U110M ⌀ 80 - 4,000 mm

> **Type U110M**
without vacuum ring

> **Type U111M**
with internal vacuum ring

> **Type U112M**
with embedded vacuum ring

Type key > page 22

U1 1 0 M
- Tie rod variant
- Support ring variants
- Number of arches
- Type

Lateral expansion joint with one arch

Design: Streamlined, single wide arch rubber bellows with full faced rubber flanges, have a cycle life in the tens of millions, constructed with a high-grade leak-proof tube, multiple layers of high-strength cord, a seamless cover, and single- or multi-part backing flanges with tie-rods borne in spherical washers. Optional with vacuum ring. In compliance with PED 2014/68/EU, FSA Technical Handbook and ASTM F1123 - 87.

Diameters: ⌀ 80 to 4,000 mm, custom diameters possible

Length: Standard L_E = 200 to 500 mm (> page 212–217)
Custom length on request

Pressure: Up to 100 bar depending on diameter and length
Vacuum stability on request, with vacuum ring up to 0.05 bar absolute

Movement: For lateral and angular (2 tie rod design) movements*
(> page 212–217)

Spring rate: Lateral spring rates (> page 296)

Application:
Cooling water systems, desalination plants, drinking water supply, plant constructions e. g. in pipelines, on pumps, as dismantling joints, on condensers and vessels

PED 2014/68/EU · KTW WRAS · FDA · <10⁵ Ohm · EX

Request assembly instructions at:
www.ditec-adam.de/en/contact

*Installation gap tolerances according to axial movement capability of the expansion joint

Bellows elastomers and reinforcements

Elastomer	Fabric	Marking	°C	Application
EPDM	Polyamid		-40 | +100	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDM	Aramid		-40 | +100	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDMht	Aramid		-40 | +120	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDMwras	Polyamid		-40 | +100	Drinking water, foodstuffs
EPDMwras	Aramid		-40 | +100	Drinking water, foodstuffs
EPDMbeige	Polyamid		-40 | +100	Foodstuffs
EPDMbeige	Aramid		-40 | +100	Foodstuffs
IIR	Polyamid		-20 | +100	Hot water, acids, bases, gases
IIR	Aramid		-20 | +100	Hot water, acids, bases, gases
CSM	Polyamid		-20 | +100	Strong acids, bases, chemicals
CSM	Aramid		-20 | +100	Strong acids, bases, chemicals
NBR	Polyamid		-30 | +100	Oils, petrol, solvents, compressed air
NBR	Aramid		-30 | +100	Oils, petrol, solvents, compressed air
NBRbeige	Polyamid		-30 | +100	Oil, fatty foods
NBRbeige	Aramid		-30 | +100	Oil, fatty foods
CR	Polyamid		-20 | +90	Cooling water, slightly oily water, seawater
CR	Aramid		-20 | +90	Cooling water, slightly oily water, seawater
FPM	Aramid		-20 | +180	Corrosive chemicals, petroleum distillates
FPMbeige	Aramid		-20 | +180	Oil, fatty foods
NR	Polyamid		-20 | +70	Abrasive materials
Silicon	Aramid Glass		-60 | +200	Air, saltwater atmosphere, foodstuffs, medical technology

PTFE-lining: Firmly embedded against chemical attacks on the interior at the rubber bellows, available starting at ∅ 300 mm. Take the restriction of the listed movement into account (> page 212–217)

Backing flanges

Design: Single- or multi-part integral backing flanges with support collar, clearance holes and tie rod holders (tie rod type B, E, C, M)

Single- or multi-part backing flanges with support collar, clearance holes and tie rod gusset plates (tie rod type R, K, L)

Flange norms: DIN, EN, ANSI, AWWA, BS, JIS, special measurements (> page 298)

Materials: Carbon steel, stainless steel

Coating: Primed, hot-dip galvanised, special paint

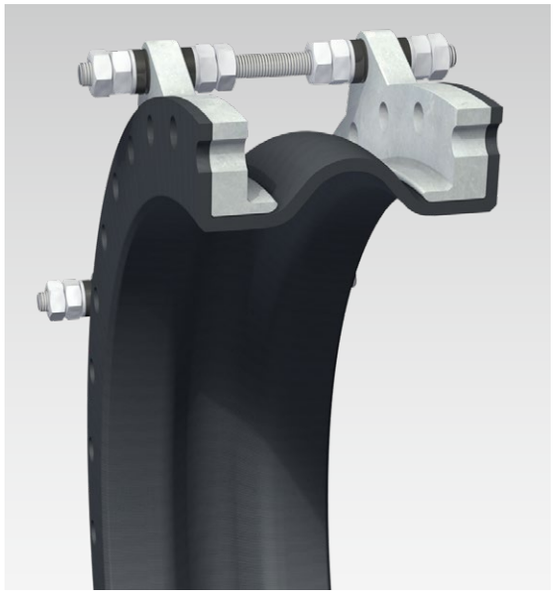
Accessories

Protective covers: Ground protective shield
Protective shield or cover
Fire protective cover (> page 58)

Flow liners: Cylindrical flow liner
Conical flow liner
Telescoping flow liner (> page 57)

Filled arch:  > page 42)

