

SealConcept

DICHTUNGEN & HYDRAULIK



R33 PTFE Radial Shaft Seals



TOGETHER FOR THE BEST OF ALL SOLUTIONS



R33 PTFE Radial Shaft Seals

Radial shaft seals R33 for extreme operating conditions and applications

Our R33 profiles can meet the high hygiene requirements of the pharmaceutical and food industries through dead-space-free design methods. They are manufactured from non-adhesive materials.

We produce individual seals and small series, interchangeable for installation spaces according to DIN 3760 or customized to your specific installation requirements.

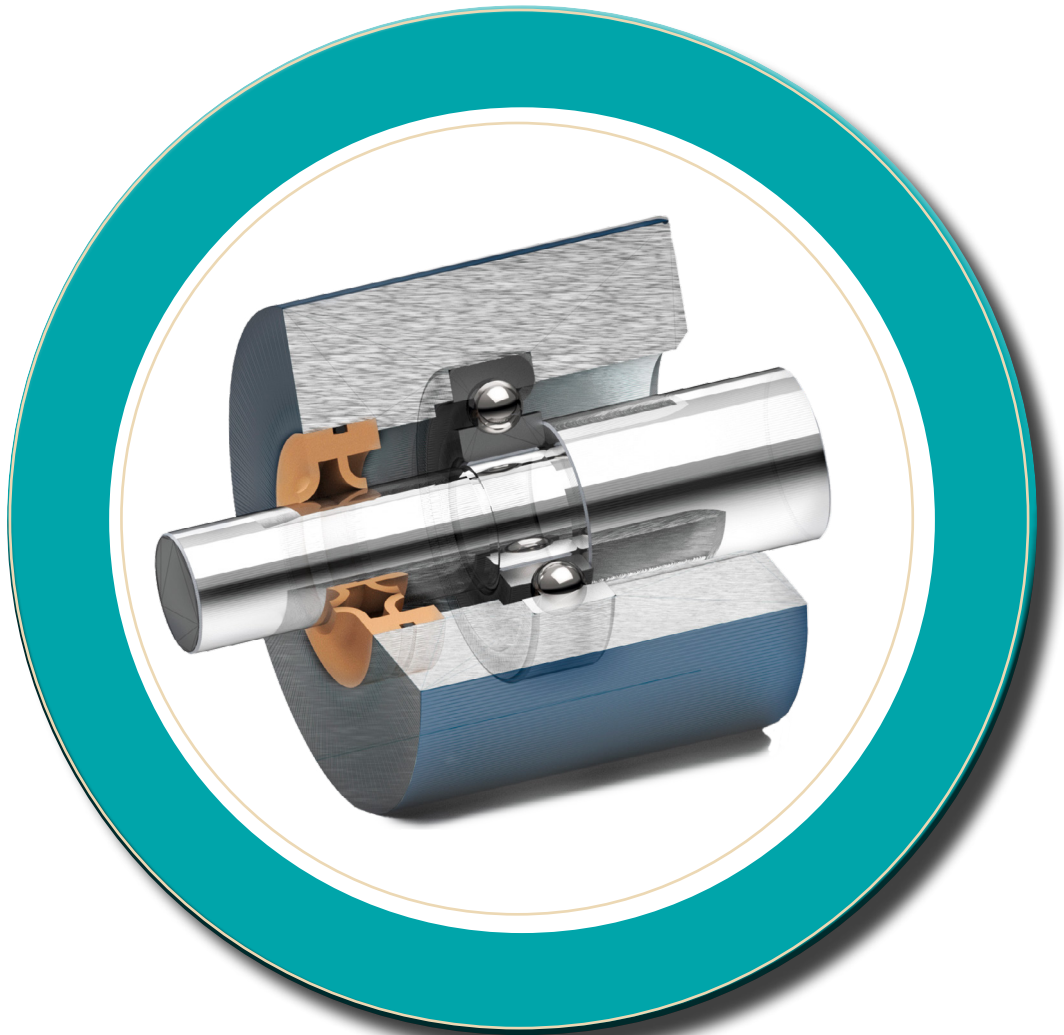
We are primarily interested in finding a solution to your problem!

