



HYDRA

Type LBR
Type LFR

Designation

The designation consists of two parts:
1. the series, defined by 3 letters
2. the nominal size, defined by 10 digits

Example:

Type LBR: HYDRA lateral expansion joint with swivel flanges, for movement in all planes

Type LFR: HYDRA lateral expansion joint with plain fixed flanges, for movement in all planes

Standard version/materials:

multi-ply bellows: 1.4541
flange: P 265 GH (1.0425)
operating temperature: up to 400°C

Designation (example):

L	B	R	1	0	.	0	1	5	0	.	1	0	2	.	0
Type			Nominal pressure (PN10)			Nominal diameter (DN150)			Movement absorption, nominal (2λ = ±51 = 102 mm)			Inner sleeve (0 = ohne, 1 = mit)			

Order text to Pressure Equipment Directive 97/23/EC

Please state the following with your order:

- for standard versions -> order number
- for different materials -> designation -> details of materials

According to the Pressure Equipment Directive 97/23/EC, the following information is required for testing and documentation:

Type of pressure equipment according to Art. 1:

- vessel volume V [l]

- piping – nominal size DN

Medium property according to Art. 9:

- group 1 – dangerous
- group 2 – all other fluids

State of medium:

- gaseous or liquid, if pD > 0.5 bar
- liquid, if pD < 0.5 bar

Design data:

max. allowable pressure PS [bar]

max./min. allowable temperature TS [°C]

test pressure PT [bar]

Optional:

category _____

Note: Tell us the dimensions that deviate from the standard dimensions and we can match the expansion joint to your specification.

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 06...

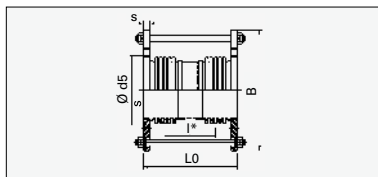
PN 6

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 06...

PN 6



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type LBR 06 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2x _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
50	51	.0050.051.0	439805	250	7	240
50	102	.0050.102.0	439806	360	7	240
50	154	.0050.154.0	439807	470	8	240
50	196	.0050.196.0	439808	560	10	240
65	53	.0065.053.0	439809	260	8	260
65	104	.0065.104.0	439810	370	8	260
65	151	.0065.151.0	439811	470	9	260
65	204	.0065.204.0	439812	580	9	260
80	53	.0080.053.0	439813	275	11	290
80	102	.0080.102.0	439814	385	11	290
80	154	.0080.154.0	439815	495	12	290
80	201	.0080.201.0	439816	595	12	290
100	52	.0100.052.0	439817	275	12	310
100	103	.0100.103.0	439818	385	13	310
100	151	.0100.151.0	439819	485	13	310
100	204	.0100.204.0	439820	595	14	310
125	51	.0125.051.0	439821	310	15	340
125	103	.0125.103.0	439822	450	16	340
125	153	.0125.153.0	439823	580	17	340
125	203	.0125.203.0	439824	710	18	340
150	53	.0150.053.0	439825	330	19	365
150	101	.0150.101.0	439826	450	20	365
150	151	.0150.151.0	439827	570	22	365
150	202	.0150.202.0	439828	690	23	365

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r	c _L	c _p
l*	PN	d5	s	c _r	c _L	c _p
mm	–	mm	mm	N/bar	N/mm	N/mm bar
136	6	90	16	4.8	15	0.6
246	6	90	16	3.5	4.7	0.2
356	6	90	16	2.8	2.3	0.1
445	6	90	16	2.4	1.4	0.1
141	6	107	16	7	21	0.6
251	6	107	16	5.2	6.5	0.2
351	6	107	16	4.2	3.3	0.1
461	6	107	16	3.5	1.9	0.1
146	6	122	18	8.8	25	0.5
256	6	122	18	6.5	8	0.2
366	6	122	18	5.2	3.9	0.1
466	6	122	18	4.4	2.4	0.1
141	6	147	18	14	39	1.2
251	6	147	18	10	12	0.4
351	6	147	18	8.2	6.2	0.2
461	6	147	18	6.8	3.6	0.1
167	6	178	20	16	45	1.2
307	6	178	20	12	13	0.4
437	6	178	20	9.2	6.6	0.2
567	6	178	20	7.7	3.9	0.1
166	6	202	20	22	87	2.5
286	6	202	20	17	29	0.8
406	6	202	20	13	15	0.4
526	6	202	20	11	8.7	0.2

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 06...

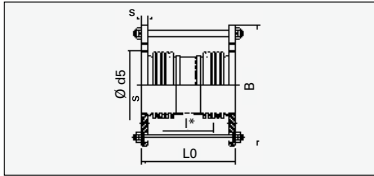
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Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 06...

PN 6



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type LBR 06 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2x _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
200	51	.0200.051.0	439829	345	27	420
200	100	.0200.100.0	439830	475	29	420
200	153	.0200.153.0	439831	605	30	420
200	198	.0200.198.0	439832	730	45	420
250	50	.0250.050.0	439833	365	38	503
250	102	.0250.102.0	439834	505	41	503
250	153	.0250.153.0	439835	635	43	503
250	212	.0250.212.0	439836	805	66	503
300	50	.0300.050.0	439837	380	52	600
300	101	.0300.101.0	439838	540	56	600
300	152	.0300.152.0	439839	690	60	600
300	196	.0300.196.0	439840	840	93	600
300	296	.0300.296.0	439841	1140	116	600
350	52	.0350.052.0	439842	410	65	650
350	102	.0350.102.0	439843	580	70	650
350	148	.0350.148.0	439844	755	94	650
350	195	.0350.195.0	439845	905	104	650
350	300	.0350.300.0	439846	1255	127	650
400	51	.0400.051.0	439847	465	87	724
400	100	.0400.100.0	439848	665	109	724
400	158	.0400.158.0	439849	865	125	724
400	200	.0400.200.0	439850	1015	137	724
400	294	.0400.294.0	439851	1415	168	724

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r N/bar	c _L N/mm	c _p N/mm bar
	PN	d5	s			
l*	–	mm	mm	–	–	–
166	6	258	22	42	137	4.2
296	6	258	22	32	43	1.3
426	6	258	22	26	21	0.6
535	6	258	22	22	13	0.4
171	6	312	24	80	188	6.7
311	6	312	24	61	57	2
441	6	312	24	50	28	1
590	6	312	24	40	16	0.6
191	6	365	24	153	251	6.6
351	6	365	24	114	74	2
501	6	365	24	92	37	1
630	6	365	24	77	23	0.6
930	6	365	24	59	11	0.3
215	6	410	26	172	243	6.7
385	6	410	26	128	76	2.1
534	6	410	26	102	39	1.1
684	6	410	26	87	24	0.7
1034	6	410	26	64	11	0.3
231	6	465	28	249	241	9.7
410	6	465	28	185	76	3.1
610	6	465	28	147	34	1.4
760	6	465	28	129	22	0.9
1160	6	465	28	95	9.5	0.4

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 06...

