

VR RADIAL SHAFT SEAL-Double Lip MAC

PRODUCT APPLICATION

Sealing of shafts. Rotary shaft seal (RWDR) in dimensions in accordance with DIN 3760.

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.

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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

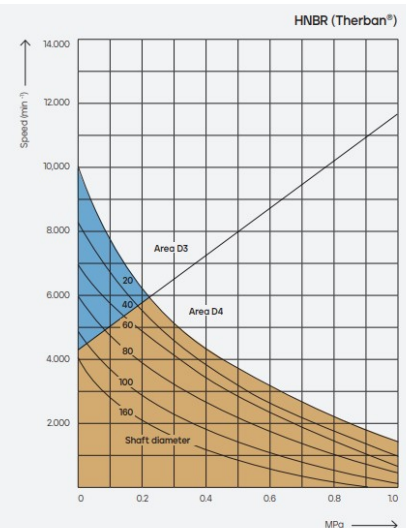
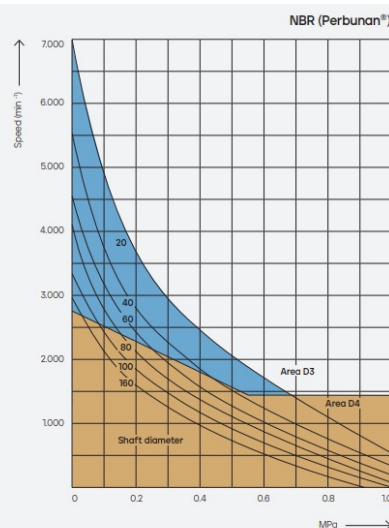
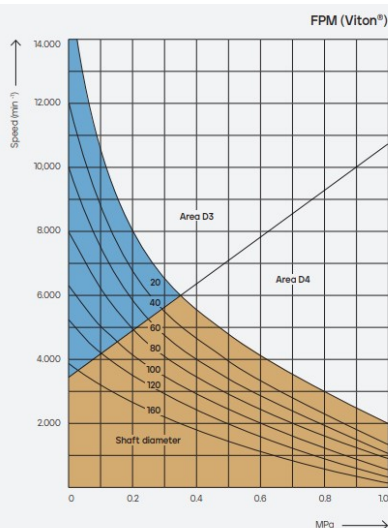
Surface Element	Rz	Ra / Rt
Shaft	1 – 5 µm	0.1 – 0.8 µm
Housing	4.0 µm ≤ Rz ≤ 8.0 µm	Ra ≤ 3 µm Rt ≤ 16 µm

*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





MAC Double Lip Seal

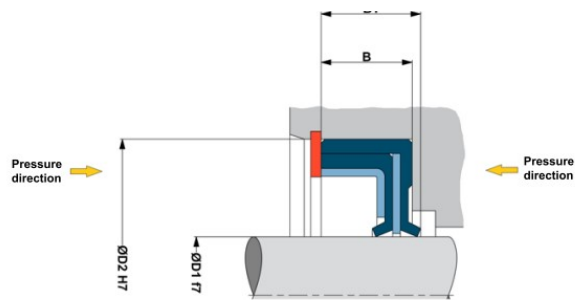
support body / diameter

$$D4 = D1 + 0.5\text{mm}$$

from D1 = 150mm

$$D4 = D1 + 1.0\text{ mm}$$

> 130 mm housing – diameter on request



D1	D2	B	B1	E2	D1	D2	B	B1	E2	D1	D2	B	B1	E2	D1	D2	B	B1	E2
					20	30	7	11	8,5	42	55	10	15	12	85	110	10	16	12,5
						32					62					120	12	18	14,5
						35					72				90	110	10	16	12,5
						40				45	60	10	15	12		120	12	18	14,5
						47					62				95	120	12	18	14,5
6	16	7	10	8	22	32	7	11,5	8,5		65								
	22					35					72				100	120	12	18	14,5
						40				48	62	10	15	12		125			
7	16	7	10,5	8,5		47					72					130			
	22				24	35	7	12	9	50	65	10	15	12	105	130	12	18	14,5
8	16	7	11	8,5		37					68					140			
	22					40					72				110	130	12	18	14,5
	24					47					80					140			
9	22	7	11	8,5	25	35	7	12	9	52	68	10	15	12	115	140	12	18	14,5
	24					40					72					150			
	26					42				55	70	10	15	12	120	150	12	18	14,5
10	22	7	11	8,5		47					72					160			
	24					52	9	14	11		80				125	150	12	18	14,5
	26				26	37	7	12	9		85					160			
11	22	7	11	8,5		42				56	70	10	15	12	130	160	12	18	14,5
	26					47					72					170			
					28	40	7	12	9		80				135	170	12	18	14,5
12	22	7	11	8,5		47					85				140	170	12	18	14,5
	24					52	9	14	11	58	72	10	15	12	145	175	15	21	17,5
	26				30	40	7	12	9		80				150	180	15	21	17,5
	28					42				60	75	10	16	12,5	160	180	15	21	17,5
						45					80				170	200	15	21	17,5
14	24	7	11	8,5		47					85				180	210	15	21	17,5
	28										90				190	220	15	21	17,5
	30					52	9	14	11	62	85	10	16	12,5	200	230	15	22	18
	35					62	10	15	12		90				210	240	15	22	18
15	26	7	11	8,5	32	45	7	12	9	63	85	10	16	12,5	220	250	15	22	18
	30					47					90				230	260	15	22	18
	32					52	9	15	11	65	85	10	16	12,5	240	270	15	22	18
	35				35	47	7	12	9		80				250	280	15	22	18
16	28	7	11	8,5		50	7	12	9		100				260	300	20	29	24
	30					52	9	14	11	68	90	10	16	12,5	280	320	20	29	24
	32					62	10	15	12		100				300	340	20	29	24
	35				36	47	7	12	9	70	90	10	16	12,5	320	360	20	29	24
17	28	7	11	8,5		50					100				340	380	20	29	24
	30					52	9	14	11	72	95	10	16	12,5	360	400	20	29	24
	32					62	10	15	12		100				380	420	20	29	24
	35				38	52	9	14	11	75	95	10	16	12,5					
	40					55	10	15	12		100								
18	30	7	11	8,5		62				78	100	10	16	12,5					
	32				40	52	9	14	11	80	100	10	16	12,5					
	35					55	10	15	12		110								
	40																		
						72													