AUTOMOTIVE | AEROSPACE | FOOD & BEVERAGE | FLUID TECHNOLOGIES | MOBILE MACHINERY

FRANCEJOINT

SEALING SYSTEMS

ROTARY SEALS

FRANCEJOINT
SEALING SYSTEMS

FRANCEJOINT

SEALING SYSTEMS

Contents

ROTARY SEALS

1 General description 6
2 Materials 7
3 Examples of applications 12
4 Conditions for use 14
5 Shaft seal design 19
6 Design recommendation for the shaft 22
7 Design recommendation for the housing 28
8 Analysis of faults 30
9 Assembly recommendations 33
10 Storage recommendations and lifespan 34
11 Standard shaft seals 36
12 High-pressure shaft seals 114
13 Triple-lip shaft seals 118
14 Rotary hub seals 124
15 Shaft seals for linear motion 146
16 Flanged shaft seals - Type 5 151
17 Flanged shaft seals - Type 6 157
18 Shaft seals with PTFE coating 161
19 Shaft seals with PTFE sealing lips 166
20 PTFE shaft seals 169
21 Pin dust seals 179
22 Roto-seals 182
23 V'Rings 199
24 Gamma seals 210
25 Cover seals 215

FRANCEJOINT
SEALING SYSTEMS

Site n°1: Compression Molding – Injection Molding – Water Jet Cutting – Finition – Quality Control – Logistics

Site N°2: Administrative Area – Research & Development – Machining – Tooling

FRANCEJOINT
SEALING SYSTEMS

Since 1981, FRANCE JOINT – SEALING SYSTEMS has been designing, manufacturing and distributing seals and precision rubber parts for its customers for whom quality is a determining factor.

Faced with tough competition among the big decision-makers of the industrial world, FRANCE JOINT has responded with innovation, research and development, experience in Best-Cost manufacturing, and a consistently high level of quality, thanks to certificates ISO 9001, IATF 16949, EN/AS 9100 and ISO 14001.

Today, FRANCE JOINT is working in close collaboration with its customers, meeting challenges head on with success. Automotive, Aeronautics, Mobile hydraulics, Beverages & Foods, Fluid engineering industries... every solution emerges from a uniquely individual partnership, constantly fostered and renewed.

Our prime objective, based on unrivalled quality, is to find the most suitable solutions for ensuring that you will stand out in what has become an extremely competitive domain. Our position of excellence has led us since the birth of our company to acquire the tools necessary to anticipate and prevent risks and maximize our service; the ultimate objective being of course to help you keep ahead of developments in this more and more technological market.

- AUTOMOTIVE
- AERONAUTICS
- BEVERAGES & FOODS
- FLUID ENGINEERING
- MOBILE HYDRAULICS

Compression molding

Injection molding

Machining / Tooling

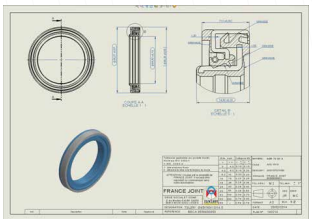
Logistics / Packaging

RESEARCH & **DEVELOPMENT**

Innovation, reliability, safety, minimization of risk: your expectations are our daily concern. To get from the idea to the finished product demands firm managerial control over a wide range of projects in addition to expertise in manufacturing.

FRANCE JOINT's contributors, who are as much inventors as technicians, get the best of fully automated, state-of-the-art technology that takes them from drawing-board to prototype and finally to assembly line. From writing specifications to putting on a major technical event through designing (3D Solidwrks software) and testing for validation and compliance, FRANCE JOINT engineering works hand in hand with you to find the best solutions guaranteeing the level of expected performance.

More than 1000 compounds integrating elastomers, PTFE materials, Polyurethane, or even thermoplastics, as many solutions vis-a-vis the new most complex requirements which will put you in pole position today so that we can all be winners tomorrow. FRANCE JOINT puts in place qualifications in order to examine the behavior of its seals according to various parameters intervening on frictions, pressures, temperatures, speeds, strokes, leakages…



QUALITY **IN OUR CONCERNS**

Several certificates obtained, ISO 9001, IATF 16949, EN/AS 9100 and ISO 14001, testify to the quality department's commitment to constant progress at every level of the company, at all stages of the realization, particularly where continual improvement is what has made FRANCE JOINT the name it is today.

Ambitious with customer satisfaction a priority, FRANCE JOINT has thus obtained the most powerful methods (PPAP, AMDEC, value analysis, Audits, MRP, 8D analysis, SPC, R&R ...) in order to optimize simultaneously the capacity of machines and processes, operational manpower performances, organizational methods, and finally, product and financial results.

FRANCE JOINT guarantees the best technology and pursues its daily objectives of a "Zero defects" production, through physico chemical controls (rheometer, spectrometer, durometer…), through dimensional and final aspects (unit controlling equipment, 3D camera ...). This is because the search for competitiveness is as important as the search for continuous improvement.

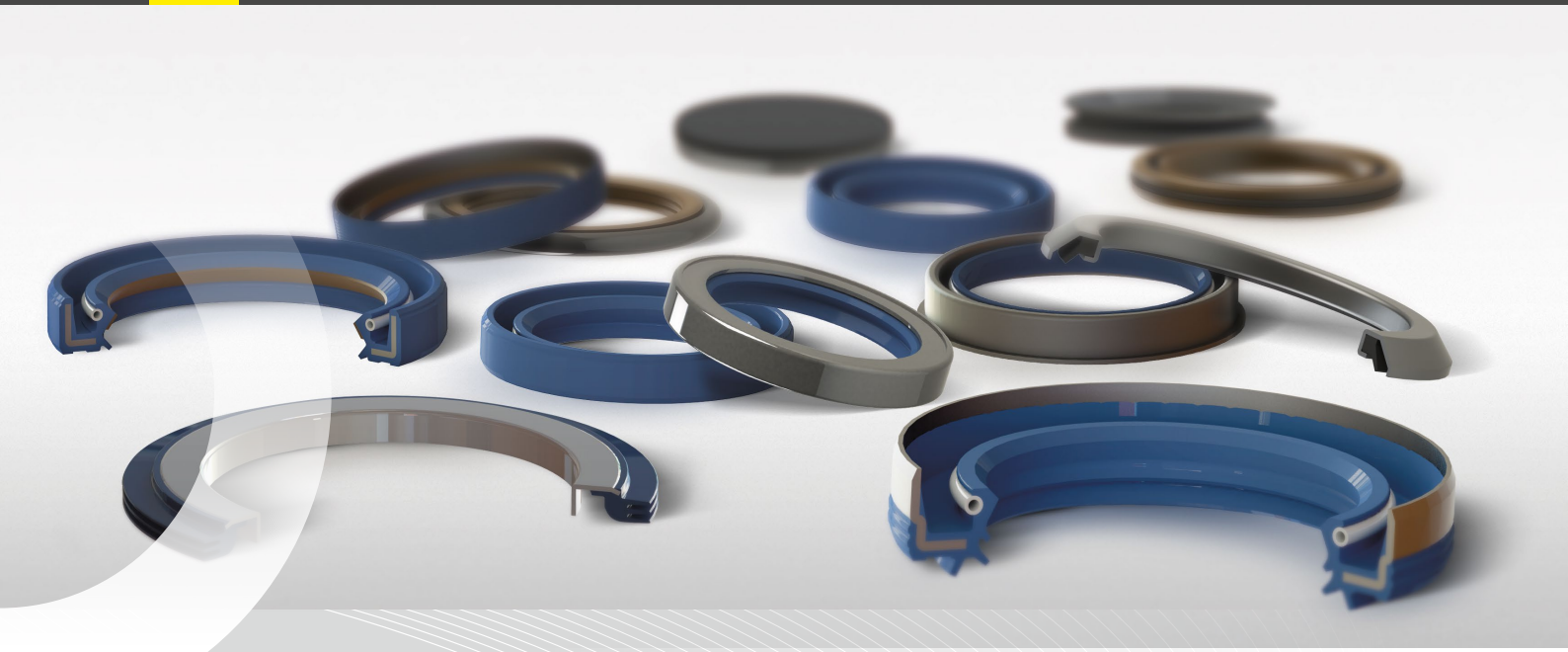
3D test device

CERTIFIÉ ISO 9001 CERTIFIED

CERTIFIÉ ISO 14001 CERTIFIED

CERTIFIÉ IATF 16949 CERTIFIED

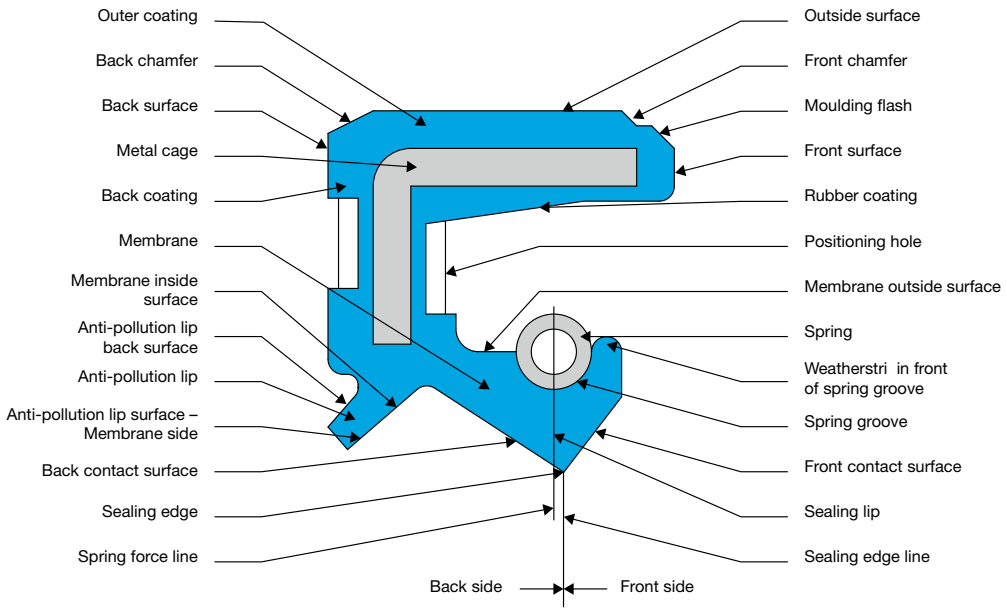
CERTIFIÉ EN 9100 CERTIFIED



ROTARY SEALS

1. General description

The shaft seals have been designed to provide optimal sealing on all types of rotating shafts, such as those found on utility and industrial vehicle transmissions, construction machinery, crankshaft and camshaft motors, in washing machines, pumps, etc. A shaft seal appears as follows:



Generally-speaking, a shaft seal has 3 main parts:

- **a rubber part**
- **a built-in metal frame**
- **a spring on the sealing lip**

The rubber part incorporates the sealing lip, rubber coating and membrane.

The lip ensures dynamic and static sealing for rotating shafts, by creating direct friction on the shaft. It is composed of a sloping part, finished with a negative edge to prevent any potential leaks. For specific applications that create dust and dirt, FRANCE JOINT can design shaft seals with multiple additional sealing lips.

The rubber coating is the thick rubber part that covers the metal frame on all sides, depending on specific requirements.

The membrane is the rubber part that connects the coating/metal frame to the sealing lip. Its length means that it can be fully sealed during the shaft's helicoidal movements. The reinforced frame is composed of a metal casing that often has a perpendicular profile; it is created by stamping. The spiral spring is fitted pre-stressed at the groove of the sealing lip's beading in order to improve the lip's friction load.

2. Materials

2.1 STEELS FOR METAL CASINGS AND SPRINGS

The table below shows the materials that we can offer for metal casings and springs for rotary seals.

Application	Material	Standard	Characteristics
Metal cage	Non-alloy standard steel	AISI 1010 (DIN 1624)	Cold rolled steel
Metal cage	Nickel chrome steel	AISI 304 (DIN 1.4301 - V2A)	Standard stainless steel
Metal cage and spring	Chrome-nickel-molybdenum steel	AISI 316 (DIN 1.4401 - V4A)	Stainless steel highly resistant to corrosion
Spring	Steel for springs	AISI 1070 - 1090 (DIN 17223)	Cold drawn carbon steel wire
Spring	Nickel chrome steel	AISI 302 (DIN 1.4300)	Stainless steel for springs with a high carbon content

Other types of steel are available, depending on your applications.

2.2 RUBBERS AND OTHER MATERIALS

The table below provides an overview of the different rubber families that are used to create shaft seals.

Abbreviation ISO 1629 ASTM 1418	France Joint Code	Chemical name
ACM	B	Polyacrylate
AEM	V	Ethylene acrylate rubber
EPDM	C	Ethylene Propylene Diene Monomer rubber
FFKM	FF	Perfluorinated rubber
FKM	G	Fluorinated rubber
FVMQ	FS	Fluorosilicone rubber
HNBR	HK	Hydrogenated Nitrile Butadiene rubber
NBR	K	Nitrile Butadiene rubber
VMQ	F	Silicone rubber: Polysiloxane – Vinyl - Methyl

ACM (Polyacrylate)

Ethyl acrylate copolymer (or other acrylates) and a comonomer with reactive properties for vulcanisation. This material is more resistant to heat than NBR. It is often used for automatic gearboxes.

Chemical resistance	Mineral oils (motor oils, gear box oils, ATF oils) Atmospheric and ozone agents
Compatibility issue	Glycol-based brake fluids (Dot 3 & 4) Aromatic and chlorinated hydrocarbons Water and steam Acids, alkalis and amines
Temperature range*	-25°C / +150°C (short-term peak at +160°C) -35°C / +150°C with particular ACMs

AEM (Ethylene acrylate rubber)

As a methyl acrylate and ethylene copolymer, AEM is considered to be better resistant to heat than ACM. Its characteristics make it an intermediary between the ACM and FKM.

Resistance to chemicals	Cooling fluids Aggressive mineral oils Atmospheric agents Water
Compatibility issue	Aromatic solvents Strong acids Brake fluids Gearbox oils ATF oils
Temperature range*	-40°C/+150°C

EPDM (Ethylene Propylene Diene Monomer rubber)

As an Ethylene Propylene Diene Monomer copolymer (EPDM), this rubber is commonly used for hot water taps, cooling systems, brake systems, dishwashers and washing machines.

Chemical resistance	Hot water and steam up to 150°C Glycol-based brake fluids (Dot 3 & 4) and silicone-based brake fluids (Dot 5) Organic and inorganic acids Cleaning agents, sodium and potassium alkalis. Hydraulic fluids (HFD-R) Silicone oils and greases Polar solvents (alcohols, ketones and esters) Atmospheric and ozone agents
Compatibility issue	Mineral oils and greases Hydrocarbons Low impermeability to gas
Temperature range*	-45°C / +150°C (short-term peak at +175°C)

FFKM (Perfluorinated rubber)

FFKM has the best resistance to high temperatures and an excellent chemical inertia. This FKM-based rubber is very often used for high-temperature hydraulic and pneumatic systems, industrial valves, injection/fuel systems, motor seals and high-vacuum systems.

Resistance to chemicals	Aliphatic and aromatic hydrocarbons Polar solvents (ketones, esters and ethers) Organic and inorganic acids Water and steam High-vacuum system
Compatibility issue	Coolants (R11, R12, R13, R113, R114, etc.) PFPE
Temperature range*	-15°C/+320°C

FKM (Fluorinated rubber)

Depending on their structure and fluorine content, fluoroelastomers can vary in terms of chemical resistance and resistance to cold. This FKM-based rubber is very often used for high-temperature hydraulic and pneumatic systems, industrial valves, injection/fuel systems, motor seals and high-vacuum systems.

