



HYDRA

Type ABT

Designation

The designation consists of two parts:
1. the series, defined by 3 letters
2. the nominal size, defined by 9 digits

Example:

Type ABT: HYDRA axial expansion joint with PTFE liner and swivel flanges

Standard version/materials:

multi-ply bellows: 1.4541
flange: S 235 JRG2 (1.0038)
operating temperature: up to 230°C

Designation (example):

A	B	T	1	0	.	0	1	5	0	.	0	6	0
Type			Nominal pressure (PN10)			Nominal diameter (DN150)			Movement absorption, nominal ($2\delta = \pm 30 = 60$ mm)				

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.

Axial expansion joints

with PTFE liner

Type ABT 10...

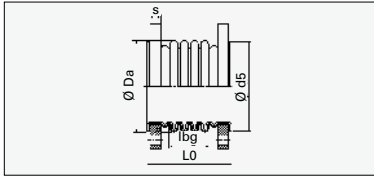
PN 10

Axial expansion joints

with PTFE liner

Type ABT 10...

PN 10



Type ABT

Nominal diameter	Nominal axial movement absorption	Type ABT 10 ...	Order No., standard version	Overall length	Weight approx.	Flange		
						drilling EN 1092	rim diameter	thickness
DN	2δ _N	–	–	Lo	G	PN	d5	s
–	mm	–	–	mm	kg	–	mm	mm
32	9	.0032.009	427980	145	3.9	40	70	18
32	18	.0032.018	427982	220	4.1	40	70	18
40	11	.0040.011	427985	157	4.5	40	80	18
40	22	.0040.022	427986	242	4.8	40	80	18
50	13	.0050.013	427987	179	5.7	16	92	19
50	27	.0050.027	427988	294	6.5	16	92	19
65	17	.0065.017	427989	181	6.9	16	107	20
65	32	.0065.032	427990	287	7.9	16	107	20
80	20	.0080.020	427991	185	8	16	122	20
80	35	.0080.035	427992	275	9	16	122	20
100	20	.0100.020	427994	179	10	16	147	22
100	40	.0100.040	427995	267	11	16	147	22
125	29	.0125.029	427996	221	14	16	178	22
125	50	.0125.050	427997	363	17	16	178	22
150	30	.0150.030	427998	248	18	16	208	24
150	60	.0150.060	427999	388	23	16	208	24
200	42	.0200.042	428000	246	25	10	258	24
200	78	.0200.078	428001	418	33	10	258	24
250	44	.0250.044	428002	241	32	10	320	26
250	81	.0250.081	428003	390	38	10	320	26

¹⁾ Movement absorption: The movements (axial, angular, lateral) are to be regarded as alternatives, i.e. the sum of their proportions in percentages should not exceed 100%.

Bellows			Nominal movement absorption ¹⁾ for 1000 loading cycles		Adjusting force rate		
outside diameter	corrugated length	effective cross-section	angular ¹⁾	lateral ¹⁾	axial	angular	lateral
Da	lbG	A	2α _N	2λ _N	c _δ	c _α	c _λ
mm	mm	cm ²	degree	mm	N/mm	Nm/degree	N/mm
61	75	20	20	4.7	260	1.3	159
61	150	20	31	19	130	0.7	21
74	85	30.6	20	5.3	272	2.1	200
74	170	30.6	30	21	136	1	24
88	95	44.7	19	5.7	276	3.1	236
88	209	44.3	32	26	195	2.2	35
106	95	67.1	20	6	234	4	305
107	200	67.4	30	24	173	3	52
120	100	87.3	20	6.5	220	5	344
121	189	87.6	29	22	178	4.1	79
148	88	135	17	4.6	365	13	1154
148	176	135	28	18	183	6.5	144
169	120	179	20	7.9	290	14	668
172	260	181	30	29	290	14	142
204	140	261	18	7.8	560	39	1368
204	280	261	29	31	280	20	175
258	140	432	19	8.5	412	48	1684
261	310	434	30	35	335	40	286
318	120	666	17	6.1	525	95	4536
318	270	667	24	25	269	49	462

Axial expansion joints

with PTFE liner

Type ABT 10...