Tie rods

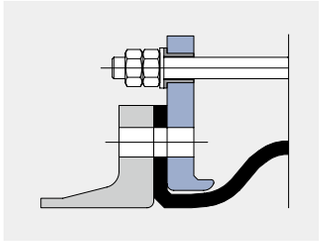


Example: Type U110M

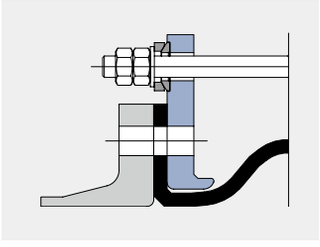
Design: Dimensioning according to design pressure (test pressure) based on the Pressure Equipment Directive

Materials: Carbon steel
Stainless steel

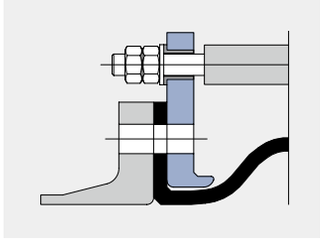
Coating: Spherical washers/ball disks: PTFE coated
Tie rods: galvanised, hot-dip galvanised or PTFE-coated



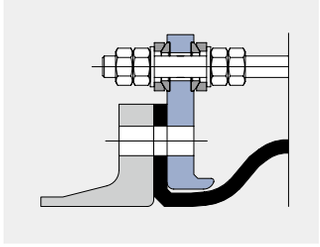
Type U110B
Tie rods mounted outside in rubber bushing to accommodate pressure thrust forces



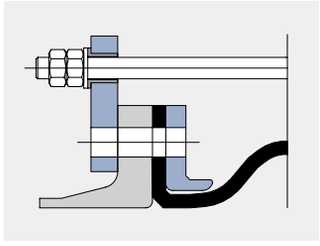
Type U110E
Tie rods mounted outside in spherical washers and ball disks to accommodate pressure thrust forces



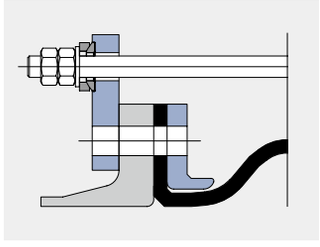
Type U110C
Tie rods mounted outside in rubber bushing and inside with compression sleeve to accommodate pressure/vacuum thrust forces



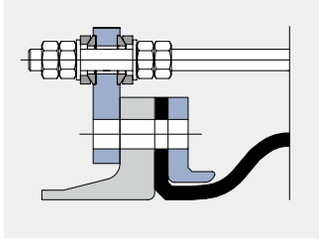
Type U110M
Tie rods mounted outside and inside in spherical washers and ball disks to accommodate pressure/vacuum thrust forces



Type U110R
Gusset plates: Tie rods mounted outside in rubber bushing to accommodate pressure thrust forces



Type U110K
Gusset plates: Tie rods mounted outside in spherical washers and ball disks to accommodate pressure thrust forces



Type U110L
Gusset plates: Tie rods mounted outside and inside in spherical washers and ball disks to accommodate pressure/vacuum thrust forces

10-PAB02 CP501

Sea water intake cooling water line ∅ 2,600 mm,
operating pressure 2.5 bar,
lateral tied rubber expansion joints of type U111M

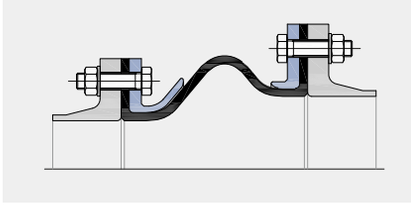
EPDM rubber expansion joint ∅ 900 mm PN 16
designed according PED 2014/68/EU with aramid cord reinforcements,
design temperature 120° C

Support rings

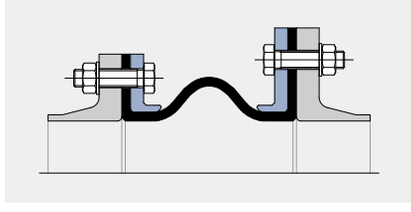
TYPE	Support rings	Vacuum ring	Pressure	Movement
U110M		None	Depending on the diameter up to 100 bar, vacuum stability on request	> page 212–213
U111M		Medium contact, inside the arch	Depending on the diameter up to 100 bar, for vacuum up to 0.05 bar absolute	> page 214–215
U112M		No medium contact, embedded in the arch	Depending on the diameter up to 25 bar, for vacuum up to 0.05 bar absolute	> page 216–217

