

PTFE – shaft seals

IBG PTFE shaft seals reliably seal shafts and spindles in a wide range of applications.

These parts are easy to handle (assembly and reassembly), have a very good sealing efficiency and long operating time.

Shaft seals can be made according to DIN 3760 as well as in many custom-tailored dimensions and material grades.

IBG PTFE shaft seals are e.g. used in following branches:

- Chemical industry
- Pharmaceutical industry
- Food processing industry
- Paint processing industry
- General machinery industry
- and many more

Typical applications

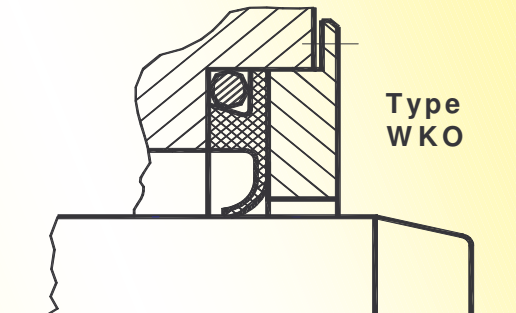
- Rotary-, gear- or dosing pumps
- Centrifuges
- Screw compressors
- Fans
- Mills
- Mixing equipment
- Dryer
- Agitators
- Machine tools
- Rotary connection

Specific features

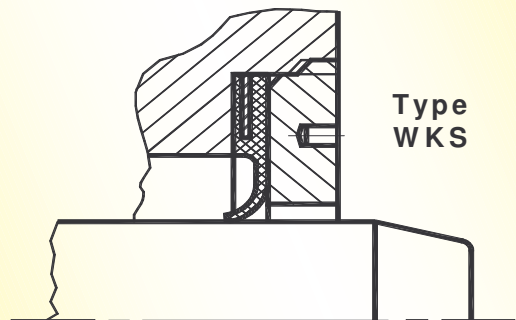
- self-retightening sealing lips
- no press fit in housing, this results in easy assembly and reassembly
- gas-tight
- lowest friction
- suitable for dry-running operation
- low death space
- low overall height

Typical media

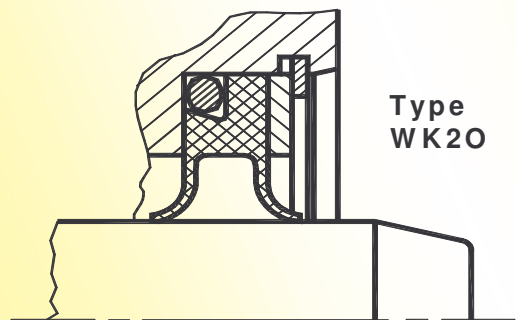
- Air / Gas
- Glues and adhesives
- Paints
- all types of aggressive media, liquid and gaseous
- Water
- Steam
- pharmaceutical products
- solid and liquid food



Type
WKO



Type
WKS



Type
WK20

Range of materials

Adopted to specific applications IBG Monforts can offer several combinations of materials. The standard material is **PTFE filled with carbon**.

For special applications there is a number of PTFE-modifications available. These applications can be e.g. extreme dry-running operation, abrasive media, soft running surfaces and others.

The secondary rubber-sealings are chosen depending on the specific operating conditions.

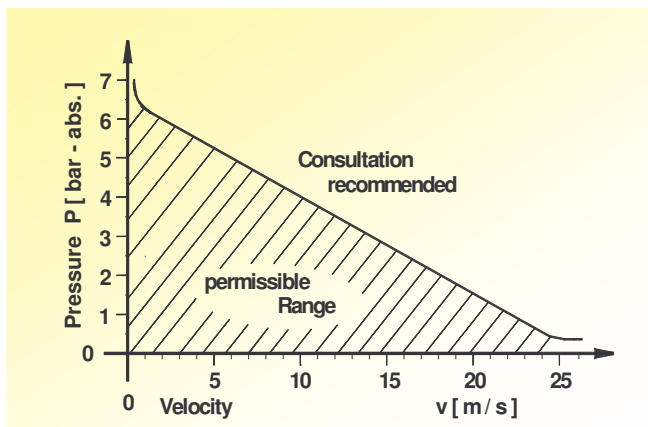
common rubber types

- NBR
- EPDM
- FPM
- MvQ

PTFE- Compounds, as well as the additional sealings are available with approvals according to **BGA / FDA, KTW and DVGW**

