

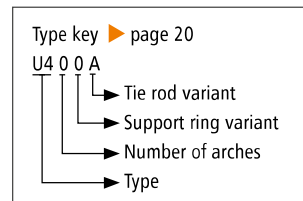
U400A

NB 300 – NB 4000



► **Type U400A**
without pressure support ring

► **Type U403A**
with pressure support ring



Universal expansion joint with one arch facing inward

Design: Rubber bellows with one arch facing inward along the entire installation length, full faced rubber flanges and single or multi-part backing flanges
 Note: The arch reduces the pipe cross-section (please request flange connection measurements)
 Optionally for pressure, external pressure support ring in the arch trough

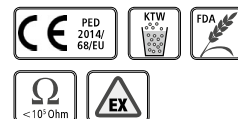
Nominal diameters: NB 300 to NB 4000, intermediate sizes possible

Installation length: Standard $L_E = 250$ to 350 mm (► page 94–95)
 Other installation lengths on request

Pressure: Applications with permanent vacuum
 Pressure not allowed without external pressure support ring in the arch trough. Design in accordance with Pressure Equipment Directive 2014/68/EU

Movement: For axial, lateral and angular movements (► page 94–95)

Application:
 Cooling water systems,
 plant construction, petro-
 chemical and refinery
 technology e.g. in vacuum
 lines, acid lines and on
 vessels



Assembly instruction download
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 |

Flanges

Design: Single-part or multi-part, round backing flanges with 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

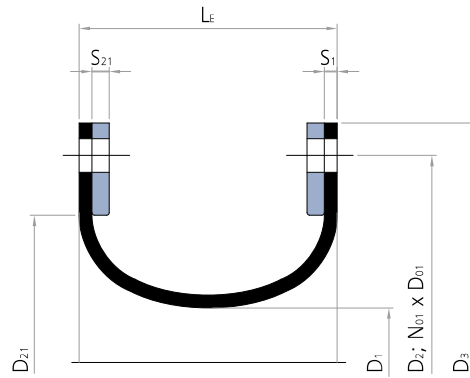
| TYPE | | Pressure support ring | Pressure | Movement |
|-------|--|-----------------------------|---|-----------|
| U400A | | Without | For vacuum up to 0.05 bar absolute Pressure not allowed | ▶ page 94 |
| U403A | | External in the arch trough | Depending on the nominal diameter up to 6 bar, for vacuum up to 0.05 bar absolute | ▶ page 95 |