In demanding operational environments where high standards for cleanability, sterilization, and hygienic design are crucial, we, as a certified manufacturer, are your competent partner. We guarantee a swift analysis and implementation of your sealing solution by our experienced specialists, along with the use of materials compliant with food standards.

Product Benefits & Highlights at a Glance

- High chemical resistance
- High thermal resistance from -60°C to $+200^{\circ}\text{C}$
- Applicable in cases of insufficient lubrication and dry running
- Peripheral speeds of up to 30 m/s possible
- Seals up to a maximum pressure of 30 bar are possible, depending on the design
- Low friction, high wear resistance and low Stick-Slip after extended periods of inactivity
- Also suitable for use on non-hardened shafts (depending on the material)







Installation instructions

The delicate sealing lips must be protected from damage. For installation, we recommend assembly tools with an insertion cone of 10° to 15°. The installation space must be axially accessible.

Shaft design

The service life and tightness depend greatly on the surface condition of the shaft. We recommend using surfaces that are as smooth as possible, free from voids and pores, with a high load-bearing capacity. This can be achieved, for example, through fine grinding, honing, and polishing.

Surface roughness of the running surfaces

$R_a = 0.3 - 0.5 \mu\text{m}$ for lubricated applications

$R_a = 0.2 - 0.4 \mu\text{m}$ for dry running and abrasive media

Surface hardness

40 to 65 HRC for lubricated applications and pressures ≤ 15 bar.

58 to 65 HRC for dry running, abrasive media and pressures ≥ 15 bar

Preferably, hardened steel should be used as the shaft material.

Surface roughness of the housing bore

$R_a = \max 0.8 \mu\text{m}$


For larger roughness up to $R_a = 1.6 \mu\text{m}$, additional sealing on the outer diameter is recommended (O-ring standard with our R33 profiles).

The static O-ring Seal on the outer diameter also prevents the seal from rotating and facilitates installation/removal.

Each seal is individually tailored to the existing installation spaces and operating conditions. Filling the gaps with grease, for example, between the sealing lips or in other cavities of various sealing profiles, can increase the service life. In cases of higher pressures or axial movements of the shaft, it is advisable to protect the seal from extrusion with a retaining ring.

APPLICATIONS:

- Centrifuges
- Fans, Ventilators
- Vacuum pumps
- Hydraulic pumps
- Solid handling pumps
- Bearing protection
- Gearbox Seals
- Wood/paper processing machines
- Machine tools
- Stone processing machines
- Agitators
- Mills
- Meat processing machines
- Bakery machines
- Beverage filling systems



Do you have any further questions?










Our technical advisors are available at any time for further information. We are happy to arrange a personal consultation at your location. You are also welcome to visit us at our facility in Bobingen at any time to personally witness our working methods and quality.

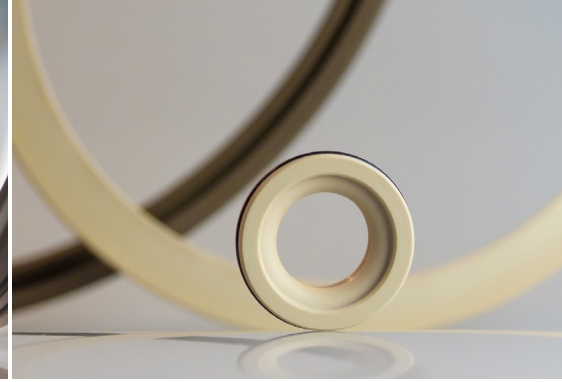
Expertise and high technical competence are the prerequisites for high-quality precision products.





