	3.5	2.0
300	151	6.3	79000	445	400	22	12.0	22	360	26	5.5	3.5	1.5
350	151	6.5	116500	505	460	22	16.0	22	402	26	6.0	3.5	1.5
400	161	6.8	145000	565	515	26	16.0	24	453	26	6.0	3.5	1.5
450	161	7.0	193200	615	565	26	20.0	27	533	26	6.0	3.5	1.5
500	166	7.3	222000	670	620	26	20.0	27	564	26	5.5	3.0	1.3
600	166	7.6	312000	780	725	30	20.0	30	658	26	5.5	3.0	1.0

\*1 WF = effective area

\*2 Other dimensions (e.g. according to DIN PN 6, 16, ANSI b16,5 150 lbs) are available upon request.

\*3 The movement absorption values are maximum values and must not occur in combination.

Please refer to the movement diagram in the technical appendix.

\*4 Angular movement absorption only possible without tie rods.

### Important information

Please note the appropriate fixed point constructions and plain bearings in your piping system!  
For more information please refer to our installation instructions.

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