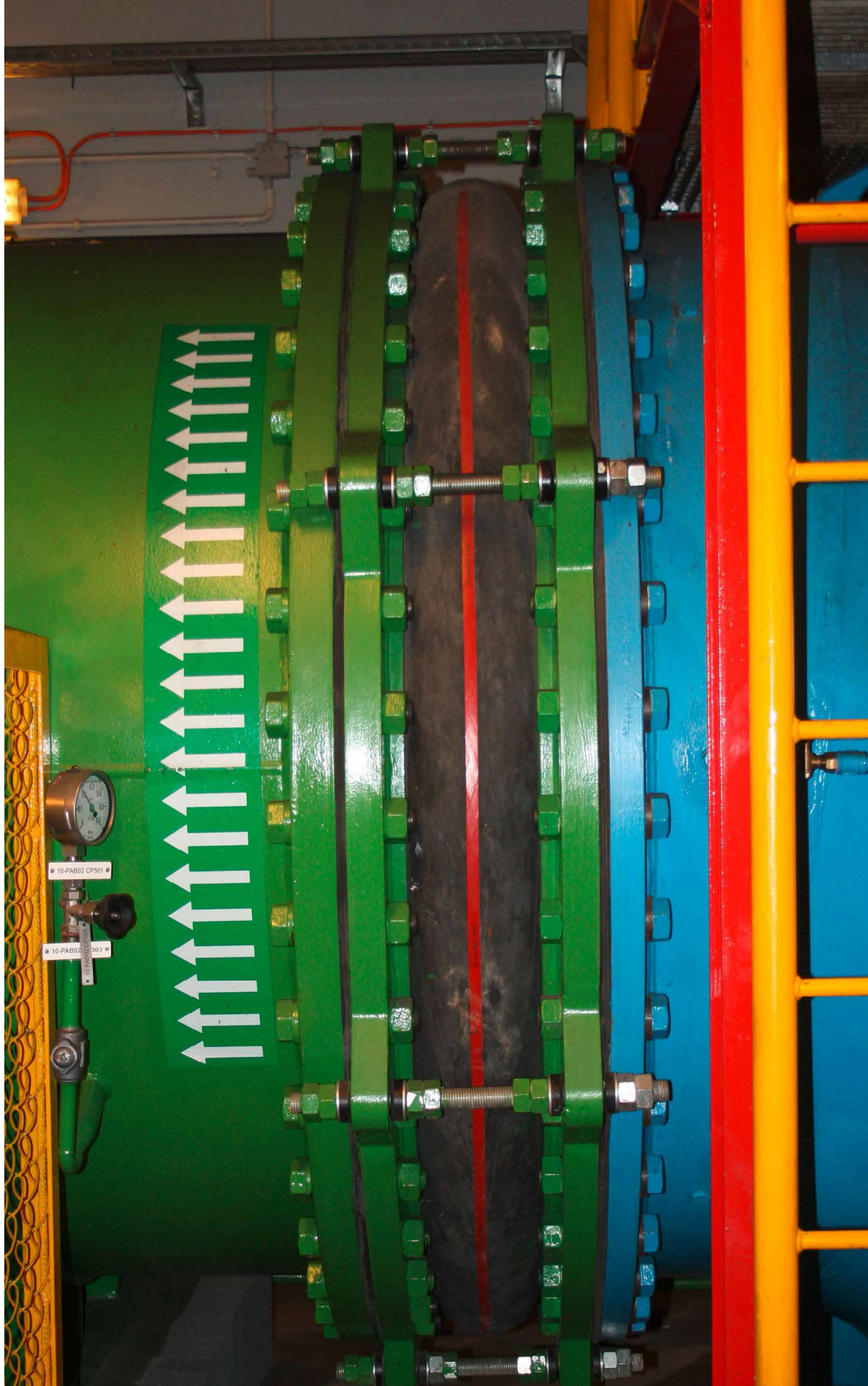
| Materials | | |
|------------------|--|----------------------------|
| Stainless steel: | 1.4301 (X5CrNi18-10) 1.4539 (X1NiCrMoCu25-20-5) 1.4571 (X6CrNiMoTi17-12-2) | Other materials on request |
| Carbon steel: | 1.0570 (S355J2G3) 1.0570 (S355J2G3) galvanised | |



