



## WCP

### Description

Product group: Rotary shaft seal  
Design: C metal outer coat + rigidity ring  
Profile no.: 20  
Seal material: PTFE + carbon fibre PT 00 3707  
Elastomer ring: FKM  
Colour: grey  
Metal cages: stainless steel 1.4301 (AISI 304)

### Operational application limits

Pressure: up to 10 bar (dependent on the other operating parameters)  
Temperature (°C): -90 to +250  
Peripheral speed (m/s):  $\leq 40$

### Media

All types of oil, water, water-oil emulsion, hot-air, broad chemical resistance to a great number of aggressive media.

### Function

The WCP20 is a single acting rotary shaft seal for rotating or pivoting shafts offering a very long service life. Excellent sealing performance is guaranteed by the pre-stressed PTFE sealing lip which has a very low friction coefficient providing lower starting resistance and avoiding stick-slip problems. As a result the WCP20 also works well in applications where there is insufficient lubrication or dry running. Due to a low heat development the seal can be used at high peripheral speeds and with pressures up to 10 bar, however consideration should be given to the  $p \times V$  factor (i.e. the product of pressure and peripheral speed  $\leq 40 \text{ bar m/s}$ ). To guarantee a high degree of static sealing on the outer diameter of the seal a good quality surface finish is required as follows:

$R_a = 0.8 \text{ bis } 3.2 \mu\text{m}$

$R_z = 6.3 \text{ bis } 16 \mu\text{m}$

$R_{\text{max}} \leq 16 \mu\text{m}$

Surface finish of the housing bore is extremely important and processing marks or damage, such as scratching, scoring, dents or cavities are not permissible, particularly when the application is in combination with thin fluid or gaseous media, or split housings are used. To achieve better static sealing in these applications an additional coat of sealing paint can be applied to the outer metal case.

# TTP SEALS



## Areas of application

Generally used for sealing of rotating shafts, hubs, axles or other machine elements at high peripheral speeds, high pressures and/or high temperatures. Also used extensively for sealing of aggressive media or in applications where there is insufficient lubrication or dry running due to the excellent chemical resistance and very good friction coefficient provided by the PTFE sealing lip.

## Installation

The outer diameter of the metal outer case is centralised in the housing by press-fitting and standard ISO 6194-1 (DIN 3760) housing tolerances should be used. However out-of roundness of the housing should be kept to a minimum to avoid any danger of the PTFE sealing lip no longer being able to follow the shaft at very high speeds. It is recommended that the installation housing is designed to provide the WCP20 with axial support. The PTFE sealing lip must not be damaged or deformed during installation, therefore a suitable tool such as the installation cone (illustrated below) should be used. When installing the WCP20 over a bevelled shaft an installation cone should always be used to avoid deforming the sealing lip. When installing the WCP20 the other way round, with the outside first, a suitable radius, rounding or bevelling must be provided. Otherwise, the usual installation guidelines for rotary shaft seals apply as does the installation chamfer (dk) according to the table.

## Remarks

Although covering a wide range of applications the WCP20 is most typically used in low pressure, high speed applications. The seals are individually packed and labelled WCP20 with the applicable dimensions.