Resistance to chemicals	Mineral oils and greases, ASTM n°1, IRM 902 and IRM 903 oils. Fire-resistant liquids (HFD) Silicone oils and greases Mineral and vegetable oils and greases Aliphatic hydrocarbons (propane, butane, petroleum) Aromatic hydrocarbons (benzene, toluene) Chlorinated hydrocarbons (trichlorethylene) Fuel (including high alcohol content) Atmospheric and ozone agents
Compatibility issue	Glycol-based brake fluids Ammonia gas Organic acids with a low molecular weight (formic and acetic acids)
Temperature range*	-20°C / +200°C (short-term peak at +230°C) -40°C / +200°C with particular FKMs

FVMQ (Fluorosilicone rubber)

The FVMQ has mechanical and physical properties that are very similar to those of VMQ. However, the FVMQ offers better resistance to fuels and mineral oils. However, resistance to hot air is not as good as that of VMQ.

Resistance to chemicals	Aromatic mineral oils (IRM 903 oil) Fuels Aromatic hydrocarbons with low molecular weights (benzene, toluene)
Temperature range*	-70°C / +175°C

HNBR (Hydrogenated Nitrile Butadiene Rubber)

This HNBR-based elastomer is obtained through selective hydrogenation of the NBR's butadiene groups. It is commonly used for power-assisted steering and for air conditioning.

Chemical resistance	Aliphatic hydrocarbons Mineral and vegetable oils and greases Fire-resistant fluids (HFA, HFB and HFC) Diluted acids, saline solutions and bases for operation at an average temperature Water and steam up to 150°C Atmospheric and ozone agents
Compatibility issue	Chlorinated hydrocarbons Polar solvents (ketones, esters and ethers) Strong acids
Temperature range*	-30°C / +150°C (short-term peak at +160°C) -40°C / +150°C with particular HNBRs

NBR (Nitrile Butadiene Rubber)

Nitrile rubber (NBR) is the general term for acrylonitrile-butadiene copolymer. The ACN content can vary between 18% and 50%. While the acrylonitrile content is important, the resistance to oil and fuel is more so. Conversely, the elasticity and compression set are not as good. The NBR has good mechanical properties and good wear resistance. However, its resistance to atmospheric agents and the ozone is relatively low.

Resistance to chemicals	Aliphatic hydrocarbons (propane, butane, petroleum, diesel fuel) Mineral oils and greases Fire-resistant fluids (HFA, HFB and HFC) Diluted acids, low-temperature alkaline and saline solutions Water (up to 100°C max)
Compatibility issue	Fuels with high aromatic content Aromatic hydrocarbons (benzene) Chlorinated hydrocarbons (trichlorethylene) Polar solvents (ketone, acetone, acetic acid, ethylene-ester) Strong acids Glycol-based brake fluids Atmospheric and ozone agents
Temperature range*	-30°C / +100°C (short-term peak at +120°C) -40°C / +100°C with particular NBRs

PTFE (Polytetrafluoroethylene)

Polytetrafluorethylene is the most versatile high-molecular-weight polymer, which can be used over a very wide range of applications and is particularly successful where other polymers are excluded. It is known for its strong resistance to chemicals and its use in environments that can reach temperatures of up to 260°C. It is also characterised by its very low friction coefficient.

Advantages	Good chemical resistance Sensitive to attacks from molten alkaline metals or those in compound or fluorine form Good dielectric properties independent of the temperature and hygrometry Non-stick Resistant to friction wearing Resistant to loads Physiological inertia Resistance to limited wear Low sensitivity to steam and corrosion Temperature resistance
Temperature range*	-200°C / +260°C

VMQ (Silicone rubber: Methyl Vinyl Polysiloxane)

This FVMQ-based rubber is very often used in fuel systems.

Resistance to chemicals	Animal and vegetable oils and greases Water for operation at an average temperature Diluted saline solutions Atmospheric and ozone agents
Compatibility issue	Superheated steam greater than 120°C Chlorinated hydrocarbons with a low molecular weight (trichlorethylene) Aromatic hydrocarbons (benzene, toluene) Atmospheric and ozone agents
Temperature range*	-60°C / +200°C (short-term peak at +230°C)

* These temperatures strictly relate to the material. Please contact our experts to find out the thermal limits of our materials that would be suitable for your application and the selected rotary seal profile.

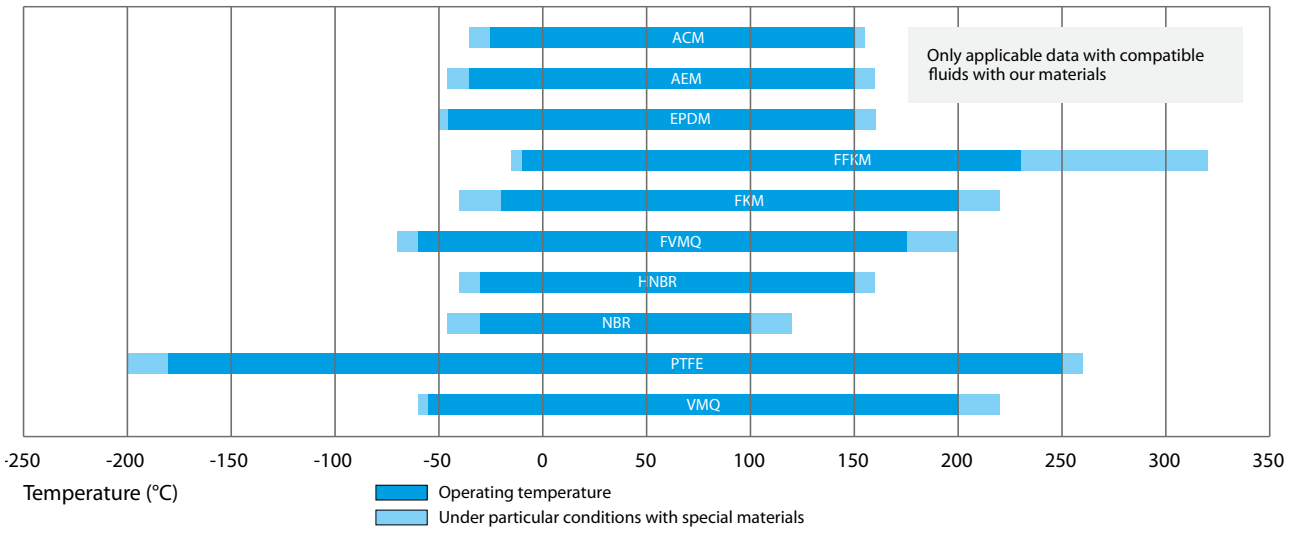
2.3 CHEMICAL COMPATIBILITY

A "Chemical compatibility guide" catalogue can be downloaded from our website: **www.francejoint.com**

You can also use our online "**Chemical compatibility" tool free of charge.**

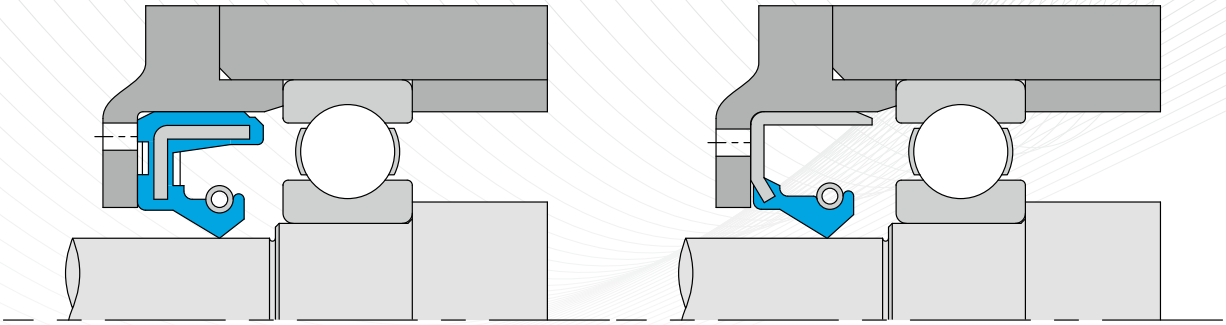
These two tools enable you to measure the behaviour of our materials that come into contact with the majority of existing fluids. The data displayed is the result of rigorous testing at the ambient temperature and takes previous publications into consideration. Test results are not fully representative because of the specific features of your application. The tests performed actually do not consider additives and impurities that may exist under actual conditions of use, nor the potential elevation of temperatures. Other parameters can also alter the behaviour of our materials, such as the hardness, compression set, abrasion, etc. We therefore recommend performing your own tests to verify the compatibility of our materials depending on your specific application. Our technical team can provide you with any additional information.

2.4 TEMPERATURE

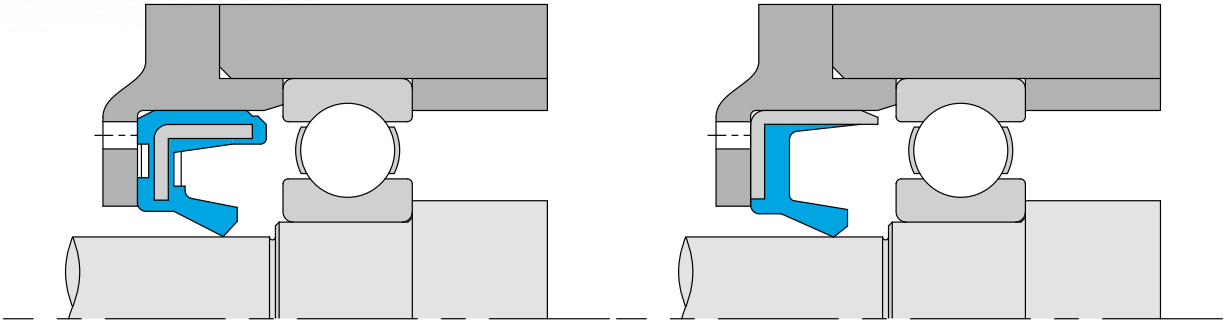


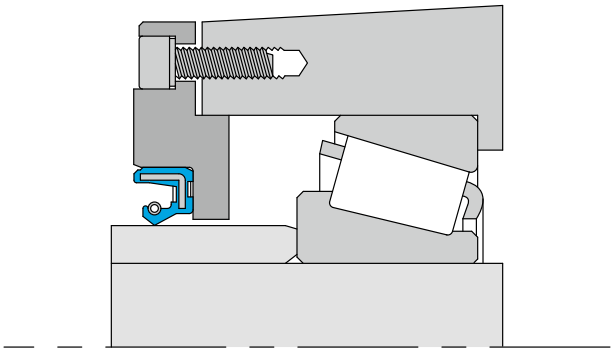
3. Examples of applications

3.1 SEALING AGAINST OIL OR OTHER LOW-VISCOSITY FLUIDS

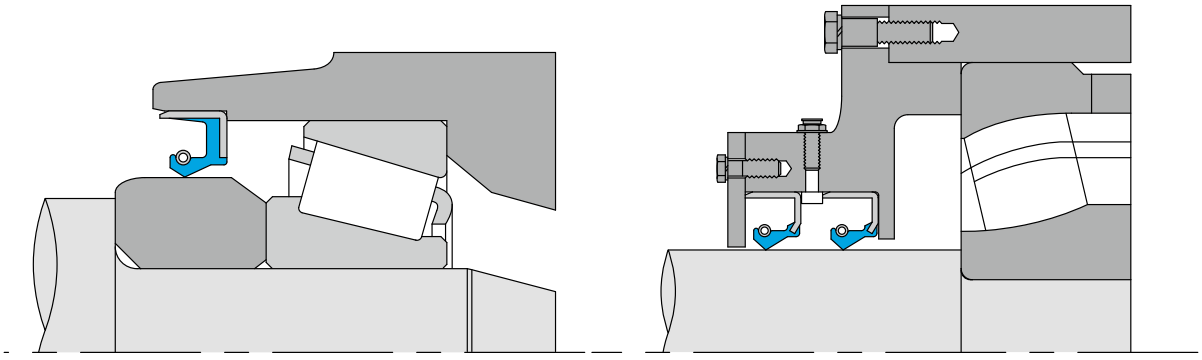


3.2 SEALING AGAINST GREASE OR OTHER HIGH-VISCOSITY FLUIDS

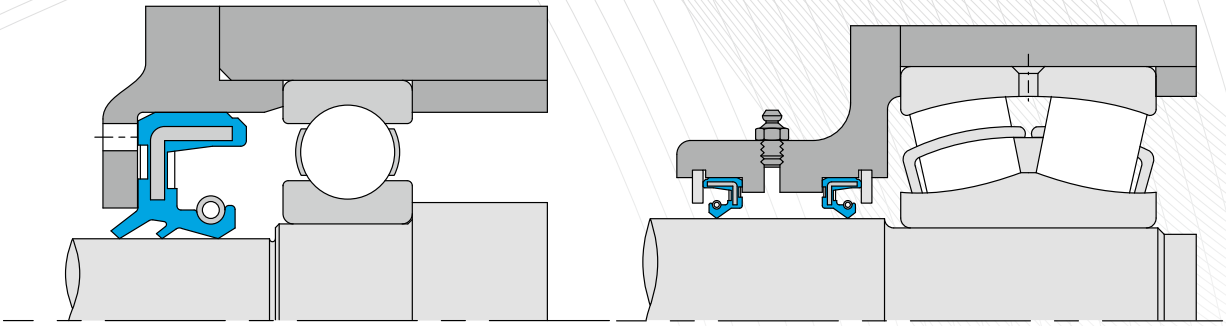




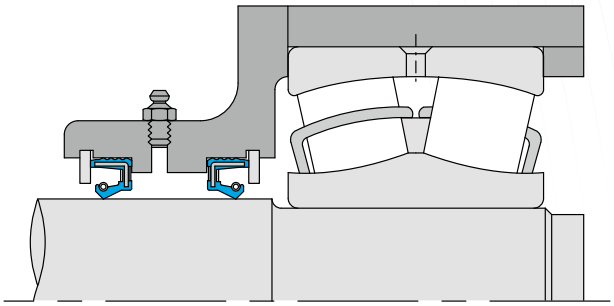
3.3 REMOVAL OF EXTERNAL POLLUTANTS

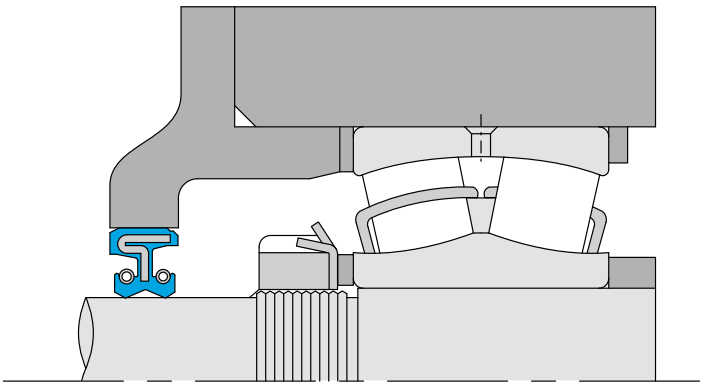


3.4 SEALING AGAINST FLUIDS AND REMOVAL OF EXTERNAL POLLUTANTS

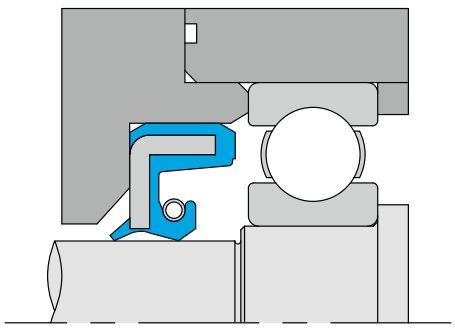


3.5 SEPARATING TWO FLUIDS





3.6 SEALING AGAINST PRESSURISED FLUIDS



4. Conditions for use

4.1 SPEED

The linear speed "s" is the relationship between the path travelled by the shaft and the time necessary for travel; it is measured as follows:

s (m/s) = [shaft Ø (mm) x speed (rpm) x π] / 60,000

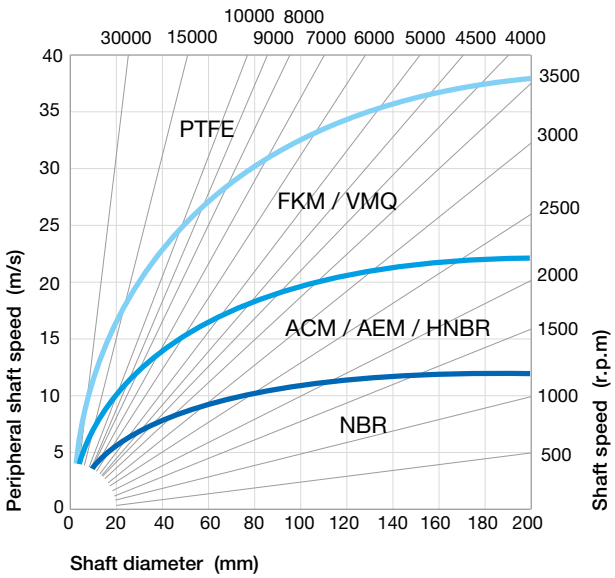
These values are provided for information purposes only. It is important to ensure that the system has sufficient lubrication and good heat removal.