Performance limits

PV – Diagram



Conditions: 1) Oil at ambient temperature
2) sealing lip not supported

$$v = \frac{d \cdot \pi \cdot n}{6 \cdot 10^4}$$

v = circumference velocity [m/s]
d = shaft diameter [mm]
n = revolutions [min⁻¹]

Limits

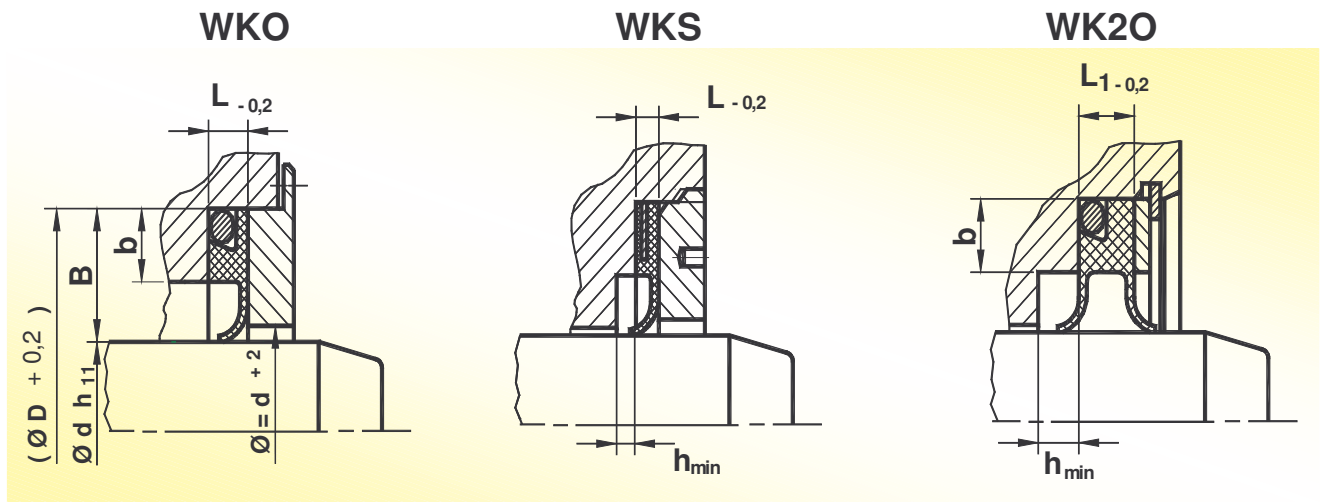
Pressure (bar)	from vacuum up to 7 bars
Temp. (°C)	- 70 bis +260
Sliding velocity (m/s)	25
Tol. of cycling running	≤ 0,1 mm
Center offset	≤ 0,2 mm

The different working conditions can have an impact on each other.

Many further facts like medium, shaft material, surface quality, surface hardness and others can influence the operating life.

If your specific working conditions are outside above mentioned range, please contact us for further details

Dimensions



Ratio Profile B / Ød - area

Ø d Range	B	b	L	h _{min}	L ₁
3 – 10	6	3,5	3	3	4
11 – 25	7,5	4,5	3	4	5
26 – 50	10	6	4	5	6
51 – 150	13	8	4	6	7,5
151 – 250	15	9	5	7	9
215 – 500	17	10	5	8	10

Other than the above mentioned dimensions can be produced on special request.
Please also consider our instructions for design and assembly on **Page 4**.

