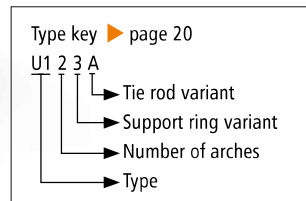


## U120A

NB 100 – NB 4000



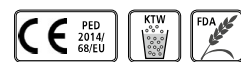
- ▶ **Type U120A**  
without vacuum support rings
- ▶ **Type U121A**  
with internal vacuum support rings
- ▶ **Type U122A**  
with embedded vacuum support rings
- ▶ **Type U123A**  
without vacuum support rings,  
with pressure support ring in the arch trough
- ▶ **Type U124A**  
with internal vacuum support rings,  
with pressure support ring in the arch trough
- ▶ **Type U125A**  
with embedded vacuum support rings,  
with pressure support ring in the arch trough



## Universal expansion joint with two arches






















- Design:** Highly elastic, hydrodynamic, double-arch rubber bellows with full faced rubber flanges and backing flanges with support collar  
Optionally with vacuum support rings and/or external pressure support ring in the arch trough
- Nominal diameters:** NB 100 to NB 4000, intermediate sizes possible
- Installation length:** Standard  $L_E = 350$  to  $600$  mm (▶ page 66–71)  
Other installation lengths on request
- Pressure:** Depending on the nominal diameter up to 40 bar  
Vacuum not allowed without vacuum support rings, with vacuum support rings up to 0.05 bar absolute  
Design in accordance with Pressure Equipment Directive PED 2014/68/EU
- Movement:** For large axial, lateral and angular movements (▶ page 66–71)

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



Assembly instruction download  
[www.ditec-adam.de/en/downloads.html](http://www.ditec-adam.de/en/downloads.html)

## Rubber bellows

Rubber	Fabric	Marking	Max.	Application
EPDM	Nylon		100 °C	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDM	Kevlar		100 °C	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDMht	Kevlar		120 °C	Cooling water, hot water, seawater, acids, dilute chlorine compounds
EPDMtw	Nylon		100 °C	Drinking water
EPDMtw	Kevlar		100 °C	Drinking water
EPDMaf	Nylon		100 °C	Abrasive materials, water-sand extraction
EPDMaf	Kevlar		100 °C	Abrasive materials, water-sand extraction
EPDMbeige	Nylon		100 °C	Foodstuffs
EPDMbeige	Kevlar		100 °C	Foodstuffs
IIR	Nylon		100 °C	Hot water, acids, bases, gases
IIR	Kevlar		100 °C	Hot water, acids, bases, gases
CSM	Nylon		100 °C	Strong acids, bases, chemicals
CSM	Kevlar		100 °C	Strong acids, bases, chemicals
NBR	Nylon		100 °C	Oils, petrol, solvents, compressed air
NBR	Kevlar		100 °C	Oils, petrol, solvents, compressed air
NBRbeige	Nylon		100 °C	Oil, fatty foods
NBRbeige	Kevlar		100 °C	Oil, fatty foods
CR	Nylon		90 °C	Cooling water, slightly oily water, seawater
CR	Kevlar		90 °C	Cooling water, slightly oily water, seawater
FPM	Kevlar		180 °C	Corrosive chemicals, petroleum distillates
FPMbeige	Kevlar		180 °C	Oil, fatty foods
NR	Nylon		70 °C	Abrasive materials
Silicon	Kevlar or glass		200 °C	Air, saltwater atmosphere, foodstuffs, medical technology

PTFE-lining: Permanently embedded against chemical attacks on the interior at the rubber bellows, available starting at NB 300. Take the restriction of the listed movement into account (▶ page 66–71)

## Flanges

**Design:** Single-part or multi-part, round backing flanges with support collars and clearance holes

**Flange norms:** DIN, EN, ANSI, AWWA, BS, JIS, special measurements (▶ page 256)

**Materials:**

- Carbon steel: 1.0038 (S235JRG2)  
1.0570 (S355J2G3)
- Stainless steel: 1.4301 (X5CrNi18-10)  
1.4571 (X6CrNiMoTi17-12-2)
- Aluminium: AlMg3
- Other materials on request

**Coating:** Primed, hot-dip galvanised, special paint

## Optional accessories

**Protective hood:** UV protection cover  
Ground protective cover  
Fire protection cover  
Splash protective cover (▶ page 44)

**Flow liners:** Cylindrical flow liner  
Conical flow liner  
Telescoping flow liner (▶ page 43)

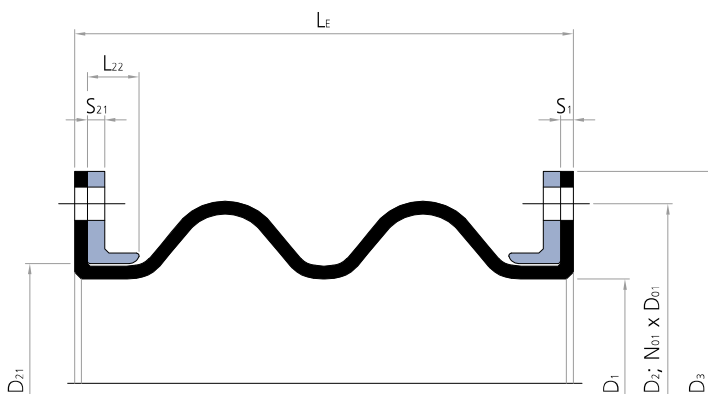
### Support rings

TYPE		Vacuum support ring	Pressure support ring	Pressure	Movement
U120A		Without	Without	Slight pressure, vacuum stability on request	▶ page 66–67
U121A		Medium contact, inside the arch apex	Without	Slight pressure, for vacuum up to 0.05 bar absolute	▶ page 68–69
U122A		No medium contact, embedded into the arch apex of the rubber bellows	Without	Slight pressure, for vacuum up to 0.05 bar absolute	▶ page 70–71
U123A		Without	External in the arch trough	Depending on the nominal diameter up to 40 bar, slight vacuum	▶ page 66–67
U124A		Medium contact, inside the arch apex	External in the arch trough	Depending on the nominal diameter up to 40 bar, for vacuum up to 0.05 bar absolute	▶ page 68–69
U125A		No medium contact, embedded into the arch apex of the rubber bellows	External in the arch trough	Depending on the nominal diameter up to 25 bar, for vacuum up to 0.05 bar absolute	▶ page 70–71