<table>
<tr><th>TYPES OF PROFILES</th><th>SPEED</th></tr>
<tr><td>Standard spring-loaded shaft seals
SC - TC - DC - SCW - TCW - DCW - SB - TB - DB - SB2 - TB2 - DB2

High-pressure shaft seals
SCHP – SCWHP – TCHP – TCWHP – DCHP – DCWHP

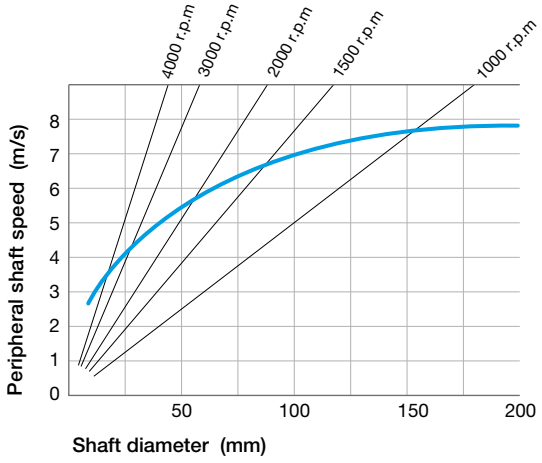
Flanged spring-loaded shaft seals - Type 5
SC5 – TC5 – DC5 – SB5 – TB5 – DB5

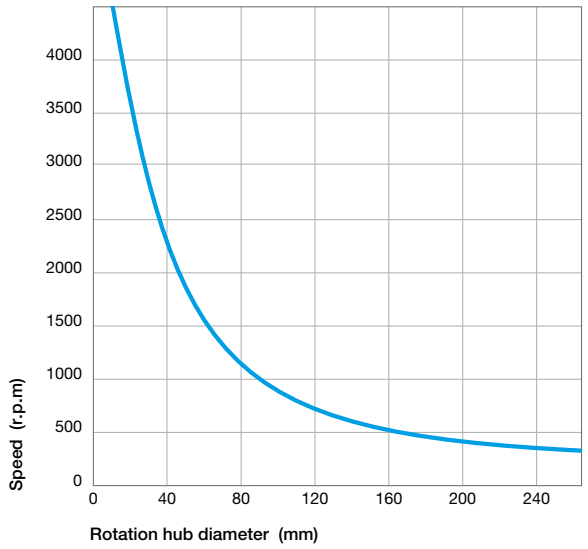
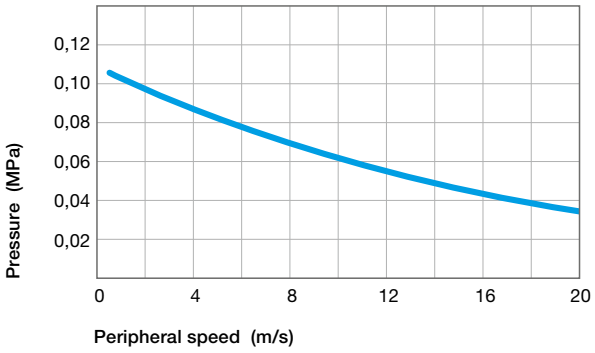
Flanged spring-loaded shaft seals - Type 6
SB6 – TB6 – DB6 – SA6 – TA6 – DA6

Shaft seals with PTFE lips
BECA 804 – BECA 805 – BECA 806</td><td> 

The shaft seals with an additional protective lip are limited to a speed of 8 m/sec.</td></tr>
<tr><td>Standard shaft seals without spring
VC – KC - VCW – KCW - VB – KB - VB2 – KB2

Flanged shaft seals without spring - Type 5
VC5 – KC5 – VB5 – KB5

Flanged shaft seals without spring - Type 6
VB6 – KB6 – VA6 – KA6</td><td> 
</td></tr>
<tr><td>Triple-lip shaft seals
KCL3 - KCWL3 - KBL3 - KB2L3 - KBCL3 - KBCWL3 - KA2L3 - OKCL3 - OKCWL3 - OKBL3 - OKB2L3 - OKBCL3 - OKBCWL3 - OKA2L3</td><td>The speed must not exceed a maximum of 2.5 m/s for standard profiles</td></tr>
</table>

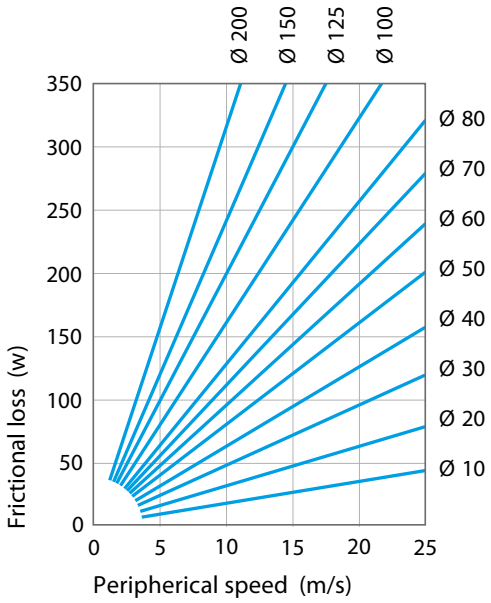
TYPES OF PROFILES	SPEED
Rotary hub seals OSC – OTC – OKC – OVC – ODC – OSB – OTB – OKB – OVB - ODB	
Shaft seals with PTFE coating SCJ – TCJ – DCJ – SBJ – TBJ - DBJ	

* The list of profiles is not exhaustive. Please contact our experts.

4.2 LOSS OF POWER

Power loss is due to a set of parameters, such as the design of the seal, choice of material, strength of the spring, speed, temperature, design of the rotating shaft, media and lubrication quality.

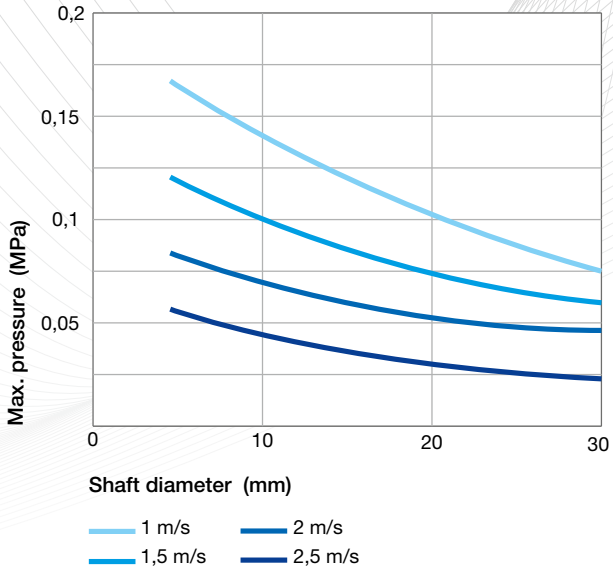
The table provides general information on power loss in Watts for an **SC - SB** shaft seal (without the anti-pollution sealing lip).



4.3 PRESSURE

The standard shaft seals are generally used in unpressurised environments, or for low pressures between 0.02 and 0.05 MPa maximum.

As shown on the chart, higher pressures are acceptable, following testing, for standard NBR or FKM shaft seals used on a shaft diameter less than 30 mm.



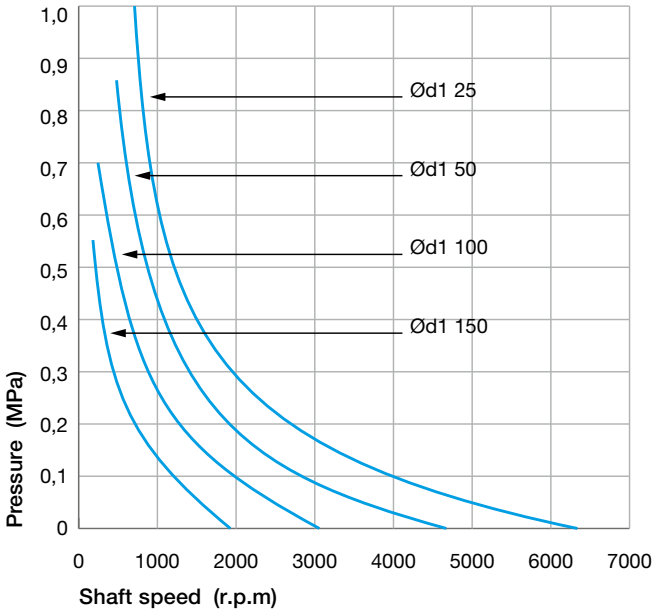
When the pressure is too great for standard shaft seals, the sealing lip is subjected to significant friction and therefore heavy wear, which could lead to premature breakdown of the seal.

For higher pressures up to 1.5 MPa, **SCHP - TCHP** high-pressure shaft seals are recommended. They are characterised by a short but flexible sealing lip, thick rubber membrane and a metal casing close to the shaft. This design reduces the tightening of the sealing lip on the shaft and therefore the friction.

The table below sets out the standard materials used for such applications.

Code	Materials	Max. pressure	Max. speed
K8	NBR 80 Shore A	1.0 MPa	< 10 m/s
Y0	NBR 90 Shore A	1.5 MPa	2 m/s

The graph below sets out the permissible pressures depending on the shaft diameter and rotation speed.



There are other rotary seals to support greater pressures and speeds. Please contact our experts.

4.4 TEMPERATURE

The sealing lip of the shaft seal endures a higher temperature due to shaft rotation, and significant pressure and friction on the mechanical parts. Good lubrication is therefore necessary to allow for a better release of heat and thus limits the temperature rise in the parts subjected to friction.

By definition, the temperature at the edge of the seal is raised when the rotation speed (and thus the linear speed) as well as the shaft diameter increases.

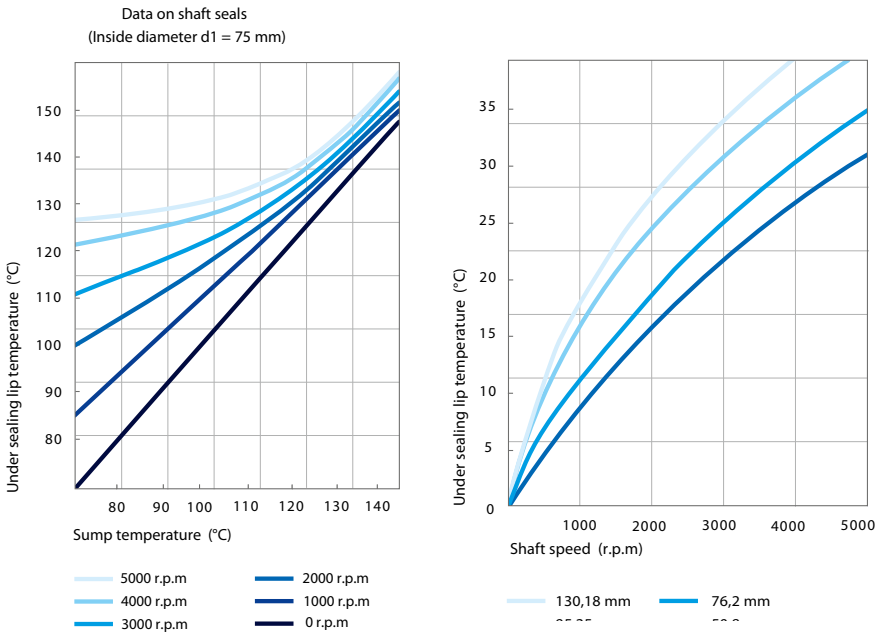
The values in this table are for information purposes only, and rely on good lubrication. Furthermore, when the pressure on the sealing lip increases, the temperature has a tendency to rise.

The table below indicates the temperature limits, depending on the materials and fluids used.

Media		Maximum temperature depending on the materials							
		NBR	HNBR	EPDM	ACM	AEM	VMQ	FKM	PTFE
Mineral oils	Oils for motors	+100°C	+130°C	---	+130°C	+130°C	+150°C	+170°C	+150°C
	Oils for gearboxes	+80°C	+110°C	---	+120°C	+130°C	+130°C	+150°C	+150°C
	Oils for hypoid gears	+80°C	+110°C	---	+120°C	+130°C	---	+150°C	+150°C
	ATF oils	+100°C	+130°C	---	+120°C	+130°C	---	+170°C	+150°C
	Hydraulic oils	+90°C	+130°C	---	+120°C	+130°C	---	+150°C	+150°C
	Greases	+90°C	+100°C	---	---	+130°C	---	---	+150°C
Fire-resistant liquids	HFA group - Emulsion with more than 80% water	+70°C	+70°C	---	---	---	+60°C	---	---
	HFB group - Opposite solution (water in oil)	+70°C	+70°C	---	---	---	+60°C	---	---
	HFC group - Polymer aqueous solution	+70°C	+70°C	+60°C	---	---	---	---	---
	HFD group - Water-free synthetic fluids	---	---	---	---	---	---	+150°C	+150°C
Other fluids	EL + L heating oil	+90°C	+100°C	---	---	---	---	---	---
	Air	+100°C	+130°C	+150°C	+150°C	+150°C	+200°C	+200°C	+150°C
	Water	+90°C	+100°C	+150°C	---	---	---	+100°C	---
	Water for washing	+90°C	+100°C	+130°C	---	---	---	+100°C	---
Temperature range		-30°C/ +100°C	-30°C/ +150°C	-50°C/ +150°C	-25°C/ +150°C	-40°C/ +150°C	-60°C/ +200°C	-20°C/ +200°C	-60°C/ +200°C

For **TB – TC** shaft seals with a secondary anti-pollution sealing lip, the increase in temperature at the sealing lips' point of contact can rise above 20°C.

The adjacent supplemental graphs give an overview of the increase in temperature (in °C) at the point of contact on the sealing lip.



4.5 FLUIDS

The fluid to be sealed is a determining factor in the choice of materials and the type of shaft seal. Their physical properties can actually be altered under the effects of fluids, such as:

- **Hardening due to ageing caused by fluids, particularly at higher temperatures**
- **Softening due to inflation caused by fluids**

Different tests on a standardised specimen in a laboratory, before and after immersion in the fluid in question, measure the fluctuations and thereby determine the fluid's level of compatibility with the selected material. The tests mainly carried out are:

- **Hardness**
- **Compression set**
- **Elongation at break**
- **Tensile strength**
- **Volume**

Please also refer to the "Compatibility of materials" guide to find out the chemical resistance of materials.

a. Mineral oils

In general, this type of oil has few additives and is therefore perfectly suitable for all of the rubbers used for shaft seals. The following oils are suitable for rotating applications:

- **motor oils**
- **gearbox oils**
- **hypoid oils**
- **ATF oils**
- **transmission oils**

b. synthetic oils

This type of oil is used to improve different characteristics such as resistance to ageing, resistance to high temperatures, viscosity, etc. and is highly compatible with the majority of rubbers used for shaft seals. Tests may need to be performed beforehand to measure the degree of compatibility of this type of oil with the materials used. Among the synthetic oils are:

- **brake fluids**
- **fluids for automatic gearboxes**
- **fluids for suspensions**
- **fluids for steering systems**
- **fluids for hydraulic transmissions**

c. Hypoid oils

This type of oil contains special components such as EP additives. These enable lubrication and thus limit any seizing at the bearings, for example. When affected by heat, these additives have the tendency to lead to deposits on the sealing lip. That is why we recommend using shaft seals with a sealing lip comprising return pumping leads in order to limit the increase in temperature and above all, to reduce these potential carbon deposits.

d. Greases

Greases are generally applied to bearings etc. and require specific adaptation to provide favourable operating conditions for the shaft seals. To prevent the lip of the seal from sustaining more significant pressures than planned, we recommend positioning the shaft seal on one side of the bearing in such a way so that the lip is not prematurely destroyed. We also recommend reducing the rotation speed by 50% when lubricated, to ensure that less heat escapes during friction.

e. Aggressive fluids

It is critical to choose the correct material to better resist different aggressive fluids (acids, solvents, chemical products, etc.). For applications in a rotating environment, we recommend using materials such as FKM rather than NBR. For operations that are dry or use very little lubrication, and where the rubbers do not resist certain aggressive fluids, we advise you to use our shaft seals with a PTFE lip.