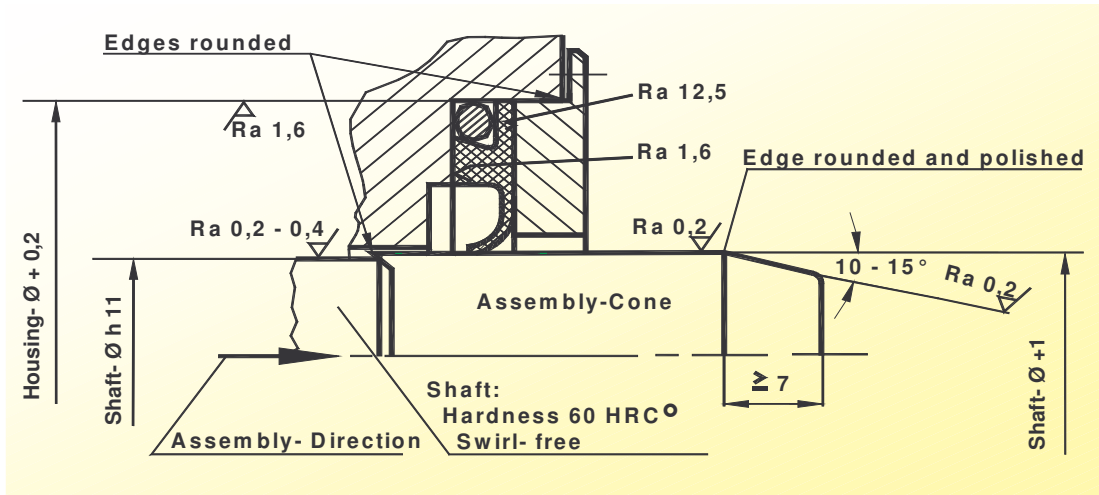
To manufacture shaft seals there are no special tools needed.
This means that special shapes are possible without much more effort.
Thus we do not offer you a standard catalogue but are able to quote the best
custom-tailored solutions for your specific application!

Examples:

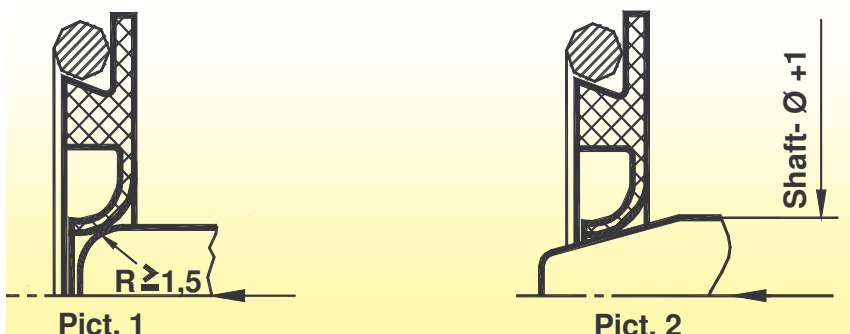
- Death-space free gaskets for food and pharmaceutical industry.
- High pressure gaskets for pressure up to 500 bars.
- High abrasion resistant types suitable for abrasive or hard media.
- Soft but low-wear sealing materials for use against unhardened counter surfaces.
- Electrical conductive materials for safe discharging of current potentials
(Explosion-proved environment)

All details in this brochure are without guarantee and for reference only.

Instructions for design and assembly



- To avoid any damages the shafts or assembly cones should be fitted with a chamfer with a small angle.
- If the seals are mounted back-side first one radius at the shaft end is sufficient (**Pict. 1**).
- The running surface of the shaft should be machined twist-free, e.g. grinded.
- Mounting space and shaft should be cleaned from dirt, marks must be removed.
- To ease the assembly procedure shaft and sealing lips can be wetted with oil.
Do not use grease!
- Mount the shaft sealing ring in the housing first then assemble the shaft.
- If the insert slope is too small, has sharp edges or grooves the sealing lips can be expanded a little bit. In this case slide the seal carefully over a mandrel or something similar which has an approximately 1 mm larger diameter than the shaft (**Pict. 2**).
- The required hardness is dependent on the operating conditions and the used material. In case of only low requirements soft shaft can be sufficient.



For further questions please contact us!