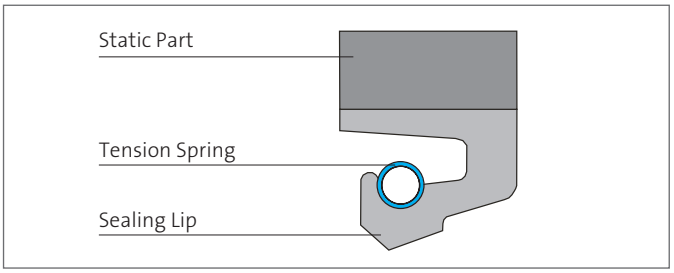
MERKEL RADIAMATIC R35

Merkel Radiamatic R35 is a radial shaft seal consisting of a fabric reinforced section of sturdy design, firmly bonded to the rubber sealing lip. A garter spring assists radial contact pressure of the lip on the shaft.



Applications
Shaft seals Merkel Radiamatic R35 are mainly used in heavy duty applications like rolling mills, large size gear boxes or wind turbines.

Material

Sealing lip	Adhesive part	Tension spring
80 NBR 245565	Impregnated cotton fabric	ST 1.4571
80 NBR B241	Impregnated cotton fabric	ST 1.4571
75 HNBR U467	Impregnated aramide fabric	ST 1.4571
80 FKM K670	Impregnated aramide fabric	ST 1.4571

Further material combinations on request.

VALUE TO THE CUSTOMER

- Highly wear resistant
- Constant radial force assuring steady performance
- Available as on-site joining version with rubber lock. This allows open assembly, i.e. cutting and joining of the ring on site with the Merkel RK15 bonding set
- LD version (large diameter) available, up to Ø 3.500 mm

TECHNICAL PROPERTIES

Operating Conditions

Material	80 NBR 245565	80 NBR B241	75 HNBR U467	80 FKM K670
Mineral Oil	–20 ... +80 °C *	–30 ... +100 °C *	–20 ... +120 °C *	–10 ... +150 °C *
Water	+5 ... +80 °C	+5 ... +100 °C	+5 ... +100 °C	+5 ... +80 °C
Lubricating Greases	–20 ... +80 °C *	–30 ... +100 °C *	–20 ... +120 °C *	–10 ... +150 °C *
Rolling Oil Emulsion	on enquiry	on enquiry	on enquiry	on enquiry
Pressure	0,05 MPa	0,05 MPa	0,05 MPa	0,05 MPa
Sliding Speed	12 m/s	20 m/s	25 m/s	25 m/s

Other media on demand. The figures given are maximum values and must not be applied simultaneously.
* See note "Low temperature duty in wind power mills" – extended temperature range.

Low temperature operation in wind turbines

Freezing of the materials during a standstill is completely reversible as soon as the temperature rises again. This means a possible survival temperature far below –30 °C (–22 °F).

Overall Eccentricity

The permissible overall eccentricity (static and dynamic eccentricity) between shaft and housing is dependent on the seal profile and circumferential speed. Recommended values on request.

Surface Finish

Peak-to-valley Heights	R_a	R_{max}
Sliding Surface	≤0,6 µm	≤2,5 µm
Housing	≤4 µm	≤15 µm

The counter surface is suitably machined by plunge grinding, i.e. without feed. The recommended surface hardness is approx. 60 HRC (hardening depth min. 0,5 mm). As the circumferential speed increases, the counter surface should be finished with a decreasing roughness depth R_a. The surface must not get too smooth in order to ensure sufficient lubricant film formation.
Standard value: R_a min. = 0,1 µm. Profile bearing length ratio t_p > 50 % up to max. 90 % at average depth c = R_z/2 and reference line C_{ref} = 0 %. Abrasive surfaces, ridges, scratches and blow-holes are to be avoided.

Tolerances

Ø D [mm]	Tolerances
<500	H8
>500	+0,0004 x D

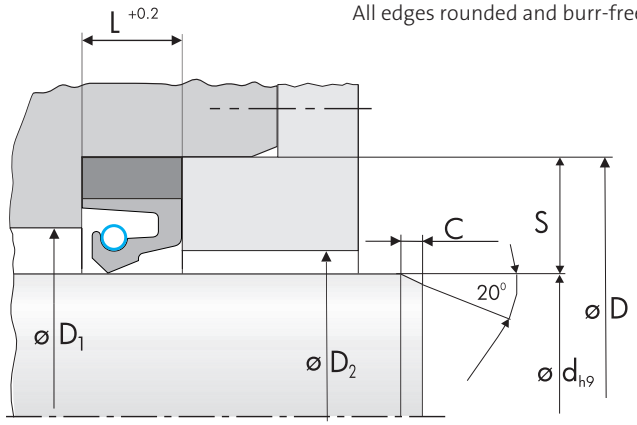
Housing Recommendations for New Designs

Ø d [mm]	S (Profile) [mm]	L [mm]
>100	20	16
>250	22	20
>450	25	22
>750	32	25

Installation & Assembly

The shaft seal Merkel Radiamatic R35 is axially pretensioned to the metallic housing dimension L in an axially accessible installation space via a cover plate with tightening screws. The ring is therefore supplied with an oversize in the seal height. Certain deformation forces are required for pressing. The cover plate and the tightening screws must be designed accordingly. Guide values are available on request.

INSTALLATION DIAGRAM



Please note the general design-related remarks in our technical manual.