

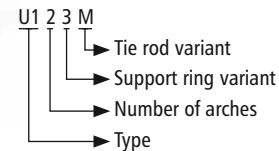
U120x (B/E/C/M/R/K/L)

NB 100 – NB 4000



- ▶ **Type U120x** (B/E/C/M/R/K/L)
without vacuum support rings
- ▶ **Type U121x** (B/E/C/M/R/K/L)
with internal vacuum support rings
- ▶ **Type U122x** (B/E/C/M/R/K/L)
with embedded vacuum support rings
- ▶ **Type U123x** (B/E/C/M/R/K/L)
without vacuum support rings,
with pressure support ring in the arch trough
- ▶ **Type U124x** (B/E/C/M/R/K/L)
with internal vacuum support rings,
with pressure support ring outside in the arch
trough
- ▶ **Type U125** (B/E/C/M/R/K/L)
with embedded vacuum support rings,
with external pressure support ring in the arch
trough

Type key ▶ page 20



Lateral expansion joint with two arches

- Design:** Highly elastic, hydrodynamic, double-arch rubber bellows with full faced rubber flanges and backing flanges with support collar and tie rods
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 650 mm (▶ page 186–191)
Other installation lengths on request
- Pressure:** Depending on the nominal diameter up to 10 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 97/23/EC
- Movement:** For very large axial, lateral and angular movements (▶ page 186–191)
Installation gap tolerances possible in the context of axial compression and extension

Application:

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



Rubber bellows

| Rubber grades | | | Carrier |
|---------------|--|--|---|
| up to 100 °C: | EPDM | Cooling water, hot water, seawater, acids, dilute chlorine compounds | Nylon fabric Polyester fabric Kevlar fabric Glass fibre fabric Steel mesh |
| | EPDM, drinking water approved | Drinking water | |
| | EPDM, white, food grade | Foodstuffs | |
| | EPDM, abrasion-resistant | Abrasive materials, Water-sand extraction | |
| | EPDM, insulating | Electrical systems construction | |
| | IIR | Hot water, acids, bases, gases | |
| | CSM | Strong acids, bases, chemicals | |
| | NBR | Oils, petrol, solvents, compressed air | |
| | NBR, bright, food grade | Oil, fatty foods | |
| up to 80 °C: | CR | Cooling water, slightly oily water, seawater | |
| up to 70 °C: | NR | Abrasive materials | |
| up to 150 °C: | HNBR | Oils, petrol, solvents, compressed air | |
| up to 180 °C: | FPM | Corrosive chemicals, petroleum distillates | |
| up to 200 °C: | Silicon (Q) | Air, saltwater atmosphere | |
| | Silicon (Q), white, food grade | 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 186–191) | | |

Flanges

Design: Single-part or multi-part backing flanges with support collar, clearance holes and holder for tie rods (control unit type B, E, C, M)

Single-part or multi-part round backing flanges with support collar, clearance holes and control unit plates (control unit type R, K, L)

Flange norms: DIN, ANSI, AWWA, BS, JIS, special measurements (▶ page 280)

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
(▶ page 50)

Flow liners: Cylindrical flow liner
Conical flow liner
Telescoping flow liner
(▶ page 49)

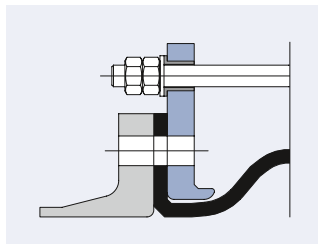
Tie rods



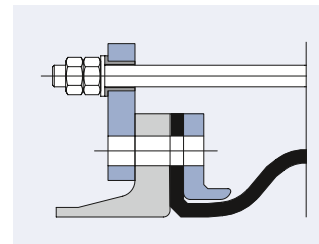
Design: Dimensioning according to design pressure (test pressure) based on the Pressure Equipment Directive

Materials: Carbon steel in strength class 8.8 or stainless steel

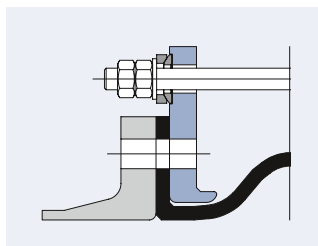
Coating: Spherical bearings and ball disks PTFE-coated
Tie rods galvanised or hot-dip galvanised



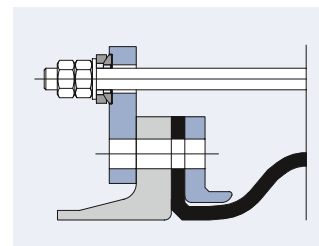
Type U120B
Tie rods mounted outside in rubber bushing to accommodate reaction forces in the event of pressure (up to NB 300)



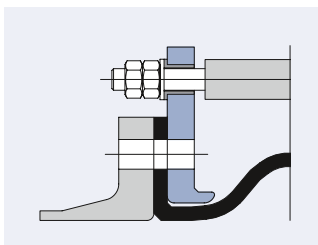
Type U120R
Control unit plate: Tie rods mounted outside in rubber bushing to accommodate reaction forces in the event of pressure (up to NB 300)



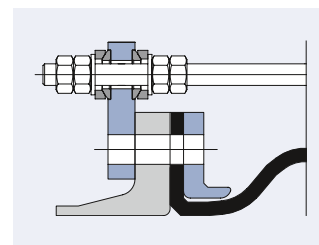
Type U120E
Tie rods mounted outside in spherical bearings and ball disks to accommodate the reaction forces in the event of pressure



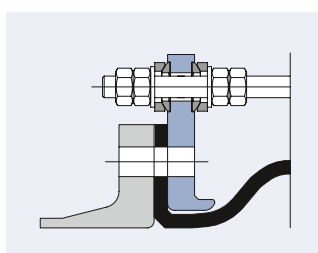
Type U120K
Control unit plate: Tie rods mounted outside in spherical bearings and ball disks to accommodate the reaction forces in the event of pressure



Type U120C
Tie rods mounted outside in rubber bushing and inside in the thrust limiter to accommodate stresses in the event of pressure and vacuum (up to NB 300)






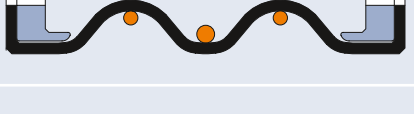


Type U120L
Control unit plate: Tie rods mounted outside and inside in spherical bearings and ball disks to accommodate the reaction forces in the event of pressure and vacuum



Type U120M
Tie rods mounted outside and inside in spherical bearings and ball disks to accommodate the reaction forces in the event of pressure and vacuum

