

VR RADIAL SHAFT SEAL-Double Lip SAC

PRODUCT APPLICATION

Sealing of shafts. Rotary shaft seal (RWDR) in dimensions in accordance with DIN 3760. It is often used to separate media or pressure ranges.

PRODUCT ADVANTAGES

- Low coefficient of friction
- Low power loss and high service life values
- Low pumping effect due to tangential and radial preload
- High pressure stability
- No post-treatment of the shaft material, such as hardening, nitriding, hard chrome plating or additional liners required



MATERIAL

| | |
|-------------------|----------------------------|
| Sleeve / Membrane | NBR |
| | HNBR |
| | FKM |
| | EPDM |
| | FFKM * |
| Support Ring/Body | Aluminium |
| | Stainless steel (1.4301) * |

* Other materials on enquiry.

OPERATING CONDITIONS

| | |
|-------------------------|-----------------------|
| Temperature | -50 °C to 220 °C** |
| Circumferential speed | 40* m/s for 0 MPa |
| Pressure (Pmin to Pmax) | 0.06* MPa to 1.5* MPa |

* Value depends on other application parameters and the elastomer used.

** Value dependent on other application parameters and the elastomer used.

TOLERANCE

| Surface Element | Surface Tolerance | Roundness |
|-----------------|-------------------|-----------|
| Shaft | IT1 | IT8 |
| Housing | ISO tolerance H8 | |

*Depending on increase in rotational speed, the radial shaft deflection may need to be more tightly adjusted. Please enquire.

SURFACE QUALITY

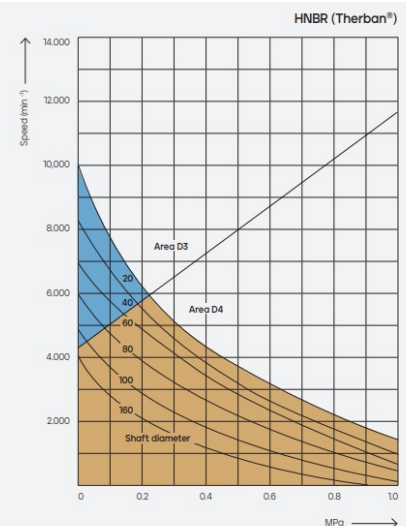
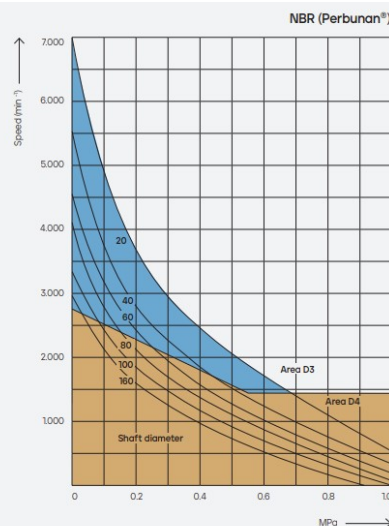
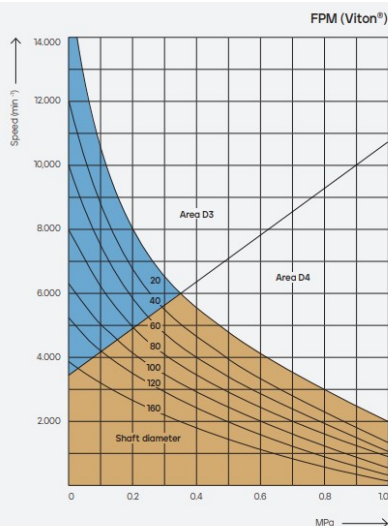
| Surface Element | Rz | Ra / Rt |
|-----------------|----------------------|-------------------------|
| Shaft | 1 – 5 µm | 0.1 – 0.8 µm |
| Housing | 4.0 µm ≤ Rz ≤ 8.0 µm | Ra ≤ 3 µm Rt ≤ 16 µm |

*Please observe our general design notes in catalogue.