#### Materials

Stainless steel:	1.4301 (X5CrNi18-10) 1.4539 (X1NiCrMoCu25-20-5) 1.4571 (X6CrNiMoTi17-12-2)	Other materials on request
Carbon steel:	1.0570 (S355J2G3) rubber coated 1.0570 (S355J2G3) galvanised	

#### Planning help U120A







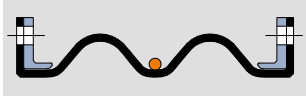
UNIVERSAL  
rubber flange

U120A

Lateral expansion joints type U121E  
for a marine supply line  
NB 2000, +2/-1 bar

**U120A**

▶ without vacuum support rings

**U123A**

▶ without vacuum support rings, with pressure support ring in the arch trough

### Installation length ( $L_E$ ) at design pressure

NB	up to 10 bar $L_E = 350$ mm					up to 10 bar $L_E = 400$ mm higher pressures on request					up to 10 bar $L_E = 450$ mm				
	Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>
	mm	mm	± mm	± °		mm	mm	± mm	± °		mm	mm	± mm	± °	
100	62	20	38	21.8	177	80	40	56	38.7	254	88	41	61	39.4	260
125	62	20	38	17.7	241	80	40	55	32.6	330	88	41	60	33.3	337
150	62	20	37	14.9	314	80	40	54	28.1	415	88	41	59	28.7	423
175	62	20	36	12.9	415	80	40	54	24.6	531	88	41	58	25.1	539
200	62	20	36	11.3	491	80	40	53	21.8	616	88	41	57	22.3	625
250	62	20	35	9.1	707	80	40	52	17.7	855	88	41	56	18.2	866
300	62	20	35	7.6	973	80	40	51	14.9	1,146	88	41	55	15.3	1,158
350	62	20	34	6.5	1,288	80	40	50	12.9	1,486	88	41	54	13.2	1,500
400	62	20	34	5.7	1,605	80	40	50	11.3	1,825	88	41	54	11.6	1,840
450	62	20	33	5.1	1,987	80	40	49	10.1	2,231	88	41	53	10.3	2,248
500	62	20	33	4.6	2,402	80	40	49	9.1	2,669	88	41	52	9.3	2,688
550	62	20	33	4.2	2,827	80	40	48	8.3	3,117	88	41	52	8.5	3,137
600	62	20	33	3.8	3,349	80	40	48	7.6	3,664	88	41	52	7.8	3,685
650	62	20	32	3.5	3,848	80	40	48	7.0	4,185	88	41	51	7.2	4,208
700	62	20	32	3.3	4,465	80	40	47	6.5	4,827	88	41	51	6.7	4,852
750	62	20	32	3.1	5,027	80	40	47	6.1	5,411	88	41	51	6.2	5,437
800	62	20	32	2.9	5,741	80	40	47	5.7	6,151	88	41	50	5.9	6,179
850	62	20	32	2.7	6,362	80	40	46	5.4	6,793	88	41	50	5.5	6,822
900	62	20	31	2.5	7,163	80	40	46	5.1	7,620	88	41	50	5.2	7,651
950	62	20	31	2.4	7,854	80	40	46	4.8	8,332	88	41	49	4.9	8,365
1000	62	20	31	2.3	8,742	80	40	46	4.6	9,246	88	41	49	4.7	9,280
1050	62	20	31	2.2	9,503	80	40	46	4.4	10,029	88	41	49	4.5	10,064
1100	62	20	31	2.1	10,496	80	40	45	4.2	11,047	88	41	49	4.3	11,085
1150	62	20	31	2.0	11,310	80	40	45	4.0	11,882	88	41	49	4.1	11,921
1200	62	20	31	1.9	12,370	80	40	45	3.8	12,969	88	41	48	3.9	13,009
1250	62	20	30	1.8	13,273	80	40	45	3.7	13,893	88	41	48	3.8	13,935
1300	62	20	30	1.8	14,420	80	40	45	3.5	15,066	88	41	48	3.6	15,109
1350	62	20	30	1.7	15,394	80	40	45	3.4	16,061	88	41	48	3.5	16,106
1400	62	20	30	1.6	16,627	80	40	44	3.3	17,320	88	41	48	3.4	17,366
1450	62	20	30	1.6	17,671	80	40	44	3.2	18,385	88	41	48	3.2	18,433
1500	62	20	30	1.5	18,991	80	40	44	3.1	19,731	88	41	47	3.1	19,781
1600	62	20	30	1.4	21,512	80	40	44	2.9	22,299	88	41	47	2.9	22,352
1650	62	20	30	1.4	22,698	80	40	44	2.8	23,506	88	41	47	2.8	23,561
1700	62	20	30	1.3	24,190	80	40	44	2.7	25,025	88	41	47	2.8	25,081
1800	62	20	29	1.3	27,055	80	40	43	2.5	27,937	88	41	47	2.6	27,996
1900	62	20	29	1.2	30,018	80	40	43	2.4	30,946	88	41	46	2.5	31,009
1950	62	20	29	1.2	31,416	80	40	43	2.3	32,365	88	41	46	2.4	32,429
2000	62	20	29	1.1	33,168	80	40	43	2.3	34,143	88	41	46	2.3	34,209
2100	62	20	29	1.1	36,474	80	40	43	2.2	37,497	88	41	46	2.2	37,565
2200	62	20	29	1.0	39,938	80	40	43	2.1	41,007	88	41	46	2.1	41,079
2250	62	20	29	1.0	41,548	80	40	42	2.0	42,638	88	41	46	2.1	42,712
2300	62	20	29	1.0	43,558	80	40	42	2.0	44,675	88	41	46	2.0	44,750
2400	62	20	29	1.0	47,336	80	40	42	1.9	48,500	88	41	45	2.0	48,578
2500	62	20	29	0.9	51,271	80	40	42	1.8	52,482	88	41	45	1.9	52,563
2550	62	20	29	0.9	53,093	80	40	42	1.8	54,325	88	41	45	1.8	54,408
2600	62	20	29	0.9	55,363	80	40	42	1.8	56,621	88	41	45	1.8	56,706
2700	62	20	28	0.8	59,612	80	40	42	1.7	60,917	88	41	45	1.7	61,005
2800	62	20	28	0.8	64,018	80	40	42	1.6	65,370	88	41	45	1.7	65,461
2850	62	20	28	0.8	66,052	80	40	42	1.6	67,426	88	41	45	1.6	67,518
2900	62	20	28	0.8	68,581	80	40	42	1.6	69,981	88	41	45	1.6	70,075
3000	62	20	28	0.8	73,301	80	40	41	1.5	74,748	88	41	45	1.6	74,845
3100	62	20	28	0.7	78,179	80	40	41	1.5	79,673	88	41	44	1.5	79,773
3150	62	20	28	0.7	80,425	80	40	41	1.5	81,940	88	41	44	1.5	82,041
3200	62	20	28	0.7	83,213	80	40	41	1.4	84,754	88	41	44	1.5	84,857
3300	62	20	28	0.7	88,405	80	40	41	1.4	89,993	88	41	44	1.4	90,099
3400	62	20	28	0.7	93,753	80	40	41	1.3	95,388	88	41	44	1.4	95,498
3450	62	20	28	0.7	96,211	80	40	41	1.3	97,868	88	41	44	1.4	97,979
3600	62	20	28	0.6	104,922	80	40	41	1.3	106,651	88	41	44	1.3	106,767
3800	62	20	28	0.6	116,718	80	40	41	1.2	118,542	88	41	44	1.2	118,664
4000	62	20	27	0.6	129,143	80	40	40	1.1	131,061	88	41	43	1.2	131,190