Materials		
Stainless steel	Carbon steel, rubberised	Carbon steel, embedded

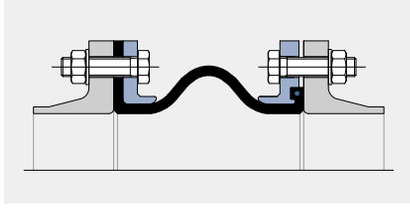
Specials



Customized reducer style

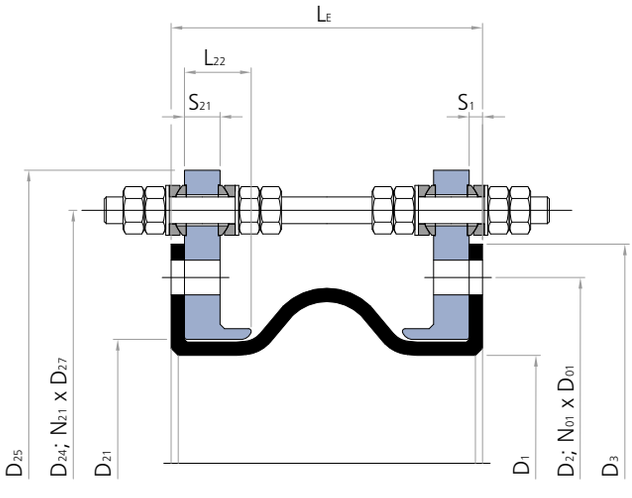


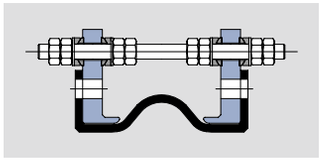
Different flange dimensions



Different end fitting

Cross section U110M





U110M

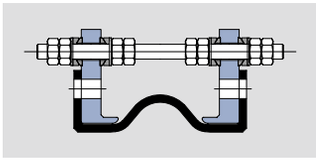
> without vacuum ring

Installation length (L_E) at design pressure

	up to 4 bar L_E = 200 mm up to 6 bar L_E = 200 mm up to 10 bar L_E = 250 mm					up to 4 bar L_E = 200 mm up to 6 bar L_E = 250 mm up to 10 bar L_E = 300 mm					up to 4 bar L_E = 250 mm up to 6 bar L_E = 300 mm up to 10 bar L_E = 350 mm				
	higher pressures on request														
	Movement				A	Movement				A	Movement				A
∅															
mm	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²
100	26	11	18	0	177	31	10	19	0	177	40	20	28	0	254
125	26	11	17	0	241	31	10	19	0	241	40	20	28	0	330
150	26	11	17	0	314	31	10	18	0	314	40	20	27	0	415
175	26	11	17	0	415	31	10	18	0	415	40	20	27	0	531
200	26	11	17	0	491	31	10	18	0	491	40	20	26	0	616
250	26	11	16	0	707	31	10	18	0	707	40	20	26	0	855
300	26	11	16	0	973	31	10	17	0	973	40	20	26	0	1,146
350	26	11	16	0	1,288	31	10	17	0	1,288	40	20	25	0	1,486
400	26	11	16	0	1,605	31	10	17	0	1,605	40	20	25	0	1,825
450	26	11	15	0	1,987	31	10	17	0	1,987	40	20	25	0	2,231
500	26	11	15	0	2,402	31	10	17	0	2,402	40	20	24	0	2,669
550						31	10	16	0	2,827	40	20	24	0	3,117
600						31	10	16	0	3,349	40	20	24	0	3,664
650						31	10	16	0	3,848	40	20	24	0	4,185
700						31	10	16	0	4,465	40	20	24	0	4,827
750						31	10	16	0	5,027	40	20	23	0	5,411
800						31	10	16	0	5,741	40	20	23	0	6,151
850						31	10	16	0	6,362	40	20	23	0	6,793
900						31	10	16	0	7,163	40	20	23	0	7,620
950						31	10	16	0	7,854	40	20	23	0	8,332
1000						31	10	16	0	8,742	40	20	23	0	9,246
1050											40	20	23	0	10,029
1100											40	20	23	0	11,047
1150											40	20	23	0	11,882
1200											40	20	22	0	12,969
1250											40	20	22	0	13,893
1300											40	20	22	0	15,066
1350											40	20	22	0	16,061
1400											40	20	22	0	17,320
1450											40	20	22	0	18,385
1500											40	20	22	0	19,731
1600											40	20	22	0	22,299
1650											40	20	22	0	23,506
1700											40	20	22	0	25,025
1800											40	20	22	0	27,937
1900											40	20	22	0	30,946
1950											40	20	22	0	32,365
2000											40	20	21	0	34,143
2100															
2200															
2250															
2300															
2400															
2500															
2550															
2600															
2700															
2800															
2850															
2900															
3000															
3100															
3150															
3200															
3300															
3400															
3450															
3600															
3800															
4000															

Recommended sizes
Further possible sizes

Reduction of movement for expansion joints with PTFE lining:
axial compression: -33 %; axial extension: -66 %; lateral displacement: -50 %.
In the event of lateral displacement and simultaneous axial extension (due to installation gap tolerance) the above movements are reduced (> page 29). For larger movements see type U120x.