Example: Type U403A

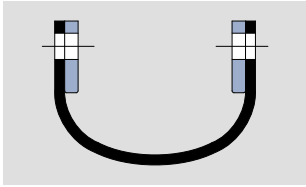
Planning help U400A





U400A

UNIVERSAL
rubber flange



U400A

▶ without pressure support ring

| Installation length (L _E) | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|----|------|----------------------|-------------------------|----|------|----------------------|-------------------------|----|------|----------------------|--|
| NB | L _E = 250 mm | | | | L _E = 300 mm | | | | L _E = 350 mm | | | | |
| | Movement | | | A cm ² | Movement | | | A cm ² | Movement | | | A cm ² | |
| | mm | mm | ± mm | | mm | mm | ± mm | | mm | mm | ± mm | | |
| 300 | 30 | 15 | 18 | 707 | 40 | 20 | 25 | 707 | 50 | 25 | 31 | 707 | |
| 350 | 30 | 15 | 18 | 962 | 40 | 20 | 24 | 962 | 50 | 25 | 30 | 962 | |
| 400 | 30 | 15 | 18 | 1,257 | 40 | 20 | 24 | 1,257 | 50 | 25 | 30 | 1,257 | |
| 450 | 30 | 15 | 17 | 1,590 | 40 | 20 | 23 | 1,590 | 50 | 25 | 29 | 1,590 | |
| 500 | 30 | 15 | 17 | 1,964 | 40 | 20 | 23 | 1,964 | 50 | 25 | 29 | 1,964 | |
| 550 | 30 | 15 | 17 | 2,376 | 40 | 20 | 23 | 2,376 | 50 | 25 | 28 | 2,376 | |
| 600 | 30 | 15 | 17 | 2,827 | 40 | 20 | 22 | 2,827 | 50 | 25 | 28 | 2,827 | |
| 650 | 30 | 15 | 17 | 3,318 | 40 | 20 | 22 | 3,318 | 50 | 25 | 28 | 3,318 | |
| 700 | 30 | 15 | 17 | 3,849 | 40 | 20 | 22 | 3,849 | 50 | 25 | 28 | 3,849 | |
| 750 | 30 | 15 | 16 | 4,418 | 40 | 20 | 22 | 4,418 | 50 | 25 | 27 | 4,418 | |
| 800 | 30 | 15 | 16 | 5,027 | 40 | 20 | 22 | 5,027 | 50 | 25 | 27 | 5,027 | |
| 850 | 30 | 15 | 16 | 5,675 | 40 | 20 | 22 | 5,675 | 50 | 25 | 27 | 5,675 | |
| 900 | 30 | 15 | 16 | 6,362 | 40 | 20 | 21 | 6,362 | 50 | 25 | 27 | 6,362 | |
| 950 | 30 | 15 | 16 | 7,088 | 40 | 20 | 21 | 7,088 | 50 | 25 | 27 | 7,088 | |
| 1000 | 30 | 15 | 16 | 7,854 | 40 | 20 | 21 | 7,854 | 50 | 25 | 26 | 7,854 | |
| 1050 | 30 | 15 | 16 | 8,659 | 40 | 20 | 21 | 8,659 | 50 | 25 | 26 | 8,659 | |
| 1100 | 30 | 15 | 16 | 9,503 | 40 | 20 | 21 | 9,503 | 50 | 25 | 26 | 9,503 | |
| 1150 | 30 | 15 | 16 | 10,387 | 40 | 20 | 21 | 10,387 | 50 | 25 | 26 | 10,387 | |
| 1200 | 30 | 15 | 15 | 11,310 | 40 | 20 | 21 | 11,310 | 50 | 25 | 26 | 11,310 | |
| 1250 | 30 | 15 | 15 | 12,272 | 40 | 20 | 21 | 12,272 | 50 | 25 | 26 | 12,272 | |
| 1300 | 30 | 15 | 15 | 13,273 | 40 | 20 | 20 | 13,273 | 50 | 25 | 26 | 13,273 | |
| 1350 | 30 | 15 | 15 | 14,314 | 40 | 20 | 20 | 14,314 | 50 | 25 | 25 | 14,314 | |
| 1400 | 30 | 15 | 15 | 15,394 | 40 | 20 | 20 | 15,394 | 50 | 25 | 25 | 15,394 | |
| 1450 | 30 | 15 | 15 | 16,513 | 40 | 20 | 20 | 16,513 | 50 | 25 | 25 | 16,513 | |