Here is a selection of our R33 materials

Description	Material Designation	Color		Datasheet Number	Hardness	°C Operating Temperature	GMP EU 2023/2006	FDA-Conformity	VO (EU) 1935/2004	VO (EU) 10/2011	BSE/TSE-free	3A Sanitary	USP Class VI
PTFE+PEEK	PM575	beige		575	32 MPa	-200 °C to +260 °C	x	x	x	x	x	x	
PTFE+Ekonal	PM056	beige		56	57 ShD	-200 °C to +260 °C	x	x	x	x	x		
PTFE+Glasfaser	PG568	gray		568	58 ShD	-200 °C to +260 °C		x	x	x	x	x	x
PTFE+Kohlefaser	PKF15-282	gray		282	37 MPa	-150 °C to +250 °C							
PTFE+Kohle	PK126	black		126	62 bis 67 ShD	-200 °C to +260 °C							
PTFE natur	P128	white		128	57 ShD	-250 °C to +300 °C	x	x	x	x	x		
PTFE türkis	PT322	turquoise		322	56 ShD	-200 °C to +260 °C	x	x	x	x	x		
PTFE blau	PM148	blue		148	56 ShD	-200 °C to +260 °C	x	x	x	x	x		
PTFE+E-Kohle	PK670	black		670	63 ShD	-200 °C to +260 °C	x	x	x	x			



R33 Profile selection



R33
Standard type, suitable for narrow installation spaces



R33E
Similar to R33D, with an additional sealing lip for increased security



R33A
Dead-space-free, for food and pharmaceutical industries



R33F
For extreme operating conditions (e.g., solid handling pumps and mixers)



R33B
Similar to R33, with an additional sealing lip for increased security



R33G
High-pressure variant, dead-space-free (e.g., bearing protection during high-pressure cleaning)



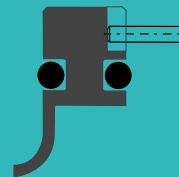
R33C
Similar to R33A, with an additional sealing lip for increased security



R33H
High-pressure variant for narrow installation spaces



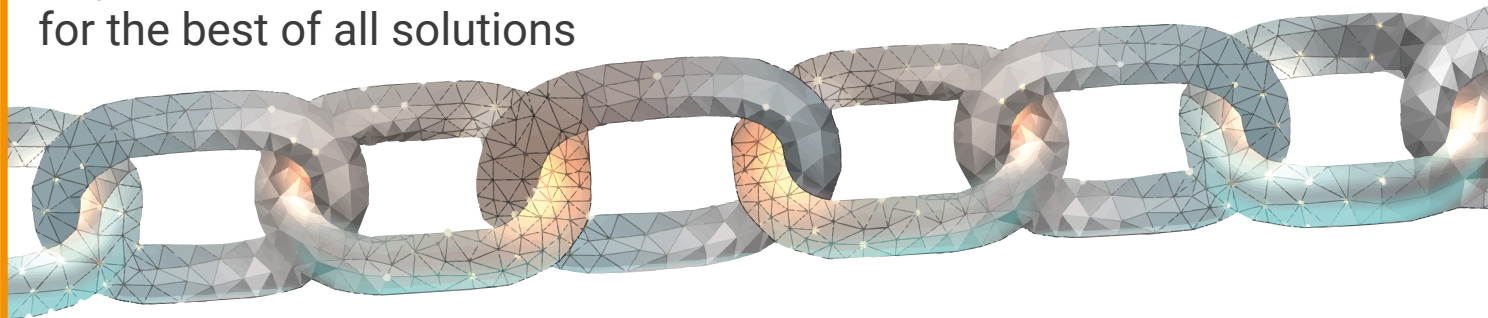
R33D
Counter-rotating sealing lips for media separation



SPECIAL INDIVIDUAL TYPES
e.g. for radial shaft deflection, for customer-specific installation spaces, with flushing bores between the sealing lips, etc.

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Together for the best of all solutions



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Please visit our website for contact information for specific individual persons.

Seal Concept®

DICHTUNGEN & HYDRAULIK

- Seals & Seal Kits
- Hydraulic Components
- Compact Power Modules
- Hydraulic Integrated Circuits
- Custom Solutions



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