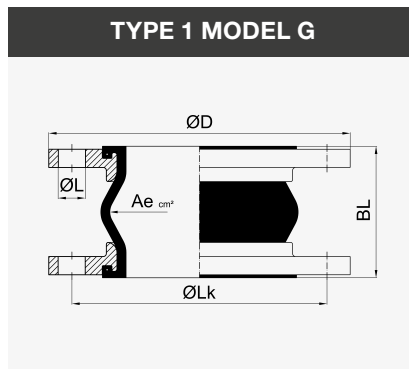


RUBBER EXPANSION JOINTS

Type 1 MODEL G



Areas of application in industry and trade:

- › Absorbing axial movements and (heat/cold) expansions
- › Vibration-reducing connection of machines and units
- › Reducing noise transfer
- › Compensation of installation inaccuracies
- › Reduction of forces and moments in connections
- › Mechanical engineering, plant engineering, pipeline construction and ship building
- › Gas supply and building technology
- › Energy and offshore technology
- › Steel, printing, paper and chemical industry

Version

The HKS rubber expansion joint of **type 1 model G** consists of a rubber bellows and two rotating flanges.

Design of rubber bellows:

- Inner layer: NBR (nitrile), seamless, abrasion-resistant
- Pressure support: PA textile cord
- Outer layer: Chloroprene CR
- Identification: Yellow ring, DN..., PN..., date of manufacture

Flange design:

Rotating steel flanges made of material S235JR, galvanised, DIN PN 10, with integrated rubber bead (self-sealing), additional seals are not required.

Properties and areas of application:

The HKS rubber expansion joint **type 1 model G** is suitable for mineral oil products, fuel-ethanol mixtures and EN fuels, municipal and natural gas except liquid gas. Electrically conductive.

Additional equipment:

- › PTFE linings
- › Vacuum support rings
- › Tensioning/tension rod length limiters
- › Hinged tensioners
- › Inner sleeves
- › Flame protection covers
- › Soil protection covers

Special versions:

- › Flanges: Other materials, flange standards and dimensions according to DIN, ASA, JIS, etc. are possible.
- › Rubber bellows: On request, other expansion joints are available with Nominal diameters, pressure stages and lengths which exceed the standard listed in the tables. DN 32 bellows are used for DN 25 rubber expansion joints.

Temperature-dependent pressure and movement ranges

| Max. operating temperature | Max. movement range | Temperature-dependent operating pressure for bellows | |
|----------------------------|---------------------|--|--------|
| | | PN 10 | PN 16 |
| 50 °C | 100 % | 10 bar | 16 bar |
| 70 °C | 80 % | 8 bar | 12 bar |
| 100 °C | 60 % | 6 bar | 10 bar |

- 1) DN 32 bellows are used for DN 25 rubber expansion joints.
- 2) VSD ... vacuum support ring made of material 1.4571
- 3) VSD+S ... vacuum support ring with lock (screw fitting) made of 1.4571
- 4) Axial movement absorption Δx_c ... compression and Δx_e ... extension
- 5) $\Delta x_c/\Delta x_e$, Δy and $\Delta \alpha$ have to be reduced proportionately for simultaneous movement absorption. The sum of all parts must not exceed 100 %.