4.6 SEALING AGAINST DIRT

For dirt, dust and moisture in the surrounding air, we recommend using **TB – TC – KB – KC** shaft seals with a secondary anti-pollution sealing lip.

To protect against heavier pollutants such as jets of mud and water, we recommend using more suitable seal profiles, such as **cassette seals and combi seals**.

5. Shaft seal design

5.1 STATIC SEALING AND HOLD IN THE BORE

The outer envelope of the shaft seal ensures:

- **a good hold in the bore**
- **static sealing in the bore of the housing**
- **precise and easy fitting of the shaft seal**

To guarantee correct operation of the shaft seal in the bore of the housing, it is important to ensure:

- **there are chamfers on the outer envelope of the shaft seal**
- **the pre-tightening of the shaft seal on the nominal diameter of the housing**

The table below indicates the pre-tightening for shaft seals on the housing diameter according to standard ISO 6194-1.

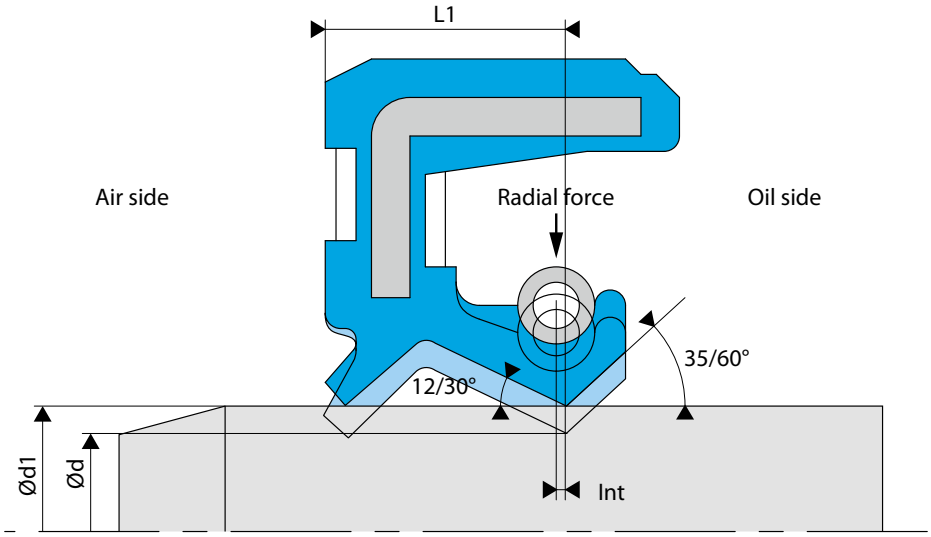
Housing ØD1	Tolerances on the outside diameter ØD of the ring			Roundness tolerance	
	Apparent metal cage	Rubber coating	Coating with grooves	Apparent metal cage	Rubber coating
ØD1 ≤ 50.0	+ 0.10 / + 0.20	+ 0.15 / + 0.30	+ 0.20 / + 0.40	0.18	0.25
50.0 < ØD1 ≤ 80.0	+ 0.13 / + 0.23	+ 0.20 / + 0.35	+0.25 / + 0.45	0.25	0.35
80.0 < ØD1 ≤ 120.0	+ 0.15 / + 0.25	+ 0.20 / + 0.35	+ 0.25 / + 0.45	0.30	0.50
120.0 < ØD1 ≤ 180.0	+ 0.18 / + 0.28	+ 0.25 / + 0.45	+ 0.30 / + 0.55	0.40	0.65
180.0 < ØD1 ≤ 300.0	+ 0.20 / + 0.30	+ 025 / + 0.45	+ 0.30 / + 0.55	0.25% of the outside diameter	0.80
300.0 < ØD1 ≤ 500.0	+ 0.23 / + 0.35	+ 0.30 / + 0.55	+ 0.35 / + 0.65	0.25% of the outside diameter	1.00
500.0 < ØD1 ≤ 630.0	+ 0.23 / + 0.35	+ 0.35 / + 0.65	+ 0.40 / + 0.75	-	-
630.0 < ØD1 ≤ 800.0	+ 0.28 / + 0.43	+ 0.40 / + 0.75	+ 0.45 / + 0.85	-	-

For the **OSC – OTC – OKC – OVC** rotary hub seals that are used on rotating hubs, the tolerances associated with seal pre-tightening are applied to the inside diameter of the seal with negative tolerances.

5.2 DYNAMIC SEALING AND SEALING LIP DESIGN

The design of the shaft seal lip is a determining factor for optimal operation.

The image below sets out the design parameters associated with the sealing lip of the seal.



The ratio between the length of the sealing lip (L1) and the profile of the lip determines its flexibility, depending on whether it is long, for large rotations, or short for holding it steady on the shaft at greater pressures.

To position the spring on the sealing lip, the gap between the centre of the spring and that of the sealing edge must be correctly determined. If this gap (Int) is too big, then friction will occur over too large a surface due to the downturn of the sealing lip. On the other hand, if the gap (Int) is too small the edge may turn over, especially under higher pressures.

The angles on each side of the edge are important, as they ensure better sealing. We recommend allowing an angle between 35° and 60° on the oil side and between 12° and 30° on the air side.

The asymmetrical distribution of the tightening pressure as well as the force from the shaft's rotation causes the part of the sealing lip in contact to become warped.

When movement begins (dry friction), striations form that create a backflow of lubricant on the oil side (hydrodynamic movement). Should these contact forces be disrupted (poor shaft roughness, scratches, impurities, fluid decomposition products, cracks and hardening on the sealing edge), the shaft seal will not correctly fulfil its function.

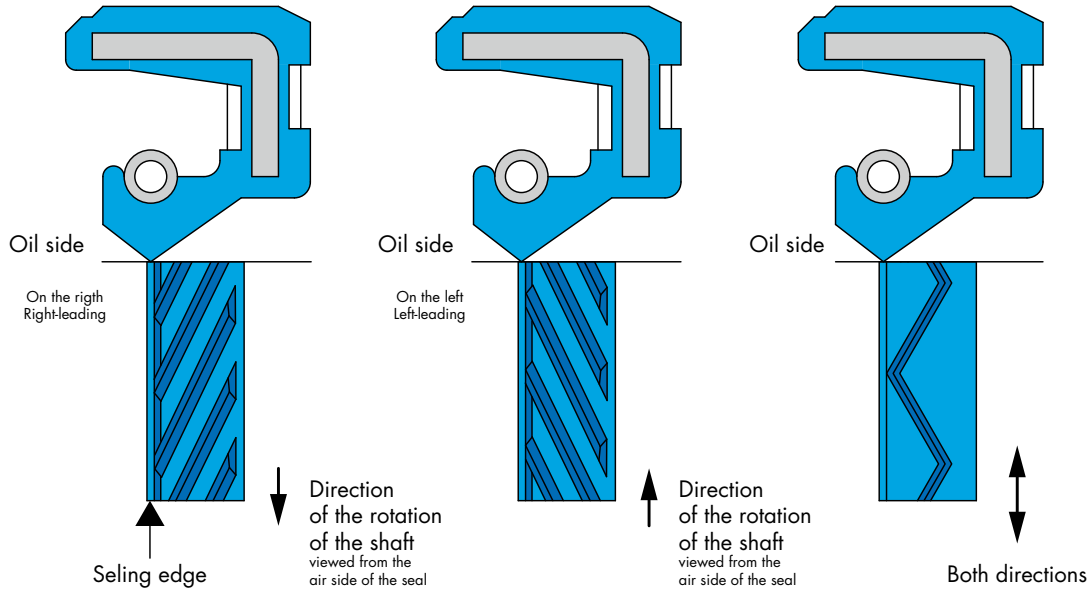
Free and without constraint, the inside diameter of the sealing lip is always smaller than the diameter of the shaft. The pre-tightening or interference denotes the difference between these two values. Depending on the shaft diameter, the diameter of the sealing lip is generally considered to be less, between 0.8 and 3.5 mm.

5.3 PUMPING LEADS

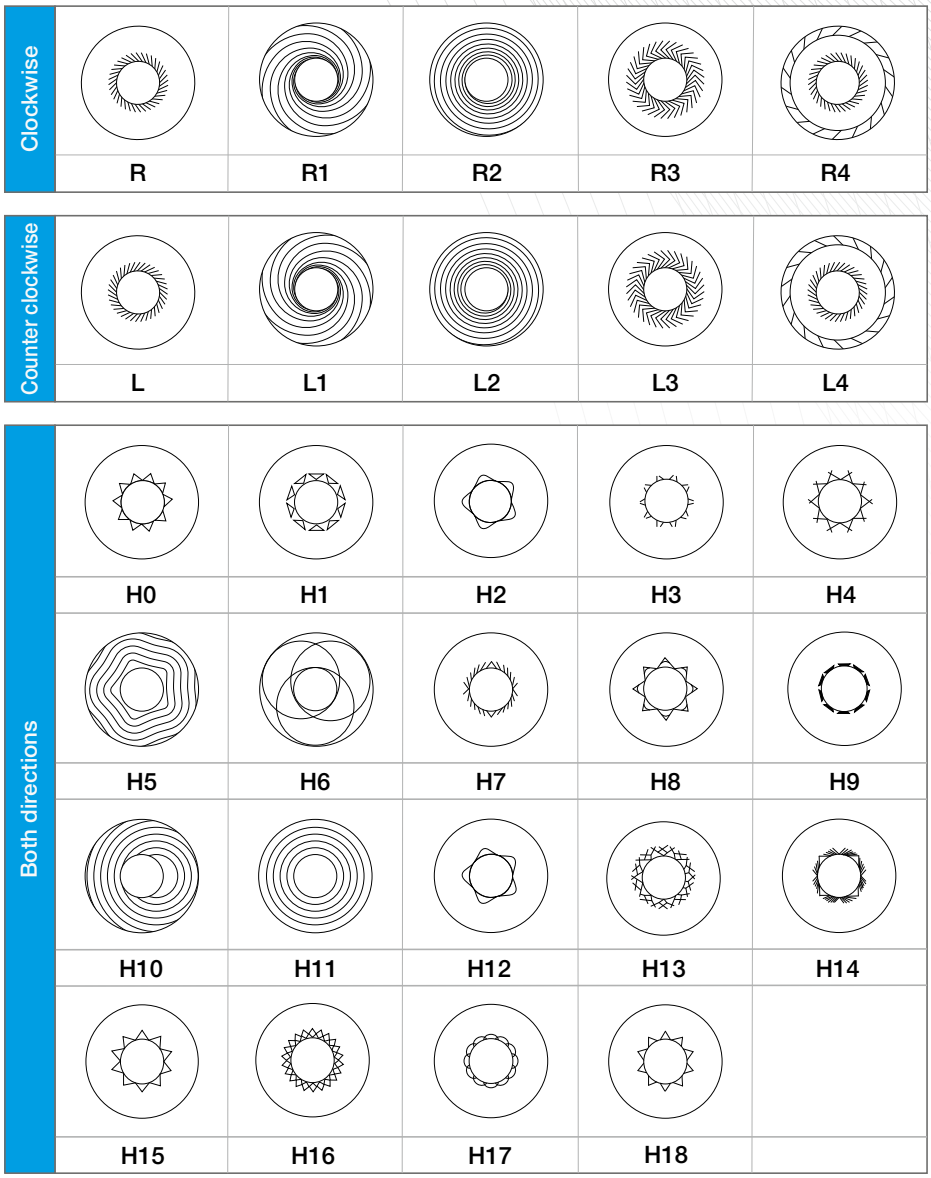
The sealing lip operates with low lubrication and significant heating at the point of contact with the shaft during higher stresses with elevated temperatures and speeds, and with the seal close to the bearing exercising a considerable pumping effect.

To maintain the lubrication, we recommend integrating diagonal pumping leads on the primary sealing lip, on the air side oriented in the direction of the shaft rotation, which reinforces the pumping effect of the rubber's micro-striations.

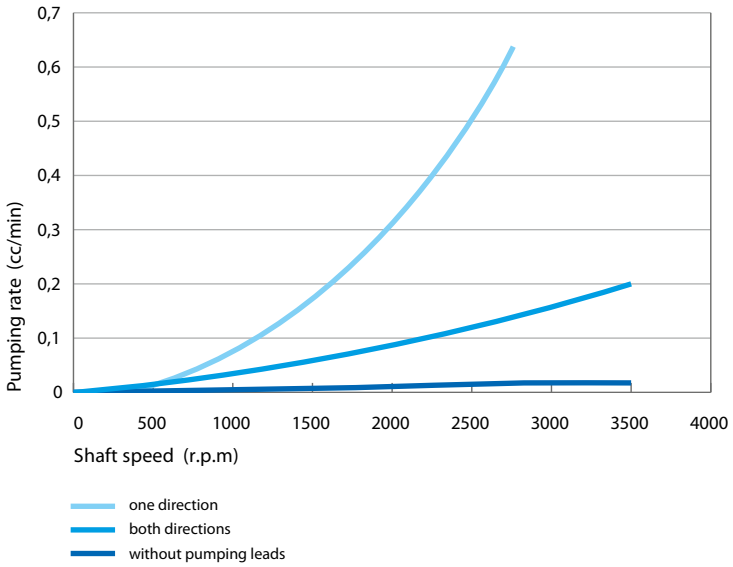
The image below sets out the main types of diagonal striations on the air side of the sealing lip.



Other types of backflow striations can be made.

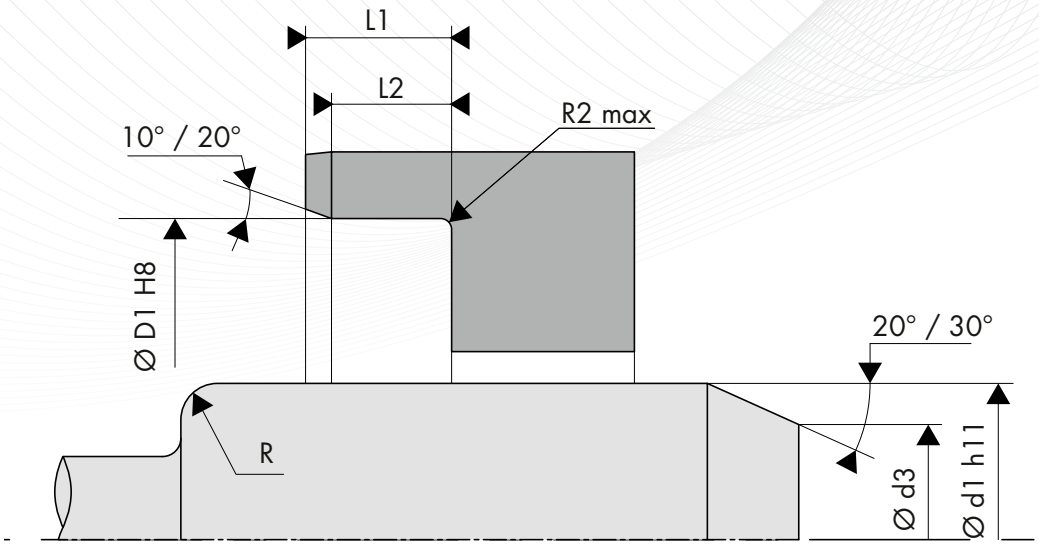


The adjacent graph sets out the backflow level of the rubber's micro-striations:



6. Design recommendation for the shaft

The shaft on which the shaft seal is positioned has a determining influence on the sealing function of the rotating system and on its lifespan.