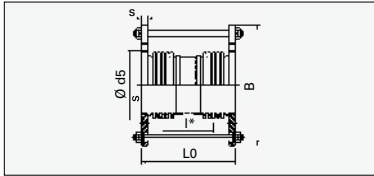
PN 6

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 06...

PN 6



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type LBR 06 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2λ _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
450	50	.0450.050.0	439852	475	96	779
450	97	.0450.097.0	439853	675	121	779
450	152	.0450.152.0	439854	875	139	779
450	192	.0450.192.0	439855	1025	152	779
450	289	.0450.289.0	439856	1390	189	779
500	52	.0500.052.0	439857	495	134	865
500	104	.0500.104.0	439858	710	164	865
500	147	.0500.147.0	439859	860	179	865
500	207	.0500.207.0	439860	1060	199	865
500	289	.0500.289.0	439861	1360	229	865

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r	c _λ	c _p
l*	PN	d5	s	c _r	c _λ	c _p
mm	–	mm	mm	N/bar	N/mm	N/mm bar
236	6	520	28	313	282	12
415	6	520	28	233	91	4
615	6	520	28	185	42	1.8
765	6	520	28	159	27	1.2
1120	6	520	28	121	17	0.6
236	6	570	32	421	449	16
425	6	570	32	310	138	5.2
575	6	570	32	261	76	2.8
775	6	570	32	217	42	1.6
1075	6	570	32	174	22	0.8

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 10...

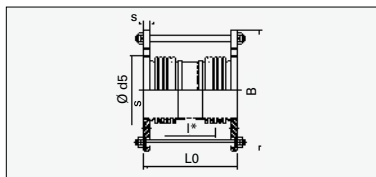
PN 10

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 10...

PN 10



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type LBR 10 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2x _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
50	51	.0050.051.0	439862	260	10	265
50	102	.0050.102.0	439863	370	10	265
50	146	.0050.146.0	439864	465	12	265
50	202	.0050.202.0	439865	615	14	265
65	53	.0065.053.0	439866	270	11	285
65	104	.0065.104.0	439867	380	12	285
65	146	.0065.146.0	439868	480	12	285
65	201	.0065.201.0	439869	630	13	285
80	53	.0080.053.0	439870	300	13	300
80	101	.0080.101.0	439871	420	14	300
80	151	.0080.151.0	439872	540	15	300
80	202	.0080.202.0	439873	660	16	300
100	50	.0100.050.0	439874	290	15	320
100	100	.0100.100.0	439875	420	16	320
100	146	.0100.146.0	439876	550	17	320
100	203	.0100.203.0	439877	730	18	320
125	50	.0125.050.0	439878	315	20	350
125	100	.0125.100.0	439879	435	21	350
125	153	.0125.153.0	439880	555	22	350
125	200	.0125.200.0	439881	665	23	350
150	51	.0150.051.0	439882	340	27	385
150	102	.0150.102.0	439883	470	29	385
150	151	.0150.151.0	439884	590	30	385
150	202	.0150.202.0	439885	710	32	385

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r N/bar	c _L N/mm	c _p N/mm bar
	PN	d5	s			
mm	–	mm	mm	–	–	–
136	16	92	19	7.8	15	0.60
246	16	92	19	3.4	4.7	0.20
345	16	92	19	2.8	2.4	0.10
495	16	92	19	2.1	1.2	0.00
141	16	107	20	6.8	21	0.60
251	16	107	20	5.1	6.5	0.20
351	16	107	20	4.1	3.3	0.10
501	16	107	20	3.2	1.6	0.00
161	16	122	20	8	35	0.90
281	16	122	20	6	12	0.30
401	16	122	20	4.7	5.7	0.10
521	16	122	20	3.9	3.4	0.10
159	16	147	22	13	38	0.90
289	16	147	22	9.3	12	0.30
419	16	147	22	7.3	5.5	0.10
599	16	147	22	5.6	2.7	0.10
151	16	178	22	16	75	2.00
271	16	178	22	12	23	0.60
391	16	178	22	9.7	11	0.30
501	16	178	22	8.2	6.8	0.20
161	16	208	24	25	115	2.70
291	16	208	24	19	35	0.80
411	16	208	24	16	18	0.40
531	16	208	24	13	11	0.20

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 10...

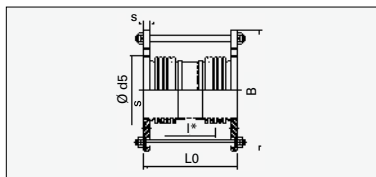
PN 10

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 10...

PN 10



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2x _N	LBR 10 ...	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
200	52	.0200.052.0	439886	365	37	468
200	100	.0200.100.0	439887	515	39	468
200	153	.0200.153.0	439888	675	42	468
200	206	.0200.206.0	439889	855	61	468
250	52	.0250.052.0	439890	395	52	555
250	101	.0250.101.0	439891	555	56	555
250	152	.0250.152.0	439892	715	60	555
250	198	.0250.198.0	439893	885	87	555
300	51	.0300.051.0	439894	405	72	629
300	102	.0300.102.0	439895	565	78	629
300	145	.0300.145.0	439896	715	104	629
300	196	.0300.196.0	439897	865	116	629
300	292	.0300.292.0	439898	1165	141	629
350	50	.0350.050.0	439899	420	87	689
350	100	.0350.100.0	439900	590	94	689
350	149	.0350.149.0	439901	775	118	689
350	195	.0350.195.0	439902	925	129	689
350	296	.0350.296.0	439903	1275	153	689
400	51	.0400.051.0	439904	515	147	785
400	106	.0400.106.0	439905	760	176	785
400	146	.0400.146.0	439906	910	189	785
400	200	.0400.200.0	439907	1110	206	785
400	287	.0400.287.0	439908	1460	235	785