| 1500 | 30 | 15 | 15 | 17,672 | 40 | 20 | 20 | 17,672 | 50 | 25 | 25 | 17,672 | |
| 1600 | 30 | 15 | 15 | 20,106 | 40 | 20 | 20 | 20,106 | 50 | 25 | 25 | 20,106 | |
| 1650 | 30 | 15 | 15 | 21,383 | 40 | 20 | 20 | 21,383 | 50 | 25 | 25 | 21,383 | |
| 1700 | 30 | 15 | 15 | 22,698 | 40 | 20 | 20 | 22,698 | 50 | 25 | 25 | 22,698 | |
| 1800 | 30 | 15 | 15 | 25,447 | 40 | 20 | 20 | 25,447 | 50 | 25 | 24 | 25,447 | |
| 1900 | 30 | 15 | 15 | 28,353 | 40 | 20 | 19 | 28,353 | 50 | 25 | 24 | 28,353 | |
| 1950 | 30 | 15 | 15 | 29,865 | 40 | 20 | 19 | 29,865 | 50 | 25 | 24 | 29,865 | |
| 2000 | 30 | 15 | 15 | 31,416 | 40 | 20 | 19 | 31,416 | 50 | 25 | 24 | 31,416 | |
| 2100 | 30 | 15 | 14 | 34,636 | 40 | 20 | 19 | 34,636 | 50 | 25 | 24 | 34,636 | |
| 2200 | 30 | 15 | 14 | 38,013 | 40 | 20 | 19 | 38,013 | 50 | 25 | 24 | 38,013 | |
| 2250 | 30 | 15 | 14 | 39,761 | 40 | 20 | 19 | 39,761 | 50 | 25 | 24 | 39,761 | |
| 2300 | 30 | 15 | 14 | 41,548 | 40 | 20 | 19 | 41,548 | 50 | 25 | 24 | 41,548 | |
| 2400 | 30 | 15 | 14 | 45,239 | 40 | 20 | 19 | 45,239 | 50 | 25 | 24 | 45,239 | |
| 2500 | 30 | 15 | 14 | 49,087 | 40 | 20 | 19 | 49,087 | 50 | 25 | 24 | 49,087 | |
| 2550 | 30 | 15 | 14 | 51,071 | 40 | 20 | 19 | 51,071 | 50 | 25 | 23 | 51,071 | |
| 2600 | 30 | 15 | 14 | 53,093 | 40 | 20 | 19 | 53,093 | 50 | 25 | 23 | 53,093 | |
| 2700 | 30 | 15 | 14 | 57,256 | 40 | 20 | 19 | 57,256 | 50 | 25 | 23 | 57,256 | |
| 2800 | 30 | 15 | 14 | 61,575 | 40 | 20 | 19 | 61,575 | 50 | 25 | 23 | 61,575 | |
| 2850 | 30 | 15 | 14 | 63,794 | 40 | 20 | 18 | 63,794 | 50 | 25 | 23 | 63,794 | |
| 2900 | 30 | 15 | 14 | 66,052 | 40 | 20 | 18 | 66,052 | 50 | 25 | 23 | 66,052 | |
| 3000 | 30 | 15 | 14 | 70,686 | 40 | 20 | 18 | 70,686 | 50 | 25 | 23 | 70,686 | |
| 3100 | 30 | 15 | 14 | 75,477 | 40 | 20 | 18 | 75,477 | 50 | 25 | 23 | 75,477 | |
| 3150 | 30 | 15 | 14 | 77,931 | 40 | 20 | 18 | 77,931 | 50 | 25 | 23 | 77,931 | |
| 3200 | 30 | 15 | 14 | 80,425 | 40 | 20 | 18 | 80,425 | 50 | 25 | 23 | 80,425 | |
| 3300 | 30 | 15 | 14 | 85,530 | 40 | 20 | 18 | 85,530 | 50 | 25 | 23 | 85,530 | |
| 3400 | 30 | 15 | 14 | 90,792 | 40 | 20 | 18 | 90,792 | 50 | 25 | 23 | 90,792 | |
| 3450 | 30 | 15 | 14 | 93,482 | 40 | 20 | 18 | 93,482 | 50 | 25 | 23 | 93,482 | |
| 3600 | 30 | 15 | 13 | 101,788 | 40 | 20 | 18 | 101,788 | 50 | 25 | 22 | 101,788 | |
| 3800 | 30 | 15 | 13 | 113,412 | 40 | 20 | 18 | 113,412 | 50 | 25 | 22 | 113,412 | |
| 4000 | 30 | 15 | 13 | 125,664 | 40 | 20 | 18 | 125,664 | 50 | 25 | 22 | 125,664 | |