6.1 SHAFT MATERIALS

Suitable materials are:

- **ordinary C35 and C45 steels used in mechanical construction**
- **1.4300 and 1.4112 stainless steels for sealing water**
- **sprayed carbide coatings**
- **graphite**
- **malleable cast iron**
- **materials with a CVD and PVD coating**

Not appropriate:

- **chrome coatings solidified through non-uniform wear**
- **plastic materials resulting from low thermal conductivity, which can lead to a disturbance in the transport of heat, an increase in temperature in friction areas with the shaft seal, as well as a potential softening**

6.2 SHAFT HARDNESS

Shaft hardness will depend on the linear speed (in m/s) and the level of pollution. For surface hardness, we recommend allowing for a hardness depth of at least 0.3 mm.

Rotation speed	Hardness in HRC
s ≤ 4 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

6.3 SURFACE ROUGHNESS OF THE SHAFT

When the depth of the roughness is too shallow, the transport of lubricant towards the edge of the seal is disrupted and the hydrodynamic film on it breaks up. At high speeds, such a defect could lead to hardening, formation of cracks or even burns on the sealing edge.

On the other hand, if the hardness depth is too deep it could lead to premature wear on the shaft seal lip, and to a significant leak.

The recommendations below must be considered for the quality of the shaft surface area.

Standard conditions:

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

For pressures > 0.1 MPa:

Ra	0.2 to 0.4 µm and 0.1 for demanding applications
Rz	1.0 to 3.0 µm
Rmax	≤6.3 µm

Standard shaft seal conditions where the dynamic contact area is PTFE:

Ra	0.1 to 0.4 µm
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

6.4 SHAFT TOLERANCES AND ROUNDNESS

For shaft seals, the shaft diameter must have a tolerance of h11, in line with ISO standard 286-2. The tolerance class IT 8, in line with ISO standard 286-1, is required for shaft roundness.

Ød1 shaft (mm)	h11 tolerance (mm)	Roundness IT 8 (mm)
Ød1 ≤ 3.0	-0.060 / 0	0.014
3.0 < Ød1 ≤ 6.0	-0.075 / 0	0.018
6.0 < Ød1 ≤ 10.0	-0.090 / 0	0.022
10.0 < Ød1 ≤ 18.0	-0.110 / 0	0.027
18.0 < Ød1 ≤ 30.0	-0.130 / 0	0.033
30.0 < Ød1 ≤ 50.0	-0.160 / 0	0.039
50.0 < Ød1 ≤ 80.0	-0.190 / 0	0.046
80.0 < Ød1 ≤ 120.0	-0.220 / 0	0.054
120.0 < Ød1 ≤ 180.0	-0.250 / 0	0.063
180.0 < Ød1 ≤ 250.0	-0.290 / 0	0.072
250.0 < Ød1 ≤ 315.0	-0.320 / 0	0.081
315.0 < Ød1 ≤ 400.0	-0.360 / 0	0.089
400.0 < Ød1 ≤ 500.0	-0.400 / 0	0.097
500.0 < Ød1 ≤ 630.0	-0.440 / 0	0.110
630.0 < Ød1 ≤ 800.0	-0.500 / 0	0.125

For rotary hub seals and inverted triple-lip shaft seals, the fixed shaft must have a tolerance of h8.

6.5 CHAMFERS AND RADIUS

You are strongly advised to install a chamfer on the shaft so as not to alter the primary lip of the shaft seal during assembly. Please refer to the table below.

Shaft diameter Ød1	Chamfer diameter Ød3	Radius R
Ød1 ≤ 10.0	Ød1 - 1.50	2.0
10.0 < Ød1 ≤ 20.0	Ød1 - 2.00	2.0
20.0 < Ød1 ≤ 30.0	Ød1 - 2.50	3.0
30.0 < Ød1 ≤ 40.0	Ød1 - 3.00	3.0
40.0 < Ød1 ≤ 50.0	Ød1 - 3.50	4.0
50.0 < Ød1 ≤ 70.0	Ød1 - 4.00	4.0
70.0 < Ød1 ≤ 95.0	Ød1 - 4.50	5.0
95.0 < Ød1 ≤ 130.0	Ød1 - 5.50	6.0
130.0 < Ød1 ≤ 240.0	Ød1 - 7.00	8.0
240.0 < Ød1 ≤ 500.0	Ød1 - 11.00	12.0

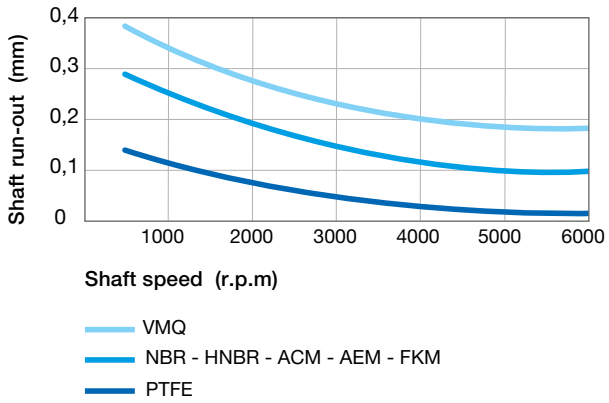
6.6 OVERALL ECCENTRICITY

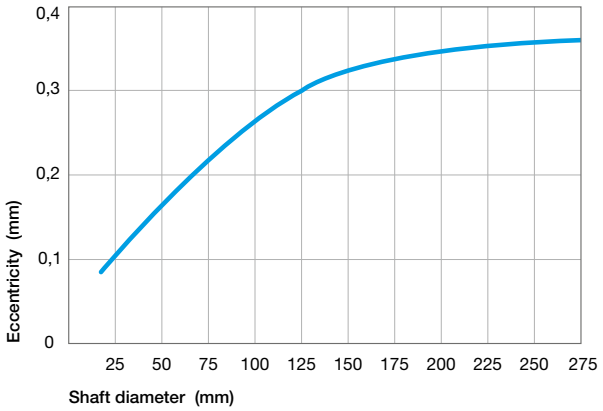
Shaft run out

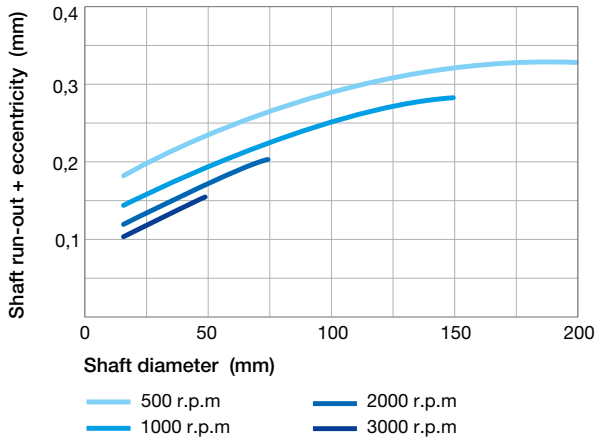
The shaft run out is a deviation between the current shaft axis and the theoretical rotation axis. This sealing gap (or deviation) must also be as small as possible as it could lead to leaks at high rotation speeds, and the sealing lip may no longer be able to follow to the shaft because of the force of inertia. It is therefore important to reduce shaft run out to a minimum by positioning the shaft seal as close as possible to the bearing.

Concentricity deviation

The shaft and housing must be assembled centred on one another in order to remove any unilateral radial load at the sealing lip of the ring. The concentricity deviation leads to an irregular distribution of contact pressure on the circumference, which is also the source of stronger forces acting on the shaft seal lip and premature wear.

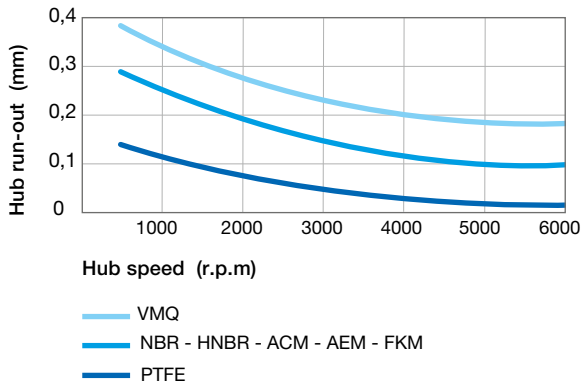
TYPES OF PROFILES	SHAFT RUN OUT
Standard spring-loaded shaft seals	
High-pressure shaft seals	
Flanged spring-loaded shaft seals - Type 5 and 6	
Shaft seals with PTFE lips	

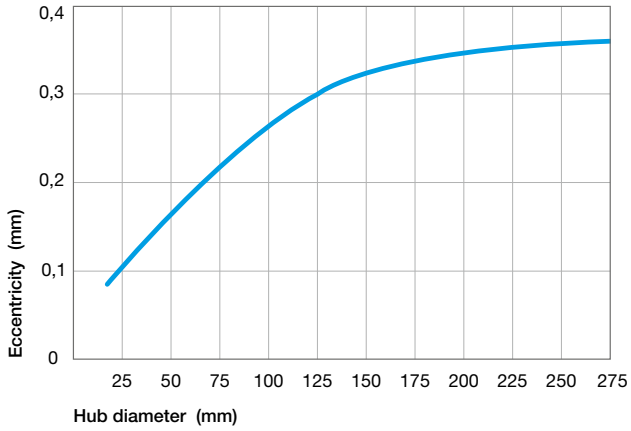
TYPES OF PROFILES	CONCENTRICITY DEVIATION
Standard spring-loaded shaft seals High-pressure shaft seals Flanged spring-loaded shaft seals - Type 5 and 6 Shaft seals with PTFE lips	

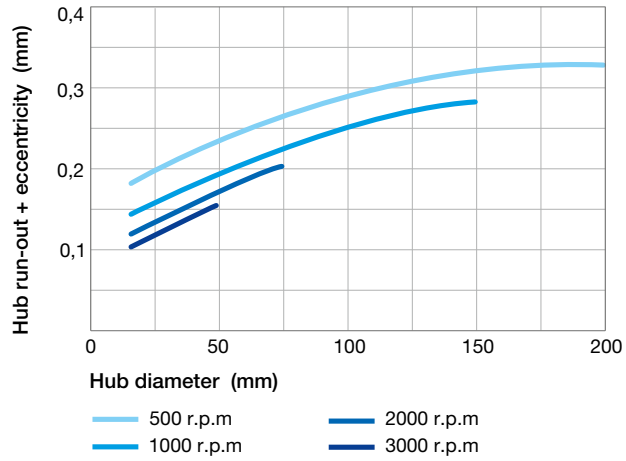
TYPES OF PROFILES	SHAFT RUN-OUT AND CONCENTRICITY DEVIATION
Standard shaft seals without spring Flanged shaft seals - Type 5 and 6 without spring Pin dust seals	

TYPES OF PROFILES	SHAFT RUN-OUT AND CONCENTRICITY DEVIATION
Triple-lip shaft seals	

Shaft diameter Ød1 (mm)	Overall eccentricity (mm)
Ød1 ≤ 40.00	0.15
40.00 < Ød1 ≤ 80.00	0.20
80.00 < Ød1 ≤ 120.00	0.30

TYPES OF PROFILES	HUB RUN OUT
Rotary hub seals with spring	

TYPES OF PROFILES	CONCENTRICITY DEVIATION
Rotary hub seals with spring	

TYPES OF PROFILES	SHAFT RUN-OUT AND CONCENTRICITY DEVIATION
Rotary hub seals without spring	

TYPES OF PROFILES	SHAFT RUN-OUT AND CONCENTRICITY DEVIATION
Shaft seals with PTFE coating	

Shaft diameter Ød1 (mm)	Overall eccentricity (mm)
Ød1 ≤ 40.00	0.20
40.00 < Ød1 ≤ 80.00	0.30
80.00 < Ød1 ≤ 120.00	0.40

6.7 SHAFT MACHINING

Correct shaft machining is essential to the proper operation of the sealing system.

The shaft must be machined without creating helices or striations on the contact surface with the sealing edge of the seal, in order to prevent an inverted pumping effect or backflow effect at the site to be sealed, and therefore leaks.

There are different processes:

- **Plunge grinding: preferred machining method that ensures the absence of striations on the shaft (0 +/- 0.05°)**
- **Turning: suitable for shafts used with a unidirectional sense of rotation**
- **Roller burnishing**
- **Blasting**
- **Honing**
- **Superfinishing**
- **Polishing**

The table below sets out the machining guidelines for correcting the surfaces.

Parameters	Requirements
Speed of the part to be machined	30 to 300 rpm
Grinding disc speed	1500 to 1700 rpm
Dressing feed	< 0.02 mm/rv
Dressing tool cut	multi-grain dressing diamond, single drain dressing diamond
Grinding rate feed	approximately 0.02 mm
Spark duration	full spark, min. 30 secs
Infeed depth	> Rmax of the old machining operation
Concentricity of the tool and part to be machined	the best possible

6.8 PREVENTING RESIDUAL STRIATIONS ON THE SHAFT SURFACE

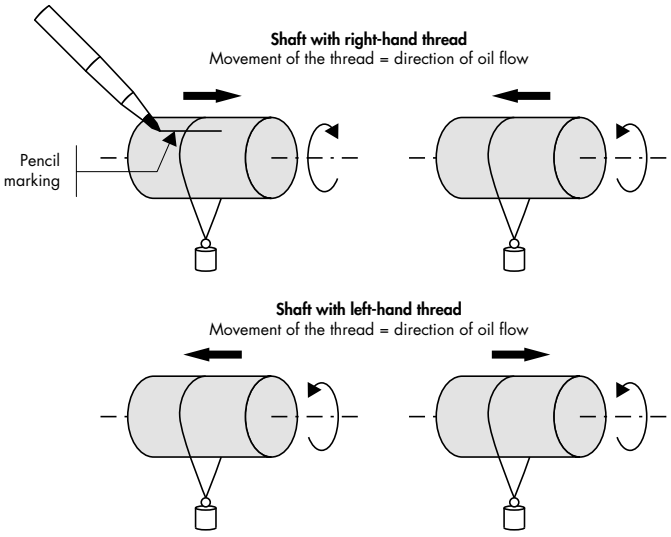
It is important to ensure that shaft machining is free from striations by preventing a backflow effect in the area in contact with the sealing edge, which would disrupt the system and cause leaks.

The wire process can be used to check that there are no striations on the shafts and sleeves, where certain parameters are required.