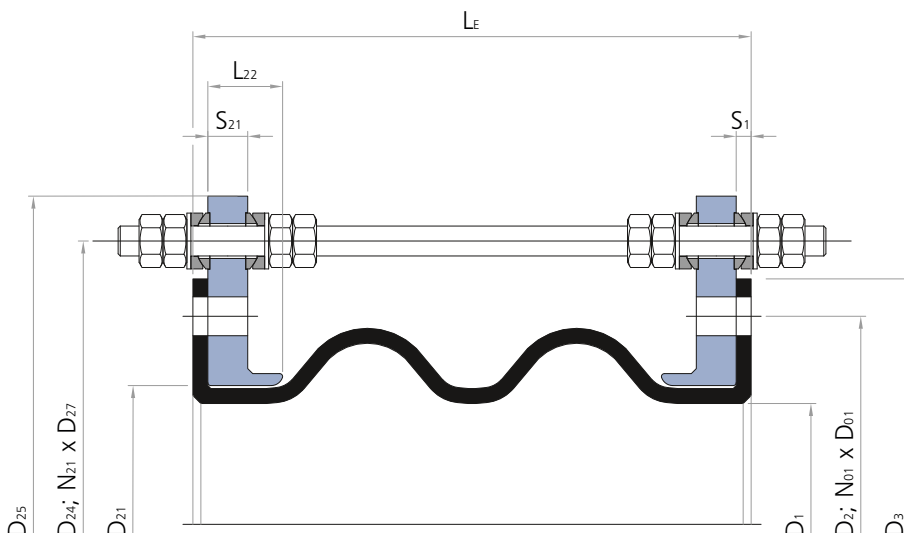
Support rings

| TYPE | | Vacuum support ring | Pressure support ring | Pressure | Movement |
|------------------------------|---|--|-----------------------------|--|----------------|
| U120x (B/E/C/M/ R/K/L) |  | Without | Without | Slight pressure, slight vacuum | ▶ page 186–187 |
| U121x (B/E/C/M/ R/K/L) |  | Medium contact, inside the arch apex | Without | Slight pressure, for vacuum up to 0.05 bar absolute | ▶ page 188–189 |
| U122x (B/E/C/M/ R/K/L) |  | No medium contact, embedded into the arch apex of the rubber bellows | Without | Slight pressure, for vacuum up to 0.05 bar absolute | ▶ page 190–191 |
| U123x (B/E/C/M/ R/K/L) |  | Without | External in the arch trough | Depending on the nominal diameter up to 10 bar, slight vacuum | ▶ page 186–187 |
| U124x (B/E/C/M/ R/K/L) |  | Medium contact, inside the arch apex | External in the arch trough | Depending on the nominal diameter up to 10 bar, for vacuum up to 0.05 bar absolute | ▶ page 188–189 |
| U125x (B/E/C/M/ R/K/L) |  | No medium contact, embedded into the arch apex of the rubber bellows | External in the arch trough | Depending on the nominal diameter up to 10 bar, for vacuum up to 0.05 bar absolute | ▶ page 190–191 |

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 | |

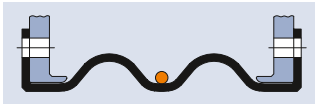
Planning help U120M





U120x (B/E/C/M/R/K/L)

▶ without vacuum support rings



U123x (B/E/C/M/R/K/L)

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

Installation length (L_E) at design pressure

| NB | up to 4 bar L _E = 350 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 | | | | |
|------|--|----|-----|----|-----------------|--|----|-----|----|-----------------|--|----|-----|----|-----------------|
| | Movement | | | | A | Movement | | | | A | Movement | | | | A |
| | mm | mm | ±mm | ±° | cm ² | mm | mm | ±mm | ±° | cm ² | mm | mm | ±mm | ±° | cm ² |
| 100 | 54 | 27 | 38 | 0 | 177 | 62 | 20 | 38 | 0 | 177 | 80 | 40 | 56 | 0 | 254 |
| 125 | 54 | 27 | 37 | 0 | 241 | 62 | 20 | 38 | 0 | 241 | 80 | 40 | 55 | 0 | 330 |
| 150 | 54 | 27 | 36 | 0 | 314 | 62 | 20 | 37 | 0 | 314 | 80 | 40 | 54 | 0 | 415 |
| 175 | 54 | 27 | 36 | 0 | 415 | 62 | 20 | 36 | 0 | 415 | 80 | 40 | 54 | 0 | 531 |
| 200 | 54 | 27 | 35 | 0 | 491 | 62 | 20 | 36 | 0 | 491 | 80 | 40 | 53 | 0 | 616 |
| 250 | 54 | 27 | 35 | 0 | 707 | 62 | 20 | 35 | 0 | 707 | 80 | 40 | 52 | 0 | 855 |
| 300 | 54 | 27 | 34 | 0 | 973 | 62 | 20 | 35 | 0 | 973 | 80 | 40 | 51 | 0 | 1,146 |
| 350 | 54 | 27 | 34 | 0 | 1,288 | 62 | 20 | 34 | 0 | 1,288 | 80 | 40 | 50 | 0 | 1,486 |
| 400 | 54 | 27 | 33 | 0 | 1,605 | 62 | 20 | 34 | 0 | 1,605 | 80 | 40 | 50 | 0 | 1,825 |
| 450 | 54 | 27 | 33 | 0 | 1,987 | 62 | 20 | 33 | 0 | 1,987 | 80 | 40 | 49 | 0 | 2,231 |
| 500 | 54 | 27 | 33 | 0 | 2,402 | 62 | 20 | 33 | 0 | 2,402 | 80 | 40 | 49 | 0 | 2,669 |
| 550 | | | | | | 62 | 20 | 33 | 0 | 2,827 | 80 | 40 | 48 | 0 | 3,117 |
| 600 | | | | | | 62 | 20 | 33 | 0 | 3,349 | 80 | 40 | 48 | 0 | 3,664 |
| 650 | | | | | | 62 | 20 | 32 | 0 | 3,848 | 80 | 40 | 48 | 0 | 4,185 |
| 700 | | | | | | 62 | 20 | 32 | 0 | 4,465 | 80 | 40 | 47 | 0 | 4,827 |
| 750 | | | | | | 62 | 20 | 32 | 0 | 5,027 | 80 | 40 | 47 | 0 | 5,411 |
| 800 | | | | | | 62 | 20 | 32 | 0 | 5,741 | 80 | 40 | 47 | 0 | 6,151 |
| 850 | | | | | | 62 | 20 | 32 | 0 | 6,362 | 80 | 40 | 46 | 0 | 6,793 |
| 900 | | | | | | 62 | 20 | 31 | 0 | 7,163 | 80 | 40 | 46 | 0 | 7,620 |
| 950 | | | | | | 62 | 20 | 31 | 0 | 7,854 | 80 | 40 | 46 | 0 | 8,332 |
| 1000 | | | | | | 62 | 20 | 31 | 0 | 8,742 | 80 | 40 | 46 | 0 | 9,246 |
| 1050 | | | | | | | | | | | 80 | 40 | 46 | 0 | 10,029 |
| 1100 | | | | | | | | | | | 80 | 40 | 45 | 0 | 11,047 |
| 1150 | | | | | | | | | | | 80 | 40 | 45 | 0 | 11,882 |
| 1200 | | | | | | | | | | | 80 | 40 | 45 | 0 | 12,969 |
| 1250 | | | | | | | | | | | 80 | 40 | 45 | 0 | 13,893 |
| 1300 | | | | | | | | | | | 80 | 40 | 45 | 0 | 15,066 |
| 1350 | | | | | | | | | | | 80 | 40 | 45 | 0 | 16,061 |
| 1400 | | | | | | | | | | | 80 | 40 | 44 | 0 | 17,320 |
| 1450 | | | | | | | | | | | 80 | 40 | 44 | 0 | 18,385 |
| 1500 | | | | | | | | | | | 80 | 40 | 44 | 0 | 19,731 |
| 1600 | | | | | | | | | | | 80 | 40 | 44 | 0 | 22,299 |
| 1650 | | | | | | | | | | | 80 | 40 | 44 | 0 | 23,506 |
| 1700 | | | | | | | | | | | 80 | 40 | 44 | 0 | 25,025 |
| 1800 | | | | | | | | | | | 80 | 40 | 43 | 0 | 27,937 |
| 1900 | | | | | | | | | | | 80 | 40 | 43 | 0 | 30,946 |
| 1950 | | | | | | | | | | | 80 | 40 | 43 | 0 | 32,365 |
| 2000 | | | | | | | | | | | 80 | 40 | 43 | 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 | | | | | | | | | | | | | | | |

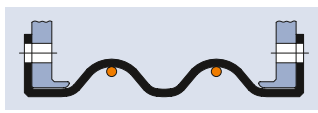
Recommended sizes
Additional possible sizes

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). Larger movements on request.