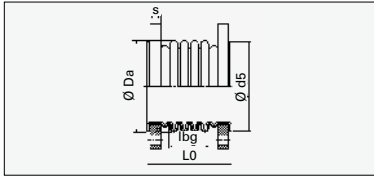
PN 10

Axial expansion joints

with PTFE liner

Type ABT 10...

PN 10



Type ABT

Nominal diameter	Nominal axial movement absorption	Type ABT 10 ...	Order No., standard version	Overall length	Weight approx.	Flange		
						drilling EN 1092	rim diameter	thickness
DN	2δ _N	–	–	Lo	G	PN	d5	s
–	mm	–	–	mm	kg	–	mm	mm
300	55	.0300.055	428004	287	40	10	370	26
300	95	.0300.095	428005	429	51	10	370	26
350	60	.0350.060	428006	296	56	10	410	28
350	92	.0350.092	428007	407	66	10	410	28
400	52	.0400.052	428008	288	74	10	465	32
400	104	.0400.104	428009	432	85	10	465	32
450	70	.0450.070	428010	329	85	10	520	32
450	130	.0450.130	428011	536	113	10	520	32
500	56	.0500.056	428012	310	104	10	570	34
500	126	.0500.126	428013	510	129	10	570	34
600	70	.0600.070	428014	334	126	10	670	36
600	126	.0600.126	428015	482	144	10	670	36

¹⁾ Movement absorption: The movements (axial, angular, lateral) are to be regarded as alternatives, i.e. the sum of their proportions in percentages should not exceed 100%.

Bellows			Nominal movement absorption ¹⁾ for 1000 loading cycles		Adjusting force rate		
outside diameter	corrugated length	effective cross-section	angular ¹⁾	lateral ¹⁾	axial	angular	lateral
Da	lbg	A	2α _N	2λ _N	c _δ	c _α	c _λ
mm	mm	cm ²	degree	mm	N/mm	Nm/degree	N/mm
374	165	932	17	8.9	480	121	3056
375	306	932	25	28	352	89	654
408	170	1119	17	9.1	460	139	3307
409	280	1119	23	23	378	115	1009
463	144	1449	13	5.9	713	281	9317
463	288	1449	22	23	357	141	1169
516	185	1821	15	9	548	272	5464
516	390	1813	24	35	430	214	967
571	160	2235	12	5.6	955	586	15738
571	360	2235	22	29	425	261	1385
678	185	3201	12	6.8	548	484	9723
678	333	3201	17	22	305	269	1668

Axial expansion joints

with PTFE liner

Type ABT 25...

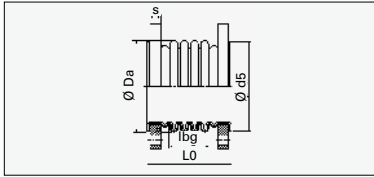
PN 25

Axial expansion joints

with PTFE liner

Type ABT 25...

PN 25



Type ABT

Nominal diameter	Nominal axial movement absorption	Type ABT 25 ...	Order No., standard version	Overall length	Weight approx.	Flange		
						drilling EN 1092	rim diameter	thickness
DN	2δ _N	–	–	Lo	G	PN	d5	s
–	mm	–	–	mm	kg	–	mm	mm
32	8	.0032.008	428016	146	4	40	70	18
32	15	.0032.015	428017	206	4.2	40	70	18
40	10	.0040.010	428018	163	4.6	40	80	18
40	17	.0040.017	428019	263	5.2	40	80	18
50	15	.0050.015	428021	201	6	40	92	20
50	24	.0050.024	428022	308	7.2	40	92	20
65	14	.0065.014	428023	197	7.7	40	107	22
65	26	.0065.026	428024	281	8.9	40	107	22
80	16	.0080.016	428027	211	10	40	122	24
80	29	.0080.029	428029	303	11	40	122	24
100	21	.0100.021	428030	217	13	40	147	24
100	35	.0100.035	428032	323	16	40	147	24
125	20	.0125.020	428033	215	19	40	178	26
125	35	.0125.035	428034	293	21	40	178	26
150	26	.0150.026	428035	256	23	40	208	28
150	47	.0150.047	428036	368	28	40	208	28
200	30	.0200.030	428037	239	36	25	258	32
200	52	.0200.052	428038	326	40	25	258	32
250	35	.0250.035	428039	268	51	25	320	35
250	61	.0250.061	428040	364	57	25	320	35

¹⁾ Movement absorption: The movements (axial, angular, lateral) are to be regarded as alternatives, i.e. the sum of their proportions in percentages should not exceed 100%.