Subject to technical modifications

| Nominal diameter | | Length | Bellows | | Permitted movement absorption nominal ⁵⁾ | | | | Permitted negative pressure (vacuum stability) | | | Flange | | | | | Weight | | | |
|------------------|--------|--------|------------------|--------------------|---|--------------|----------|---------|--|------------------------|--------------------------|------------------|----------------------------------|-----------------------|--------------|---------------|--------|------------|-----------------|-----|
| | | | Nominal pressure | Effective diameter | Axial ⁴⁾ | | Lateral | Angular | With out VSD | With VSD ²⁾ | With VSD+S ³⁾ | Outside diameter | Borehole pattern acc. to EN 1092 | Pitch circle diameter | No. of holes | Hole diameter | | | | |
| | | | | | Δx_c | Δx_e | | | | | | | | | | | | Δy | $\Delta \alpha$ | D |
| DN | BL | PN | Ae | mm | mm | mm | De-grees | mbar | mbar | mbar | mm | - | mm | - | mm | kg | | | | |
| mm | in | mm | bar | cm ² | mm | mm | mm | | | | | | | | | | | | | |
| 25 ¹⁾ | 1" | 130 | 16 | 15 | -30 | +20 | ±30 | ±30 | max. -1000 | | | 115 | 40 | 85 | 4 | 14 | 1.9 | | | |
| 32 | 1 1/4" | 130 | 16 | 15 | -30 | +20 | ±30 | ±30 | | | | 140 | 40 | 100 | 4 | 18 | 3.4 | | | |
| 32 | 1 1/4" | 160 | 16 | 15 | -30 | +35 | ±35 | ±15 | | | | 140 | 40 | 100 | 4 | 18 | 3.6 | | | |
| 40 | 1 1/2" | 130 | 16 | 20 | -30 | +20 | ±30 | ±30 | | | | 150 | 40 | 110 | 4 | 18 | 4.0 | | | |
| 40 | 1 1/2" | 160 | 16 | 20 | -30 | +35 | ±35 | ±15 | | | | 150 | 40 | 110 | 4 | 18 | 4.2 | | | |
| 50 | 2" | 130 | 16 | 30 | -30 | +20 | ±30 | ±30 | | | | 165 | 16 | 125 | 4 | 18 | 4.6 | | | |
| 50 | 2" | 150 | 16 | 30 | -35 | +30 | ±30 | ±15 | | | | 165 | 16 | 125 | 4 | 18 | 4.7 | | | |
| 50 | 2" | 160 | 16 | 30 | -30 | +35 | ±35 | ±15 | | | | 165 | 16 | 125 | 4 | 18 | 4.8 | | | |
| 65 | 2 1/2" | 130 | 16 | 50 | -30 | +20 | ±30 | ±30 | | | | -700 | max. -1000 | | 185 | 16 | 145 | 4 | 18 | 5.3 |
| 65 | 2 1/2" | 150 | 16 | 50 | -35 | +30 | ±30 | ±15 | | | | -700 | | | 185 | 16 | 145 | 4 | 18 | 5.4 |
| 65 | 2 1/2" | 160 | 16 | 50 | -30 | +35 | ±35 | ±15 | -700 | 185 | 16 | 145 | | | 4 | 18 | 5.5 | | | |
| 80 | 3" | 130 | 16 | 85 | -30 | +20 | ±30 | ±30 | -600 | 200 | 16 | 160 | | | 8 | 18 | 6.9 | | | |
| 80 | 3" | 150 | 16 | 85 | -35 | +30 | ±30 | ±15 | -600 | 200 | 16 | 160 | | | 8 | 18 | 7.0 | | | |
| 80 | 3" | 160 | 16 | 85 | -30 | +35 | ±35 | ±15 | -600 | 200 | 16 | 160 | | | 8 | 18 | 7.1 | | | |
| 100 | 4" | 130 | 16 | 125 | -30 | +20 | ±30 | ±20 | -400 | 220 | 16 | 180 | | | 8 | 18 | 8.0 | | | |
| 100 | 4" | 150 | 16 | 125 | -35 | +30 | ±30 | ±15 | -400 | 220 | 16 | 180 | | | 8 | 18 | 8.1 | | | |