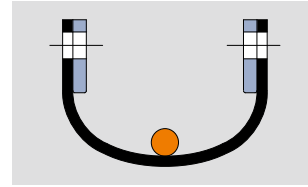
Recommended sizes
Additional possible sizes

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

Individual fabrication possible

U403A

▶ with pressure support ring



| Installation length (L _E) at design pressure | | | | | | | | | | | | |
|--|-------------------------------------|----|------|---------|-------------------------------------|----|------|---------|-------------------------------------|----|------|---------|
| NB | up to 6 bar L _E = 250 mm | | | | up to 6 bar L _E = 300 mm | | | | up to 6 bar L _E = 350 mm | | | |
| | Movement | | | A | Movement | | | A | Movement | | | A |
| | mm | mm | ± mm | | mm | mm | ± mm | | mm | mm | ± mm | |
| 300 | 30 | 15 | 18 | 707 | 40 | 20 | 25 | 707 | 50 | 25 | 31 | 707 |
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| 1050 | 30 | 15 | 16 | 8,659 | 40 | 20 | 21 | 8,659 | 50 | 25 | 26 | 8,659 |
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| 2000 | 30 | 15 | 15 | 31,416 | 40 | 20 | 19 | 31,416 | 50 | 25 | 24 | 31,416 |
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| 2400 | 30 | 15 | 14 | 45,239 | 40 | 20 | 19 | 45,239 | 50 | 25 | 24 | 45,239 |
| 2500 | 30 | 15 | 14 | 49,087 | 40 | 20 | 19 | 49,087 | 50 | 25 | 24 | 49,087 |
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| 2600 | 30 | 15 | 14 | 53,093 | 40 | 20 | 19 | 53,093 | 50 | 25 | 23 | 53,093 |
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| 2800 | 30 | 15 | 14 | 61,575 | 40 | 20 | 19 | 61,575 | 50 | 25 | 23 | 61,575 |
| 2850 | 30 | 15 | 14 | 63,794 | 40 | 20 | 18 | 63,794 | 50 | 25 | 23 | 63,794 |
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| 3000 | 30 | 15 | 14 | 70,686 | 40 | 20 | 18 | 70,686 | 50 | 25 | 23 | 70,686 |
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| 3150 | 30 | 15 | 14 | 77,931 | 40 | 20 | 18 | 77,931 | 50 | 25 | 23 | 77,931 |
| 3200 | 30 | 15 | 14 | 80,425 | 40 | 20 | 18 | 80,425 | 50 | 25 | 23 | 80,425 |
| 3300 | 30 | 15 | 14 | 85,530 | 40 | 20 | 18 | 85,530 | 50 | 25 | 23 | 85,530 |
| 3400 | 30 | 15 | 14 | 90,792 | 40 | 20 | 18 | 90,792 | 50 | 25 | 23 | 90,792 |
| 3450 | 30 | 15 | 14 | 93,482 | 40 | 20 | 18 | 93,482 | 50 | 25 | 23 | 93,482 |
| 3600 | 30 | 15 | 13 | 101,788 | 40 | 20 | 18 | 101,788 | 50 | 25 | 22 | 101,788 |
| 3800 | 30 | 15 | 13 | 113,412 | 40 | 20 | 18 | 113,412 | 50 | 25 | 22 | 113,412 |
| 4000 | 30 | 15 | 13 | 125,664 | 40 | 20 | 18 | 125,664 | 50 | 25 | 22 | 125,664 |

Recommended sizes
Additional possible sizes

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Individual fabrication possible