| Installation length (L _E) at design pressure | | | | | | | | | | | | | | | | | | | |
|--|----|------|-----|-----------------|--|----|------|-----|-----------------|--|----|----------|-----|-----------------|------|----|----|------|-----|
| up to 4 bar L _E = 450 mm up to 6 bar L _E = 500 mm up to 10 bar L _E = 550 mm | | | | | up to 4 bar L _E = 500 mm up to 6 bar L _E = 550 mm up to 10 bar L _E = 600 mm | | | | | up to 4 bar L _E = 550 mm up to 6 bar L _E = 600 mm up to 10 bar L _E = 650 mm | | | | | | | | | |
| higher pressures on request | | | | | | | | | | | | | | | | | | | |
| Movement | | A | | Movement | | | | A | | | | Movement | | | | A | NB | | |
| mm | mm | ± mm | ± ° | cm ² | mm | mm | ± mm | ± ° | cm ² | mm | mm | ± mm | ± ° | cm ² | mm | mm | | ± mm | ± ° |
| 68 | 41 | 61 | 0 | 260 | 106 | 61 | 79 | 0 | 353 | 124 | 82 | 97 | 0 | 460 | 100 | | | | |
| 88 | 41 | 60 | 0 | 337 | 106 | 61 | 77 | 0 | 441 | 124 | 82 | 95 | 0 | 560 | 125 | | | | |
| 88 | 41 | 59 | 0 | 423 | 106 | 61 | 76 | 0 | 539 | 124 | 82 | 93 | 0 | 670 | 150 | | | | |
| 88 | 41 | 58 | 0 | 539 | 106 | 61 | 75 | 0 | 670 | 124 | 82 | 92 | 0 | 814 | 175 | | | | |
| 88 | 41 | 57 | 0 | 625 | 106 | 61 | 74 | 0 | 765 | 124 | 82 | 91 | 0 | 919 | 200 | | | | |
| 88 | 41 | 56 | 0 | 866 | 106 | 61 | 72 | 0 | 1,029 | 124 | 82 | 89 | 0 | 1,207 | 250 | | | | |
| 88 | 41 | 55 | 0 | 1,158 | 106 | 61 | 71 | 0 | 1,346 | 124 | 82 | 88 | 0 | 1,548 | 300 | | | | |
| 88 | 41 | 54 | 0 | 1,500 | 106 | 61 | 70 | 0 | 1,713 | 124 | 82 | 86 | 0 | 1,940 | 350 | | | | |
| 88 | 41 | 54 | 0 | 1,840 | 106 | 61 | 69 | 0 | 2,075 | 124 | 82 | 85 | 0 | 2,324 | 400 | | | | |
| 88 | 41 | 53 | 0 | 2,248 | 106 | 61 | 69 | 0 | 2,507 | 124 | 82 | 84 | 0 | 2,781 | 450 | | | | |
| 88 | 41 | 52 | 0 | 2,688 | 106 | 61 | 68 | 0 | 2,971 | 124 | 82 | 84 | 0 | 3,267 | 500 | | | | |
| 88 | 41 | 52 | 0 | 3,137 | 106 | 61 | 67 | 0 | 3,442 | 124 | 82 | 83 | 0 | 3,761 | 550 | | | | |
| 88 | 41 | 52 | 0 | 3,685 | 106 | 61 | 67 | 0 | 4,015 | 124 | 82 | 82 | 0 | 4,359 | 600 | | | | |
| 88 | 41 | 51 | 0 | 4,208 | 106 | 61 | 66 | 0 | 4,560 | 124 | 82 | 82 | 0 | 4,927 | 650 | | | | |
| 88 | 41 | 51 | 0 | 4,852 | 106 | 61 | 66 | 0 | 5,230 | 124 | 82 | 81 | 0 | 5,621 | 700 | | | | |
| 88 | 41 | 51 | 0 | 5,437 | 106 | 61 | 66 | 0 | 5,836 | 124 | 82 | 81 | 0 | 6,249 | 750 | | | | |
| 88 | 41 | 50 | 0 | 6,179 | 106 | 61 | 65 | 0 | 6,604 | 124 | 82 | 80 | 0 | 7,044 | 800 | | | | |
| 88 | 41 | 50 | 0 | 6,822 | 106 | 61 | 65 | 0 | 7,268 | 124 | 82 | 80 | 0 | 7,729 | 850 | | | | |
| 88 | 41 | 50 | 0 | 7,651 | 106 | 61 | 64 | 0 | 8,123 | 124 | 82 | 79 | 0 | 8,610 | 900 | | | | |
| 88 | 41 | 49 | 0 | 8,365 | 106 | 61 | 64 | 0 | 8,858 | 124 | 82 | 79 | 0 | 9,366 | 950 | | | | |
| 88 | 41 | 49 | 0 | 9,280 | 106 | 61 | 64 | 0 | 9,799 | 124 | 82 | 79 | 0 | 10,333 | 1000 | | | | |
| 88 | 41 | 49 | 0 | 10,064 | 106 | 61 | 64 | 0 | 10,605 | 124 | 82 | 78 | 0 | 11,159 | 1050 | | | | |
| 88 | 41 | 49 | 0 | 11,085 | 106 | 61 | 63 | 0 | 11,652 | 124 | 82 | 78 | 0 | 12,233 | 1100 | | | | |
| 88 | 41 | 49 | 0 | 11,921 | 106 | 61 | 63 | 0 | 12,509 | 124 | 82 | 78 | 0 | 13,110 | 1150 | | | | |
| 88 | 41 | 48 | 0 | 13,009 | 106 | 61 | 63 | 0 | 13,623 | 124 | 82 | 77 | 0 | 14,250 | 1200 | | | | |
| 88 | 41 | 48 | 0 | 13,935 | 106 | 61 | 63 | 0 | 14,569 | 124 | 82 | 77 | 0 | 15,218 | 1250 | | | | |
| 88 | 41 | 48 | 0 | 15,109 | 106 | 61 | 62 | 0 | 15,770 | 124 | 82 | 77 | 0 | 16,445 | 1300 | | | | |