U110M

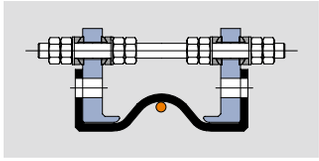
> without vacuum ring

Installation length (L_E) at design pressure

up to 4 bar L_E = 300 mm up to 6 bar L_E = 350 mm up to 10 bar L_E = 400 mm					up to 4 bar L_E = 350 mm up to 6 bar L_E = 400 mm up to 10 bar L_E = 450 mm					up to 4 bar L_E = 400 mm up to 6 bar L_E = 450 mm up to 10 bar L_E = 500 mm					
higher pressures on request															
Movement				A	Movement				A	Movement				A	∅
mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm
44	20	30	0	260	53	31	39	0	353	69	43	53	0	491	**100**
44	20	30	0	337	53	31	39	0	441	69	43	51	0	594	**125**
44	20	29	0	423	53	31	38	0	539	69	43	51	0	707	**150**
44	20	29	0	539	53	31	37	0	670	69	43	50	0	855	**175**
44	20	29	0	625	53	31	37	0	765	69	43	49	0	962	**200**
44	20	28	0	866	53	31	36	0	1,029	69	43	48	0	1,257	**250**
44	20	27	0	1,158	53	31	36	0	1,346	69	43	48	0	1,605	**300**
44	20	27	0	1,500	53	31	35	0	1,713	69	43	47	0	2,003	**350**
44	20	27	0	1,840	53	31	35	0	2,075	69	43	46	0	2,393	**400**
44	20	26	0	2,248	53	31	34	0	2,507	69	43	46	0	2,856	**450**
44	20	26	0	2,688	53	31	34	0	2,971	69	43	45	0	3,349	**500**
44	20	26	0	3,137	53	31	34	0	3,442	69	43	45	0	3,848	**550**
44	20	26	0	3,685	53	31	33	0	4,015	69	43	45	0	4,453	**600**
44	20	26	0	4,208	53	31	33	0	4,560	69	43	44	0	5,027	**650**
44	20	25	0	4,852	53	31	33	0	5,230	69	43	44	0	5,728	**700**
44	20	25	0	5,437	53	31	33	0	5,836	69	43	44	0	6,362	**750**
44	20	25	0	6,179	53	31	33	0	6,604	69	43	43	0	7,163	**800**
44	20	25	0	6,822	53	31	32	0	7,268	69	43	43	0	7,854	**850**
44	20	25	0	7,651	53	31	32	0	8,123	69	43	43	0	8,742	**900**
44	20	25	0	8,365	53	31	32	0	8,858	69	43	43	0	9,503	**950**
44	20	25	0	9,280	53	31	32	0	9,799	69	43	43	0	10,477	**1000**
44	20	25	0	10,064	53	31	32	0	10,605	69	43	42	0	11,310	**1050**
44	20	24	0	11,085	53	31	32	0	11,652	69	43	42	0	12,390	**1100**
44	20	24	0	11,921	53	31	32	0	12,509	69	43	42	0	13,273	**1150**
44	20	24	0	13,009	53	31	31	0	13,623	69	43	42	0	14,420	**1200**
44	20	24	0	13,935	53	31	31	0	14,569	69	43	42	0	15,394	**1250**
44	20	24	0	15,109	53	31	31	0	15,770	69	43	42	0	16,627	**1300**
44	20	24	0	16,106	53	31	31	0	16,787	69	43	41	0	17,671	**1350**
44	20	24	0	17,366	53	31	31	0	18,074	69	43	41	0	18,991	**1400**
44	20	24	0	18,433	53	31	31	0	19,162	69	43	41	0	20,106	**1450**
44	20	24	0	19,781	53	31	31	0	20,536	69	43	41	0	21,512	**1500**
44	20	24	0	22,352	53	31	31	0	23,154	69	43	41	0	24,190	**1600**
44	20	24	0	23,561	53	31	31	0	24,384	69	43	41	0	25,447	**1650**
44	20	23	0	25,081	53	31	30	0	25,930	69	43	41	0	27,026	**1700**
44	20	23	0	27,996	53	31	30	0	28,893	69	43	40	0	30,049	**1800**
44	20	23	0	31,009	53	31	30	0	31,952	69	43	40	0	33,168	**1900**
44	20	23	0	32,429	53	31	30	0	33,394	69	43	40	0	34,636	**1950**
44	20	23	0	34,209	53	31	30	0	35,199	69	43	40	0	36,474	**2000**
44	20	23	0	37,565	53	31	30	0	38,603	69	43	40	0	39,938	**2100**
44	20	23	0	41,079	53	31	30	0	42,164	69	43	40	0	43,558	**2200**
44	20	23	0	42,712	53	31	30	0	43,818	69	43	40	0	45,239	**2250**
44	20	23	0	44,750	53	31	30	0	45,882	69	43	40	0	47,336	**2300**
44	20	23	0	48,578	53	31	29	0	49,757	69	43	39	0	51,271	**2400**
44	20	23	0	52,563	53	31	29	0	53,789	69	43	39	0	55,363	**2500**
44	20	23	0	54,408	53	31	29	0	55,655	69	43	39	0	57,256	**2550**
44	20	23	0	56,706	53	31	29	0	57,979	69	43	39	0	59,612	**2600**
44	20	23	0	61,005	53	31	29	0	62,325	69	43	39	0	64,018	**2700**
44	20	22	0	65,461	53	31	29	0	66,829	69	43	39	0	68,581	**2800**
44	20	22	0	67,518	53	31	29	0	68,906	69	43	39	0	70,686	**2850**
44	20	22	0	70,075	53	31	29	0	71,489	69	43	39	0	73,301	**2900**
44	20	22	0	74,845	53	31	29	0	76,307	69	43	39	0	78,179	**3000**
44	20	22	0	79,773	53	31	29	0	81,282	69	43	38	0	83,213	**3100**
44	20	22	0	82,041	53	31	29	0	83,571	69	43	38	0	85,530	**3150**
44	20	22	0	84,857	53	31	29	0	86,413	69	43	38	0	88,405	**3200**
44	20	22	0	90,099	53	31	29	0	91,702	69	43	38	0	93,753	**3300**
44	20	22	0	95,498	53	31	29	0	97,148	69	43	38	0	99,259	**3400**
44	20	22	0	97,979	53	31	29	0	99,650	69	43	38	0	101,788	**3450**
44	20	22	0	106,767	53	31	28	0	108,511	69	43	38	0	110,741	**3600**
44	20	22	0	118,664	53	31	28	0	120,503	69	43	38	0	122,852	**3800**
44	20	22	0	131,190	53	31	28	0	133,123	69	43	38	0	135,591	**4000**

The movement capability of the expansion joints given in the tables is determined for flange dimensions according to DIN PN10. In case of deviating flange dimensions, please contact us.