Recommended sizes  
Additional possible sizes

Reduction of movement for expansion joints with PTFE lining:  
axial compression: -33 %; axial extension: -66 %; lateral displacement: -50 %; angular movement: -66 %.  
Angular movement only possible with guided pressure support ring.

In the event of axial extension and simultaneous lateral displacement the above movements are reduced (▶ page 22).

For large movements see type U130A or U133A.



### U120A

▶ without vacuum support rings



### U123A

▶ without vacuum support rings, with pressure support ring in the arch trough



#### Installation length (L<sub>E</sub>) at design pressure

up to 10 bar L <sub>E</sub> = 500 mm					up to 10 bar L <sub>E</sub> = 550 mm					up to 10 bar L <sub>E</sub> = 600 mm					NB
higher pressures on request					higher pressures on request					higher pressures on request					
Movement				A	Movement				A	Movement				A	
mm	mm	± mm	± °	cm <sup>2</sup>	mm	mm	± mm	± °	cm <sup>2</sup>	mm	mm	± mm	± °	cm <sup>2</sup>	
106	61	79	50.7	353	124	82	97	58.6	460	138	85	105	59.5	491	100
106	61	77	44.3	441	124	82	95	52.7	560	138	85	103	53.7	594	125
106	61	76	39.1	539	124	82	93	47.6	670	138	85	101	48.6	707	150
106	61	75	34.9	670	124	82	92	43.1	814	138	85	100	44.2	855	175
106	61	74	31.4	765	124	82	91	39.4	919	138	85	99	40.4	962	200
106	61	72	26.0	1,029	124	82	89	33.3	1,207	138	85	97	34.2	1,257	250
106	61	71	22.1	1,346	124	82	88	28.7	1,548	138	85	95	29.5	1,605	300
106	61	70	19.2	1,713	124	82	86	25.1	1,940	138	85	94	25.9	2,003	350
106	61	69	17.0	2,075	124	82	85	22.3	2,324	138	85	93	23.0	2,393	400
106	61	69	15.2	2,507	124	82	84	20.0	2,781	138	85	92	20.7	2,856	450
106	61	68	13.7	2,971	124	82	84	18.2	3,267	138	85	91	18.8	3,349	500
106	61	67	12.5	3,442	124	82	83	16.6	3,761	138	85	90	17.2	3,848	550
106	61	67	11.5	4,015	124	82	82	15.3	4,359	138	85	89	15.8	4,453	600
106	61	66	10.6	4,560	124	82	82	14.2	4,927	138	85	89	14.7	5,027	650
106	61	66	9.9	5,230	124	82	81	13.2	5,621	138	85	88	13.7	5,728	700
106	61	66	9.2	5,836	124	82	81	12.3	6,249	138	85	87	12.8	6,362	750
106	61	65	8.7	6,604	124	82	80	11.6	7,044	138	85	87	12.0	7,163	800
106	61	65	8.2	7,268	124	82	80	10.9	7,729	138	85	86	11.3	7,854	850
106	61	64	7.7	8,123	124	82	79	10.3	8,610	138	85	86	10.7	8,742	900
106	61	64	7.3	8,858	124	82	79	9.8	9,366	138	85	86	10.1	9,503	950
106	61	64	7.0	9,799	124	82	79	9.3	10,333	138	85	85	9.6	10,477	1000
106	61	64	6.6	10,605	124	82	78	8.9	11,159	138	85	85	9.2	11,310	1050
106	61	63	6.3	11,652	124	82	78	8.5	12,233	138	85	84	8.8	12,390	1100
106	61	63	6.1	12,509	124	82	78	8.1	13,110	138	85	84	8.4	13,273	1150
106	61	63	5.8	13,623	124	82	77	7.8	14,250	138	85	84	8.1	14,420	1200
106	61	63	5.6	14,569	124	82	77	7.5	15,218	138	85	84	7.7	15,394	1250
106	61	62	5.4	15,770	124	82	77	7.2	16,445	138	85	83	7.5	16,627	1300
106	61	62	5.2	16,787	124	82	76	6.9	17,483	138	85	83	7.2	17,671	1350
106	61	62	5.0	18,074	124	82	76	6.7	18,796	138	85	83	6.9	18,991	1400
106	61	62	4.8	19,162	124	82	76	6.5	19,906	138	85	82	6.7	20,106	1450
106	61	62	4.6	20,536	124	82	76	6.2	21,305	138	85	82	6.5	21,512	1500
106	61	61	4.4	23,154	124	82	75	5.9	23,970	138	85	82	6.1	24,190	1600
106	61	61	4.2	24,384	124	82	75	5.7	25,221	138	85	81	5.9	25,447	1650
106	61	61	4.1	25,930	124	82	75	5.5	26,793	138	85	81	5.7	27,026	1700
106	61	61	3.9	28,893	124	82	74	5.2	29,804	138	85	81	5.4	30,049	1800
106	61	60	3.7	31,952	124	82	74	4.9	32,910	138	85	80	5.1	33,168	1900
106	61	60	3.6	33,394	124	82	74	4.8	34,373	138	85	80	5.0	34,636	1950
106	61	60	3.5	35,199	124	82	74	4.7	36,204	138	85	80	4.9	36,474	2000
106	61	60	3.3	38,603	124	82	73	4.5	39,655	138	85	80	4.6	39,938	2100
106	61	59	3.2	42,164	124	82	73	4.3	43,263	138	85	79	4.4	43,558	2200
106	61	59	3.1	43,818	124	82	73	4.2	44,938	138	85	79	4.3	45,239	2250
106	61	59	3.0	45,882	124	82	73	4.1	47,028	138	85	79	4.2	47,336	2300
106	61	59	2.9	49,757	124	82	72	3.9	50,950	138	85	79	4.1	51,271	2400
106	61	59	2.8	53,789	124	82	72	3.8	55,030	138	85	78	3.9	55,363	2500
106	61	59	2.7	55,655	124	82	72	3.7	56,917	138	85	78	3.8	57,256	2550
106	61	59	2.7	57,979	124	82	72	3.6	59,266	138	85	78	3.7	59,612	2600
106	61	58	2.6	62,325	124	82	72	3.5	63,660	138	85	78	3.6	64,018	2700
106	61	58	2.5	66,829	124	82	71	3.4	68,210	138	85	78	3.5	68,581	2800
106	61	58	2.5	68,906	124	82	71	3.3	70,309	138	85	77	3.4	70,686	2850
106	61	58	2.4	71,489	124	82	71	3.2	72,918	138	85	77	3.4	73,301	2900
106	61	58	2.3	76,307	124	82	71	3.1	77,783	138	85	77	3.2	78,179	3000
106	61	58	2.3	81,282	124	82	71	3.0	82,805	138	85	77	3.1	83,213	3100
106	61	58	2.2	83,571	124	82	71	3.0	85,116	138	85	77	3.1	85,530	3150
106	61	57	2.2	86,413	124	82	71	2.9	87,984	138	85	77	3.0	88,405	3200
106	61	57	2.1	91,702	124	82	70	2.8	93,320	138	85	76	2.9	93,753	3300
106	61	57	2.1	97,148	124	82	70	2.8	98,813	138	85	76	2.9	99,259	3400
106	61	57	2.0	99,650	124	82	70	2.7	101,336	138	85	76	2.8	101,788	3450
106	61	57	1.9	108,511	124	82	70	2.6	110,270	138	85	76	2.7	110,741	3600
106	61	57	1.8	120,503	124	82	70	2.5	122,356	138	85	75	2.6	122,852	3800
106	61	56	1.7	133,123	124	82	69	2.3	135,070	138	85	75	2.4	135,591	4000

