

VR RADIAL SHAFT SEAL-Single Lip DOA

PRODUCT APPLICATION

VR Seal DOA significantly reduces friction compared to standard geometries. For sealing shafts when there is limited space available. Rotary shaft seal (RWDR) in dimensions in accordance with DIN 3760 in half DIN width.

PRODUCT ADVANTAGES

- Low 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.

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TOLERANCE

Surface Element	Surface Tolerance	Roundness
Shaft	H11	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

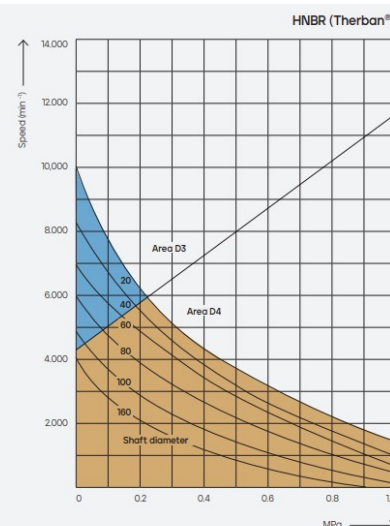
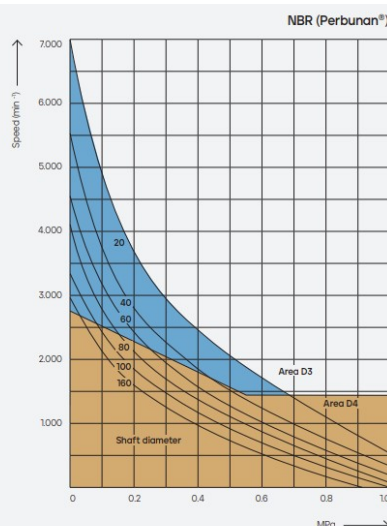
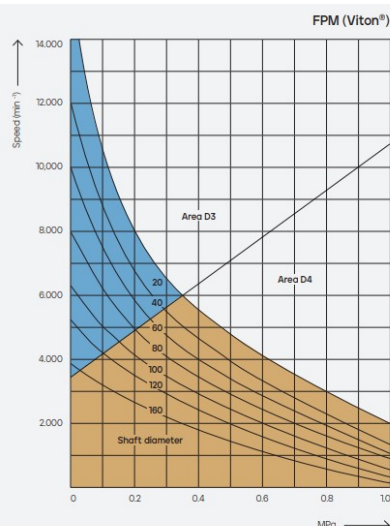
Surface Element	Rz	Ra / Rt
Shaft	1 – 5 µm	0.1 – 0.8 µm
Housing	4.0 µm ≤ Rz ≤ 8.0 µm	Ra ≤ 3 µm Rt ≤ 16 µm

*Please observe our general design notes in catalogue.

Shaft Surface Hardness:

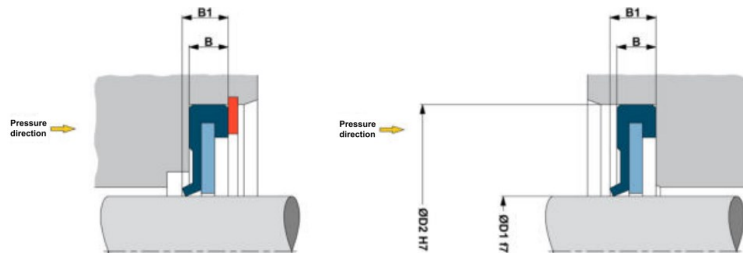
- Simple applications: 25 – 30 HRC
- Normal applications: Min. 40 HRC
- External dirt ingress or contaminated media: Min. 55 HRC

P – V DIAGRAM





DOA Single 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 DOA – seal 0.5mm can be compressed by the adjacent component.
e.g. B = 3.5 becomes 3.0 mm

Red-marked and deviating dimensions only on request.

D1	D2	B	B1	B2	D1	D2	B	B1	B2	D1	D2	B	B1	B2	D1	D2	B	B1	B2
3	10	3,5	4,5	5,5	20	30	3,5	5	6	42	55	4,5	6,5	7,5	85	110	5,5	8	9
4	10					32					62					120	5,5	8	9
5	10					35					72				90	110	5,5	8	9
6	10					40				45	60	4,5	6,5	7,5		120	5,5	8	9
5	16	3,5	4,5	5,5		47					62				95	120	5,5	8	9
6	16	3,5	4,5	5,5	22	32	3,5	5	6,5		65					125			
	19					35					72				100	120	5,5	8	9
	22					40				48	62	4,5	6,5	7,5		125			
7	16	3,5	5	5,5		47					72					130			
	22				24	35	3,5	5,5	6,5	50	65	4,5	6,5	7,5	105	130	5,5	8	9
8	16	3,5	5	6		37					68					140			
	22					40					72				110	130	5,5	8	9
	24					47					80					140			
9	22	3,5	5	6	25	35	3,5	5,5	6,5	52	68	4,5	6,5	7,5	115	140	5,5	8	9
	24					40					72					150			
	26					42				55	70	4,5	6,5	7,5	120	150	5,5	8	9
10	22	3,5	5	6		47					72								
	24					52	4,5	6,5	7,5		80				125	150	5,5	8	9
	26				26	37	3,5	5,5	6,5		85								
11	22	3,5	5	6		42				56	70	4,5	6,5	7,5					
	26					47					72								
					28	40	3,5	5,5	6,5		80								
12	22	3,5	5	6		47					85								
	24					52	4,5	6,5	7,5	58	72	4,5	6,5	7,5					
	28				30	40	3,5	5,5	6,5		80								
	30					42				60	75	4,5	7	8					
14	24	3,5	5,0	6		45					80								
	26					47					85								
	28					52	4,5	6,5	7,5		90								
	30					62	4,5	6,5	7,5	62	85	4,5	7	8					
	35										90								
15	26	3,5	5	6	32	45	3,5	5,5	6,5	63	85	4,5	7	8					
	30					47					90								
	32					52	4,5	6,5	7,5	65	85	4,5	7	8					
	35				35	47	3,5	5,5	6,5		90								
16	28	3,5	5	6		50					100								
	30					52	4,5	6,5	7,5	68	90	4,5	7	8					
	32					62	4,5	6,5	7,5		100								
	35				36	47	3,5	5,5	6,5	70	90	4,5	7	8					
17	28	3,5	5	6		50					100								
	30					52	4,5	6,5	7,5	72	95	4,5	7	8					
	32					62	4,5	6,5	7,5		100								
	35				38	52	4,5	6,5	7,5	75	95	4,5	7	8					
	40					55	4,5	6,5	7,5		100								
18	30	3,5	5	6		62	4,5	6,5	7,5	78	100	4,5	7	8					
	32				40	52	4,5	6,5	7,5	80	100	4,5	7	8					
	35					55	4,5	6,5	7,5		110	5,5	8	9					