Shaft Surface Hardness:

- Simple applications: 25 – 30 HRC
- Normal applications: Min. 40 HRC
- External dirt ingress or contaminated media: Min. 55 HRC

P - V DIAGRAM





SAC Double Lip Seal



support body / diameter

D3 = D1 + 1.0mm to D1 = 145mm

D4 = D1 + 0.5mm

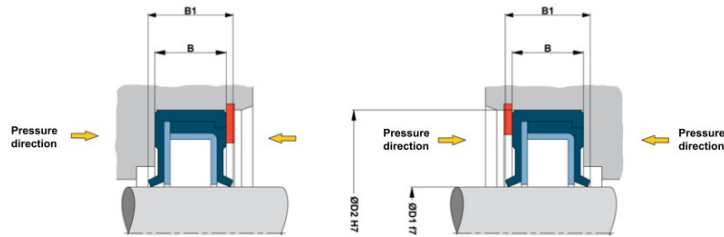
D3 = D1 + 1.5 mm from D1 = 150mm

D4 = D1 + 1.0 mm

Housing - diameter D5 min.

D5 = (D1 + D2) / 2

For an axial fixation, the SAC-seal 0.5mm can be compressed by the adjacent component.
e.g. B = 3.5 becomes 3.0 mm



| D1 | D2 | B | B1 | B2 | D1 | D2 | B | B1 | B2 | D1 | D2 | B | B1 | B2 | D1 | D2 | B | B1 | B2 |
|----|----|---|-----|-----|----|----|----|-----|-----|----|-----|----|------|------|-----|-----|----|------|------|
| | | | | | 20 | 30 | 7 | 8,5 | 9,5 | 42 | 55 | 10 | 12 | 13 | 85 | 110 | 10 | 12,5 | 13,5 |
| | | | | | | 32 | | | | | 62 | | | | | 120 | 12 | 14,5 | 15,5 |
| | | | | | | 35 | | | | | 72 | | | | 90 | 110 | 10 | 12,5 | 13,5 |
| | | | | | | 40 | | | | 45 | 60 | 10 | 12 | 13 | | 120 | 12 | 14,5 | 15,5 |
| | | | | | | 47 | | | | | 62 | | | | 95 | 120 | 12 | 14,5 | 15,5 |
| 6 | 16 | 7 | 8 | 9 | 22 | 32 | 7 | 8,5 | 10 | | 65 | | | | | 125 | | | |
| | 22 | | | | | 35 | | | | | 72 | | | | 100 | 120 | 12 | 14,5 | 15,5 |
| | | | | | | 40 | | | | 48 | 62 | 10 | 12 | 13 | | 125 | | | |
| 7 | 16 | 7 | 8,5 | 9 | | 47 | | | | | 72 | | | | | 130 | | | |
| | 22 | | | | 24 | 35 | 7 | 9 | 10 | 50 | 65 | 10 | 12 | 13 | 105 | 130 | 12 | 14,5 | 15,5 |
| 8 | 16 | 7 | 8,5 | 9,5 | | 37 | | | | | 68 | | | | | 140 | | | |
| | 22 | | | | | 40 | | | | | 72 | | | | 110 | 130 | 12 | 14,5 | 15,5 |
| | 24 | | | | | 47 | | | | | 80 | | | | | 140 | | | |
| 9 | 22 | 7 | 8,5 | 9,5 | 25 | 35 | 7 | 9 | 10 | 52 | 68 | 10 | 12 | 13 | 115 | 140 | 12 | 14,5 | 15,5 |
| | 24 | | | | | 40 | | | | | 72 | | | | | 150 | | | |
| | 26 | | | | | 42 | | | | 55 | 70 | 10 | 12 | 13 | 120 | 150 | 12 | 14,5 | 15,5 |
| 10 | 22 | 7 | 8,5 | 9,5 | | 47 | | | | | 72 | | | | | 160 | | | |
| | 24 | | | | | 52 | 9 | 11 | 12 | | 80 | | | | 125 | 150 | 12 | 14,5 | 15,5 |
| | 26 | | | | 26 | 37 | 7 | 9 | 10 | | 85 | | | | | 160 | | | |
| 11 | 22 | 7 | 8,5 | 9,5 | | 42 | | | | 56 | 70 | 10 | 12 | 13 | 130 | 160 | 12 | 14,5 | 15,5 |