UNIVERSAL  
rubber flange

U120A

Individual fabrication possible



### U121A

▶ with internal vacuum support rings



### U124A

▶ with internal vacuum support rings, with pressure support ring in the arch trough

Installation length (L <sub>E</sub> ) at design pressure															
NB	up to 10 bar L <sub>E</sub> = 350 mm					up to 10 bar L <sub>E</sub> = 400 mm higher pressures on request					up to 10 bar L <sub>E</sub> = 450 mm				
	Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>
	mm	mm	± mm	± °		mm	mm	± mm	± °		mm	mm	± mm	± °	
100	62	7	38	21.8	177	80	13	56	38.7	254	88	13	61	39.4	260
125	62	7	38	17.7	241	80	13	55	32.6	330	88	13	60	33.3	337
150	62	7	37	14.9	314	80	13	54	28.1	415	88	13	59	28.7	423
175	62	7	36	12.9	415	80	13	54	24.6	531	88	13	58	25.1	539
200	62	7	36	11.3	491	80	13	53	21.8	616	88	13	57	22.3	625
250	62	7	35	9.1	707	80	13	52	17.7	855	88	13	56	18.2	866
300	62	7	35	7.6	973	80	13	51	14.9	1,146	88	13	55	15.3	1,158
350	62	7	34	6.5	1,288	80	13	50	12.9	1,486	88	13	54	13.2	1,500
400	62	7	34	5.7	1,605	80	13	50	11.3	1,825	88	13	54	11.6	1,840
450	62	7	33	5.1	1,987	80	13	49	10.1	2,231	88	13	53	10.3	2,248
500	62	7	33	4.6	2,402	80	13	49	9.1	2,669	88	13	52	9.3	2,688
550	62	7	33	4.2	2,827	80	13	48	8.3	3,117	88	13	52	8.5	3,137
600	62	7	33	3.8	3,349	80	13	48	7.6	3,664	88	13	52	7.8	3,685
650	62	7	32	3.5	3,848	80	13	48	7.0	4,185	88	13	51	7.2	4,208
700	62	7	32	3.3	4,465	80	13	47	6.5	4,827	88	13	51	6.7	4,852
750	62	7	32	3.1	5,027	80	13	47	6.1	5,411	88	13	51	6.2	5,437
800	62	7	32	2.9	5,741	80	13	47	5.7	6,151	88	13	50	5.9	6,179
850	62	7	32	2.7	6,362	80	13	46	5.4	6,793	88	13	50	5.5	6,822
900	62	7	31	2.5	7,163	80	13	46	5.1	7,620	88	13	50	5.2	7,651
950	62	7	31	2.4	7,854	80	13	46	4.8	8,332	88	13	49	4.9	8,365
1000	62	7	31	2.3	8,742	80	13	46	4.6	9,246	88	13	49	4.7	9,280
1050	62	7	31	2.2	9,503	80	13	46	4.4	10,029	88	13	49	4.5	10,064
1100	62	7	31	2.1	10,496	80	13	45	4.2	11,047	88	13	49	4.3	11,085
1150	62	7	31	2.0	11,310	80	13	45	4.0	11,882	88	13	49	4.1	11,921
1200	62	7	31	1.9	12,370	80	13	45	3.8	12,969	88	13	48	3.9	13,009
1250	62	7	30	1.8	13,273	80	13	45	3.7	13,893	88	13	48	3.8	13,935
1300	62	7	30	1.8	14,420	80	13	45	3.5	15,066	88	13	48	3.6	15,109
1350	62	7	30	1.7	15,394	80	13	45	3.4	16,061	88	13	48	3.5	16,106
1400	62	7	30	1.6	16,627	80	13	44	3.3	17,320	88	13	48	3.4	17,366
1450	62	7	30	1.6	17,671	80	13	44	3.2	18,385	88	13	48	3.2	18,433
1500	62	7	30	1.5	18,991	80	13	44	3.1	19,731	88	13	47	3.1	19,781
1600	62	7	30	1.4	21,512	80	13	44	2.9	22,299	88	13	47	2.9	22,352
1650	62	7	30	1.4	22,698	80	13	44	2.8	23,506	88	13	47	2.8	23,561
1700	62	7	30	1.3	24,190	80	13	44	2.7	25,025	88	13	47	2.8	25,081
1800	62	7	29	1.3	27,055	80	13	43	2.5	27,937	88	13	47	2.6	27,996
1900	62	7	29	1.2	30,018	80	13	43	2.4	30,946	88	13	46	2.5	31,009
1950	62	7	29	1.2	31,416	80	13	43	2.3	32,365	88	13	46	2.4	32,429
2000	62	7	29	1.1	33,168	80	13	43	2.3	34,143	88	13	46	2.3	34,209
2100	62	7	29	1.1	36,474	80	13	43	2.2	37,497	88	13	46	2.2	37,565
2200	62	7	29	1.0	39,938	80	13	43	2.1	41,007	88	13	46	2.1	41,079
2250	62	7	29	1.0	41,548	80	13	42	2.0	42,638	88	13	46	2.1	42,712
2300	62	7	29	1.0	43,558	80	13	42	2.0	44,675	88	13	46	2	44,750
2400	62	7	29	1.0	47,336	80	13	42	1.9	48,500	88	13	45	2	48,578
2500	62	7	29	0.9	51,271	80	13	42	1.8	52,482	88	13	45	1.9	52,563
2550	62	7	29	0.9	53,093	80	13	42	1.8	54,325	88	13	45	1.8	54,408
2600	62	7	29	0.9	55,363	80	13	42	1.8	56,621	88	13	45	1.8	56,706
2700	62	7	28	0.8	59,612	80	13	42	1.7	60,917	88	13	45	1.7	61,005
2800	62	7	28	0.8	64,018	80	13	42	1.6	65,370	88	13	45	1.7	65,461
2850	62	7	28	0.8	66,052	80	13	42	1.6	67,426	88	13	45	1.6	67,518
2900	62	7	28	0.8	68,581	80	13	42	1.6	69,981	88	13	45	1.6	70,075
3000	62	7	28	0.8	73,301	80	13	41	1.5	74,748	88	13	45	1.6	74,845
3100	62	7	28	0.7	78,179	80	13	41	1.5	79,673	88	13	44	1.5	79,773
3150	62	7	28	0.7	80,425	80	13	41	1.5	81,940	88	13	44	1.5	82,041
3200	62	7	28	0.7	83,213	80	13	41	1.4	84,754	88	13	44	1.5	84,857
3300	62	7	28	0.7	88,405	80	13	41	1.4	89,993	88	13	44	1.4	90,099
3400	62	7	28	0.7	93,753	80	13	41	1.3	95,388	88	13	44	1.4	95,498
3450	62	7	28	0.7	96,211	80	13	41	1.3	97,868	88	13	44	1.4	97,979
3600	62	7	28	0.6	104,922	80	13	41	1.3	106,651	88	13	44	1.3	106,767
3800	62	7	28	0.6	116,718	80	13	41	1.2	118,542	88	13	44	1.2	118,664
4000	62	7	27	0.6	129,143	80	13	40	1.1	131,061	88	13	43	1.2	131,190