Bellows			Nominal movement absorption ¹⁾ for 1000 loading cycles		Adjusting force rate		
outside diameter	corrugated length	effective cross-section	angular ¹⁾	lateral ¹⁾	axial	angular	lateral
			2α _N	2λ _N			
Da	lbg	A	degree	mm	N/mm	Nm/degree	N/mm
mm	mm	cm ²	degree	mm	N/mm	Nm/degree	N/mm
61	75	19.7	17	4.2	428	2.2	269
61	135	19.7	24	14	238	1.2	45
75	90	30.8	17	5	428	3.3	280
75	190	30.5	22	18	354	2.7	51
88	114	44.3	19	7.9	357	4	212
89	220	44.2	25	24	390	4.5	64
108	105	67.2	16	5.4	660	12	748
108	189	67.2	23	18	367	6.5	125
123	115	87.8	16	5.9	740	17	884
123	207	87.8	23	19	412	9.6	154
150	120	135.2	16	6.5	616	22	1050
151	225	135	23	20	523	19	258
172	104	181	14	4.7	725	35	2225
172	182	181	20	14	415	20	415
204	140	260	15	6.8	890	62	2175
204	252	260	21	22	495	35	379
261	116	436	13	5	850	100	5110
261	203	436	19	15	486	57	951
322	128	672	13	5.1	975	179	7512
322	224	672	18	16	558	102	1398

Axial expansion joints

with PTFE liner

Type ABT 25...

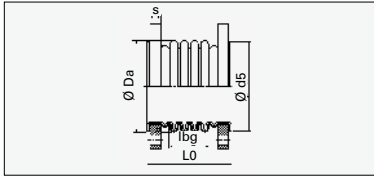
PN 25

Axial expansion joints

with PTFE liner

Type ABT 25...

PN 25



Type ABT

Nominal diameter	Nominal axial movement absorption	Type ABT 25 ...	Order No., standard version	Overall length	Weight approx.	Flange		
						drilling EN 1092	rim diameter	thickness
DN	2δ _N	–	–	Lo	G	PN	d5	s
–	mm	–	–	mm	kg	–	mm	mm
300	40	.0300.040	428041	293	71	25	375	38
300	70	.0300.070	428042	401	80	25	375	38
350	42	.0350.042	428043	305	103	25	410	42
350	73	.0350.073	428044	416	112	25	410	42
400	44	.0400.044	428045	328	128	25	465	42
400	88	.0400.088	428046	488	146	25	465	42
450	50	.0450.050	428047	377	155	25	520	44
450	90	.0450.090	428048	541	179	25	520	44
500	48	.0500.048	428049	340	173	25	570	44
500	96	.0500.096	428050	508	201	25	570	44
600	48	.0600.048	428051	337	220	25	670	46
600	96	.0600.096	428052	501	250	25	670	46

¹⁾ Movement absorption: The movements (axial, angular, lateral) are to be regarded as alternatives, i.e. the sum of their proportions in percentages should not exceed 100%.

Bellows			Nominal movement absorption ¹⁾ for 1000 loading cycles		Adjusting force rate		
outside diameter	corrugated length	effective cross-section	angular ¹⁾	lateral ¹⁾	axial	angular	lateral
Da	lbG	A	2α _N	2λ _N	c _δ	c _α	c _λ
mm	mm	cm ²	degree	mm	N/mm	Nm/degree	N/mm
377	144	932	12	5.6	1188	302	10013
377	252	932	18	17	679	173	1873
410	148	1116	12	5.5	1190	363	11394
410	259	1116	17	17	680	207	2122
464	160	1439	11	5.5	1605	635	17054
464	320	1439	18	22	803	318	2135
523	205	1831	11	7.1	1500	756	12369
523	369	1831	16	23	834	421	2126
578	168	2255	9,6	5	1673	1040	25335
578	336	2255	16	20	837	520	3167
680	164	3190	8,1	4.1	1675	1483	37910
680	328	3190	13	16	838	742	4742