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c ₁	c ₂	c _p
l*	PN	d5	s	N/bar	N/mm	N/mm bar
mm	–	mm	mm			
199	PN10	258	24	53	145	2.60
349	PN10	258	24	40	47	0.80
509	PN10	258	24	31	22	0.40
668	PN10	258	24	25	13	0.20
207	PN10	320	26	108	193	4.00
367	PN10	320	26	81	61	1.30
527	PN10	320	26	65	30	0.60
676	PN10	320	26	54	18	0.40
199	PN10	370	28	178	379	6.90
359	PN10	370	28	136	116	2.10
488	PN10	370	28	113	63	1.20
638	PN10	370	28	95	37	0.70
938	PN10	370	28	72	17	0.30
213	PN10	410	28	205	404	7.30
383	PN10	410	28	158	125	2.30
542	PN10	410	28	126	62	1.20
692	PN10	410	28	106	38	0.70
1042	PN10	410	28	80	17	0.30
251	PN10	465	37	262	446	9.10
470	PN10	465	37	191	127	2.60
620	PN10	465	37	161	73	1.50
820	PN10	465	37	135	42	0.90
1170	PN10	465	37	106	21	0.40

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 10...

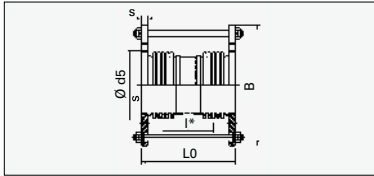
PN 10

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 10...

PN 10



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type LBR 10 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2λ _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
450	51	.0450.051.0	439909	505	174	756
450	98	.0450.098.0	439910	710	210	756
450	153	.0450.153.0	439911	910	235	756
450	195	.0450.195.0	439912	1060	254	756
450	285	.0450.285.0	439913	1410	298	756
500	51	.0500.051.0	439914	510	197	808
500	105	.0500.105.0	439915	735	239	808
500	148	.0500.148.0	439916	885	259	808
500	207	.0500.207.0	439917	1085	286	808
500	306	.0500.306.0	439918	1485	341	808

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r	c _L	c _p
l*	PN	d5	s	N/bar	N/mm	N/mm bar
mm	–	mm	mm			
246	PN10	520	32	294	570	12.00
425	PN10	520	32	222	191	4.20
625	PN10	520	32	179	88	1.90
775	PN10	520	32	157	57	1.30
1125	PN10	520	32	120	27	0.60
236	PN10	570	34	363	708	18.00
435	PN10	570	34	268	208	5.30
585	PN10	570	34	225	115	2.90
785	PN10	570	34	187	64	1.60
1185	PN10	570	34	141	28	0.70

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 16...

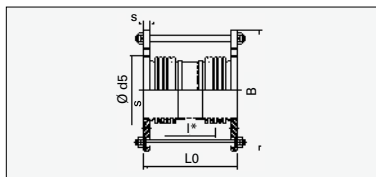
PN 16

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 16...

PN 16



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2x _N	LBR 16 ...	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
50	50	.0050.050.0	439919	280	10	265
50	103	.0050.103.0	439920	410	11	265
50	149	.0050.149.0	439921	530	13	265
50	199	.0050.199.0	439922	680	14	265
65	53	.0065.053.0	439923	290	12	285
65	104	.0065.104.0	439924	410	13	285
65	145	.0065.145.0	439925	520	14	285
65	198	.0065.198.0	439926	680	15	285
80	51	.0080.051.0	439927	300	14	300
80	102	.0080.102.0	439928	430	15	300
80	150	.0080.150.0	439929	550	16	300
80	205	.0080.205.0	439930	720	17	300
100	50	.0100.050.0	439931	310	16	320
100	103	.0100.103.0	439932	460	17	320
100	145	.0100.145.0	439933	590	18	320
100	202	.0100.202.0	439934	790	20	320
125	53	.0125.053.0	439935	345	23	350
125	102	.0125.102.0	439936	475	25	350
125	151	.0125.151.0	439937	595	26	350
125	196	.0125.196.0	439938	715	28	350
150	53	.0150.053.0	439939	360	32	413
150	100	.0150.100.0	439940	490	34	413
150	153	.0150.153.0	439941	630	37	413
150	194	.0150.194.0	439942	760	40	413

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r	c _L	c _p
	PN	d5	s			
151	PN16	92	19	4.3	23	0.50
281	PN16	92	19	3.1	6.5	0.10
400	PN16	92	19	2.5	3.2	0.10
550	PN16	92	19	2	1.7	0.00
156	PN16	107	20	6.4	30	0.50
276	PN16	107	20	4.7	9.6	0.20
386	PN16	107	20	3.8	4.9	0.10
546	PN16	107	20	3	2.5	0.00
161	PN16	122	20	8	44	0.90
291	PN16	122	20	5.9	14	0.30
411	PN16	122	20	4.7	6.8	0.10
581	PN16	122	20	3.6	3.4	0.10
173	PN16	147	22	12	57	0.80
323	PN16	147	22	8.5	16	0.20
453	PN16	147	22	6.8	8.4	0.10
653	PN16	147	22	5.2	4	0.10
171	PN16	178	22	17	102	1.60
301	PN16	178	22	13	33	0.50
421	PN16	178	22	11	17	0.30
541	PN16	178	22	9.2	10	0.20
181	PN16	208	24	32	126	2.10
311	PN16	208	24	25	43	0.70
451	PN16	208	24	20	20	0.30
581	PN16	208	24	17	12	0.20

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 16...

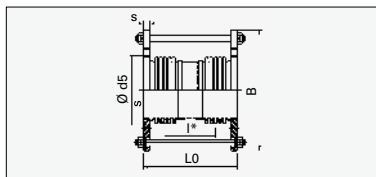
PN 16

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 16...