| 100 | 4" | 160 | 16 | 125 | -30 | +35 | ±35 | ±15 | -400 | 220 | 16 | 180 | | | 8 | 18 | 8.2 | | | |
| 125 | 5" | 130 | 16 | 185 | -30 | +20 | ±30 | ±20 | -300 | 250 | 16 | 210 | | | 8 | 18 | 9.9 | | | |
| 125 | 5" | 150 | 16 | 185 | -35 | +30 | ±30 | ±15 | -300 | 250 | 16 | 210 | 8 | 18 | 10.1 | | | | | |
| 125 | 5" | 160 | 16 | 185 | -30 | +35 | ±35 | ±15 | -300 | 250 | 16 | 210 | 8 | 18 | 10.2 | | | | | |
| 150 | 6" | 130 | 16 | 250 | -30 | +20 | ±30 | ±20 | -300 | 285 | 16 | 240 | 8 | 22 | 12.3 | | | | | |
| 150 | 6" | 150 | 16 | 250 | -35 | +30 | ±30 | ±15 | -300 | 285 | 16 | 240 | 8 | 22 | 12.4 | | | | | |
| 150 | 6" | 160 | 16 | 250 | -30 | +35 | ±35 | ±15 | -300 | 285 | 16 | 240 | 8 | 22 | 12.5 | | | | | |
| 200 | 8" | 130 | 16 | 400 | -25 | +30 | ±30 | ±10 | -300 | 340 | 10 | 295 | 8 | 22 | 16.5 | | | | | |
| 200 | 8" | 150 | 16 | 400 | -35 | +30 | ±30 | ±15 | -300 | 340 | 10 | 295 | 8 | 22 | 16.6 | | | | | |
| 200 | 8" | 160 | 16 | 400 | -30 | +35 | ±35 | ±15 | -300 | 340 | 10 | 295 | 8 | 22 | 16.7 | | | | | |
| 200 | 8" | 175 | 16 | 400 | -15 | +35 | ±10 | ±5 | -300 | 340 | 10 | 295 | 8 | 22 | 16.8 | | | | | |
| 250 | 10" | 130 | 16 | 600 | -10 | +30 | ±15 | ±5 | -200 | 395 | 10 | 350 | 12 | 22 | 21.6 | | | | | |
| 250 | 10" | 175 | 16 | 600 | -15 | +35 | ±10 | ±5 | -200 | 395 | 10 | 350 | 12 | 22 | 21.9 | | | | | |
| 250 | 10" | 200 | 10 | 600 | -40 | +35 | ±30 | ±10 | -200 | 395 | 10 | 350 | 12 | 22 | 22.1 | | | | | |
| 300 | 12" | 130 | 16 | 800 | -10 | +30 | ±15 | ±5 | -100 | 445 | 10 | 400 | 12 | 22 | 29.3 | | | | | |
| 300 | 12" | 200 | 10 | 800 | -40 | +35 | ±30 | ±10 | -100 | 445 | 10 | 400 | 12 | 22 | 29.8 | | | | | |
| 350 | 14" | 200 | 16 | 1000 | -40 | +35 | ±30 | ±8 | - | 505 | 10 | 460 | 16 | 22 | 43.0 | | | | | |
| 400 | 16" | 200 | 16 | 1375 | -40 | +35 | ±30 | ±8 | - | 565 | 10 | 515 | 16 | 26 | 46.0 | | | | | |
| 450 | 18" | 200 | 10 | 1780 | -40 | +35 | ±30 | ±8 | - | -700 | 615 | 10 | 565 | 20 | 26 | 50.0 | | | | |
| 450 | 18" | 250 | 10 | 1780 | -40 | +35 | ±30 | ±8 | - | -700 | 615 | 10 | 565 | 20 | 26 | 53.0 | | | | |
| 500 | 20" | 200 | 10 | 2185 | -40 | +35 | ±30 | ±8 | - | -700 | 670 | 10 | 620 | 20 | 26 | 57.0 | | | | |
| 600 | 24" | 200 | 10 | 3080 | -40 | +35 | ±30 | ±8 | - | -700 | 780 | 10 | 725 | 20 | 30 | 70.0 | | | | |
| 700 | 28" | 260 | 10 | 4800 | -40 | +30 | ±30 | ±5 | - | - | 895 | 10 | 840 | 24 | 30 | 117.0 | | | | |
| 800 | 32" | 250 | 10 | 5440 | -40 | +35 | ±35 | ±5 | - | - | -700 | 1015 | 10 | 950 | 24 | 33 | 129.5 | | | |
| 900 | 36" | 300 | 10 | 7100 | -40 | +40 | ±40 | ±5 | - | - | -700 | 1115 | 10 | 1050 | 28 | 33 | 184.0 | | | |
| 1000 | 40" | 300 | 10 | 8700 | -40 | +40 | ±40 | ±5 | - | - | -700 | 1230 | 10 | 1160 | 28 | 36 | 245.0 | | | |