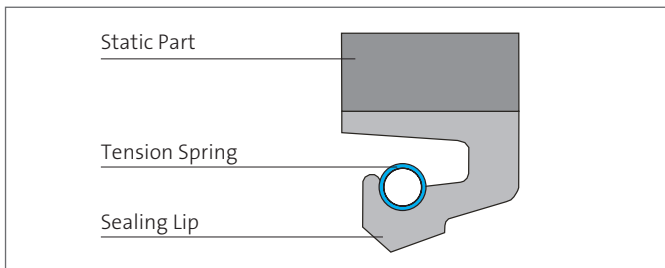




# MERKEL RADIAMATIC R35

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.



## VALUE TO THE CUSTOMER

- Highly wear resistant
- Constant radial force assuring steady performance
- Also available as joint-on-site version
- LD version (large diameter) available, up to  $\varnothing$  3.500 mm

### 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.



## TECHNICAL PROPERTIES

### Operating Conditions

Material	80 NBR 245565	80 NBR B241	75 HNBR U467	80 FKM K670
Mineral Oils	-20 ... +80 °C *	-40 ... +100 °C *	-30 ... +120 °C *	-10 ... +180 °C *
Water	+5 ... +80 °C	+5 ... +100 °C	+5 ... +100 °C	+5 ... +80 °C
Lubricating Greases	-20 ... +80 °C *	-40 ... +100 °C *	-30 ... +120 °C *	-10 ... +180 °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 Duty in Wind Power Mills

Freezing of the materials during a standstill is completely reversible as soon as the temperature rises again.

When the rotors are spinning slowly or beginning to rotate, the temperature at the sealing lip will rise very swiftly.

This means static utilization down to -50 °C (-58 °F) is not problematic.

### Surface Finish

Peak-to-valley Heights	$R_a$	$R_{max}$
Sliding Surface	$\leq 0,6 \mu\text{m}$	$\leq 2,5 \mu\text{m}$
Housing	$\leq 4 \mu\text{m}$	$\leq 15 \mu\text{m}$

Machining is carried out most effectively by plunge grinding, i. e. without forward feed. The surface hardness should be approx. 60 HRC (min. depth of hardness 0,5 mm).

The higher the peripheral speed the lower should be the surface roughness  $R_a$  of the mating surface. In order to ensure a sufficient lubricating film the surface should not be too smooth.

Standard value:  $R_a \text{ min.} = 0,1 \mu\text{m}$ .

Profile bearing length ratio  $t_p > 50\%$  up to max. 90% at average depth  $c = R_s/2$  and reference line  $C_{ref} = 0\%$ .

Abrasive surfaces, ridges, scratches and blow-holes are to be avoided.

### Tolerances

$\varnothing D$ [mm]	Tolerances
<500	H8
>500	+0,0004 x D

### Overall Eccentricity

The permissible overall eccentricity (static and dynamic eccentricity) between shaft and housing is dependent on the seal Profile and circumferential speed. If necessary we will provide recommended values.

### Housing Recommendations for New Designs

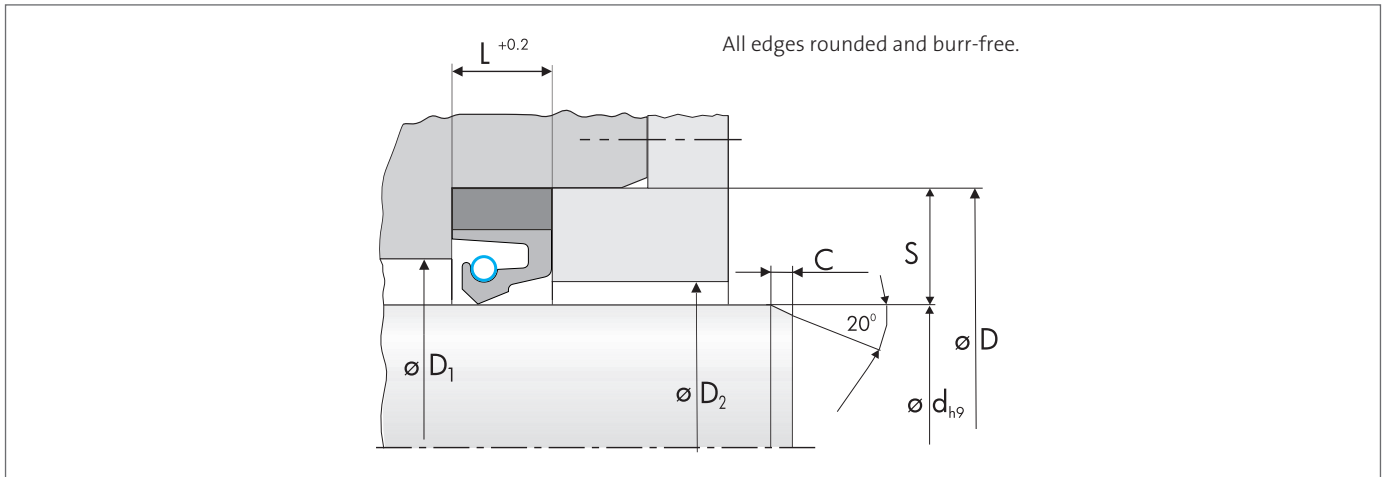
$\varnothing d$ [mm]	S (Profile) [mm]	L [mm]
>100	20	16
>250	22	20
>450	25	22
>750	32	25

### Installation & Assembly

An axially accessible housing is necessary for radial shaft seal Merkel Radiamatic R35, as a clamping force must be applied to the ring. The rotary shaft seal is delivered with an over-sized height. To ensure reliable operation, the seal must be axially pressed to the dimension "L". An open housing with a cover plate and tightening screws is necessary. Certain deformation forces are necessary for pressing, and the cover plate and tightening screws should be designed accordingly. Please ask us for guide values.



## INSTALLATION DIAGRAM



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

The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

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