PN 16



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2x _N	LBR 16 ...	—	L ₀	G	B
—	mm	—	—	mm	kg	mm
200	50	.0200.050.0	439943	365	46	500
200	100	.0200.100.0	439944	525	50	500
200	150	.0200.150.0	439945	675	54	500
200	200	.0200.200.0	439946	865	73	500
250	52	.0250.052.0	439947	465	77	589
250	103	.0250.103.0	439948	685	98	589
250	154	.0250.154.0	439949	885	111	589
250	207	.0250.207.0	439950	1135	127	589
300	50	.0300.050.0	439951	500	119	680
300	95	.0300.095.0	439952	670	134	680
300	145	.0300.145.0	439953	870	151	680
300	196	.0300.196.0	439954	1120	173	680
300	296	.0300.296.0	439955	1620	217	680
350	51	.0350.051.0	439956	520	162	667
350	100	.0350.100.0	439957	720	183	667
350	149	.0350.149.0	439958	920	204	667
350	199	.0350.199.0	439959	1170	231	667
350	306	.0350.206.0	439960	1720	288	667
400	52	.0400.052.0	439961	555	199	723
400	94	.0400.094.0	439962	725	219	723
400	147	.0400.147.0	439963	925	242	723
400	200	.0400.200.0	439964	1125	265	723
400	309	.0400.309.0	439965	1625	323	723

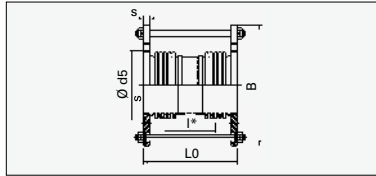
Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r	c _L	c _p
	PN	d5	s			
193	PN16	258	26	73	212	2.80
353	PN16	258	26	54	63	0.80
503	PN16	258	26	44	31	0.40
672	PN16	258	26	35	18	0.20
246	PN16	320	32	115	210	3.40
445	PN16	320	32	83	64	1.10
645	PN16	320	32	67	31	0.50
895	PN16	320	32	54	16	0.30
235	PN16	375	37	173	288	5.80
405	PN16	375	37	134	97	2.00
605	PN16	375	37	107	44	0.90
855	PN16	375	37	87	22	0.40
1355	PN16	375	37	62	8.7	0.20
260	PN16	410	32	180	346	6.10
460	PN16	410	32	136	110	1.90
660	PN16	410	32	109	54	0.90
910	PN16	410	32	87	28	0.50
1460	PN16	410	32	61	11	0.20
260	PN16	465	34	220	592	9.30
430	PN16	465	34	172	216	3.40
630	PN16	465	34	139	101	1.60
830	PN16	465	34	117	58	0.90
1330	PN16	465	34	83	23	0.40

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 16...

PN 16



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type LBR 16 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2λ _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
450	50	.0450.050.0	439966	560	265	815
450	104	.0450.104.0	439967	780	295	815
450	155	.0450.155.0	439968	980	323	815
450	203	.0450.203.0	439969	1180	350	815
450	296	.0450.296.0	439970	1630	412	815

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 16...

PN 16

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness			
	PN	d5	s	c _r	c _L	c _p
mm	–	mm	mm	N/bar	N/mm	N/mm bar
260	PN16	520	37	302	719	12.00
480	PN16	520	37	230	211	3.40
680	PN16	520	37	189	105	1.70
880	PN16	520	37	160	63	1.00
1330	PN16	520	37	120	27	0.40

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 25...

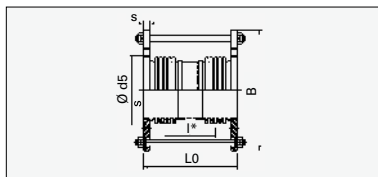
PN 25

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 25...

PN 25



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2x _N	LBR 25 ...	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
50	50	.0050.050.0	439971	290	11	265
50	98	.0050.098.0	439972	420	11	265
50	148	.0050.148.0	439973	590	14	265
50	205	.0050.205.0	439974	790	16	265
65	51	.0065.051.0	439975	315	14	285
65	99	.0065.099.0	439976	465	15	285
65	153	.0065.153.0	439977	665	16	285
65	195	.0065.195.0	439978	825	17	285
80	52	.0080.052.0	439979	330	17	300
80	103	.0080.103.0	439980	470	18	300
80	155	.0080.155.0	439981	640	20	300
80	193	.0080.193.0	439982	780	21	300
100	50	.0100.050.0	439983	340	22	335
100	102	.0100.102.0	439984	510	24	335
100	144	.0100.144.0	439985	670	26	335
100	192	.0100.192.0	439986	855	29	335
125	51	.0125.051.0	439987	360	32	398
125	102	.0125.102.0	439988	520	35	398
125	153	.0125.153.0	439989	710	38	398
125	196	.0125.196.0	439990	895	45	398
150	51	.0150.051.0	439991	375	44	460
150	102	.0150.102.0	439992	545	48	460
150	151	.0150.151.0	439993	745	52	460
150	194	.0150.194.0	439994	950	63	460

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r	c _L	c _p
	PN	d5	s			
156	PN40	92	20	4.2	27	0.50
286	PN40	92	20	3.1	8	0.10
455	PN40	92	20	2.3	3.2	0.10
655	PN40	92	20	1.7	1.5	0.00
185	PN40	107	22	6.1	33	0.30
335	PN40	107	22	4.3	10	0.10
535	PN40	107	22	3.1	4	0.00
695	PN40	107	22	2.5	2.3	0.00
176	PN40	122	24	7.4	52	0.70
316	PN40	122	24	5.4	16	0.20
486	PN40	122	24	4.1	6.8	0.10
626	PN40	122	24	3.4	4.1	0.10
197	PN40	147	24	13	74	0.60
367	PN40	147	24	9.4	21	0.20
527	PN40	147	24	7.4	10	0.10
712	PN40	147	24	5.9	5.7	0.00
195	PN40	178	26	22	96	0.90
355	PN40	178	26	16	29	0.30
545	PN40	178	26	12	12	0.10
714	PN40	178	26	10	7.2	0.10
205	PN40	208	28	43	123	1.40
375	PN40	208	28	32	37	0.40
575	PN40	208	28	24	16	0.20
764	PN40	208	28	20	8.8	0.10

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 25...

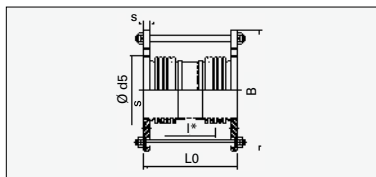
PN 25

Lateral expansion joint

for movement in all planes with lap-joint flanges

Type LBR 25...