Recommended sizes  
Additional possible sizes

Reduction of movement for expansion joints with PTFE lining:  
axial compression: -33 %; axial extension: -0 %; lateral displacement: -50 %; angular movement: -0 %.  
Angular movement only possible with guided pressure support ring.  
In the event of axial extension and simultaneous lateral displacement the above movements are reduced (▶ page 22).  
For large movements see type U131A or U134A.

### U121A

▶ with internal vacuum support rings



### U124A

▶ with internal vacuum support rings, with pressure support ring in the arch trough



#### Installation length (L<sub>E</sub>) at design pressure

up to 10 bar L <sub>E</sub> = 500 mm					up to 10 bar L <sub>E</sub> = 550 mm					up to 10 bar L <sub>E</sub> = 600 mm					NB
higher pressures on request					higher pressures on request					higher pressures on request					
Movement				A	Movement				A	Movement				A	
mm	mm	± mm	± °	cm <sup>2</sup>	mm	mm	± mm	± °	cm <sup>2</sup>	mm	mm	± mm	± °	cm <sup>2</sup>	
106	20	79	50.7	353	124	27	97	58.6	460	138	28	105	59.5	491	100
106	20	77	44.3	441	124	27	95	52.7	560	138	28	103	53.7	594	125
106	20	76	39.1	539	124	27	93	47.6	670	138	28	101	48.6	707	150
106	20	75	34.9	670	124	27	92	43.1	814	138	28	100	44.2	855	175
106	20	74	31.4	765	124	27	91	39.4	919	138	28	99	40.4	962	200
106	20	72	26	1,029	124	27	89	33.3	1,207	138	28	97	34.2	1,257	250
106	20	71	22.1	1,346	124	27	88	28.7	1,548	138	28	95	29.5	1,605	300
106	20	70	19.2	1,713	124	27	86	25.1	1,940	138	28	94	25.9	2,003	350
106	20	69	17	2,075	124	27	85	22.3	2,324	138	28	93	23	2,393	400
106	20	69	15.2	2,507	124	27	84	20	2,781	138	28	92	20.7	2,856	450
106	20	68	13.7	2,971	124	27	84	18.2	3,267	138	28	91	18.8	3,349	500
106	20	67	12.5	3,442	124	27	83	16.6	3,761	138	28	90	17.2	3,848	550
106	20	67	11.5	4,015	124	27	82	15.3	4,359	138	28	89	15.8	4,453	600
106	20	66	10.6	4,560	124	27	82	14.2	4,927	138	28	89	14.7	5,027	650
106	20	66	9.9	5,230	124	27	81	13.2	5,621	138	28	88	13.7	5,728	700
106	20	66	9.2	5,836	124	27	81	12.3	6,249	138	28	87	12.8	6,362	750
106	20	65	8.7	6,604	124	27	80	11.6	7,044	138	28	87	12	7,163	800
106	20	65	8.2	7,268	124	27	80	10.9	7,729	138	28	86	11.3	7,854	850
106	20	64	7.7	8,123	124	27	79	10.3	8,610	138	28	86	10.7	8,742	900
106	20	64	7.3	8,858	124	27	79	9.8	9,366	138	28	86	10.1	9,503	950
106	20	64	7	9,799	124	27	79	9.3	10,333	138	28	85	9.6	10,477	1000
106	20	64	6.6	10,605	124	27	78	8.9	11,159	138	28	85	9.2	11,310	1050
106	20	63	6.3	11,652	124	27	78	8.5	12,233	138	28	84	8.8	12,390	1100
106	20	63	6.1	12,509	124	27	78	8.1	13,110	138	28	84	8.4	13,273	1150
106	20	63	5.8	13,623	124	27	77	7.8	14,250	138	28	84	8.1	14,420	1200