Parameters	Requirements
Shaft direction	Horizontal
Lubricant	Moisten the shaft with low-viscosity oil
Thread	Horse hair, 0.1 mm fishing line
Contact angle of the thread	> 180°, < 170°
Weight	Ød1 of the shaft < 100 mm: 30 g Ød1 of the shaft > 100 mm: 50g
Speed	Approximately 20 rpm when the direction is changed

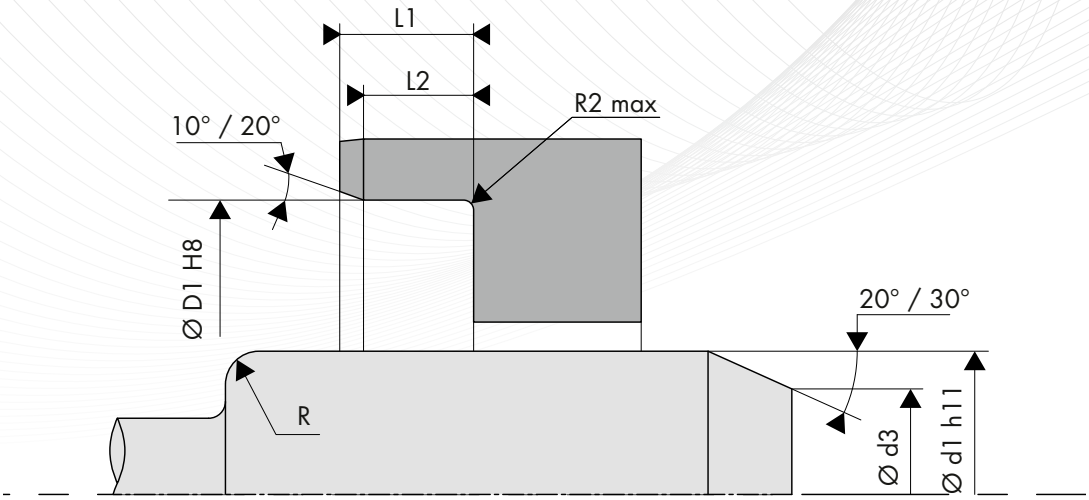
Check that there are no striations as follows:

- **Lightly moisten the shaft with oil**
- **Hang up the thread using a weight**
- **Rotate the shaft several times**
- **Draw an axial line on the inside of the shaft with a pencil**
- **Turn the shaft approximately 20 turns**
- **Examine axial pencil line for wiping effect**
- **Repeat the process in the opposite direction**
- **If there are no striations, the line remains intact**



7. Design recommendation for the housing

The type of housing design is a determining factor in guaranteeing optimal static sealing using the shaft seal envelope. It is important to ensure that all of the recommendations below have been followed to guarantee sound fitting and that the housing is watertight.



7.1 SURFACE ROUGHNESS

The following roughness values must be observed to obtain a reliable static sealing.

Standard conditions for rings with a rubber coating:

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Standard conditions for rings with an apparent metal cage:

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

7.2 TOLERANCES ON THE BORE DIAMETER OF THE HOUSING

For shaft seals, the bore diameter of the housing must have a tolerance of H8, in line with ISO standard 286-2.

Housing ØD1	H8 tolerance (mm)
3.0 < ØD1 ≤ 6.0	0 / +0.018
6.0 < ØD1 ≤ 10.0	0 / +0.022
10.0 < ØD1 ≤ 18.0	0 / +0.027
18.0 < ØD1 ≤ 30.0	0 / +0.033
30.0 < ØD1 ≤ 50.0	0 / +0.039
50.0 < ØD1 ≤ 80.0	0 / +0.046
80.0 < ØD1 ≤ 120.0	0 / +0.054
120.0 < ØD1 ≤ 180.0	0 / +0.063
180.0 < ØD1 ≤ 250.0	0 / +0.072
250.0 < ØD1 ≤ 315.0	0 / +0.081
315.0 < ØD1 ≤ 400.0	0 / +0.089
400.0 < ØD1 ≤ 500.0	0 / +0.097
500.0 < ØD1 ≤ 630.0	0 / +0.110
630.0 < ØD1 ≤ 800.0	0 / +0.125
800.0 < ØD1 ≤ 1000.0	0 / +0.140

For rotary hub seals and inverted triple-lip shaft seals, the rotating housing (hub) must have a tolerance of H11.

7.3 GROOVE WIDTH DIMENSIONS

The axial dimensions of the housing and radius of the corresponding edges are listed in the table below, in line with the height (H1) of the shaft seal.

H1	L2min (H1 x 0.85)	L1min (H1 x +0.3)	Max R2 radius
7.00	5.95	7.30	0.50
8.00	6.80	8.30	
10.00	8.50	10.30	
12.00	10.30	12.30	0.70
15.00	12.75	15.30	
20.00	17.00	20.30	

7.4 HOUSING CHAMFER

The housing has a chamfer of 10° to 20° with routings that must be created without flashes.

7.5 THERMAL EXPANSION

During operation, the temperature can considerably affect the pre-tightening between the housing and the shaft seal, particularly when it involves housings made from lightweight alloys or plastic.

The differences between the thermal expansion coefficients of steel, cast iron and plastic materials are significant and can lead to a number of problems.

Using **SC – SCW – TC – TCW** shaft seals is recommended, as they follow the thermal expansion of the housing better due to a greater pre-tightening and higher thermal expansion coefficient.

7.6 TWO-PART HOUSING

We recommend using **SC – TC** shaft seals with a rubber envelope that are reliable and enable static sealing on both parts of the housing, even in the partition lines.

7.7 STIFFNESS

In certain applications, the housings are fitted with thin walls for cost-efficiency, and the bores have little elasticity or sturdiness. When shaft seals are fitted, there is a risk of enlarging or rupturing the casing, which is likely to cause leaks.

In order to reduce the fitting force, we recommend selecting **SC – TC** shaft seals or modifying the tolerance of the bore to F8.

8. Analysis of faults

Sources of faults	Causes	Outcomes	Corrective measures
Receipt of goods			
• Deterioration of packaging	• Unsuitable packaging	• Shaft seal pollution • Reduced lifespan or immediate leak	• Check the parts for dirt and visual or dimensional alterations • Improve maintenance operations • Improve packaging
Shaft seal storage			
• Non-compliance with ISO 2230	• Absence of storage procedures required by regulations	• Faulty shaft seals fitted • Reduced lifespan or immediate leak	• Follow the storage conditions in line with ISO 2230
• Shaft seal pollution	• Dust, impurities	• Dirty shaft seals fitted and used • Reduced lifespan or immediate leak	• Clean shaft seals with a suitable cleaning product • Open the original packaging just before fitting • Follow the storage conditions in line with ISO 2230
• Shaft seal deterioration	• Premature ageing caused by unsuitable storage	• Damaged shaft seals fitted • Reduced lifespan or immediate leak	• Open the original packaging just before fitting • Follow the storage conditions in line with ISO 2230
Preparing shaft seals for fitting			
• Opening or sampling seals in the packaging that are non-compliant	• Tools with sharp or unsuitable edges • Unsuitable opening methods	• Cuts or other damages to shaft seals • Shaft seal pollution • Spring detachment • Shaft seals are fitted without a spring	• Use suitable packaging and tools • Pay particular attention to the instructions for those carrying out the fitting
• Lubricating the shaft seals with unsuitable oil or grease	• Dust, impurities	• Shaft seal pollution • Reduced lifespan or immediate leak	• Protect the container of oil or grease against pollution and close it after each use
• Excess grease between the sealing edge and the additional anti-pollution sealing lip	• Incorrect amount of grease	• False leaks • Excess grease escaping during shaft seal assembly or during operation	• Ensure greasing with a maximum volume of 40%
• Insufficient greasing	• Incorrect amount of grease	• Insufficient lubrication • Penetration of impurities • Shaft seal deterioration through abrasion	• Grease the protective lip
• Greasing in the wrong place	• Wrong instruction • Wrong greasing mechanism	• Insufficient lubrication • Penetration of impurities • Shaft seal deterioration through abrasion	• Use pre-greased shaft seals • Modify the greasing mechanism

Sources of faults	Causes	Outcomes	Corrective measures
Fitting shaft seals			
• Poor mandrel design	• Adjustment problem • Unsuitable fitting device	• Shaft seal deterioration • Spring detachment • Skewed shaft seal fitting	• Follow the instructions in the France Joint catalogue
• Dirty mandrel	• Dust, impurities	• Shaft seal pollution • Reduced lifespan or immediate leak	• Ensure that the fitting area is clean • Check that the mandrel is clean and wash it with suitable products if necessary
• Warped mandrel	• Mandrel wear • Mandrel non-compliant	• Shaft seal deterioration • Reduced lifespan or immediate leak	• Check the condition of the mandrel after it is fitted for the first time • Regularly check the mandrel
• Unsuitable mandrel	• Problem with traceability • The correct mandrel was not identified and used the shaft seal	• Shaft seal deterioration • Reduced lifespan or immediate leak	• Put the correct fitting instructions in place • Identify the correct mandrel for the shaft seals
• Fitting speed too great	• Fitting with a hammer • The shaft seal is fitted too fast	• Bounce-back effect, shaft seal sloping • Irregular wear, static leak • Reduced lifespan or immediate leak	• Observe the maximum recommended speed
• The fitting force is too great when fitted on the flange	• Incorrect assembly device setting	• Shaft seal deterioration • Distortion of the metal casing • Reduced lifespan or immediate leak	• Reduce the fitting force • Fit an end of stroke stop on the mandrel
• Fitting stroke too little or too long	• No mandrel • Unsuitable mandrel	• Sealing lip operates in the wrong place	• Check that the shaft seal is correctly positioned
• Fitting with a hammer	• Fitting non-compliant	• Shaft seal deterioration • Housing deterioration • Sloping shaft seal • Spring detachment	• Follow the instructions in the France Joint catalogue • Avoid using a hammer to fit in the manufacturing program
• The fitting area is dirty	• Dust, impurities • Sharp edges	• Shaft seal pollution • Shaft seal deterioration • Reduced lifespan or immediate leak	• Ensure that the fitting area is clean • Ensure that the fitting area is free from sharp objects or edges

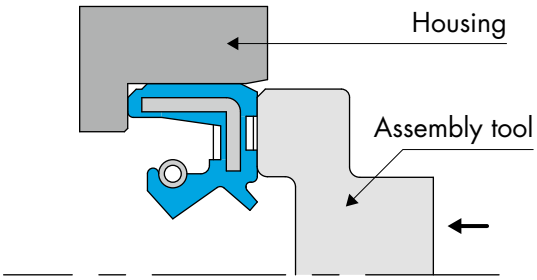
Sources of faults	Causes	Outcomes	Corrective measures
Shaft			
• Scratched shaft	• Deterioration during transport or during maintenance operations • No shaft protection	• Sealing lip deterioration during shaft fitting • Reduced lifespan or immediate leak	• Check the shaft before fitting • Do not store or transport loose shafts • Use protective systems
• Dirty shaft	• Became dirty during transport or during maintenance operations • No shaft protection	• Shaft seal pollution • Shaft seal deterioration • Reduced lifespan or immediate leak	• Check that the shaft is clean and wash it with suitable products if necessary
• Corroded shaft	• Corrosion during transport or during maintenance operations • No shaft protection • Too much moisture • Stored for too long	• Shaft seal corrosion • Shaft seal deterioration • Reduced lifespan or immediate leak	• Check that the shaft is clean and wash it with suitable products if necessary • Use suitable anti-corrosive agents
• Blind fitting	• Shaft is too long • Shaft is too heavy • Shaft tilts • Poor shaft guidance	• Spring detachment • The sealing lip and anti-dust lip turn over • Sloping shaft seal • Shaft seal deterioration	• Follow the instructions in the France Joint catalogue • Coordinate manufacture with fitting and housing
Bore			
• Two-part housing	• Incorrect choice of outer coating on the shaft seal	• Static leak	• Use a one-part housing • Select a shaft seal with a rubber or 1/2 metal-rubber outer coating • Avoid using lacquers or adhesives
• Cast iron housing	• Porosities • Moulding sand • Blisters • Insufficient cast iron quality • Insufficient cleaning	• Static leak • Reduced lifespan due to moulding sand	• Ensure proper cleaning • Check that porosities and blisters do not exceed 1/3 of the length of the shaft seal's outer coating
• Housing moulded under pressure (Al, Mg)	• Incorrect choice of outer coating on the shaft seal	• Static leak • The housing deteriorates if it comes into contact with a shaft seal with a metal casing • Reduced life span • Scratched housing	• Select a shaft seal with a rubber outer coating
• Plastic housing	• Incorrect choice of outer coating on the shaft seal • Thermal expansion is too great • Surface is too smooth	• Static leak • The housing deteriorates if it comes into contact with a shaft seal with a metal casing • Reduced life span	• Select a shaft seal with a rubber outer coating
• Inlet chamfer in the housing/bore	• Flashes between the chamfer and housing • Chamfer too large • Chamfer too small • Roundness defect in the shaft seal	• Static leak • The rubber part is sheared on the outer coating • Skewed fitting • Bounce-back effect on the shaft seal	• Check that there are no flashes • Follow the instructions in the France Joint catalogue • Select a suitable 10°/20° chamfer

9. Assembly recommendations

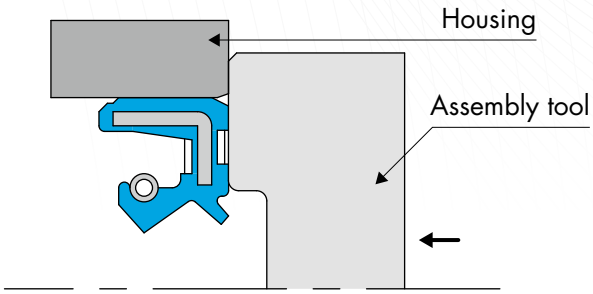
Several essential rules must be followed before fitting the seals.

- Check that the mechanical parts (shaft and housing) have an inlet chamfer.
- Flash and chamfer or round off the sharp edges; cover the threaded parts.
- Remove the machining shavings and all impurities and other foreign bodies. Clean all mechanical parts carefully.
- Grease or oil the seal (rubber only) and shaft to facilitate assembly. Only use clean grease or oil to do this.
- Ensure beforehand that the lubricants are compatible with the seal's materials. Avoid greases containing solid additives (molybdenum disulphide or zinc sulphide).
- If using installation tools, check that they are clean and do not have sharp edges.

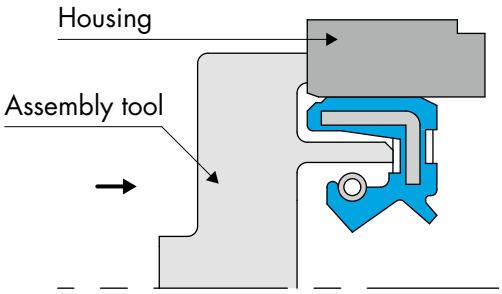
Fitting with shaft seal against abutment



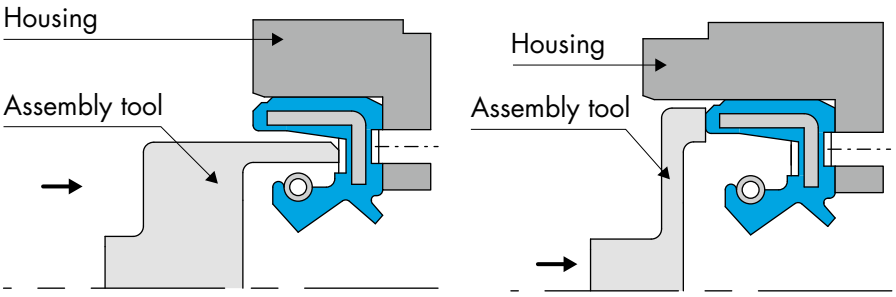
Fitting with mandrel against abutment



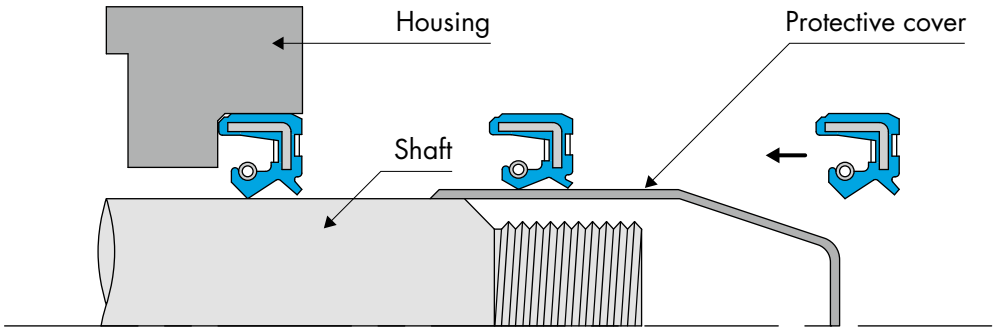
Fitting with mandrel against abutment - inverted



Fitting with shaft seal against abutment - inverted



Fit with assembly cone



10. Storage recommendations and lifespan

Seals, which are regularly used as spare parts, can be stored over a long-term period. During storage, rubbers are subject to physical alterations, meaning that they can sometimes become unusable due to deformation, hardening, softening or cracking when they are exposed to oxygen and ozone, light, heat, moisture, oils and solvents.