Customised products available



U111M

> with internal vacuum ring

Installation length (L_E) at design pressure

	up to 4 bar L_E = 200 mm up to 6 bar L_E = 200 mm up to 10 bar L_E = 250 mm					up to 4 bar L_E = 200 mm up to 6 bar L_E = 250 mm up to 10 bar L_E = 300 mm					up to 4 bar L_E = 250 mm up to 6 bar L_E = 300 mm up to 10 bar L_E = 350 mm				
	higher pressures on request														
	Movement				A	Movement				A	Movement				A
∅															
mm	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²
100	26	4	18	0	177	31	3	19	0	177	40	7	28	0	254
125	26	4	17	0	241	31	3	19	0	241	40	7	28	0	330
150	26	4	17	0	314	31	3	18	0	314	40	7	27	0	415
175	26	4	17	0	415	31	3	18	0	415	40	7	27	0	531
200	26	4	17	0	491	31	3	18	0	491	40	7	26	0	616
250	26	4	16	0	707	31	3	18	0	707	40	7	26	0	855
300	26	4	16	0	973	31	3	17	0	973	40	7	26	0	1,146
350	26	4	16	0	1,288	31	3	17	0	1,288	40	7	25	0	1,486
400	26	4	16	0	1,605	31	3	17	0	1,605	40	7	25	0	1,825
450	26	4	15	0	1,987	31	3	17	0	1,987	40	7	25	0	2,231
500	26	4	15	0	2,402	31	3	17	0	2,402	40	7	24	0	2,669
550						31	3	16	0	2,827	40	7	24	0	3,117
600						31	3	16	0	3,349	40	7	24	0	3,664
650						31	3	16	0	3,848	40	7	24	0	4,185
700						31	3	16	0	4,465	40	7	24	0	4,827
750						31	3	16	0	5,027	40	7	23	0	5,411
800						31	3	16	0	5,741	40	7	23	0	6,151
850						31	3	16	0	6,362	40	7	23	0	6,793
900						31	3	16	0	7,163	40	7	23	0	7,620
950						31	3	16	0	7,854	40	7	23	0	8,332
1000						31	3	16	0	8,742	40	7	23	0	9,246
1050											40	7	23	0	10,029
1100											40	7	23	0	11,047
1150											40	7	23	0	11,882
1200											40	7	22	0	12,969
1250											40	7	22	0	13,893
1300											40	7	22	0	15,066
1350											40	7	22	0	16,061
1400											40	7	22	0	17,320
1450											40	7	22	0	18,385
1500											40	7	22	0	19,731
1600											40	7	22	0	22,299
1650											40	7	22	0	23,506
1700											40	7	22	0	25,025
1800											40	7	22	0	27,937
1900											40	7	22	0	30,946
1950											40	7	22	0	32,365
2000											40	7	21	0	34,143
2100															
2200															
2250															
2300															
2400															
2500															
2550															
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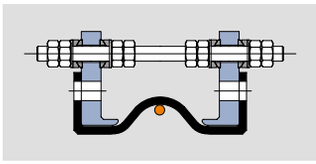
3000															
3100															
3150															
3200															
3300															
3400															
3450															
3600															
3800															
4000															

Recommended sizes
Further possible sizes

Reduction of movement for expansion joints with PTFE lining:
axial compression: -33 %; axial extension: -0 %; lateral displacement: -50 %.
In the event of lateral displacement and simultaneous axial extension (due to installation gap tolerance) the above movements are reduced (> page 29). For larger movements see type U121x.