| 88 | 41 | 48 | 0 | 16,106 | 106 | 61 | 62 | 0 | 16,787 | 124 | 82 | 76 | 0 | 17,483 | 1350 | | | | |
| 88 | 41 | 48 | 0 | 17,366 | 106 | 61 | 62 | 0 | 18,074 | 124 | 82 | 76 | 0 | 18,796 | 1400 | | | | |
| 88 | 41 | 48 | 0 | 18,433 | 106 | 61 | 62 | 0 | 19,162 | 124 | 82 | 76 | 0 | 19,906 | 1450 | | | | |
| 88 | 41 | 47 | 0 | 19,781 | 106 | 61 | 62 | 0 | 20,536 | 124 | 82 | 76 | 0 | 21,305 | 1500 | | | | |
| 88 | 41 | 47 | 0 | 22,352 | 106 | 61 | 61 | 0 | 23,154 | 124 | 82 | 75 | 0 | 23,970 | 1600 | | | | |
| 88 | 41 | 47 | 0 | 23,561 | 106 | 61 | 61 | 0 | 24,384 | 124 | 82 | 75 | 0 | 25,221 | 1650 | | | | |
| 88 | 41 | 47 | 0 | 25,081 | 106 | 61 | 61 | 0 | 25,930 | 124 | 82 | 75 | 0 | 26,793 | 1700 | | | | |
| 88 | 41 | 47 | 0 | 27,996 | 106 | 61 | 61 | 0 | 28,893 | 124 | 82 | 74 | 0 | 29,804 | 1800 | | | | |
| 88 | 41 | 46 | 0 | 31,009 | 106 | 61 | 60 | 0 | 31,952 | 124 | 82 | 74 | 0 | 32,910 | 1900 | | | | |
| 88 | 41 | 46 | 0 | 32,429 | 106 | 61 | 60 | 0 | 33,394 | 124 | 82 | 74 | 0 | 34,373 | 1950 | | | | |
| 88 | 41 | 46 | 0 | 34,209 | 106 | 61 | 60 | 0 | 35,199 | 124 | 82 | 74 | 0 | 36,204 | 2000 | | | | |
| 88 | 41 | 46 | 0 | 37,565 | 106 | 61 | 60 | 0 | 38,603 | 124 | 82 | 73 | 0 | 39,655 | 2100 | | | | |
| 88 | 41 | 46 | 0 | 41,079 | 106 | 61 | 59 | 0 | 42,164 | 124 | 82 | 73 | 0 | 43,263 | 2200 | | | | |
| 88 | 41 | 46 | 0 | 42,712 | 106 | 61 | 59 | 0 | 43,818 | 124 | 82 | 73 | 0 | 44,938 | 2250 | | | | |
| 88 | 41 | 46 | 0 | 44,750 | 106 | 61 | 59 | 0 | 45,882 | 124 | 82 | 73 | 0 | 47,028 | 2300 | | | | |
| 88 | 41 | 45 | 0 | 48,578 | 106 | 61 | 59 | 0 | 49,757 | 124 | 82 | 72 | 0 | 50,950 | 2400 | | | | |
| 88 | 41 | 45 | 0 | 52,563 | 106 | 61 | 59 | 0 | 53,789 | 124 | 82 | 72 | 0 | 55,030 | 2500 | | | | |
| 88 | 41 | 45 | 0 | 54,408 | 106 | 61 | 59 | 0 | 55,655 | 124 | 82 | 72 | 0 | 56,917 | 2550 | | | | |
| 88 | 41 | 45 | 0 | 56,706 | 106 | 61 | 59 | 0 | 57,979 | 124 | 82 | 72 | 0 | 59,266 | 2600 | | | | |
| 88 | 41 | 45 | 0 | 61,005 | 106 | 61 | 58 | 0 | 62,325 | 124 | 82 | 72 | 0 | 63,660 | 2700 | | | | |
| 88 | 41 | 45 | 0 | 65,461 | 106 | 61 | 58 | 0 | 66,829 | 124 | 82 | 71 | 0 | 68,210 | 2800 | | | | |
| 88 | 41 | 45 | 0 | 67,518 | 106 | 61 | 58 | 0 | 68,906 | 124 | 82 | 71 | 0 | 70,309 | 2850 | | | | |
| 88 | 41 | 45 | 0 | 70,075 | 106 | 61 | 58 | 0 | 71,489 | 124 | 82 | 71 | 0 | 72,918 | 2900 | | | | |
| 88 | 41 | 45 | 0 | 74,845 | 106 | 61 | 58 | 0 | 76,307 | 124 | 82 | 71 | 0 | 77,783 | 3000 | | | | |
| 88 | 41 | 44 | 0 | 79,773 | 106 | 61 | 58 | 0 | 81,282 | 124 | 82 | 71 | 0 | 82,805 | 3100 | | | | |
| 88 | 41 | 44 | 0 | 82,041 | 106 | 61 | 58 | 0 | 83,571 | 124 | 82 | 71 | 0 | 85,116 | 3150 | | | | |
| 88 | 41 | 44 | 0 | 84,857 | 106 | 61 | 57 | 0 | 86,413 | 124 | 82 | 71 | 0 | 87,984 | 3200 | | | | |
| 88 | 41 | 44 | 0 | 90,099 | 106 | 61 | 57 | 0 | 91,702 | 124 | 82 | 70 | 0 | 93,320 | 3300 | | | | |
| 88 | 41 | 44 | 0 | 95,498 | 106 | 61 | 57 | 0 | 97,148 | 124 | 82 | 70 | 0 | 98,813 | 3400 | | | | |
| 88 | 41 | 44 | 0 | 97,979 | 106 | 61 | 57 | 0 | 99,650 | 124 | 82 | 70 | 0 | 101,336 | 3450 | | | | |
| 88 | 41 | 44 | 0 | 106,767 | 106 | 61 | 57 | 0 | 108,511 | 124 | 82 | 70 | 0 | 110,270 | 3600 | | | | |
| 88 | 41 | 44 | 0 | 118,664 | 106 | 61 | 57 | 0 | 120,503 | 124 | 82 | 70 | 0 | 122,356 | 3800 | | | | |
| 88 | 41 | 43 | 0 | 131,190 | 106 | 61 | 56 | 0 | 133,123 | 124 | 82 | 69 | 0 | 135,070 | 4000 | | | | |