ISO Standard 2230: 2002 "Rubber Products - Guidelines for Storage" sets out the storage recommendations and length of storage for rubbers depending on material classification, in order to ensure optimal preservation of the physical and chemical features of parts.

Temperature

The temperature in the storage area must preferably be between +5°C and +25°C. If the temperature exceeds +25°C, the rubber seals may undergo physical changes, no longer retaining their original technical features, and may break down prematurely. All heat sources (radiators, lamps, sunlight, etc.) must be controlled so that the temperature does not exceed +25°C.
On the other hand, if the temperature in the storage area is below +5°C, the seals may become more rigid, which will not necessarily alter their chemical and physical features. Returning them to +20°C is advised before putting them into operation.

Humidity

Generally speaking, the relative humidity of the storage area should not exceed 70% for rubber seals (65% for polyurethane seals). Avoid humid areas, as well as areas that are prone to condensation.

Light

Rubber seals must not come into contact with sunlight or artificial light with a high UV ray content. Using normal incandescent lighting is recommended, as is covering windows in the storage area with a protective red or orange paint. Using special anti-UV bags will ensure that seals are better protected.

Radiation

Precautions must be taken to protect stored parts from all sources of ionising radiation.

Ozone

As ozone is very damaging to rubber seals, the storage area must not contain ozone-producing equipment, such as mercury-vapour lamps, high-voltage electrical equipment, electric motors or other products likely to produce soundless electrical charges or sparks. No combustible gases or organic vapours must be present, as their photochemical processes may lead to ozone production.

Distortion

Seals must preferably be stored where they are not subjected to constraints, pressures or any other force that could cause them to become misshapen. Seals should be kept in their original packaging as far as possible.

Contact with liquids and semi-liquids

Seals must not be stored in contact with liquids (acids, disinfectants, oils, greases, etc.) or other semi-liquid materials, unless packaged in this way by the manufacturer.

Contact with metals

Certain metals, such as manganese, iron, copper, brass and other compounds are damaging to rubbers. Seals must not be stored in contact with such metals unless the rubber parts are affixed to them, in which case a rolled packaging would be preferable.

Contact with other materials

Rubber seals must not be stored in contact with PVC due to the risk of potentially transferring plasticiser or other ingredients. Rubbers with different compositions must be separated from one another.

Cleaning

If necessary, clean seals with soap and water, or denatured alcohol. Cleaning with water should particularly be avoided for seals with textile fibre, and steel-rubber (corrosion problems) or polyurethane seals. Parts must be dried at ambient temperature and not near a heat source. Seals must not come into contact with wire brushes or sharp objects.

Storage and control

Storage duration largely depends on the type of material, rubbers being particularly sensitive to storage. The table below sets out the initial storage period.

Type of materials	Initial storage period	Extension period
NR - PU	5 years	2 years
ACM - AEM - CR - HNBR - NBR	7 years	3 years
EPDM - FFKM - FKM - FVMQ - VMQ	10 years	5 years
PTFE - PA6 - POM	Unlimited	-

Quality control is carried out at the end of this period. An extension may be possible, depending on the results.

11. Standard shaft seals

FRANCE JOINT has a complete range of standard shaft seals (also known as oil seals), which ensure fluid sealing on rotating shafts.

Standard shaft seals include the most recent profiles, some of which are standardised by ISO 6194, DIN 3760 or DIN 3761. They are generally pressure-free and come in different design shapes depending on the type of fluid, level of external pollution, qualities of the shaft and housing (hardness, surface roughness, material), speed, temperature, etc.

11.1 COMPARATIVE TABLE FOR STANDARD SHAFT SEAL PROFILES

		Single rubber covered metal casing	Single metal casing with rubber grooves covering the outside of the casing	Single outer metal casing with rubber coating on the inside	Single outer metal casing			
		C	**CW**	**B**	**B2**			
Spring-loaded sealing lip	**S**	**SC** **P. 39**	**SCW** **P. 39**	**SB** **P. 80**	**SB2** **P. 80**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	
Spring-loaded sealing lip + anti-pollution sealing lip	**T**	**TC** **P. 39**	**TCW** **P. 39**	**TB** **P. 80**	**TB2** **P. 80**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Standard protection against undesirable air contaminants
Spring-loaded sealing lip + anti-pollution sealing lip + axial lip	**T7**	**TC7** **P. 39**	**TCW7** **P. 39**	**TB7** **P. 80**	**TB27** **P. 80**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Advanced protection against undesirable air contaminants
Spring-loaded sealing lip + 2 anti-pollution sealing lip	**T8**	**TC8** **P. 39**	**TCW8** **P. 39**	**TB8** **P. 80**	**TB28** **P. 80**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Advanced protection against undesirable air contaminants
Spring-loaded sealing lip + 2 anti-pollution sealing lip + axial lip	**T9**	**TC9** **P. 39**	**TCW9** **P. 39**	**TB9** **P. 80**	**TB29** **P. 80**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Strong protection against undesirable air contaminants
Primary sealing lip without spring	**V**	**VC** **P. 98**	**VCW** **P. 98**	**VB** **P. 104**	**VB2** **P. 104**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	
Primary sealing lip without spring + anti-pollution sealing lip	**K**	**KC** **P. 98**	**KCW** **P. 98**	**KB** **P. 104**	**KB2** **P. 104**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	Standard protection against undesirable air contaminants
Double spring-loaded sealing lip to separate fluids	**D**	**DC** **P. 110**	**DCW** **P. 110**	**DB** **P. 110**	**DB2** **P. 110**	Sealing for low and high viscosity fluids	Modern sealing lips with low radial forces	Fluid separation system
		Very good static sealing	Very good static sealing	Good radial rigidity, particularly for large diameters	Good radial rigidity, particularly for large diameters			
		Very good thermal expansion compensation	Very good thermal expansion compensation	Good stability when assembled, preventing the bounce-back effect	Good stability when assembled, preventing the bounce-back effect			
		Greater roughness is allowed in the housing	Greater roughness is allowed in the housing	Excellent resistance to corrosive fluids on the inside				
		Reduced risk of corrosion	Reduced risk of corrosion					
			Easy to assemble with very limited bounce-back effect					

		Single outer metal casing with rubber coating over half of the outside of the casing	Single outer metal casing with rubber coating on the inside and on the edge of the casing	Single outer metal casing with rubber grooves over half of the outside of the casing	Single outer metal casing with metal reinforcement			
		BC	**BR**	**BCW**	**A2**			
Spring-loaded sealing lip	**S**	**SBC P. 90**	**SBR P. 90**	**SBCW P. 90**	**SA2 P. 94**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	
Spring-loaded sealing lip + anti-pollution sealing lip	**T**	**TBC P. 90**	**TBR P. 90**	**TBCW P. 90**	**TA2 P. 94**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Standard protection against undesirable air contaminants
Spring-loaded sealing lip + anti-pollution sealing lip + axial lip	**T7**	**TBC7 P. 90**	**TBR7 P. 90**	**TBCW7 P. 90**	**TA27 P. 94**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Advanced protection against undesirable air contaminants
Spring-loaded sealing lip + 2 anti-pollution sealing lip	**T8**	**TBC8 P. 90**	**TBR8 P. 90**	**TBCW8 P. 90**	**TA28 P. 94**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Advanced protection against undesirable air contaminants
Spring-loaded sealing lip + 2 anti-pollution sealing lip + axial lip	**T9**	**TBC9 P. 90**	**TBR9 P. 90**	**TBCW9 P. 90**	**TA29 P. 94**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Strong protection against undesirable air contaminants
Primary sealing lip without spring	**V**	**VBC P. 106**	**VBR P. 106**	**VBCW P. 106**	**VA2 P. 108**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	
Primary sealing lip without spring + anti-pollution sealing lip	**K**	**KBC P. 106**	**KBR P. 106**	**KBCW P. 106**	**KA2 P. 108**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	Standard protection against undesirable air contaminants
Double spring-loaded sealing lip to separate fluids	**D**	**DBC P. 110**	**DBR P. 110**	**DBCW P. 110**	**DA2 P. 110**	Sealing for low and high viscosity fluids	Modern sealing lips with low radial forces	Fluid separation system
		Good radial rigidity, particularly for large diameters	Good radial rigidity, particularly for large diameters	Good radial rigidity, particularly for large diameters	Excellent radial rigidity, particularly for large diameters			
		Good stability when assembled, with limited bounce-back effect	Good stability when assembled, preventing the bounce-back effect	Good stability when assembled, preventing the bounce-back effect	Very good stability when assembled, preventing the bounce-back effect			
		Good static sealing	Excellent resistance to corrosive fluids on the inside	Good static sealing				
		Good thermal expansion compensation	Improved static sealing	Good thermal expansion compensation				
		Good heat transfer	Good thermal expansion compensation	Good heat transfer				
			Good heat transfer					

STANDARD SHAFT SEALS

SC / SCW / TC / TCW / TC7 / TCW7 / TC8 / TCW8 / TC9 / TCW9

SC profile image

11.2 SC / SCW / TC / TCW / TC7 / TCW7 / TC8 / TCW8 / TC9 / TCW9 PROFILES

		Spring-loaded sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip + axial lip	Spring-loaded sealing lip + 2 anti-pollution sealing lip	Spring-loaded sealing lip + 2 anti-pollution sealing lip + axial lip
		S	**T**	**T7**	**T8**	**T9**
Single rubber covered metal casing	**C**	**SC**	**TC**	**TC7**	**TC8**	**TC9**
Single metal casing with rubber grooves covering the outside of the casing	**CW**	**SCW**	**TCW**	**TCW7**	**TCW8**	**TCW9**

DESCRIPTION

Shaft seal composed of a single rubber covered metal casing and a spring-loaded sealing lip. Available with or without an additional radial and/or axial anti-pollution sealing lip, and with or without grooves on the outside.

APPLICATIONS

Shaft sealing
Engines
Pumps
Transmissions

ADVANTAGES

Very good static sealing
Very good thermal expansion compensation
Greater roughness is allowed in the housing
Very limited bounce-back effect where grooves are present
Reduced risk of corrosion
Sealing for low and high viscosity fluids
Modern primary sealing lip with low radial forces
Standard, average or increased protection against undesirable air contaminants

MATERIALS

Rubber

ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

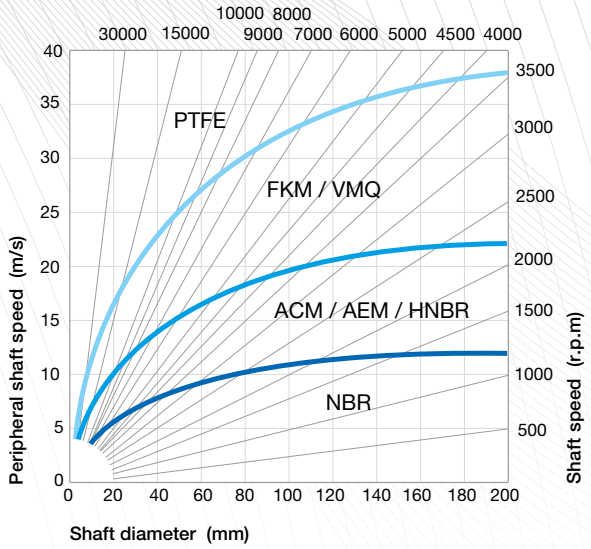
Steel - AISI 1010

Spring

Steel - AISI 1070 - 1090
Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	The shaft seals with an additional protective lip are limited to a speed of 8 m/sec.
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

