

SEALS FOR LINEAR MOVEMENTS

DC4

DESCRIPTION

The DC4 profile is a shaft seal composed of a single metal cage with a rubber coating and a double sealing lip suitable for linear movements, the fluids being separated by the integrated springs.

ADVANTAGES

- Very good static sealing
- Very good thermal expansion compensation
- Greater roughness is allowed in the housing
- Reduced risk of corrosion
- Sealing for low and high viscosity fluids
- Modern sealing lips with low radial forces
- Sealing lips designed for linear movements
- Fluid separation system

APPLICATIONS

- All types of linear applications
- Shock absorbers
- Steering

MATERIALS

Rubber

- FKM 75 - 80 Shore A
- HNBR 75 - 80 Shore A
- NBR 75 - 80 Shore A

Metal cage

- Steel - AISI 1010
- Steel - DC01 C490
- Steel - DC01 C590

Spring

- Steel - AISI 1070 - 1090
- Stainless steel - AISI 316

SEAL DESIGN

Tolerance for the outside diameter of the seal (ØD)

| Bore diameter ØD1 (mm) | Apparent metal cage | Rubber coating | Coating with grooves |
|------------------------|---------------------|----------------|----------------------|
| ØD1 ≤ 50.0 | +0.10 / +0.20 | +0.15 / +0.30 | +0.20 / +0.40 |
| 50.0 < ØD1 ≤ 80.0 | +0.13 / +0.23 | +0.20 / +0.35 | +0.25 / +0.45 |
| 80.0 < ØD1 ≤ 120.0 | +0.15 / +0.25 | +0.20 / +0.35 | +0.25 / +0.45 |
| 120.0 < ØD1 ≤ 180.0 | +0.18 / +0.28 | +0.25 / +0.45 | +0.30 / +0.55 |
| 180.0 < ØD1 ≤ 300.0 | +0.20 / +0.30 | +0.25 / +0.45 | +0.30 / +0.55 |
| 300.0 < ØD1 ≤ 500.0 | +0.23 / +0.35 | +0.30 / +0.55 | +0.35 / +0.65 |
| 500.0 < ØD1 ≤ 630.0 | +0.23 / +0.35 | +0.35 / +0.65 | +0.40 / +0.75 |

Roundness tolerance

| Bore diameter ØD1 (mm) | Apparent metal cage | Rubber coating |
|------------------------|-------------------------------|----------------|
| ØD1 ≤ 50.0 | 0.18 | 0.25 |
| 50.0 < ØD1 ≤ 80.0 | 0.25 | 0.35 |
| 80.0 < ØD1 ≤ 120.0 | 0.30 | 0.50 |
| 120.0 < ØD1 ≤ 180.0 | 0.40 | 0.65 |
| 180.0 < ØD1 ≤ 300.0 | 0.25% of the outside diameter | 0.80 |
| 300.0 < ØD1 ≤ 500.0 | 0.25% of the outside diameter | 1.00 |
| 500.0 < ØD1 ≤ 630.0 | - | - |

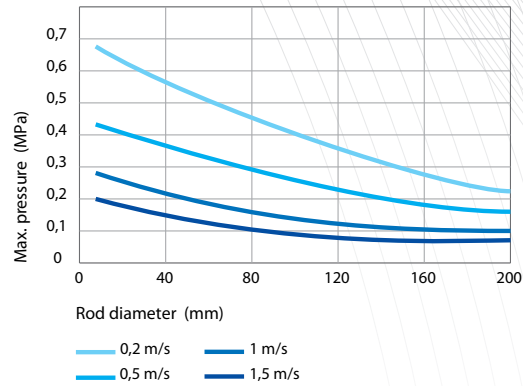
Tolerance for the inside diameter of the seal (Ød)

Free and without constraint, the inside diameter of the sealing lip is always smaller than the diameter of the rod. The pre-tightening or interference denotes the difference between these two values. Depending on the rod diameter, the diameter of the sealing lip is generally considered to be less, between 0.8 and 3.5 mm.

TECHNICAL DATA

Speed / Pressure ratio

We recommend using seals designed for linear movements at maximum speed of 1.5 m/sec and pressures that do not exceed 0.65 MPa. These approximate values cannot be interpreted at the same time.