Individual fabrication possible



U121x (B/E/C/M/R/K/L)

▶ with internal vacuum support rings



U124x (B/E/C/M/R/K/L)

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

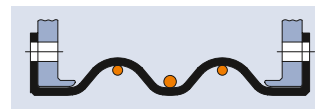


Installation length (L_E) at design pressure

| NB | up to 4 bar L _E = 350 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 | | | | |
|------|--|----|-----|----|----------------------|--|----|-----|----|----------------------|--|----|-----|----|----------------------|
| | Movement | | | | A cm ² | Movement | | | | A cm ² | Movement | | | | A cm ² |
| | mm | mm | ±mm | ±° | | mm | mm | ±mm | ±° | | mm | mm | ±mm | mm | |
| 100 | 54 | 9 | 25 | 0 | 177 | 62 | 7 | 25 | 0 | 177 | 80 | 13 | 37 | 0 | 254 |
| 125 | 54 | 9 | 24 | 0 | 241 | 62 | 7 | 25 | 0 | 241 | 80 | 13 | 36 | 0 | 330 |
| 150 | 54 | 9 | 24 | 0 | 314 | 62 | 7 | 24 | 0 | 314 | 80 | 13 | 36 | 0 | 415 |
| 175 | 54 | 9 | 24 | 0 | 415 | 62 | 7 | 24 | 0 | 415 | 80 | 13 | 35 | 0 | 531 |
| 200 | 54 | 9 | 23 | 0 | 491 | 62 | 7 | 24 | 0 | 491 | 80 | 13 | 35 | 0 | 616 |
| 250 | 54 | 9 | 23 | 0 | 707 | 62 | 7 | 23 | 0 | 707 | 80 | 13 | 34 | 0 | 855 |
| 300 | 54 | 9 | 23 | 0 | 973 | 62 | 7 | 23 | 0 | 973 | 80 | 13 | 34 | 0 | 1,146 |
| 350 | 54 | 9 | 22 | 0 | 1,288 | 62 | 7 | 23 | 0 | 1,288 | 80 | 13 | 33 | 0 | 1,486 |
| 400 | 54 | 9 | 22 | 0 | 1,605 | 62 | 7 | 22 | 0 | 1,605 | 80 | 13 | 33 | 0 | 1,825 |
| 450 | 54 | 9 | 22 | 0 | 1,987 | 62 | 7 | 22 | 0 | 1,987 | 80 | 13 | 32 | 0 | 2,231 |
| 500 | 54 | 9 | 22 | 0 | 2,402 | 62 | 7 | 22 | 0 | 2,402 | 80 | 13 | 32 | 0 | 2,669 |
| 550 | | | | | | 62 | 7 | 22 | 0 | 2,827 | 80 | 13 | 32 | 0 | 3,117 |
| 600 | | | | | | 62 | 7 | 22 | 0 | 3,349 | 80 | 13 | 32 | 0 | 3,664 |
| 650 | | | | | | 62 | 7 | 21 | 0 | 3,848 | 80 | 13 | 31 | 0 | 4,185 |
| 700 | | | | | | 62 | 7 | 21 | 0 | 4,465 | 80 | 13 | 31 | 0 | 4,827 |
| 750 | | | | | | 62 | 7 | 21 | 0 | 5,027 | 80 | 13 | 31 | 0 | 5,411 |
| 800 | | | | | | 62 | 7 | 21 | 0 | 5,741 | 80 | 13 | 31 | 0 | 6,151 |
| 850 | | | | | | 62 | 7 | 21 | 0 | 6,362 | 80 | 13 | 31 | 0 | 6,793 |
| 900 | | | | | | 62 | 7 | 21 | 0 | 7,163 | 80 | 13 | 30 | 0 | 7,620 |
| 950 | | | | | | 62 | 7 | 21 | 0 | 7,854 | 80 | 13 | 30 | 0 | 8,332 |
| 1000 | | | | | | 62 | 7 | 21 | 0 | 8,742 | 80 | 13 | 30 | 0 | 9,246 |
| 1050 | | | | | | | | | | | 80 | 13 | 30 | 0 | 10,029 |
| 1100 | | | | | | | | | | | 80 | 13 | 30 | 0 | 11,047 |
| 1150 | | | | | | | | | | | 80 | 13 | 30 | 0 | 11,882 |
| 1200 | | | | | | | | | | | 80 | 13 | 30 | 0 | 12,969 |
| 1250 | | | | | | | | | | | 80 | 13 | 30 | 0 | 13,893 |
| 1300 | | | | | | | | | | | 80 | 13 | 29 | 0 | 15,066 |
| 1350 | | | | | | | | | | | 80 | 13 | 29 | 0 | 16,061 |
| 1400 | | | | | | | | | | | 80 | 13 | 29 | 0 | 17,320 |
| 1450 | | | | | | | | | | | 80 | 13 | 29 | 0 | 18,385 |
| 1500 | | | | | | | | | | | 80 | 13 | 29 | 0 | 19,731 |
| 1600 | | | | | | | | | | | 80 | 13 | 29 | 0 | 22,299 |
| 1650 | | | | | | | | | | | 80 | 13 | 29 | 0 | 23,506 |
| 1700 | | | | | | | | | | | 80 | 13 | 29 | 0 | 25,025 |
| 1800 | | | | | | | | | | | 80 | 13 | 29 | 0 | 27,937 |
| 1900 | | | | | | | | | | | 80 | 13 | 28 | 0 | 30,946 |
| 1950 | | | | | | | | | | | 80 | 13 | 28 | 0 | 32,365 |
| 2000 | | | | | | | | | | | 80 | 13 | 28 | 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
Additional possible sizes