| | 26 | | | | | 47 | | | | | 72 | | | | | 170 | | | |
| | | | | | 28 | 40 | 7 | 9 | 10 | | 80 | | | | 135 | 170 | 12 | 14,5 | 15,5 |
| 12 | 22 | 7 | 8,5 | 9,5 | | 47 | | | | | 85 | | | | 140 | 170 | 12 | 14,5 | 15,5 |
| | 24 | | | | | 52 | 9 | 11 | 12 | 58 | 72 | 10 | 12 | 13 | 145 | 175 | 15 | 17,5 | 18,5 |
| | 28 | | | | 30 | 40 | 7 | 9 | 10 | | 80 | | | | 150 | 180 | 15 | 17,5 | 18,5 |
| | 30 | | | | | 42 | | | | 60 | 75 | 10 | 12,5 | 13,5 | 160 | 190 | 15 | 17,5 | 18,5 |
| | | | | | | 45 | | | | | 80 | | | | 170 | 200 | 15 | 17,5 | 18,5 |
| 14 | 24 | 7 | 8,5 | 9,5 | | 47 | | | | | 85 | | | | 180 | 210 | 15 | 17,5 | 18,5 |
| | 28 | | | | | 50 | | | | | 90 | | | | 190 | 220 | 15 | 17,5 | 18,5 |
| | 30 | | | | | 52 | 9 | 11 | 12 | 62 | 85 | 10 | 12,5 | 13,5 | 200 | 230 | 15 | 18 | 19 |
| | 35 | | | | | 62 | 10 | 12 | 13 | | 90 | | | | 210 | 240 | 15 | 18 | 19 |
| 15 | 26 | 7 | 8,5 | 9,5 | 32 | 45 | 7 | 9 | 10 | 63 | 85 | 10 | 12,5 | 13,5 | 220 | 250 | 15 | 18 | 19 |
| | 30 | | | | | 47 | | | | | 90 | | | | 230 | 260 | 15 | 18 | 19 |
| | 32 | | | | | 52 | 9 | 11 | 13 | 65 | 85 | 10 | 12,5 | 13,5 | 240 | 270 | 15 | 18 | 19 |
| | 35 | | | | 35 | 47 | 7 | 9 | 10 | | 90 | | | | 250 | 280 | 15 | 18 | 19 |
| 16 | 28 | 7 | 8,5 | 9,5 | | 50 | | | | | 100 | | | | 260 | 300 | 20 | 24 | 25 |
| | 30 | | | | | 52 | 9 | 11 | 12 | 68 | 90 | 10 | 12,5 | 13,5 | 280 | 320 | 20 | 24 | 25 |
| | 32 | | | | | 62 | 10 | 12 | 13 | | 100 | | | | 300 | 340 | 20 | 24 | 25 |
| | 35 | | | | 36 | 47 | 7 | 9 | 10 | 70 | 90 | 10 | 12,5 | 13,5 | 320 | 360 | 20 | 24 | 25 |
| 17 | 28 | 7 | 8,5 | 9,5 | | 50 | | | | | 100 | | | | 340 | 380 | 20 | 24 | 25 |
| | 30 | | | | | 52 | 9 | 11 | 12 | 72 | 95 | 10 | 12,5 | 13,5 | 360 | 400 | 20 | 24 | 25 |
| | 32 | | | | | 62 | 10 | 12 | 13 | | 100 | | | | 380 | 420 | 20 | 24 | 25 |
| | 35 | | | | 38 | 52 | 9 | 11 | 12 | 75 | 95 | 10 | 12,5 | 13,5 | | | | | |
| | 40 | | | | | 55 | 10 | 12 | 13 | | 100 | | | | | | | | |
| 18 | 30 | 7 | 8,5 | 9,5 | | 62 | | | | 78 | 100 | 10 | 12,5 | 13,5 | | | | | |
| | 32 | | | | 40 | 52 | 9 | 11 | 12 | 80 | 100 | 10 | 12,5 | 13,5 | | | | | |
| | 35 | | | | | 55 | 10 | 12 | 13 | | 110 | | | | | | | | |
| | 40 | | | | | 62 | | | | | | | | | | | | | |
| | | | | | | 72 | | | | | | | | | | | | | |