PN 25



Type LBR

Nominal diameter	Nominal lateral movement absorption	Type	Order No. standard version	Overall length	Weight approx.	Größte Width approx.
DN	2λ _N	LBR 25 ...	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
200	50	.0200.050.0	439995	445	71	544
200	101	.0200.101.0	439996	645	78	544
200	155	.0200.155.0	439997	915	99	544
200	195	.0200.195.0	439998	1115	109	544
250	51	.0250.051.0	439999	480	132	578
250	101	.0250.101.0	440000	700	156	578
250	149	.0250.149.0	440001	950	176	578
250	204	.0250.204.0	440002	1250	201	578
300	61	.0300.061.0	440003	620	182	634
300	110	.0300.110.0	440004	845	205	634
300	150	.0300.150.0	440005	1045	225	634
300	200	.0300.200.0	440006	1345	254	634
300	302	.0300.302.0	440007	1945	313	634
350	50	.0350.050.0	440008	550	253	735
350	100	.0350.100.0	440009	760	278	735
350	145	.0350.145.0	440010	960	302	735
350	190	.0350.190.0	440011	1210	330	735
350	291	.0350.291.0	440012	1760	395	735

Centre-to-centre spacing of bellows	Flange			Adjusting force rate		
	drilling DIN 1092	rim diameter	thickness	c _r	c _L	c _p
l*	PN	d5	s	N/bar	N/mm	N/mm bar
mm	–	mm	mm			
241	PN25	258	32	77	195	2.20
441	PN25	258	32	57	58	0.60
690	PN25	258	32	43	24	0.30
890	PN25	258	32	36	14	0.20
251	PN25	320	35	111	256	3.50
450	PN25	320	35	81	80	1.10
700	PN25	320	35	63	33	0.40
1000	PN25	320	35	49	16	0.20
340	PN25	375	38	128	276	3.10
565	PN25	375	38	96	100	1.10
765	PN25	375	38	80	54	0.60
1065	PN25	375	38	63	28	0.30
1665	PN25	375	38	45	11	0.10
260	PN25	410	42	190	497	6.60
470	PN25	410	42	144	152	2.00
670	PN25	410	42	118	75	1.00
920	PN25	410	42	97	40	0.50
1470	PN25	410	42	68	16	0.20

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 06...

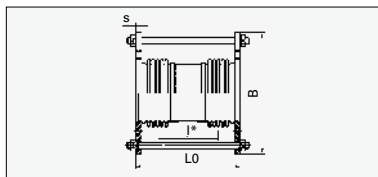
PN 6

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 06...

PN 6



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2 λ_N	LFR 06 ...	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
50	51	.0050.051.0	440013	265	7	240
50	102	.0050.102.0	440014	375	8	240
50	154	.0050.154.0	440015	485	9	240
50	196	.0050.196.0	440016	575	10	240
65	53	.0065.053.0	440017	275	9	260
65	104	.0065.104.0	440018	385	9	260
65	151	.0065.151.0	440019	485	9	260
65	204	.0065.204.0	440020	595	10	260
80	53	.0080.053.0	440021	285	12	290
80	102	.0080.102.0	440022	395	12	290
80	154	.0080.154.0	440023	505	12	290
80	201	.0080.201.0	440024	605	15	290
100	52	.0100.052.0	440025	285	12	310
100	103	.0100.103.0	440026	395	15	310
100	151	.0100.151.0	440027	495	15	310
100	204	.0100.204.0	440028	605	15	310
125	51	.0125.051.0	440029	320	18	340
125	103	.0125.103.0	440030	460	18	340
125	153	.0125.153.0	440031	590	19	340
125	203	.0125.203.0	440032	720	21	340
150	53	.0150.053.0	440033	340	23	365
150	101	.0150.101.0	440034	460	23	365
150	151	.0150.151.0	440035	580	26	365
150	202	.0150.202.0	440036	700	29	365

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c_r	c_L	c_p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
136	6	16	4.5	15	0.60
246	6	16	3.3	4.7	0.20
356	6	16	2.7	2.3	0.10
445	6	16	2.3	1.4	0.10
141	6	16	6.6	21	0.60
251	6	16	5	6.5	0.20
351	6	16	4	3.3	0.10
461	6	16	3.4	1.9	0.10
146	6	18	8.2	25	0.50
256	6	18	6.2	8	0.20
366	6	18	5	3.9	0.10
466	6	18	4.2	2.4	0.10
141	6	18	13	39	1.20
251	6	18	9.7	12	0.40
351	6	18	7.9	6.2	0.20
461	6	18	6.6	3.6	0.10
167	6	20	16	45	1.20
307	6	20	11	13	0.40
437	6	20	9.1	6.6	0.20
567	6	20	7.6	3.9	0.10
166	6	20	21	87	2.50
286	6	20	16	29	0.80
406	6	20	13	15	0.40
526	6	20	11	8.7	0.20

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 06...

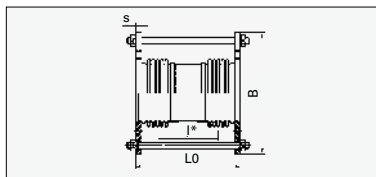
PN 6

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 06...

PN 6



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2λ _N	LFR 06 ...	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
200	51	.0200.051.0	440037	350	31	420
200	100	.0200.100.0	440038	480	34	420
200	153	.0200.153.0	440039	610	37	420
200	198	.0200.198.0	440040	740	43	420
250	50	.0250.050.0	440041	375	44	503
250	102	.0250.102.0	440042	515	47	503
250	153	.0250.153.0	440043	645	52	503
250	212	.0250.212.0	440044	810	63	503
300	50	.0300.050.0	440045	385	59	600
300	101	.0300.101.0	440046	545	65	600
300	152	.0300.152.0	440047	695	71	600
300	196	.0300.196.0	440048	845	90	600
300	296	.0300.296.0	440049	1145	113	600
350	52	.0350.052.0	440050	415	73	650
350	102	.0350.102.0	440051	585	79	650
350	148	.0350.148.0	440052	755	90	650
350	195	.0350.195.0	440053	905	100	650
350	300	.0350.300.0	440054	1255	123	650
400	51	.0400.051.0	440055	460	98	724
400	100	.0400.100.0	440056	665	105	724
400	158	.0400.158.0	440057	865	120	724
400	200	.0400.200.0	440058	1015	132	724
400	294	.0400.294.0	440059	1415	163	724

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c _r	c _L	c _p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm	N/bar	N/mm	N/mm bar
166	6	22	41	137	4.20
296	6	22	31	43	1.30
426	6	22	25	21	0.60
535	6	22	21	13	0.40
171	6	24	80	188	6.70
311	6	24	61	57	2.00
441	6	24	50	28	1.00
590	6	24	40	16	0.60
191	6	24	153	248	6.60
351	6	24	114	73	2.00
501	6	24	92	36	1.00
630	6	24	77	23	0.60
930	6	24	58	11	0.30
215	6	26	172	240	6.40
385	6	26	128	75	2.00
534	6	26	101	39	1.00
684	6	26	86	24	0.60
1034	6	26	64	11	0.30
231	6	28	249	241	9.40
410	6	28	185	76	3.00
610	6	28	147	34	1.40
760	6	28	129	22	0.90
1160	6	28	95	9.5	0.40

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 06...