106	20	63	5.6	14,569	124	27	77	7.5	15,218	138	28	84	7.7	15,394	1250
106	20	62	5.4	15,770	124	27	77	7.2	16,445	138	28	83	7.5	16,627	1300
106	20	62	5.2	16,787	124	27	76	6.9	17,483	138	28	83	7.2	17,671	1350
106	20	62	5	18,074	124	27	76	6.7	18,796	138	28	83	6.9	18,991	1400
106	20	62	4.8	19,162	124	27	76	6.5	19,906	138	28	82	6.7	20,106	1450
106	20	62	4.6	20,536	124	27	76	6.2	21,305	138	28	82	6.5	21,512	1500
106	20	61	4.4	23,154	124	27	75	5.9	23,970	138	28	82	6.1	24,190	1600
106	20	61	4.2	24,384	124	27	75	5.7	25,221	138	28	81	5.9	25,447	1650
106	20	61	4.1	25,930	124	27	75	5.5	26,793	138	28	81	5.7	27,026	1700
106	20	61	3.9	28,893	124	27	74	5.2	29,804	138	28	81	5.4	30,049	1800
106	20	60	3.7	31,952	124	27	74	4.9	32,910	138	28	80	5.1	33,168	1900
106	20	60	3.6	33,394	124	27	74	4.8	34,373	138	28	80	5	34,636	1950
106	20	60	3.5	35,199	124	27	74	4.7	36,204	138	28	80	4.9	36,474	2000
106	20	60	3.3	38,603	124	27	73	4.5	39,655	138	28	80	4.6	39,938	2100
106	20	59	3.2	42,164	124	27	73	4.3	43,263	138	28	79	4.4	43,558	2200
106	20	59	3.1	43,818	124	27	73	4.2	44,938	138	28	79	4.3	45,239	2250
106	20	59	3	45,882	124	27	73	4.1	47,028	138	28	79	4.2	47,336	2300
106	20	59	2.9	49,757	124	27	72	3.9	50,950	138	28	79	4.1	51,271	2400
106	20	59	2.8	53,789	124	27	72	3.8	55,030	138	28	78	3.9	55,363	2500
106	20	59	2.7	55,655	124	27	72	3.7	56,917	138	28	78	3.8	57,256	2550
106	20	59	2.7	57,979	124	27	72	3.6	59,266	138	28	78	3.7	59,612	2600
106	20	58	2.6	62,325	124	27	72	3.5	63,660	138	28	78	3.6	64,018	2700
106	20	58	2.5	66,829	124	27	71	3.4	68,210	138	28	78	3.5	68,581	2800
106	20	58	2.5	68,906	124	27	71	3.3	70,309	138	28	77	3.4	70,686	2850
106	20	58	2.4	71,489	124	27	71	3.2	72,918	138	28	77	3.4	73,301	2900
106	20	58	2.3	76,307	124	27	71	3.1	77,783	138	28	77	3.2	78,179	3000
106	20	58	2.3	81,282	124	27	71	3	82,805	138	28	77	3.1	83,213	3100
106	20	58	2.2	83,571	124	27	71	3	85,116	138	28	77	3.1	85,530	3150
106	20	57	2.2	86,413	124	27	71	2.9	87,984	138	28	77	3	88,405	3200
106	20	57	2.1	91,702	124	27	70	2.8	93,320	138	28	76	2.9	93,753	3300
106	20	57	2.1	97,148	124	27	70	2.8	98,813	138	28	76	2.9	99,259	3400
106	20	57	2	99,650	124	27	70	2.7	101,336	138	28	76	2.8	101,788	3450
106	20	57	1.9	108,511	124	27	70	2.6	110,270	138	28	76	2.7	110,741	3600
106	20	57	1.8	120,503	124	27	70	2.5	122,356	138	28	75	2.6	122,852	3800
106	20	56	1.7	133,123	124	27	69	2.3	135,070	138	28	75	2.4	135,591	4000

UNIVERSAL  
rubber flange

U120A

Individual fabrication possible





### U122A

▶ with embedded vacuum support rings



### U125A

▶ with embedded vacuum support rings, with pressure support ring in the arch trough