Reduction of movement for expansion joints with PTFE lining: axial compression: -33 %; axial extension: -0 %; lateral displacement: -25 %. In the event of lateral displacement and simultaneous axial extension (due to installation gap tolerance) the above movements are reduced (▶ page 29). Larger movements on request.



Installation length (L_E) at design pressure

| up to 4 bar L _E = 450 mm up to 6 bar L _E = 500 mm up to 10 bar L _E = 550 mm | | | up to 4 bar L _E = 500 mm up to 6 bar L _E = 550 mm up to 10 bar L _E = 600 mm | | | up to 4 bar L _E = 550 mm up to 6 bar L _E = 600 mm up to 10 bar L _E = 650 mm | | | higher pressures on request | | | NB | | | |
|--|----|----|--|---------|-----|--|-----|----|-----------------------------|-----|-----|-----------------|----|---------|------|
| Movement | | | Movement | | | Movement | | | Movement | | | | | | |
| mm | mm | mm | mm | mm | ±mm | ±° | mm | mm | ±mm | ±° | mm | | mm | ±mm | ±° |
| 88 | 13 | 40 | 88 | 13 | 40 | 0 | 106 | 20 | 52 | 0 | 124 | | 27 | 64 | 0 |
| A | | | A | | | A | | | A | | | cm ² | | | |
| cm ² | | | cm ² | | | cm ² | | | cm ² | | | | | | |
| 260 | | | 260 | | | 353 | | | 460 | | | | | | |
| 260 | | | 260 | | | 353 | | | 460 | | | | | | |
| 88 | 13 | 39 | 0 | 337 | 106 | 20 | 51 | 0 | 441 | 124 | 27 | 63 | 0 | 560 | 125 |
| 88 | 13 | 39 | 0 | 423 | 106 | 20 | 50 | 0 | 539 | 124 | 27 | 62 | 0 | 670 | 150 |
| 88 | 13 | 38 | 0 | 539 | 106 | 20 | 49 | 0 | 670 | 124 | 27 | 61 | 0 | 814 | 175 |
| 88 | 13 | 38 | 0 | 625 | 106 | 20 | 49 | 0 | 765 | 124 | 27 | 60 | 0 | 919 | 200 |
| 88 | 13 | 37 | 0 | 866 | 106 | 20 | 48 | 0 | 1,029 | 124 | 27 | 59 | 0 | 1,207 | 250 |
| 88 | 13 | 36 | 0 | 1,158 | 106 | 20 | 47 | 0 | 1,346 | 124 | 27 | 58 | 0 | 1,548 | 300 |
| 88 | 13 | 36 | 0 | 1,500 | 106 | 20 | 46 | 0 | 1,713 | 124 | 27 | 57 | 0 | 1,940 | 350 |
| 88 | 13 | 35 | 0 | 1,840 | 106 | 20 | 46 | 0 | 2,075 | 124 | 27 | 56 | 0 | 2,324 | 400 |
| 88 | 13 | 35 | 0 | 2,248 | 106 | 20 | 45 | 0 | 2,507 | 124 | 27 | 56 | 0 | 2,781 | 450 |
| 88 | 13 | 35 | 0 | 2,688 | 106 | 20 | 45 | 0 | 2,971 | 124 | 27 | 55 | 0 | 3,267 | 500 |
| 88 | 13 | 34 | 0 | 3,137 | 106 | 20 | 45 | 0 | 3,442 | 124 | 27 | 55 | 0 | 3,761 | 550 |
| 88 | 13 | 34 | 0 | 3,685 | 106 | 20 | 44 | 0 | 4,015 | 124 | 27 | 54 | 0 | 4,359 | 600 |
| 88 | 13 | 34 | 0 | 4,208 | 106 | 20 | 44 | 0 | 4,560 | 124 | 27 | 54 | 0 | 4,927 | 650 |
| 88 | 13 | 34 | 0 | 4,852 | 106 | 20 | 44 | 0 | 5,230 | 124 | 27 | 54 | 0 | 5,621 | 700 |
| 88 | 13 | 33 | 0 | 5,437 | 106 | 20 | 43 | 0 | 5,836 | 124 | 27 | 53 | 0 | 6,249 | 750 |
| 88 | 13 | 33 | 0 | 6,179 | 106 | 20 | 43 | 0 | 6,604 | 124 | 27 | 53 | 0 | 7,044 | 800 |
| 88 | 13 | 33 | 0 | 6,822 | 106 | 20 | 43 | 0 | 7,268 | 124 | 27 | 53 | 0 | 7,729 | 850 |
| 88 | 13 | 33 | 0 | 7,651 | 106 | 20 | 43 | 0 | 8,123 | 124 | 27 | 52 | 0 | 8,610 | 900 |
| 88 | 13 | 33 | 0 | 8,365 | 106 | 20 | 42 | 0 | 8,858 | 124 | 27 | 52 | 0 | 9,366 | 950 |
| 88 | 13 | 33 | 0 | 9,280 | 106 | 20 | 42 | 0 | 9,799 | 124 | 27 | 52 | 0 | 10,333 | 1000 |
| 88 | 13 | 32 | 0 | 10,064 | 106 | 20 | 42 | 0 | 10,605 | 124 | 27 | 52 | 0 | 11,159 | 1050 |
| 88 | 13 | 32 | 0 | 11,085 | 106 | 20 | 42 | 0 | 11,652 | 124 | 27 | 51 | 0 | 12,233 | 1100 |
| 88 | 13 | 32 | 0 | 11,921 | 106 | 20 | 42 | 0 | 12,509 | 124 | 27 | 51 | 0 | 13,110 | 1150 |
| 88 | 13 | 32 | 0 | 13,009 | 106 | 20 | 41 | 0 | 13,623 | 124 | 27 | 51 | 0 | 14,250 | 1200 |
| 88 | 13 | 32 | 0 | 13,935 | 106 | 20 | 41 | 0 | 14,569 | 124 | 27 | 51 | 0 | 15,218 | 1250 |
| 88 | 13 | 32 | 0 | 15,109 | 106 | 20 | 41 | 0 | 15,770 | 124 | 27 | 51 | 0 | 16,445 | 1300 |
| 88 | 13 | 32 | 0 | 16,106 | 106 | 20 | 41 | 0 | 16,787 | 124 | 27 | 50 | 0 | 17,483 | 1350 |
| 88 | 13 | 32 | 0 | 17,366 | 106 | 20 | 41 | 0 | 18,074 | 124 | 27 | 50 | 0 | 18,796 | 1400 |
| 88 | 13 | 31 | 0 | 18,433 | 106 | 20 | 41 | 0 | 19,162 | 124 | 27 | 50 | 0 | 19,906 | 1450 |
| 88 | 13 | 31 | 0 | 19,781 | 106 | 20 | 41 | 0 | 20,536 | 124 | 27 | 50 | 0 | 21,305 | 1500 |
| 88 | 13 | 31 | 0 | 22,352 | 106 | 20 | 40 | 0 | 23,154 | 124 | 27 | 50 | 0 | 23,970 | 1600 |
| 88 | 13 | 31 | 0 | 23,561 | 106 | 20 | 40 | 0 | 24,384 | 124 | 27 | 50 | 0 | 25,221 | 1650 |
| 88 | 13 | 31 | 0 | 25,081 | 106 | 20 | 40 | 0 | 25,930 | 124 | 27 | 49 | 0 | 26,793 | 1700 |
| 88 | 13 | 31 | 0 | 27,996 | 106 | 20 | 40 | 0 | 28,893 | 124 | 27 | 49 | 0 | 29,804 | 1800 |
| 88 | 13 | 31 | 0 | 31,009 | 106 | 20 | 40 | 0 | 31,952 | 124 | 27 | 49 | 0 | 32,910 | 1900 |
| 88 | 13 | 31 | 0 | 32,429 | 106 | 20 | 40 | 0 | 33,394 | 124 | 27 | 49 | 0 | 34,373 | 1950 |
| 88 | 13 | 31 | 0 | 34,209 | 106 | 20 | 40 | 0 | 35,199 | 124 | 27 | 49 | 0 | 36,204 | 2000 |
| 88 | 13 | 30 | 0 | 37,565 | 106 | 20 | 39 | 0 | 38,603 | 124 | 27 | 48 | 0 | 39,655 | 2100 |
| 88 | 13 | 30 | 0 | 41,079 | 106 | 20 | 39 | 0 | 42,164 | 124 | 27 | 48 | 0 | 43,263 | 2200 |
| 88 | 13 | 30 | 0 | 42,712 | 106 | 20 | 39 | 0 | 43,818 | 124 | 27 | 48 | 0 | 44,938 | 2250 |
| 88 | 13 | 30 | 0 | 44,750 | 106 | 20 | 39 | 0 | 45,882 | 124 | 27 | 48 | 0 | 47,028 | 2300 |
| 88 | 13 | 30 | 0 | 48,578 | 106 | 20 | 39 | 0 | 49,757 | 124 | 27 | 48 | 0 | 50,950 | 2400 |
| 88 | 13 | 30 | 0 | 52,563 | 106 | 20 | 39 | 0 | 53,789 | 124 | 27 | 48 | 0 | 55,030 | 2500 |
| 88 | 13 | 30 | 0 | 54,408 | 106 | 20 | 39 | 0 | 55,655 | 124 | 27 | 48 | 0 | 56,917 | 2550 |
| 88 | 13 | 30 | 0 | 56,706 | 106 | 20 | 39 | 0 | 57,979 | 124 | 27 | 48 | 0 | 59,266 | 2600 |
| 88 | 13 | 30 | 0 | 61,005 | 106 | 20 | 39 | 0 | 62,325 | 124 | 27 | 47 | 0 | 63,660 | 2700 |
| 88 | 13 | 30 | 0 | 65,461 | 106 | 20 | 38 | 0 | 66,829 | 124 | 27 | 47 | 0 | 68,210 | 2800 |
| 88 | 13 | 30 | 0 | 67,518 | 106 | 20 | 38 | 0 | 68,906 | 124 | 27 | 47 | 0 | 70,309 | 2850 |
| 88 | 13 | 30 | 0 | 70,075 | 106 | 20 | 38 | 0 | 71,489 | 124 | 27 | 47 | 0 | 72,918 | 2900 |
| 88 | 13 | 29 | 0 | 74,845 | 106 | 20 | 38 | 0 | 76,307 | 124 | 27 | 47 | 0 | 77,783 | 3000 |
| 88 | 13 | 29 | 0 | 79,773 | 106 | 20 | 38 | 0 | 81,282 | 124 | 27 | 47 | 0 | 82,805 | 3100 |
| 88 | 13 | 29 | 0 | 82,041 | 106 | 20 | 38 | 0 | 83,571 | 124 | 27 | 47 | 0 | 85,116 | 3150 |
| 88 | 13 | 29 | 0 | 84,857 | 106 | 20 | 38 | 0 | 86,413 | 124 | 27 | 47 | 0 | 87,984 | 3200 |
| 88 | 13 | 29 | 0 | 90,099 | 106 | 20 | 38 | 0 | 91,702 | 124 | 27 | 46 | 0 | 93,320 | 3300 |
| 88 | 13 | 29 | 0 | 95,498 | 106 | 20 | 38 | 0 | 97,148 | 124 | 27 | 46 | 0 | 98,813 | 3400 |
| 88 | 13 | 29 | 0 | 97,979 | 106 | 20 | 38 | 0 | 99,650 | 124 | 27 | 46 | 0 | 101,336 | 3450 |
| 88 | 13 | 29 | 0 | 106,767 | 106 | 20 | 38 | 0 | 108,511 | 124 | 27 | 46 | 0 | 110,270 | 3600 |
| 88 | 13 | 29 | 0 | 118,664 | 106 | 20 | 37 | 0 | 120,503 | 124 | 27 | 46 | 0 | 122,356 | 3800 |
| 88 | 13 | 29 | 0 | 131,190 | 106 | 20 | 37 | 0 | 133,123 | 124 | 27 | 46 | 0 | 135,070 | 4000 |

Individual fabrication possible



U122x (B/E/C/M/R/K/L)

▶ with embedded vacuum support rings



U125x (B/E/C/M/R/K/L)