U111M

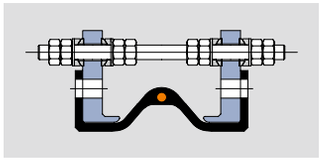
> with internal vacuum ring

Installation length (L_E) at design pressure

up to 4 bar L_E = 300 mm up to 6 bar L_E = 350 mm up to 10 bar L_E = 400 mm					up to 4 bar L_E = 350 mm up to 6 bar L_E = 400 mm up to 10 bar L_E = 450 mm					up to 4 bar L_E = 400 mm up to 6 bar L_E = 450 mm up to 10 bar L_E = 500 mm					
higher pressures on request															
Movement				A	Movement				A	Movement				A	∅
mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm
44	7	30	0	260	53	10	39	0	353	69	14	53	0	491	**100**
44	7	30	0	337	53	10	39	0	441	69	14	51	0	594	**125**
44	7	29	0	423	53	10	38	0	539	69	14	51	0	707	**150**
44	7	29	0	539	53	10	37	0	670	69	14	50	0	855	**175**
44	7	29	0	625	53	10	37	0	765	69	14	49	0	962	**200**
44	7	28	0	866	53	10	36	0	1,029	69	14	48	0	1,257	**250**
44	7	27	0	1,158	53	10	36	0	1,346	69	14	48	0	1,605	**300**
44	7	27	0	1,500	53	10	35	0	1,713	69	14	47	0	2,003	**350**
44	7	27	0	1,840	53	10	35	0	2,075	69	14	46	0	2,393	**400**
44	7	26	0	2,248	53	10	34	0	2,507	69	14	46	0	2,856	**450**
44	7	26	0	2,688	53	10	34	0	2,971	69	14	45	0	3,349	**500**
44	7	26	0	3,137	53	10	34	0	3,442	69	14	45	0	3,848	**550**
44	7	26	0	3,685	53	10	33	0	4,015	69	14	45	0	4,453	**600**
44	7	26	0	4,208	53	10	33	0	4,560	69	14	44	0	5,027	**650**
44	7	25	0	4,852	53	10	33	0	5,230	69	14	44	0	5,728	**700**
44	7	25	0	5,437	53	10	33	0	5,836	69	14	44	0	6,362	**750**
44	7	25	0	6,179	53	10	33	0	6,604	69	14	43	0	7,163	**800**
44	7	25	0	6,822	53	10	32	0	7,268	69	14	43	0	7,854	**850**
44	7	25	0	7,651	53	10	32	0	8,123	69	14	43	0	8,742	**900**
44	7	25	0	8,365	53	10	32	0	8,858	69	14	43	0	9,503	**950**
44	7	25	0	9,280	53	10	32	0	9,799	69	14	43	0	10,477	**1000**
44	7	25	0	10,064	53	10	32	0	10,605	69	14	42	0	11,310	**1050**
44	7	24	0	11,085	53	10	32	0	11,652	69	14	42	0	12,390	**1100**
44	7	24	0	11,921	53	10	32	0	12,509	69	14	42	0	13,273	**1150**
44	7	24	0	13,009	53	10	31	0	13,623	69	14	42	0	14,420	**1200**
44	7	24	0	13,935	53	10	31	0	14,569	69	14	42	0	15,394	**1250**
44	7	24	0	15,109	53	10	31	0	15,770	69	14	42	0	16,627	**1300**
44	7	24	0	16,106	53	10	31	0	16,787	69	14	41	0	17,671	**1350**
44	7	24	0	17,366	53	10	31	0	18,074	69	14	41	0	18,991	**1400**
44	7	24	0	18,433	53	10	31	0	19,162	69	14	41	0	20,106	**1450**
44	7	24	0	19,781	53	10	31	0	20,536	69	14	41	0	21,512	**1500**
44	7	24	0	22,352	53	10	31	0	23,154	69	14	41	0	24,190	**1600**
44	7	24	0	23,561	53	10	31	0	24,384	69	14	41	0	25,447	**1650**
44	7	23	0	25,081	53	10	30	0	25,930	69	14	41	0	27,026	**1700**
44	7	23	0	27,996	53	10	30	0	28,893	69	14	40	0	30,049	**1800**
44	7	23	0	31,009	53	10	30	0	31,952	69	14	40	0	33,168	**1900**
44	7	23	0	32,429	53	10	30	0	33,394	69	14	40	0	34,636	**1950**
44	7	23	0	34,209	53	10	30	0	35,199	69	14	40	0	36,474	**2000**
44	7	23	0	37,565	53	10	30	0	38,603	69	14	40	0	39,938	**2100**
44	7	23	0	41,079	53	10	30	0	42,164	69	14	40	0	43,558	**2200**
44	7	23	0	42,712	53	10	30	0	43,818	69	14	40	0	45,239	**2250**
44	7	23	0	44,750	53	10	30	0	45,882	69	14	40	0	47,336	**2300**
44	7	23	0	48,578	53	10	29	0	49,757	69	14	39	0	51,271	**2400**
44	7	23	0	52,563	53	10	29	0	53,789	69	14	39	0	55,363	**2500**
44	7	23	0	54,408	53	10	29	0	55,655	69	14	39	0	57,256	**2550**
44	7	23	0	56,706	53	10	29	0	57,979	69	14	39	0	59,612	**2600**
44	7	23	0	61,005	53	10	29	0	62,325	69	14	39	0	64,018	**2700**
44	7	22	0	65,461	53	10	29	0	66,829	69	14	39	0	68,581	**2800**
44	7	22	0	67,518	53	10	29	0	68,906	69	14	39	0	70,686	**2850**
44	7	22	0	70,075	53	10	29	0	71,489	69	14	39	0	73,301	**2900**
44	7	22	0	74,845	53	10	29	0	76,307	69	14	39	0	78,179	**3000**
44	7	22	0	79,773	53	10	29	0	81,282	69	14	38	0	83,213	**3100**
44	7	22	0	82,041	53	10	29	0	83,571	69	14	38	0	85,530	**3150**
44	7	22	0	84,857	53	10	29	0	86,413	69	14	38	0	88,405	**3200**
44	7	22	0	90,099	53	10	29	0	91,702	69	14	38	0	93,753	**3300**
44	7	22	0	95,498	53	10	29	0	97,148	69	14	38	0	99,259	**3400**
44	7	22	0	97,979	53	10	29	0	99,650	69	14	38	0	101,788	**3450**
44	7	22	0	106,767	53	10	28	0	108,511	69	14	38	0	110,741	**3600**
44	7	22	0	118,664	53	10	28	0	120,503	69	14	38	0	122,852	**3800**
44	7	22	0	131,190	53	10	28	0	133,123	69	14	38	0	135,591	**4000**

The movement capability of the expansion joints given in the tables is determined for flange dimensions according to DIN PN10. In case of deviating flange dimensions, please contact us.