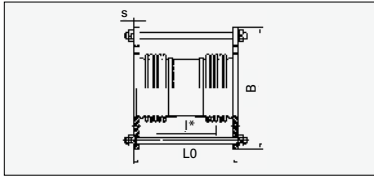
PN 6

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 06...

PN 6



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type LFR 06 ..	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2λ _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
450	50	.0450.050.0	440060	470	109	779
450	97	.0450.097.0	440061	675	116	779
450	152	.0450.152.0	440062	875	133	779
450	192	.0450.192.0	440063	1025	146	779
450	289	.0450.289.0	440064	1385	181	779
500	52	.0500.052.0	440065	490	154	865
500	104	.0500.104.0	440066	705	155	865
500	147	.0500.147.0	440067	855	169	865
500	207	.0500.207.0	440068	1055	190	865
500	289	.0500.289.0	440069	1355	220	865

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c _r	c _L	c _p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
236	6	28	313	282	12.00
415	6	28	233	91	3.80
615	6	28	185	42	1.70
765	6	28	159	27	1.10
1120	6	28	121	17	0.60
236	6	32	421	449	16.00
425	6	32	310	138	4.90
575	6	32	266	76	2.70
775	6	32	221	42	1.50
1075	6	32	176	22	0.80

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 10...

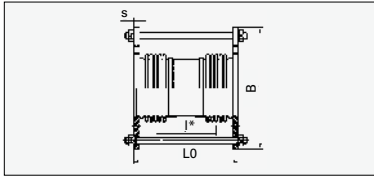
PN 10

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 10...

PN 10



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type LFR 10...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2 λ_N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
50	51	.0050.051.0	440070	270	10	265
50	102	.0050.102.0	440071	380	11	265
50	146	.0050.146.0	440072	475	12	265
50	202	.0050.202.0	440073	625	13	265
65	53	.0065.053.0	440074	280	12	285
65	104	.0065.104.0	440075	390	13	285
65	146	.0065.146.0	440076	490	13	285
65	201	.0065.201.0	440077	640	16	285
80	53	.0080.053.0	440078	310	16	300
80	101	.0080.101.0	440079	430	16	300
80	151	.0080.151.0	440080	550	18	300
80	202	.0080.202.0	440081	670	19	300
100	50	.0100.050.0	440082	300	15	320
100	100	.0100.100.0	440083	430	18	320
100	146	.0100.146.0	440084	560	19	320
100	203	.0100.203.0	440085	740	19	320
125	50	.0125.050.0	440086	320	23	350
125	100	.0125.100.0	440087	440	23	350
125	153	.0125.153.0	440088	560	26	350
125	200	.0125.200.0	440089	670	28	350
150	51	.0150.051.0	440090	345	30	385
150	102	.0150.102.0	440091	475	33	385
150	151	.0150.151.0	440092	595	35	385
150	202	.0150.202.0	440093	715	38	385

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c _r	c _L	c _p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
136	16	19	7.6	15	0.60
246	16	19	3.3	4.7	0.20
345	16	19	2.7	2.4	0.10
495	16	19	2.1	1.2	–
141	16	20	6.6	21	0.60
251	16	20	5	6.5	0.20
351	16	20	4	3.3	0.10
501	16	20	3.2	1.6	–
161	16	20	7.8	35	0.90
281	16	20	5.8	12	0.30
401	16	20	4.7	5.7	0.10
521	16	20	3.9	3.4	0.10
159	16	22	12	38	0.90
289	16	22	9.1	12	0.30
419	16	22	7.1	5.5	0.10
599	16	22	5.5	2.7	0.10
151	16	22	16	75	2.00
271	16	22	12	23	0.60
391	16	22	9.5	11	0.30
501	16	22	8.1	6.8	0.20
161	16	24	25	115	2.70
291	16	24	19	35	0.80
411	16	24	16	18	0.40
531	16	24	13	11	0.20

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 10...

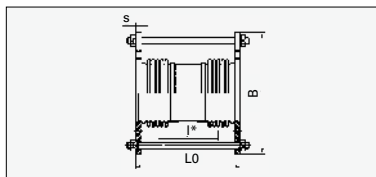
PN 10

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 10...

PN 10



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2 λ_N	LFR 10 ...	–	Lo	G	B
–	mm	–	–	mm	kg	mm
200	52	.0200.052.0	440094	370	42	468
200	100	.0200.100.0	440095	520	45	468
200	153	.0200.153.0	440096	680	51	468
200	206	.0200.206.0	440097	860	58	468
250	52	.0250.052.0	440098	400	59	555
250	101	.0250.101.0	440099	560	65	555
250	152	.0250.152.0	440100	720	71	555
250	198	.0250.198.0	440101	885	83	555
300	51	.0300.051.0	440102	400	83	629
300	102	.0300.102.0	440103	560	92	629
300	145	.0300.145.0	440104	710	98	629
300	196	.0300.196.0	440105	860	111	629
300	292	.0300.292.0	440106	1160	135	629
350	50	.0350.050.0	440107	415	98	689
350	100	.0350.100.0	440108	585	110	689
350	149	.0350.149.0	440109	770	112	689
350	195	.0350.195.0	440110	920	122	689
350	296	.0350.296.0	440111	1270	147	689
400	51	.0400.051.0	440112	510	170	785
400	106	.0400.106.0	440113	750	165	785
400	146	.0400.146.0	440114	900	178	785
400	200	.0400.200.0	440115	1100	195	785
400	287	.0400.287.0	440116	1450	224	785

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c_r	c_L	c_p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
199	10	24	52	145	2.60
349	10	24	39	47	0.80
509	10	24	31	22	0.40
668	10	24	25	13	0.20
207	10	26	106	193	4.00
367	10	26	80	61	1.30
527	10	26	64	30	0.60
676	10	26	53	18	0.40
199	10	28	185	379	6.70
359	10	28	140	116	2.00
488	10	28	113	63	1.10
638	10	28	95	37	0.60
938	10	28	72	17	0.30
213	10	28	213	404	7.30
383	10	28	158	125	2.30
542	10	28	126	62	1.10
692	10	28	108	38	0.70
1042	10	28	80	17	0.30
251	10	37	262	446	9.10
470	10	37	191	127	2.60
620	10	37	161	73	1.50
820	10	37	135	42	0.90
1170	10	37	106	21	0.40

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 10...