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



Installation length (L_E) at design pressure

| NB | up to 4 bar L _E = 350 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 | | | | |
|------|--|----|-----|----|----------------------|--|----|-----|----|----------------------|--|----|-----|----------------------|--------|
| | Movement | | | | A cm ² | Movement | | | | A cm ² | Movement | | | A cm ² | |
| | mm | mm | ±mm | ±° | | mm | mm | ±mm | ±° | | mm | mm | ±mm | | |
| 100 | 35 | 9 | 19 | 0 | 177 | 41 | 7 | 19 | 0 | 177 | 52 | 13 | 28 | 0 | 254 |
| 125 | 35 | 9 | 19 | 0 | 241 | 41 | 7 | 19 | 0 | 241 | 52 | 13 | 28 | 0 | 330 |
| 150 | 35 | 9 | 18 | 0 | 314 | 41 | 7 | 18 | 0 | 314 | 52 | 13 | 27 | 0 | 415 |
| 175 | 35 | 9 | 18 | 0 | 415 | 41 | 7 | 18 | 0 | 415 | 52 | 13 | 27 | 0 | 531 |
| 200 | 35 | 9 | 18 | 0 | 491 | 41 | 7 | 18 | 0 | 491 | 52 | 13 | 26 | 0 | 616 |
| 250 | 35 | 9 | 17 | 0 | 707 | 41 | 7 | 18 | 0 | 707 | 52 | 13 | 26 | 0 | 855 |
| 300 | 35 | 9 | 17 | 0 | 973 | 41 | 7 | 17 | 0 | 973 | 52 | 13 | 26 | 0 | 1,146 |
| 350 | 35 | 9 | 17 | 0 | 1,288 | 41 | 7 | 17 | 0 | 1,288 | 52 | 13 | 25 | 0 | 1,486 |
| 400 | 35 | 9 | 17 | 0 | 1,605 | 41 | 7 | 17 | 0 | 1,605 | 52 | 13 | 25 | 0 | 1,825 |
| 450 | 35 | 9 | 16 | 0 | 1,987 | 41 | 7 | 17 | 0 | 1,987 | 52 | 13 | 25 | 0 | 2,231 |
| 500 | 35 | 9 | 16 | 0 | 2,402 | 41 | 7 | 17 | 0 | 2,402 | 52 | 13 | 24 | 0 | 2,669 |
| 550 | | | | | | 41 | 7 | 16 | 0 | 2,827 | 52 | 13 | 24 | 0 | 3,117 |
| 600 | | | | | | 41 | 7 | 16 | 0 | 3,349 | 52 | 13 | 24 | 0 | 3,664 |
| 650 | | | | | | 41 | 7 | 16 | 0 | 3,848 | 52 | 13 | 24 | 0 | 4,185 |
| 700 | | | | | | 41 | 7 | 16 | 0 | 4,465 | 52 | 13 | 24 | 0 | 4,827 |
| 750 | | | | | | 41 | 7 | 16 | 0 | 5,027 | 52 | 13 | 23 | 0 | 5,411 |
| 800 | | | | | | 41 | 7 | 16 | 0 | 5,741 | 52 | 13 | 23 | 0 | 6,151 |
| 850 | | | | | | 41 | 7 | 16 | 0 | 6,362 | 52 | 13 | 23 | 0 | 6,793 |
| 900 | | | | | | 41 | 7 | 16 | 0 | 7,163 | 52 | 13 | 23 | 0 | 7,620 |
| 950 | | | | | | 41 | 7 | 16 | 0 | 7,854 | 52 | 13 | 23 | 0 | 8,332 |
| 1000 | | | | | | 41 | 7 | 16 | 0 | 8,742 | 52 | 13 | 23 | 0 | 9,246 |
| 1050 | | | | | | | | | | | 52 | 13 | 23 | 0 | 10,029 |
| 1100 | | | | | | | | | | | 52 | 13 | 23 | 0 | 11,047 |
| 1150 | | | | | | | | | | | 52 | 13 | 23 | 0 | 11,882 |
| 1200 | | | | | | | | | | | 52 | 13 | 22 | 0 | 12,969 |
| 1250 | | | | | | | | | | | 52 | 13 | 22 | 0 | 13,893 |
| 1300 | | | | | | | | | | | 52 | 13 | 22 | 0 | 15,066 |
| 1350 | | | | | | | | | | | 52 | 13 | 22 | 0 | 16,061 |
| 1400 | | | | | | | | | | | 52 | 13 | 22 | 0 | 17,320 |
| 1450 | | | | | | | | | | | 52 | 13 | 22 | 0 | 18,385 |
| 1500 | | | | | | | | | | | 52 | 13 | 22 | 0 | 19,731 |
| 1600 | | | | | | | | | | | 52 | 13 | 22 | 0 | 22,299 |
| 1650 | | | | | | | | | | | 52 | 13 | 22 | 0 | 23,506 |
| 1700 | | | | | | | | | | | 52 | 13 | 22 | 0 | 25,025 |
| 1800 | | | | | | | | | | | 52 | 13 | 22 | 0 | 27,937 |
| 1900 | | | | | | | | | | | 52 | 13 | 22 | 0 | 30,946 |
| 1950 | | | | | | | | | | | 52 | 13 | 22 | 0 | 32,365 |
| 2000 | | | | | | | | | | | 52 | 13 | 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
Additional 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). Larger movements on request.

U122x (B/E/C/M/R/K/L)

▶ with embedded vacuum support rings



U125x (B/E/C/M/R/K/L)