Customised products available



U112M

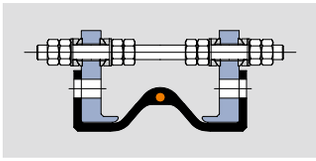
> with embedded vacuum ring

Installation length (L_E) at design pressure

	up to 4 bar L_E = 200 mm up to 6 bar L_E = 200 mm up to 10 bar L_E = 250 mm					up to 4 bar L_E = 200 mm up to 6 bar L_E = 250 mm up to 10 bar L_E = 300 mm					up to 4 bar L_E = 250 mm up to 6 bar L_E = 300 mm up to 10 bar L_E = 350 mm				
	higher pressures on request														
	Movement				A	Movement				A	Movement				A
∅															
mm	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²
100	17	4	18	0	177	20	2	18	0	150	26	6	27	0	222
125	17	4	17	0	241	20	2	18	0	209	26	6	26	0	293
150	17	4	17	0	314	20	2	17	0	278	26	6	26	0	373
175	17	4	17	0	415	20	2	17	0	373	26	6	26	0	483
200	17	4	17	0	491	20	2	17	0	445	26	6	25	0	564
250	17	4	16	0	707	20	2	16	0	651	26	6	25	0	794
300	17	4	16	0	973	20	2	16	0	908	26	6	24	0	1,075
350	17	4	16	0	1,288	20	2	16	0	1,213	26	6	24	0	1,405
400	17	4	16	0	1,605	20	2	16	0	1,521	26	6	24	0	1,735
450	17	4	15	0	1,987	20	2	16	0	1,893	26	6	23	0	2,132
500	17	4	15	0	2,402	20	2	15	0	2,299	26	6	23	0	2,561
550						20	2	15	0	2,715	26	6	23	0	3,000
600						20	2	15	0	3,227	26	6	23	0	3,536
650						20	2	15	0	3,718	26	6	23	0	4,049
700						20	2	15	0	4,324	26	6	23	0	4,681
750						20	2	15	0	4,877	26	6	22	0	5,255
800						20	2	15	0	5,581	26	6	22	0	5,986
850						20	2	15	0	6,193	26	6	22	0	6,619
900						20	2	15	0	6,984	26	6	22	0	7,436
950						20	2	15	0	7,667	26	6	22	0	8,139
1000						20	2	15	0	8,544	26	6	22	0	9,043
1050											26	6	22	0	9,817
1100											26	6	22	0	10,825
1150											26	6	22	0	11,652
1200											26	6	21	0	12,728
1250											26	6	21	0	13,643
1300											26	6	21	0	14,806
1350											26	6	21	0	15,792
1400											26	6	21	0	17,041
1450											26	6	21	0	18,098
1500											26	6	21	0	19,433
1600											26	6	21	0	21,983
1650											26	6	21	0	23,181
1700											26	6	21	0	24,689
1800											26	6	21	0	27,582
1900											26	6	21	0	30,573
1950											26	6	21	0	31,984
2000											26	6	21	0	33,751
2100															
2200															
2250															
2300															
2400															
2500															
2550															
2600															
2700															
2800															
2850															
2900															
3000															
3100															
3150															
3200															
3300															
3400															
3450															
3600															
3800															
4000															

Recommended sizes
Further possible sizes

Reduction of movement for expansion joints with PTFE lining:
axial compression: -0 %; axial extension: -0 %; lateral displacement: -0 %.
In the event of lateral displacement and simultaneous axial extension (due to installation gap tolerance) the above movements are reduced (> page 29). For larger movements see type U122x.