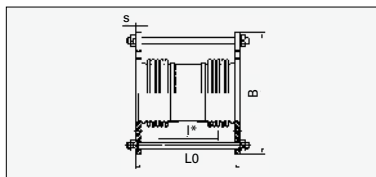
PN 10

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 10...

PN 10



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type LFR 10 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	$2\lambda_N$	–	–	L_0	G	B
–	mm	–	–	mm	kg	mm
450	51	.0450.051.0	440117	500	201	756
450	98	.0450.098.0	440118	700	198	756
450	153	.0450.153.0	440119	900	223	756
450	195	.0450.195.0	440120	1050	242	756
450	285	.0450.285.0	440121	1400	286	756
500	51	.0500.051.0	440122	505	228	808
500	105	.0500.105.0	440123	730	225	808
500	148	.0500.148.0	440124	880	246	808
500	207	.0500.207.0	440125	1080	273	808
500	306	.0500.306.0	440126	1480	327	808

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c_r	c_L	c_p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
246	10	32	303	570	12.00
425	10	32	222	191	4.10
625	10	32	179	88	1.90
775	10	32	157	57	1.20
1125	10	32	120	27	0.60
236	10	34	363	708	18.00
435	10	34	268	208	5.20
585	10	34	225	115	2.90
785	10	34	187	64	1.60
1185	10	34	141	28	0.70

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 16...

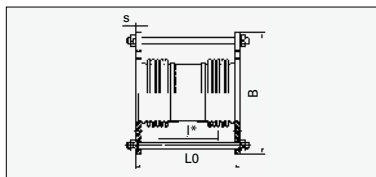
PN 16

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 16...

PN 16



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type LFR 16 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2x _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
50	50	.0050.050.0	440127	290	11	265
50	103	.0050.103.0	440128	420	12	265
50	149	.0050.149.0	440129	535	12	265
50	199	.0050.199.0	440130	685	14	265
65	53	.0065.053.0	440131	300	12	285
65	104	.0065.104.0	440132	420	15	285
65	145	.0065.145.0	440133	530	15	285
65	198	.0065.198.0	440134	690	18	285
80	51	.0080.051.0	440135	310	16	300
80	102	.0080.102.0	440136	440	18	300
80	150	.0080.150.0	440137	560	19	300
80	205	.0080.205.0	440138	730	21	300
100	50	.0100.050.0	440139	315	18	320
100	103	.0100.103.0	440140	465	20	320
100	145	.0100.145.0	440141	595	21	320
100	202	.0100.202.0	440142	795	23	320
125	53	.0125.053.0	440143	350	28	350
125	102	.0125.102.0	440144	480	30	350
125	151	.0125.151.0	440145	600	33	350
125	196	.0125.196.0	440146	720	36	350
150	53	.0150.053.0	440147	365	37	413
150	100	.0150.100.0	440148	495	40	413
150	153	.0150.153.0	440149	635	45	413
150	194	.0150.194.0	440150	765	49	413

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c _r	c _L	c _p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
151	16	19	4.2	23	0.50
281	16	19	3	6.5	0.10
400	16	19	2.4	3.2	0.10
550	16	19	1.9	1.7	–
156	16	20	6.2	30	0.50
276	16	20	4.6	9.6	0.20
386	16	20	3.7	4.9	0.10
546	16	20	2.9	2.5	–
161	16	20	7.8	44	0.90
291	16	20	5.7	14	0.30
411	16	20	4.6	6.8	0.10
581	16	20	3.6	3.4	0.10
173	16	22	12	57	0.80
323	16	22	8.4	16	0.20
453	16	22	6.7	8.4	0.10
653	16	22	5.1	4	0.10
171	16	22	17	102	1.60
301	16	22	13	33	0.50
421	16	22	11	17	0.30
541	16	22	9.2	10	0.20
181	16	24	32	126	2.10
311	16	24	25	43	0.70
451	16	24	20	20	0.30
581	16	24	17	12	0.20

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 16...

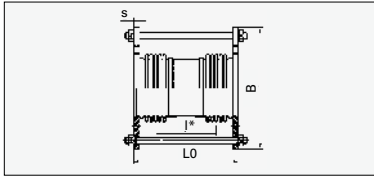
PN 16

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 16...

PN 16



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type LFR 16 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2 λ_N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
200	50	.0200.050.0	440151	370	53	500
200	100	.0200.100.0	440152	530	59	500
200	150	.0200.150.0	440153	680	65	500
200	200	.0200.200.0	440154	870	70	500
250	52	.0250.052.0	440155	460	88	589
250	103	.0250.103.0	440156	680	93	589
250	154	.0250.154.0	440157	880	106	589
250	207	.0250.207.0	440158	1130	122	589
300	50	.0300.050.0	440159	495	112	680
300	95	.0300.095.0	440160	665	127	680
300	145	.0300.145.0	440161	865	145	680
300	196	.0300.196.0	440162	1115	166	680
300	296	.0300.296.0	440163	1615	210	680
350	51	.0350.051.0	440164	515	153	667
350	100	.0350.100.0	440165	715	174	667
350	149	.0350.149.0	440166	915	196	667
350	199	.0350.199.0	440167	1165	222	667
350	306	.0350.306.0	440168	1715	279	667
400	52	.0400.052.0	440169	545	185	723
400	94	.0400.094.0	440170	715	204	723
400	147	.0400.147.0	440171	915	228	723
400	200	.0400.200.0	440172	1115	251	723
400	309	.0400.309.0	440173	1615	309	723

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c_r	c_L	c_p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
193	16	26	73	212	2.80
353	16	26	54	63	0.80
503	16	26	44	31	0.40
672	16	26	35	18	0.20
246	16	32	115	210	3.40
445	16	32	85	64	1.00
645	16	32	68	31	0.50
895	16	32	54	16	0.30
235	16	37	173	288	5.80
405	16	37	134	97	2.00
605	16	37	107	44	0.90
855	16	37	87	22	0.40
1355	16	37	62	8.7	0.20
260	16	32	180	346	5.90
460	16	32	136	110	1.90
660	16	32	109	54	0.90
910	16	32	87	28	0.50
1460	16	32	61	11	0.20
260	16	34	220	592	9.30
430	16	34	177	216	3.40
630	16	34	142	101	1.60
830	16	34	119	58	0.90
1330	16	34	84	23	0.40

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 16...