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



Installation length (L_E) at design pressure

| up to 4 bar L _E = 450 mm up to 6 bar L _E = 500 mm up to 10 bar L _E = 550 mm | | | | | up to 4 bar L _E = 500 mm up to 6 bar L _E = 550 mm up to 10 bar L _E = 600 mm | | | | | up to 4 bar L _E = 550 mm up to 6 bar L _E = 600 mm up to 10 bar L _E = 650 mm | | | | | |
|--|----|----|----|----------------------|--|-----|----|----|----------------------|--|----|----|-----|----------------------|------|
| higher pressures on request | | | | | | | | | | | | | | | |
| Movement | | | ±° | A cm ² | Movement | | | | A cm ² | Movement | | | | A cm ² | NB |
| mm | mm | mm | | | mm | ±mm | ±° | mm | | mm | mm | mm | ±mm | | |
| 58 | 13 | 30 | 0 | 260 | 70 | 20 | 39 | 0 | 353 | 82 | 27 | 48 | 0 | 460 | 100 |
| 58 | 13 | 30 | 0 | 337 | 70 | 20 | 39 | 0 | 441 | 82 | 27 | 47 | 0 | 560 | 125 |
| 58 | 13 | 29 | 0 | 423 | 70 | 20 | 38 | 0 | 539 | 82 | 27 | 47 | 0 | 670 | 150 |
| 58 | 13 | 29 | 0 | 539 | 70 | 20 | 37 | 0 | 670 | 82 | 27 | 46 | 0 | 814 | 175 |
| 58 | 13 | 29 | 0 | 625 | 70 | 20 | 37 | 0 | 765 | 82 | 27 | 45 | 0 | 919 | 200 |
| 58 | 13 | 28 | 0 | 866 | 70 | 20 | 36 | 0 | 1,029 | 82 | 27 | 45 | 0 | 1,207 | 250 |
| 58 | 13 | 27 | 0 | 1,158 | 70 | 20 | 36 | 0 | 1,346 | 82 | 27 | 44 | 0 | 1,548 | 300 |
| 58 | 13 | 27 | 0 | 1,500 | 70 | 20 | 35 | 0 | 1,713 | 82 | 27 | 43 | 0 | 1,940 | 350 |
| 58 | 13 | 27 | 0 | 1,840 | 70 | 20 | 35 | 0 | 2,075 | 82 | 27 | 43 | 0 | 2,324 | 400 |
| 58 | 13 | 26 | 0 | 2,248 | 70 | 20 | 34 | 0 | 2,507 | 82 | 27 | 42 | 0 | 2,781 | 450 |
| 58 | 13 | 26 | 0 | 2,688 | 70 | 20 | 34 | 0 | 2,971 | 82 | 27 | 42 | 0 | 3,267 | 500 |
| 58 | 13 | 26 | 0 | 3,137 | 70 | 20 | 34 | 0 | 3,442 | 82 | 27 | 41 | 0 | 3,761 | 550 |
| 58 | 13 | 26 | 0 | 3,685 | 70 | 20 | 33 | 0 | 4,015 | 82 | 27 | 41 | 0 | 4,359 | 600 |
| 58 | 13 | 26 | 0 | 4,208 | 70 | 20 | 33 | 0 | 4,560 | 82 | 27 | 41 | 0 | 4,927 | 650 |
| 58 | 13 | 25 | 0 | 4,852 | 70 | 20 | 33 | 0 | 5,230 | 82 | 27 | 41 | 0 | 5,621 | 700 |
| 58 | 13 | 25 | 0 | 5,437 | 70 | 20 | 33 | 0 | 5,836 | 82 | 27 | 40 | 0 | 6,249 | 750 |
| 58 | 13 | 25 | 0 | 6,179 | 70 | 20 | 33 | 0 | 6,604 | 82 | 27 | 40 | 0 | 7,044 | 800 |
| 58 | 13 | 25 | 0 | 6,822 | 70 | 20 | 32 | 0 | 7,268 | 82 | 27 | 40 | 0 | 7,729 | 850 |
| 58 | 13 | 25 | 0 | 7,651 | 70 | 20 | 32 | 0 | 8,123 | 82 | 27 | 40 | 0 | 8,610 | 900 |
| 58 | 13 | 25 | 0 | 8,365 | 70 | 20 | 32 | 0 | 8,858 | 82 | 27 | 39 | 0 | 9,366 | 950 |
| 58 | 13 | 25 | 0 | 9,280 | 70 | 20 | 32 | 0 | 9,799 | 82 | 27 | 39 | 0 | 10,333 | 1000 |
| 58 | 13 | 25 | 0 | 10,064 | 70 | 20 | 32 | 0 | 10,605 | 82 | 27 | 39 | 0 | 11,159 | 1050 |
| 58 | 13 | 24 | 0 | 11,085 | 70 | 20 | 32 | 0 | 11,652 | 82 | 27 | 39 | 0 | 12,233 | 1100 |
| 58 | 13 | 24 | 0 | 11,921 | 70 | 20 | 32 | 0 | 12,509 | 82 | 27 | 39 | 0 | 13,110 | 1150 |
| 58 | 13 | 24 | 0 | 13,009 | 70 | 20 | 31 | 0 | 13,623 | 82 | 27 | 39 | 0 | 14,250 | 1200 |
| 58 | 13 | 24 | 0 | 13,935 | 70 | 20 | 31 | 0 | 14,569 | 82 | 27 | 38 | 0 | 15,218 | 1250 |
| 58 | 13 | 24 | 0 | 15,109 | 70 | 20 | 31 | 0 | 15,770 | 82 | 27 | 38 | 0 | 16,445 | 1300 |
| 58 | 13 | 24 | 0 | 16,106 | 70 | 20 | 31 | 0 | 16,787 | 82 | 27 | 38 | 0 | 17,483 | 1350 |
| 58 | 13 | 24 | 0 | 17,366 | 70 | 20 | 31 | 0 | 18,074 | 82 | 27 | 38 | 0 | 18,796 | 1400 |
| 58 | 13 | 24 | 0 | 18,433 | 70 | 20 | 31 | 0 | 19,162 | 82 | 27 | 38 | 0 | 19,906 | 1450 |
| 58 | 13 | 24 | 0 | 19,781 | 70 | 20 | 31 | 0 | 20,536 | 82 | 27 | 38 | 0 | 21,305 | 1500 |
| 58 | 13 | 24 | 0 | 22,352 | 70 | 20 | 31 | 0 | 23,154 | 82 | 27 | 38 | 0 | 23,970 | 1600 |
| 58 | 13 | 24 | 0 | 23,561 | 70 | 20 | 31 | 0 | 24,384 | 82 | 27 | 38 | 0 | 25,221 | 1650 |
| 58 | 13 | 23 | 0 | 25,081 | 70 | 20 | 30 | 0 | 25,930 | 82 | 27 | 37 | 0 | 26,793 | 1700 |
| 58 | 13 | 23 | 0 | 27,996 | 70 | 20 | 30 | 0 | 28,893 | 82 | 27 | 37 | 0 | 29,804 | 1800 |
| 58 | 13 | 23 | 0 | 31,009 | 70 | 20 | 30 | 0 | 31,952 | 82 | 27 | 37 | 0 | 32,910 | 1900 |
| 58 | 13 | 23 | 0 | 32,429 | 70 | 20 | 30 | 0 | 33,394 | 82 | 27 | 37 | 0 | 34,373 | 1950 |
| 58 | 13 | 23 | 0 | 34,209 | 70 | 20 | 30 | 0 | 35,199 | 82 | 27 | 37 | 0 | 36,204 | 2000 |
| 58 | 13 | 23 | 0 | 37,565 | 70 | 20 | 30 | 0 | 38,603 | 82 | 27 | 37 | 0 | 39,655 | 2100 |
| 58 | 13 | 23 | 0 | 41,079 | 70 | 20 | 30 | 0 | 42,164 | 82 | 27 | 37 | 0 | 43,263 | 2200 |
| 58 | 13 | 23 | 0 | 42,712 | 70 | 20 | 30 | 0 | 43,818 | 82 | 27 | 36 | 0 | 44,938 | 2250 |
| 58 | 13 | 23 | 0 | 44,750 | 70 | 20 | 30 | 0 | 45,882 | 82 | 27 | 36 | 0 | 47,028 | 2300 |
| 58 | 13 | 23 | 0 | 48,578 | 70 | 20 | 29 | 0 | 49,757 | 82 | 27 | 36 | 0 | 50,950 | 2400 |
| 58 | 13 | 23 | 0 | 52,563 | 70 | 20 | 29 | 0 | 53,789 | 82 | 27 | 36 | 0 | 55,030 | 2500 |
| 58 | 13 | 23 | 0 | 54,408 | 70 | 20 | 29 | 0 | 55,655 | 82 | 27 | 36 | 0 | 56,917 | 2550 |
| 58 | 13 | 23 | 0 | 56,706 | 70 | 20 | 29 | 0 | 57,979 | 82 | 27 | 36 | 0 | 59,266 | 2600 |
| 58 | 13 | 23 | 0 | 61,005 | 70 | 20 | 29 | 0 | 62,325 | 82 | 27 | 36 | 0 | 63,660 | 2700 |
| 58 | 13 | 22 | 0 | 65,461 | 70 | 20 | 29 | 0 | 66,829 | 82 | 27 | 36 | 0 | 68,210 | 2800 |
| 58 | 13 | 22 | 0 | 67,518 | 70 | 20 | 29 | 0 | 68,906 | 82 | 27 | 36 | 0 | 70,309 | 2850 |
| 58 | 13 | 22 | 0 | 70,075 | 70 | 20 | 29 | 0 | 71,489 | 82 | 27 | 36 | 0 | 72,918 | 2900 |
| 58 | 13 | 22 | 0 | 74,845 | 70 | 20 | 29 | 0 | 76,307 | 82 | 27 | 36 | 0 | 77,783 | 3000 |
| 58 | 13 | 22 | 0 | 79,773 | 70 | 20 | 29 | 0 | 81,282 | 82 | 27 | 35 | 0 | 82,805 | 3100 |
| 58 | 13 | 22 | 0 | 82,041 | 70 | 20 | 29 | 0 | 83,571 | 82 | 27 | 35 | 0 | 85,116 | 3150 |
| 58 | 13 | 22 | 0 | 84,857 | 70 | 20 | 29 | 0 | 86,413 | 82 | 27 | 35 | 0 | 87,984 | 3200 |
| 58 | 13 | 22 | 0 | 90,099 | 70 | 20 | 29 | 0 | 91,702 | 82 | 27 | 35 | 0 | 93,320 | 3300 |
| 58 | 13 | 22 | 0 | 95,498 | 70 | 20 | 29 | 0 | 97,148 | 82 | 27 | 35 | 0 | 98,813 | 3400 |
| 58 | 13 | 22 | 0 | 97,979 | 70 | 20 | 29 | 0 | 99,650 | 82 | 27 | 35 | 0 | 101,336 | 3450 |
| 58 | 13 | 22 | 0 | 106,767 | 70 | 20 | 28 | 0 | 108,511 | 82 | 27 | 35 | 0 | 110,270 | 3600 |
| 58 | 13 | 22 | 0 | 118,664 | 70 | 20 | 28 | 0 | 120,503 | 82 | 27 | 35 | 0 | 122,356 | 3800 |
| 58 | 13 | 22 | 0 | 131,190 | 70 | 20 | 28 | 0 | 133,123 | 82 | 27 | 35 | 0 | 135,070 | 4000 |

Individual fabrication possible