U112M

> with embedded vacuum ring

Installation length (L_E) at design pressure

up to 4 bar L_E = 300 mm up to 6 bar L_E = 350 mm up to 10 bar L_E = 400 mm					up to 4 bar L_E = 350 mm up to 6 bar L_E = 400 mm up to 10 bar L_E = 450 mm					up to 4 bar L_E = 400 mm up to 6 bar L_E = 450 mm up to 10 bar L_E = 500 mm					
higher pressures on request															
Movement				A	Movement				A	Movement				A	∅
mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm	mm	±mm	±°	cm²	mm
29	6	29	0	232	35	9	38	0	320	46	13	51	0	423	**100**
29	6	29	0	305	35	9	38	0	405	46	13	50	0	519	**125**
29	6	28	0	387	35	9	37	0	499	46	13	49	0	625	**150**
29	6	28	0	499	35	9	36	0	625	46	13	48	0	765	**175**
29	6	28	0	581	35	9	36	0	716	46	13	48	0	866	**200**
29	6	27	0	814	35	9	35	0	973	46	13	47	0	1,146	**250**
29	6	27	0	1,099	35	9	35	0	1,282	46	13	46	0	1,479	**300**
29	6	26	0	1,432	35	9	34	0	1,640	46	13	45	0	1,863	**350**
29	6	26	0	1,765	35	9	34	0	1,995	46	13	45	0	2,240	**400**
29	6	26	0	2,165	35	9	33	0	2,419	46	13	44	0	2,688	**450**
29	6	25	0	2,597	35	9	33	0	2,875	46	13	44	0	3,167	**500**
29	6	25	0	3,039	35	9	33	0	3,339	46	13	44	0	3,653	**550**
29	6	25	0	3,578	35	9	33	0	3,904	46	13	43	0	4,243	**600**
29	6	25	0	4,094	35	9	32	0	4,441	46	13	43	0	4,803	**650**
29	6	25	0	4,729	35	9	32	0	5,102	46	13	43	0	5,489	**700**
29	6	24	0	5,307	35	9	32	0	5,701	46	13	42	0	6,110	**750**
29	6	24	0	6,041	35	9	32	0	6,461	46	13	42	0	6,896	**800**
29	6	24	0	6,677	35	9	32	0	7,118	46	13	42	0	7,574	**850**
29	6	24	0	7,497	35	9	31	0	7,964	46	13	42	0	8,446	**900**
29	6	24	0	8,203	35	9	31	0	8,692	46	13	41	0	9,195	**950**
29	6	24	0	9,110	35	9	31	0	9,625	46	13	41	0	10,153	**1000**
29	6	24	0	9,887	35	9	31	0	10,423	46	13	41	0	10,973	**1050**
29	6	24	0	10,899	35	9	31	0	11,461	46	13	41	0	12,037	**1100**
29	6	24	0	11,728	35	9	31	0	12,311	46	13	41	0	12,908	**1150**
29	6	23	0	12,808	35	9	31	0	13,417	46	13	41	0	14,040	**1200**
29	6	23	0	13,726	35	9	31	0	14,356	46	13	40	0	15,001	**1250**
29	6	23	0	14,892	35	9	30	0	15,548	46	13	40	0	16,218	**1300**
29	6	23	0	15,881	35	9	30	0	16,559	46	13	40	0	17,250	**1350**
29	6	23	0	17,134	35	9	30	0	17,837	46	13	40	0	18,554	**1400**
29	6	23	0	18,194	35	9	30	0	18,918	46	13	40	0	19,656	**1450**
29	6	23	0	19,532	35	9	30	0	20,283	46	13	40	0	21,047	**1500**
29	6	23	0	22,088	35	9	30	0	22,885	46	13	40	0	23,697	**1600**
29	6	23	0	23,289	35	9	30	0	24,108	46	13	39	0	24,941	**1650**
29	6	23	0	24,801	35	9	30	0	25,645	46	13	39	0	26,504	**1700**
29	6	23	0	27,700	35	9	30	0	28,592	46	13	39	0	29,498	**1800**
29	6	22	0	30,698	35	9	29	0	31,636	46	13	39	0	32,589	**1900**
29	6	22	0	32,111	35	9	29	0	33,071	46	13	39	0	34,045	**1950**
29	6	22	0	33,882	35	9	29	0	34,867	46	13	39	0	35,867	**2000**
29	6	22	0	37,223	35	9	29	0	38,256	46	13	39	0	39,303	**2100**
29	6	22	0	40,721	35	9	29	0	41,801	46	13	38	0	42,895	**2200**
29	6	22	0	42,346	35	9	29	0	43,447	46	13	38	0	44,563	**2250**
29	6	22	0	44,376	35	9	29	0	45,503	46	13	38	0	46,645	**2300**
29	6	22	0	48,188	35	9	29	0	49,363	46	13	38	0	50,551	**2400**
29	6	22	0	52,158	35	9	29	0	53,379	46	13	38	0	54,615	**2500**
29	6	22	0	53,995	35	9	29	0	55,238	46	13	38	0	56,495	**2550**
29	6	22	0	56,284	35	9	29	0	57,553	46	13	38	0	58,836	**2600**
29	6	22	0	60,568	35	9	28	0	61,883	46	13	38	0	63,213	**2700**
29	6	22	0	65,008	35	9	28	0	66,371	46	13	38	0	67,748	**2800**
29	6	22	0	67,058	35	9	28	0	68,442	46	13	37	0	69,840	**2850**
29	6	22	0	69,606	35	9	28	0	71,016	46	13	37	0	72,440	**2900**
29	6	22	0	74,361	35	9	28	0	75,818	46	13	37	0	77,289	**3000**
29	6	21	0	79,273	35	9	28	0	80,777	46	13	37	0	82,295	**3100**
29	6	21	0	81,534	35	9	28	0	83,060	46	13	37	0	84,599	**3150**
29	6	21	0	84,342	35	9	28	0	85,893	46	13	37	0	87,459	**3200**
29	6	21	0	89,568	35	9	28	0	91,166	46	13	37	0	92,779	**3300**
29	6	21	0	94,951	35	9	28	0	96,597	46	13	37	0	98,256	**3400**
29	6	21	0	97,425	35	9	28	0	99,091	46	13	37	0	100,772	**3450**
29	6	21	0	106,188	35	9	28	0	107,928	46	13	37	0	109,682	**3600**
29	6	21	0	118,054	35	9	28	0	119,888	46	13	37	0	121,736	**3800**
29	6	21	0	130,548	35	9	27	0	132,477	46	13	36	0	134,419	**4000**

The movement capability of the expansion joints given in the tables is determined for flange dimensions according to DIN PN10. In case of deviating flange dimensions, please contact us.

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