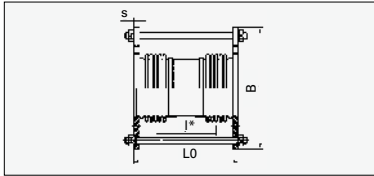
PN 16

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 16...

PN 16



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type LFR 16 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2 λ_N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
450	50	.0450.050.0	440174	550	247	815
450	104	.0450.104.0	440175	770	277	815
450	155	.0450.155.0	440176	970	305	815
450	203	.0450.203.0	440177	1170	332	815
450	296	.0450.296.0	440178	1620	395	815

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c_r	c_L	c_p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
260	16	37	311	719	12.00
480	16	37	235	211	3.40
680	16	37	192	105	1.70
880	16	37	162	63	1.00
1330	16	37	120	27	0.40

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 25...

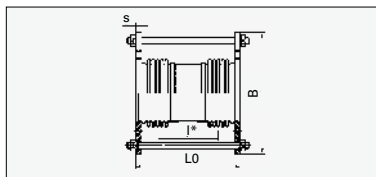
PN 25

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 25...

PN 25



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type LFR 25 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2λ _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
50	50	.0050.050.0	440179	300	11	265
50	98	.0050.098.0	440180	430	13	265
50	148	.0050.148.0	440181	600	13	265
50	205	.0050.205.0	440182	800	15	265
65	51	.0065.051.0	440183	320	16	285
65	99	.0065.099.0	440184	470	16	285
65	153	.0065.153.0	440185	670	19	285
65	195	.0065.195.0	440186	830	22	285
80	52	.0080.052.0	440187	335	20	300
80	103	.0080.103.0	440188	475	22	300
80	155	.0080.155.0	440189	645	25	300
80	193	.0080.193.0	440190	785	27	300
100	50	.0100.050.0	440191	345	26	335
100	102	.0100.102.0	440192	515	29	335
100	144	.0100.144.0	440193	675	32	335
100	192	.0100.192.0	440194	860	35	335
125	51	.0125.051.0	440195	365	35	398
125	102	.0125.102.0	440196	525	40	398
125	153	.0125.153.0	440197	715	44	398
125	196	.0125.196.0	440198	900	43	398
150	51	.0150.051.0	440199	370	49	460
150	102	.0150.102.0	440200	540	53	460
150	151	.0150.151.0	440201	740	62	460
150	194	.0150.194.0	440202	945	61	460

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c _r	c _L	c _p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
156	40	20	4.1	27	0.50
286	40	20	3	8	0.10
455	40	20	2.2	3.2	0.10
655	40	20	1.7	1.5	–
185	40	22	5.9	33	0.30
335	40	22	4.2	10	0.10
535	40	22	3	4	–
695	40	22	2.5	2.3	–
176	40	24	7.4	52	0.70
316	40	24	5.4	16	0.20
486	40	24	4.1	6.8	0.10
626	40	24	3.4	4.1	0.10
197	40	24	13	74	0.60
367	40	24	9.2	21	0.20
527	40	24	7.3	10	0.10
712	40	24	5.9	5.7	–
195	40	26	22	96	0.90
355	40	26	16	29	0.30
545	40	26	12	12	0.10
714	40	26	10	7.2	0.10
205	40	28	44	123	1.40
375	40	28	32	37	0.40
575	40	28	24	16	0.20
764	40	28	20	8.8	0.10

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 25...

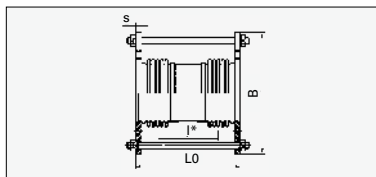
PN 25

Lateral expansion joint

for movement in all planes with plain fixed flanges

Type LFR 25...

PN 25



Type LFR

Nominal diameter	Nominal lateral movement absorption	Type LFR 25 ...	Order No. standard version	Overall length	Weight approx.	Max. width approx.
DN	2λ _N	–	–	L ₀	G	B
–	mm	–	–	mm	kg	mm
200	50	.0200.050.0	440203	440	82	544
200	101	.0200.101.0	440204	640	91	544
200	155	.0200.155.0	440205	910	95	544
200	195	.0200.195.0	440206	1110	105	544
250	51	.0250.051.0	440207	475	145	578
250	101	.0250.101.0	440208	695	149	578
250	149	.0250.149.0	440209	945	170	578
250	204	.0250.204.0	440210	1245	194	578
300	61	.0300.061.0	440211	610	172	634
300	110	.0300.110.0	440212	835	194	634
300	150	.0300.150.0	440213	1035	214	634
300	200	.0300.200.0	440214	1335	243	634
300	302	.0300.302.0	440215	1935	302	634
350	50	.0350.050.0	440216	545	241	735
350	100	.0350.100.0	440217	755	265	735
350	145	.0350.145.0	440218	955	289	735
350	190	.0350.190.0	440219	1205	318	735
350	291	.0350.291.0	440220	1755	382	735

Centre-to-centre spacing of bellows	Flange		Adjusting force rate		
	drilling DIN 1092	thickness	c _r	c _L	c _p
I*	PN	s	N/bar	N/mm	N/mm bar
mm	–	mm			
241	25	32	77	195	2.20
441	25	32	57	58	0.60
690	25	32	43	24	0.30
890	25	32	36	14	0.20
251	25	35	115	256	3.50
450	25	35	83	80	1.10
700	25	35	63	33	0.40
1000	25	35	49	16	0.20
340	25	38	128	276	3.10
565	25	38	98	100	1.10
765	25	38	81	54	0.60
1065	25	38	64	28	0.30
1665	25	38	45	11	0.10
260	25	42	190	497	6.60
470	25	42	147	152	2.00
670	25	42	120	75	1.00
920	25	42	97	40	0.50
1470	25	42	69	16	0.20