Installation length (L <sub>E</sub> ) at design pressure															
NB	up to 10 bar L <sub>E</sub> = 350 mm					up to 10 bar L <sub>E</sub> = 400 mm higher pressures on request					up to 10 bar L <sub>E</sub> = 450 mm				
	Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>
	mm	mm	± mm	± °		mm	mm	± mm	± °		mm	mm	± mm	± °	
100	41	5	36	15.6	150	52	12	54	35.0	222	58	12	59	36.5	232
125	41	5	35	12.6	209	52	12	53	29.2	293	58	12	58	30.6	305
150	41	5	35	10.6	278	52	12	52	25.0	373	58	12	57	26.3	387
175	41	5	34	9.1	373	52	12	51	21.8	483	58	12	56	22.9	499
200	41	5	34	8.0	445	52	12	51	19.3	564	58	12	55	20.3	581
250	41	5	33	6.4	651	52	12	50	15.6	794	58	12	54	16.5	814
300	41	5	32	5.3	908	52	12	49	13.1	1,075	58	12	53	13.9	1,099
350	41	5	32	4.6	1,213	52	12	48	11.3	1,405	58	12	52	11.9	1,432
400	41	5	32	4.0	1,521	52	12	48	9.9	1,735	58	12	52	10.5	1,765
450	41	5	31	3.6	1,893	52	12	47	8.8	2,132	58	12	51	9.3	2,165
500	41	5	31	3.2	2,299	52	12	47	8.0	2,561	58	12	51	8.4	2,597
550	41	5	31	2.9	2,715	52	12	46	7.3	3,000	58	12	50	7.7	3,039
600	41	5	30	2.7	3,227	52	12	46	6.7	3,536	58	12	50	7	3,578
650	41	5	30	2.5	3,718	52	12	45	6.1	4,049	58	12	50	6.5	4,094
700	41	5	30	2.3	4,324	52	12	45	5.7	4,681	58	12	49	6	4,729
750	41	5	30	2.1	4,877	52	12	45	5.3	5,255	58	12	49	5.6	5,307
800	41	5	30	2.0	5,581	52	12	45	5.0	5,986	58	12	49	5.3	6,041
850	41	5	30	1.9	6,193	52	12	44	4.7	6,619	58	12	48	5	6,677
900	41	5	29	1.8	6,984	52	12	44	4.4	7,436	58	12	48	4.7	7,497
950	41	5	29	1.7	7,667	52	12	44	4.2	8,139	58	12	48	4.5	8,203
1000	41	5	29	1.6	8,544	52	12	44	4.0	9,043	58	12	48	4.2	9,110
1050	41	5	29	1.5	9,297	52	12	44	3.8	9,817	58	12	47	4	9,887
1100	41	5	29	1.5	10,279	52	12	43	3.6	10,825	58	12	47	3.8	10,899
1150	41	5	29	1.4	11,085	52	12	43	3.5	11,652	58	12	47	3.7	11,728
1200	41	5	29	1.3	12,135	52	12	43	3.3	12,728	58	12	47	3.5	12,808
1250	41	5	29	1.3	13,029	52	12	43	3.2	13,643	58	12	47	3.4	13,726
1300	41	5	28	1.2	14,166	52	12	43	3.1	14,806	58	12	47	3.3	14,892
1350	41	5	28	1.2	15,131	52	12	43	3.0	15,792	58	12	46	3.1	15,881
1400	41	5	28	1.1	16,354	52	12	42	2.9	17,041	58	12	46	3	17,134
1450	41	5	28	1.1	17,390	52	12	42	2.8	18,098	58	12	46	2.9	18,194
1500	41	5	28	1.1	18,699	52	12	42	2.7	19,433	58	12	46	2.8	19,532
1600	41	5	28	1.0	21,201	52	12	42	2.5	21,983	58	12	46	2.6	22,088
1650	41	5	28	1.0	22,379	52	12	42	2.4	23,181	58	12	46	2.6	23,289
1700	41	5	28	0.9	23,861	52	12	42	2.4	24,689	58	12	45	2.5	24,801
1800	41	5	28	0.9	26,706	52	12	41	2.2	27,582	58	12	45	2.4	27,700
1900	41	5	27	0.8	29,651	52	12	41	2.1	30,573	58	12	45	2.2	30,698
1950	41	5	27	0.8	31,040	52	12	41	2.1	31,984	58	12	45	2.2	32,111
2000	41	5	27	0.8	32,781	52	12	41	2.0	33,751	58	12	45	2.1	33,882
2100	41	5	27	0.8	36,069	52	12	41	1.9	37,086	58	12	45	2	37,223
2200	41	5	27	0.7	39,514	52	12	41	1.8	40,578	58	12	44	1.9	40,721
2250	41	5	27	0.7	41,115	52	12	41	1.8	42,200	58	12	44	1.9	42,346
2300	41	5	27	0.7	43,116	52	12	41	1.7	44,227	58	12	44	1.8	44,376
2400	41	5	27	0.7	46,875	52	12	40	1.7	48,033	58	12	44	1.8	48,188
2500	41	5	27	0.6	50,791	52	12	40	1.6	51,996	58	12	44	1.7	52,158
2550	41	5	27	0.6	52,604	52	12	40	1.6	53,831	58	12	44	1.7	53,995
2600	41	5	27	0.6	54,864	52	12	40	1.5	56,116	58	12	44	1.6	56,284
2700	41	5	27	0.6	59,094	52	12	40	1.5	60,393	58	12	44	1.6	60,568
2800	41	5	26	0.6	63,481	52	12	40	1.4	64,828	58	12	43	1.5	65,008
2850	41	5	26	0.6	65,506	52	12	40	1.4	66,874	58	12	43	1.5	67,058
2900	41	5	26	0.6	68,025	52	12	40	1.4	69,419	58	12	43	1.5	69,606
3000	41	5	26	0.5	72,727	52	12	40	1.3	74,168	58	12	43	1.4	74,361
3100	41	5	26	0.5	77,585	52	12	39	1.3	79,073	58	12	43	1.4	79,273
3150	41	5	26	0.5	79,823	52	12	39	1.3	81,332	58	12	43	1.3	81,534
3200	41	5	26	0.5	82,601	52	12	39	1.3	84,136	58	12	43	1.3	84,342
3300	41	5	26	0.5	87,773	52	12	39	1.2	89,356	58	12	43	1.3	89,568
3400	41	5	26	0.5	93,103	52	12	39	1.2	94,733	58	12	43	1.2	94,951
3450	41	5	26	0.5	95,553	52	12	39	1.2	97,203	58	12	43	1.2	97,425
3600	41	5	26	0.4	104,234	52	12	39	1.1	105,958	58	12	42	1.2	106,188
3800	41	5	26	0.4	115,993	52	12	39	1.1	117,811	58	12	42	1.1	118,054
4000	41	5	26	0.4	128,380	52	12	39	1.0	130,292	58	12	42	1.1	130,548

Recommended sizes  
Additional possible sizes

Reduction of movement for expansion joints with PTFE lining:  
axial compression: -0 %; axial extension: -0 %; lateral displacement: -0 %; angular movement: -0 %.  
Angular movement only possible with guided pressure support ring.  
In the event of axial extension and simultaneous lateral displacement the above movements are reduced (▶ page 22).  
For large movements see type U132A or U135A.