Temperature / Media

| Media | | Maximum temperature depending on the materials | | | | | | |
|-----------------------|---|--|--------|--------|--------|--------|--------|--------|
| | | ACM | AEM | EPDM | FKM | HNBR | NBR | VMQ |
| Mineral oils | Hydraulic oils | +130°C | +130°C | - | +170°C | +130°C | +100°C | +150°C |
| | Greases | - | +130°C | - | - | +100°C | +90°C | - |
| Fire-resistant fluids | HFA group - Emulsion with more than 80% water | - | - | - | - | +70°C | +70°C | +60°C |
| | HFB group - Opposite solution (water in oil) | - | - | - | - | +70°C | +70°C | +60°C |
| | HFC group - Polymer aqueous solution | - | - | +60°C | - | +70°C | +70°C | - |
| | HFD group - Water-free synthetic fluids | - | - | - | +150°C | - | - | - |
| Other fluids | EL + L heating oil | - | - | - | - | +100°C | +90°C | - |
| | Air | +150°C | +150°C | +150°C | +200°C | +130°C | +100°C | +200°C |
| | Water | - | - | +150°C | +100°C | +100°C | +90°C | - |
| | Water for washing | - | - | +130°C | +100°C | +100°C | +90°C | - |
| Temperature range | Min. | -25°C | -40°C | -45°C | -20°C | -30°C | -30°C | -60°C |
| | Max. | +150°C | +150°C | +150°C | +200°C | +150°C | +100°C | +200°C |

DIMENSIONS

| Part number | Shaft diameter Ød1 h11 | Bore diameter ØD1 H8 | Seal height H1 |
|--------------------|---------------------------|-------------------------|-------------------|
| DC4 20 x 30 x 10 | 20.00 | 30.00 | 10.00 |
| DC4 22 x 36 x 10 | 22.00 | 36.00 | 10.00 |
| DC4 26 x 37 x 10.5 | 26.00 | 37.00 | 10.50 |
| DC4 27 x 37 x 10.5 | 27.00 | 37.00 | 10.50 |
| DC4 27 x 39 x 10.5 | 27.00 | 39.00 | 10.50 |
| DC4 27 x 40 x 10.5 | 27.00 | 40.00 | 10.50 |
| DC4 28 x 40 x 11 | 28.00 | 40.00 | 11.00 |
| DC4 30 x 41 x 10 | 30.00 | 41.00 | 10.00 |
| DC4 30 x 42 x 11 | 30.00 | 42.00 | 11.00 |
| DC4 31 x 43 x 10.3 | 31.00 | 43.00 | 10.30 |
| DC4 32 x 43 x 10.5 | 32.00 | 43.00 | 10.50 |
| DC4 32 x 44 x 10.5 | 32.00 | 44.00 | 10.50 |
| DC4 32 x 46 x 11 | 32.00 | 46.00 | 11.00 |
| DC4 33 x 45 x 11 | 33.00 | 45.00 | 11.00 |
| DC4 33 x 46 x 10.5 | 33.00 | 46.00 | 10.50 |
| DC4 33 x 46 x 11 | 33.00 | 46.00 | 11.00 |
| DC4 35 x 46 x 11 | 35.00 | 46.00 | 11.00 |
| DC4 35 x 47 x 10 | 35.00 | 47.00 | 10.00 |
| DC4 35 x 48 x 11 | 35.00 | 48.00 | 11.00 |
| DC4 36 x 50 x 11 | 36.00 | 50.00 | 11.00 |

| Part number | Shaft diameter Ød1 h11 | Bore diameter ØD1 H8 | Seal height H1 |
|--------------------|---------------------------|-------------------------|-------------------|
| DC4 37 x 50 x 11 | 37.00 | 50.00 | 11.00 |
| DC4 38 x 50 x 8 | 38.00 | 50.00 | 8.00 |
| DC4 38 x 50 x 10.5 | 38.00 | 50.00 | 10.50 |
| DC4 39 x 52 x 11 | 39.00 | 52.00 | 11.00 |
| DC4 40 x 52 x 10.5 | 40.00 | 52.00 | 10.50 |
| DC4 41 x 53 x 8 | 41.00 | 53.00 | 8.00 |
| DC4 41 x 54 x 11 | 41.00 | 54.00 | 11.00 |
| DC4 42 x 55 x 11 | 42.00 | 55.00 | 11.00 |
| DC4 43 x 54 x 11 | 43.00 | 54.00 | 11.00 |
| DC4 43 x 55 x 9.5 | 43.00 | 55.00 | 9.50 |
| DC4 43 x 55 x 10.5 | 43.00 | 55.00 | 10.50 |
| DC4 45 x 57 x 11 | 45.00 | 57.00 | 11.00 |
| DC4 45 x 58 x 11 | 45.00 | 58.00 | 11.00 |
| DC4 46 x 58 x 9.5 | 46.00 | 58.00 | 9.50 |
| DC4 46 x 58 x 10.5 | 46.00 | 58.00 | 10.50 |
| DC4 47 x 58 x 10 | 47.00 | 58.00 | 10.00 |
| DC4 48 x 58 x 8.5 | 48.00 | 58.00 | 8.50 |
| DC4 48 x 58 x 9.5 | 48.00 | 58.00 | 9.50 |
| DC4 50 x 60 x 7 | 50.00 | 60.00 | 7.00 |
| DC4 50 x 63 x 11 | 50.00 | 63.00 | 11.00 |