### U122A

▶ with embedded vacuum support rings



### U125A

▶ with embedded vacuum support rings, with pressure support ring in the arch trough



#### Installation length (L<sub>E</sub>) at design pressure

up to 10 bar L <sub>E</sub> = 500 mm					up to 10 bar L <sub>E</sub> = 550 mm higher pressures on request					up to 10 bar L <sub>E</sub> = 600 mm					NB
Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>	
mm	mm	± mm	± °		mm	mm	± mm	± °		mm	mm	± mm	± °		
70	19	77	48.7	320	82	26	95	57.3	423	91	26	102	57.3	423	100
70	19	75	42.4	405	82	26	93	51.3	519	91	26	100	51.3	519	125
70	19	74	37.2	499	82	26	91	46.1	625	91	26	98	46.1	625	150
70	19	73	33.1	625	82	26	90	41.7	765	91	26	97	41.7	765	175
70	19	72	29.7	716	82	26	89	38	866	91	26	95	38	866	200
70	19	71	24.5	973	82	26	87	32	1,146	91	26	94	32	1,146	250
70	19	69	20.8	1,282	82	26	86	27.5	1,479	91	26	92	27.5	1,479	300
70	19	69	18	1,640	82	26	85	24	1,863	91	26	91	24	1,863	350
70	19	68	15.9	1,995	82	26	84	21.3	2,240	91	26	90	21.3	2,240	400
70	19	67	14.2	2,419	82	26	83	19.1	2,688	91	26	89	19.1	2,688	450
70	19	66	12.8	2,875	82	26	82	17.3	3,167	91	26	88	17.3	3,167	500
70	19	66	11.7	3,339	82	26	81	15.8	3,653	91	26	87	15.8	3,653	550
70	19	65	10.8	3,904	82	26	81	14.6	4,243	91	26	86	14.6	4,243	600
70	19	65	9.9	4,441	82	26	80	13.5	4,803	91	26	86	13.5	4,803	650
70	19	64	9.2	5,102	82	26	79	12.6	5,489	91	26	85	12.6	5,489	700
70	19	64	8.6	5,701	82	26	79	11.7	6,110	91	26	85	11.7	6,110	750
70	19	64	8.1	6,461	82	26	78	11	6,896	91	26	84	11	6,896	800
70	19	63	7.6	7,118	82	26	78	10.4	7,574	91	26	84	10.4	7,574	850
70	19	63	7.2	7,964	82	26	78	9.8	8,446	91	26	83	9.8	8,446	900
70	19	63	6.8	8,692	82	26	77	9.3	9,195	91	26	83	9.3	9,195	950
70	19	62	6.5	9,625	82	26	77	8.9	10,153	91	26	82	8.9	10,153	1000
70	19	62	6.2	10,423	82	26	77	8.5	10,973	91	26	82	8.5	10,973	1050
70	19	62	5.9	11,461	82	26	76	8.1	12,037	91	26	82	8.1	12,037	1100
70	19	61	5.7	12,311	82	26	76	7.7	12,908	91	26	81	7.7	12,908	1150
70	19	61	5.4	13,417	82	26	76	7.4	14,040	91	26	81	7.4	14,040	1200
70	19	61	5.2	14,356	82	26	75	7.1	15,001	91	26	81	7.1	15,001	1250
70	19	61	5	15,548	82	26	75	6.8	16,218	91	26	81	6.8	16,218	1300
70	19	61	4.8	16,559	82	26	75	6.6	17,250	91	26	80	6.6	17,250	1350
70	19	60	4.7	17,837	82	26	75	6.4	18,554	91	26	80	6.4	18,554	1400
70	19	60	4.5	18,918	82	26	74	6.1	19,656	91	26	80	6.1	19,656	1450
70	19	60	4.3	20,283	82	26	74	5.9	21,047	91	26	79	5.9	21,047	1500
70	19	60	4.1	22,885	82	26	74	5.6	23,697	91	26	79	5.6	23,697	1600
70	19	60	4	24,108	82	26	73	5.4	24,941	91	26	79	5.4	24,941	1650
70	19	59	3.8	25,645	82	26	73	5.2	26,504	91	26	79	5.2	26,504	1700
70	19	59	3.6	28,592	82	26	73	5	29,498	91	26	78	5	29,498	1800
70	19	59	3.4	31,636	82	26	73	4.7	32,589	91	26	78	4.7	32,589	1900
70	19	59	3.3	33,071	82	26	72	4.6	34,045	91	26	78	4.6	34,045	1950
70	19	58	3.3	34,867	82	26	72	4.5	35,867	91	26	77	4.5	35,867	2000
70	19	58	3.1	38,256	82	26	72	4.2	39,303	91	26	77	4.2	39,303	2100
70	19	58	3	41,801	82	26	72	4.1	42,895	91	26	77	4.1	42,895	2200
70	19	58	2.9	43,447	82	26	71	4	44,563	91	26	77	4	44,563	2250
70	19	58	2.8	45,503	82	26	71	3.9	46,645	91	26	76	3.9	46,645	2300
70	19	58	2.7	49,363	82	26	71	3.7	50,551	91	26	76	3.7	50,551	2400
70	19	57	2.6	53,379	82	26	71	3.6	54,615	91	26	76	3.6	54,615	2500
70	19	57	2.6	55,238	82	26	71	3.5	56,495	91	26	76	3.5	56,495	2550
70	19	57	2.5	57,553	82	26	71	3.4	58,836	91	26	76	3.4	58,836	2600
70	19	57	2.4	61,883	82	26	70	3.3	63,213	91	26	75	3.3	63,213	2700
70	19	57	2.3	66,371	82	26	70	3.2	67,748	91	26	75	3.2	67,748	2800
70	19	57	2.3	68,442	82	26	70	3.1	69,840	91	26	75	3.1	69,840	2850
70	19	57	2.3	71,016	82	26	70	3.1	72,440	91	26	75	3.1	72,440	2900
70	19	56	2.2	75,818	82	26	70	3	77,289	91	26	75	3	77,289	3000
70	19	56	2.1	80,777	82	26	69	2.9	82,295	91	26	74	2.9	82,295	3100
70	19	56	2.1	83,060	82	26	69	2.8	84,599	91	26	74	2.8	84,599	3150
70	19	56	2	85,893	82	26	69	2.8	87,459	91	26	74	2.8	87,459	3200
70	19	56	2	91,166	82	26	69	2.7	92,779	91	26	74	2.7	92,779	3300
70	19	56	1.9	96,597	82	26	69	2.6	98,256	91	26	74	2.6	98,256	3400
70	19	56	1.9	99,091	82	26	69	2.6	100,772	91	26	74	2.6	100,772	3450
70	19	55	1.8	107,928	82	26	68	2.5	109,682	91	26	73	2.5	109,682	3600
70	19	55	1.7	119,888	82	26	68	2.4	121,736	91	26	73	2.4	121,736	3800
70	19	55	1.6	132,477	82	26	68	2.2	134,419	91	26	73	2.2	134,419	4000

UNIVERSAL  
rubber flange

U120A

Individual fabrication possible