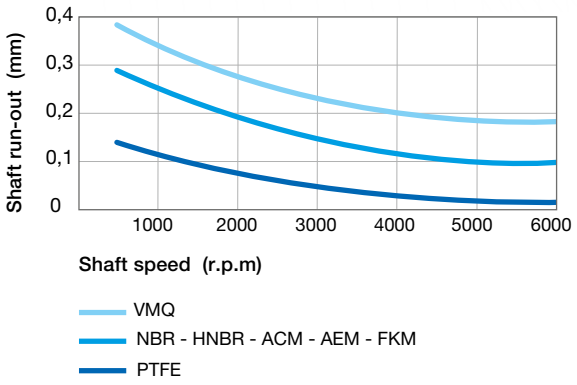
Shaft tolerance

Tolerance	ISO h11

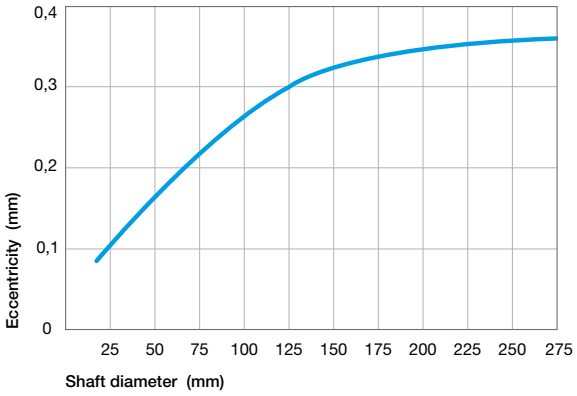
Shaft roundness

Roundness	IT 8

Shaft run out



Eccentricity



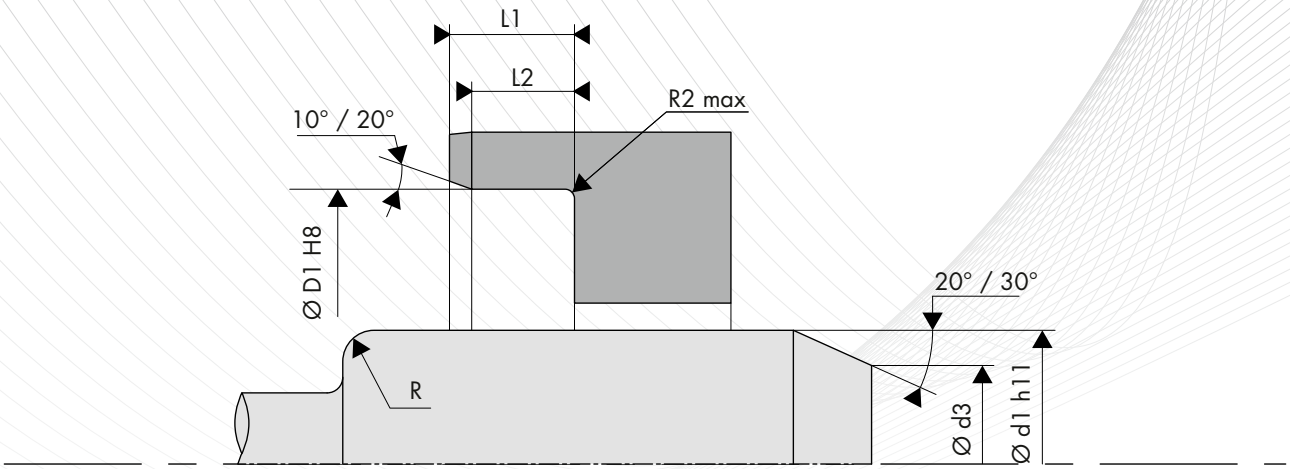
HOUSING DESIGN

Surface roughness

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Housing tolerance

Tolerance	ISO H8



DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 4x16x6	4.00	16.00	6.00		SC
SC 5x15x6	5.00	15.00	6.00		SC
TC 5x15x6	5.00	15.00	6.00		TC
TC 5x16x6	5.00	16.00	6.00		TC
TC 5x17x7	5.00	17.00	7.00		TC
TC 5x18x6	5.00	18.00	6.00		TC
TC 5x18x7	5.00	18.00	7.00		TC
TC 5x18x10	5.00	18.00	10.00		TC
TC 5x19x7	5.00	19.00	7.00		TC
TC 5x22x7	5.00	22.00	7.00		TC
SC 6x12x4.5	6.00	12.00	4.50		SC
SC 6x12x5.5	6.00	12.00	5.50		SC
TC 6x12x8	6.00	12.00	8.00		TC
SC 6x15x4	6.00	15.00	4.00		SC
SC 6x15x7	6.00	15.00	7.00		SC
SC 6x16x5	6.00	16.00	5.00		SC
TC 6x16x5	6.00	16.00	5.00		TC
TC 6x16x6	6.00	16.00	6.00		TC
SC 6x16x7	6.00	16.00	7.00		SC
TC 6x16x7	6.00	16.00	7.00		TC
TC 6x17x7	6.00	17.00	7.00		TC
TC 6x18x6	6.00	18.00	6.00		TC
TC 6x18x7	6.00	18.00	7.00		TC
SC 6x19x6	6.00	19.00	6.00		SC
TC 6x19x7	6.00	19.00	7.00		TC
TC 6x20x5.5	6.00	20.00	5.50		TC
TC 6x21x7	6.00	21.00	7.00		TC
SC 6x22x7	6.00	22.00	7.00		SC
TC 6x22x7	6.00	22.00	7.00		TC
TC 6x22x8	6.00	22.00	8.00		TC
SC 6x25x6	6.00	25.00	6.00		SC
SC 6x25x8	6.00	25.00	8.00		SC
TC 6x25x8	6.00	25.00	8.00		TC
TC 6x26x7	6.00	26.00	7.00		TC
TC 6x35x7	6.00	35.00	7.00		TC
SC 7x15x5	7.00	15.00	5.00		SC
SC 7x16x7	7.00	16.00	7.00		SC
TC 7x16x7	7.00	16.00	7.00		TC
TC 7x17x5	7.00	17.00	5.00		TC
TC 7x17x7	7.00	17.00	7.00		TC
SC 7x18x4.5	7.00	18.00	4.50		SC
SC 7x18x6.5	7.00	18.00	6.50		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 7x18x7	7.00	18.00	7.00		TC
TC 7x19x7	7.00	19.00	7.00		TC
TC 7x20x7	7.00	20.00	7.00		TC
TC 7x22x6	7.00	22.00	6.00		TC
SC 7x22x7	7.00	22.00	7.00		SC
TC 7x22x7	7.00	22.00	7.00		TC
TC 7x22x8	7.00	22.00	8.00		TC
SC 7x31x5	7.00	31.00	5.00		SC
TC 7x31x7	7.00	31.00	7.00		TC
SC 8x14x4	8.00	14.00	4.00		SC
SC 8x14x5	8.00	14.00	5.00		SC
TC 8x14x5	8.00	14.00	5.00		TC
TC 8x14x7	8.00	14.00	7.00		TC
TC 8x15x5	8.00	15.00	5.00		TC
SC 8x16x4	8.00	16.00	4.00		SC
SC 8x16x5	8.00	16.00	5.00		SC
TC 8x16x5	8.00	16.00	5.00		TC
TCW 8x16x5	8.00	16.00	5.00		TCW
SC 8x16x6	8.00	16.00	6.00		SC
TC 8x16x6	8.00	16.00	6.00		TC
SC 8x16x7	8.00	16.00	7.00		SC
TC 8x16x7	8.00	16.00	7.00		TC
TC 8x17x7	8.00	17.00	7.00		TC
SC 8x18x5	8.00	18.00	5.00		SC
TC 8x18x5	8.00	18.00	5.00		TC
TC 8x18x6	8.00	18.00	6.00		TC
TC 8x18x7	8.00	18.00	7.00		TC
TC 8x18x8	8.00	18.00	8.00		TC
SC 8x19x4	8.00	19.00	4.00		SC
TC 8x19x7	8.00	19.00	7.00		TC
SC 8x20x5	8.00	20.00	5.00		SC
TC 8x20x5	8.00	20.00	5.00		TC
TC 8x20x7	8.00	20.00	7.00		TC
SC 8x21x6	8.00	21.00	6.00		SC
TC 8x21x6	8.00	21.00	6.00		TC
SC 8x22x6	8.00	22.00	6.00		SC
TC 8x22x6	8.00	22.00	6.00		TC
SC 8x22x6.5	8.00	22.00	6.50		SC
SC 8x22x7	8.00	22.00	7.00		SC
TC 8x22x7	8.00	22.00	7.00		TC
SC 8x22x8	8.00	22.00	8.00		SC
TC 8x22x10	8.00	22.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 8x23x5	8.00	23.00	5.00		TC
TC 8x23x7	8.00	23.00	7.00		TC
SC 8x24x4.5	8.00	24.00	4.50		SC
SC 8x24x7	8.00	24.00	7.00		SC
TC 8x24x7	8.00	24.00	7.00		TC
SC 8x25x6	8.00	25.00	6.00		SC
SC 8x25x7	8.00	25.00	7.00		SC
TC 8x25x7	8.00	25.00	7.00		TC
TC 8x25x8	8.00	25.00	8.00		TC
TC 8x25x9	8.00	25.00	9.00		TC
SC 8x26x6	8.00	26.00	6.00		SC
TC 8x26x7	8.00	26.00	7.00		TC
SC 8x28x5	8.00	28.00	5.00		SC
TC 8x28x5	8.00	28.00	5.00		TC
TC 8x30x6	8.00	30.00	6.00		TC
TC 8x30x7	8.00	30.00	7.00		TC
TC 8x34x8	8.00	34.00	8.00		TC
SC 9x16x4	9.00	16.00	4.00		SC
TC 9x16x5.5	9.00	16.00	5.50		TC
SC 9x18x7	9.00	18.00	7.00		SC
TC 9x18x7	9.00	18.00	7.00		TC
SC 9x19x4	9.00	19.00	4.00		SC
SC 9x19x5	9.00	19.00	5.00		SC
TC 9x19x5	9.00	19.00	5.00		TC
TC 9x19x7	9.00	19.00	7.00		TC
TC 9x20x4	9.00	20.00	4.00		TC
TC 9x20x7	9.00	20.00	7.00		TC
SC 9x21x4.5	9.00	21.00	4.50		SC
SC 9x22x7	9.00	22.00	7.00		SC
TC 9x22x7	9.00	22.00	7.00		TC
TC 9x24x7	9.00	24.00	7.00		TC
TC 9x25x7	9.00	25.00	7.00		TC
SC 9x26x7	9.00	26.00	7.00		SC
TC 9x26x7	9.00	26.00	7.00		TC
TC 9x29x7	9.00	29.00	7.00		TC
TC 9x30x7	9.00	30.00	7.00		TC
SC 10x16x4	10.00	16.00	4.00		SC
TC 10x16x4	10.00	16.00	4.00		TC
TC 10x16x4.5	10.00	16.00	4.50		TC
SC 10x16x5	10.00	16.00	5.00		SC
TC 10x16x7	10.00	16.00	7.00		TC
TC 10x17x5	10.00	17.00	5.00		TC
SC 10x17x6	10.00	17.00	6.00		SC
TC 10x17x7	10.00	17.00	7.00		TC
SC 10x18x4	10.00	18.00	4.00		SC
TC 10x18x4	10.00	18.00	4.00		TC
TC7 10x18x5x7	10.00	18.00	5.00	7.00	TC7
SC 10x18x5	10.00	18.00	5.00		SC
TC 10x18x5	10.00	18.00	5.00		TC
SC 10x18x6	10.00	18.00	6.00		SC
TC 10x18x6	10.00	18.00	6.00		TC
TC 10x18x7	10.00	18.00	7.00		TC
SC 10x19x4	10.00	19.00	4.00		SC
SC 10x19x6	10.00	19.00	6.00		SC
SC 10x19x7	10.00	19.00	7.00		SC
TC 10x19x7	10.00	19.00	7.00		TC
TC 10x19x10	10.00	19.00	10.00		TC
SC 10x20x4	10.00	20.00	4.00		SC
SC 10x20x5	10.00	20.00	5.00		SC
TC 10x20x5	10.00	20.00	5.00		TC
TC 10x20x5.5	10.00	20.00	5.50		TC
SC 10x20x6	10.00	20.00	6.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 10x20x6	10.00	20.00	6.00		TC
TC 10x20x7	10.00	20.00	7.00		TC
TC 10x21x4	10.00	21.00	4.00		TC
SC 10x21x5	10.00	21.00	5.00		SC
SC 10x21x6	10.00	21.00	6.00		SC
TC 10x21x6	10.00	21.00	6.00		TC
TC 10x21x7	10.00	21.00	7.00		TC
SC 10x22x4	10.00	22.00	4.00		SC
TC 10x22x4	10.00	22.00	4.00		TC
TC 10x22x5	10.00	22.00	5.00		TC
TC 10x22x6	10.00	22.00	6.00		TC
SC 10x22x7	10.00	22.00	7.00		SC
TC 10x22x7	10.00	22.00	7.00		TC
TC 10x22x8	10.00	22.00	8.00		TC
TC 10x23x7	10.00	23.00	7.00		TC
TC 10x23x8	10.00	23.00	8.00		TC
TC 10x24x4	10.00	24.00	4.00		TC
TC 10x24x6	10.00	24.00	6.00		TC
SC 10x24x7	10.00	24.00	7.00		SC
TC 10x24x7	10.00	24.00	7.00		TC
SC 10x25x5	10.00	25.00	5.00		SC
TC 10x25x5	10.00	25.00	5.00		TC
TC 10x25x7	10.00	25.00	7.00		TC
TC 10x25x10	10.00	25.00	10.00		TC
SC 10x26x5.5	10.00	26.00	5.50		SC
SC 10x26x7	10.00	26.00	7.00		SC
TC 10x26x7	10.00	26.00	7.00		TC
TC 10x26x8	10.00	26.00	8.00		TC
SC 10x28x7	10.00	28.00	7.00		SC
TC 10x28x7	10.00	28.00	7.00		TC
TC 10x28x8	10.00	28.00	8.00		TC
TC 10x28x10	10.00	28.00	10.00		TC
SC 10x30x7	10.00	30.00	7.00		SC
TC 10x30x7	10.00	30.00	7.00		TC
TC 10x30x10	10.00	30.00	10.00		TC
TC 10x35x8	10.00	35.00	8.00		TC
TC7 11x17x4x6	11.00	17.00	4.00	6.00	TC7
SC 11x17x4	11.00	17.00	4.00		SC
TC 11x17x4	11.00	17.00	4.00		TC
SCW 11x17x4	11.00	17.00	4.00		SCW
SC 11x18x4	11.00	18.00	4.00		SC
TC 11x20x7	11.00	20.00	7.00		TC
TC 11x21x7	11.00	21.00	7.00		TC
TC 11x21x8	11.00	21.00	8.00		TC
TC 11x22x6	11.00	22.00	6.00		TC
SC 11x22x7	11.00	22.00	7.00		SC
TC 11x22x7	11.00	22.00	7.00		TC
TC 11x23x7	11.00	23.00	7.00		TC
TC 11x24x7	11.00	24.00	7.00		TC
TC 11x25x7	11.00	25.00	7.00		TC
SC 11x26x7	11.00	26.00	7.00		SC
TC 11x26x7	11.00	26.00	7.00		TC
TC 11x28x7	11.00	28.00	7.00		TC
TC 11x29x7	11.00	29.00	7.00		TC
TC 11x30x7	11.00	30.00	7.00		TC
TC 11x30x10	11.00	30.00	10.00		TC
SC 12x18x4	12.00	18.00	4.00		SC
TC 12x18x5	12.00	18.00	5.00		TC
TC 12x19x3	12.00	19.00	3.00		TC
SC 12x19x5	12.00	19.00	5.00		SC
TC 12x19x5	12.00	19.00	5.00		TC
TC 12x19x7	12.00	19.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 12x20x4	12.00	20.00	4.00		TC
TC7 12x20x5x10	12.00	20.00	5.00	10.00	TC7
SC 12x20x5	12.00	20.00	5.00		SC
TC 12x20x5	12.00	20.00	5.00		TC
SC 12x20x6	12.00	20.00	6.00		SC
TC 12x20x6	12.00	20.00	6.00		TC
TC 12x20x7	12.00	20.00	7.00		TC
SC 12x21x4	12.00	21.00	4.00		SC
TC 12x21x4	12.00	21.00	4.00		TC
SC 12x21x5	12.00	21.00	5.00		SC
TC 12x21x7	12.00	21.00	7.00		TC
SC 12x22x4	12.00	22.00	4.00		SC
TC 12x22x4	12.00	22.00	4.00		TC
TC 12x22x4.5	12.00	22.00	4.50		TC
TC7 12x22x5x10	12.00	22.00	5.00	10.00	TC7
SC 12x22x5	12.00	22.00	5.00		SC
TC 12x22x5	12.00	22.00	5.00		TC
SC 12x22x6	12.00	22.00	6.00		SC
TC 12x22x6	12.00	22.00	6.00		TC
SC 12x22x7	12.00	22.00	7.00		SC
TC 12x22x7	12.00	22.00	7.00		TC
TC 12x22x8	12.00	22.00	8.00		TC
TC 12x22x9	12.00	22.00	9.00		TC
TC 12x23x7	12.00	23.00	7.00		TC
TC 12x23x8	12.00	23.00	8.00		TC
SC 12x24x4.5	12.00	24.00	4.50		SC
SC 12x24x5	12.00	24.00	5.00		SC
SC 12x24x6	12.00	24.00	6.00		SC
TC 12x24x6	12.00	24.00	6.00		TC
SC 12x24x7	12.00	24.00	7.00		SC
TC 12x24x7	12.00	24.00	7.00		TC
TC 12x24x8	12.00	24.00	8.00		TC
SC 12x25x4	12.00	25.00	4.00		SC
SC 12x25x4,5	12.00	25.00	4.50		SC
SC 12x25x5	12.00	25.00	5.00		SC
TC 12x25x5	12.00	25.00	5.00		TC
TC 12x25x6	12.00	25.00	6.00		TC
SC 12x25x7	12.00	25.00	7.00		SC
TC 12x25x7	12.00	25.00	7.00		TC
TC 12x25x8	12.00	25.00	8.00		TC
TC 12x25x10	12.00	25.00	10.00		TC
SC 12x26x4.5	12.00	26.00	4.50		SC
SC 12x26x6	12.00	26.00	6.00		SC
TC 12x26x7	12.00	26.00	7.00		TC
SC 12x26x8	12.00	26.00	8.00		SC
TC 12x26x8	12.00	26.00	8.00		TC
TC 12x27x7	12.00	27.00	7.00		TC
TC 12x27x9	12.00	27.00	9.00		TC
SC 12x28x5	12.00	28.00	5.00		SC
SC 12x28x6	12.00	28.00	6.00		SC
SC 12x28x7	12.00	28.00	7.00		SC
TC 12x28x7	12.00	28.00	7.00		TC
SC 12x28x8	12.00	28.00	8.00		SC
TC 12x28x8	12.00	28.00	8.00		TC
SC 12x30x5	12.00	30.00	5.00		SC
TC 12x30x5	12.00	30.00	5.00		TC
SC 12x30x6	12.00	30.00	6.00		SC
SC 12x30x7	12.00	30.00	7.00		SC
TC 12x30x7	12.00	30.00	7.00		TC
TC 12x30x9	12.00	30.00	9.00		TC
TC 12x30x10	12.00	30.00	10.00		TC
SC 12x32x5	12.00	32.00	5.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 12x32x5	12.00	32.00	5.00		TC
SC 12x32x7	12.00	32.00	7.00		SC
TC 12x32x7	12.00	32.00	7.00		TC
SC 12x32x10	12.00	32.00	10.00		SC
TC 12x32x10	12.00	32.00	10.00		TC
TC 12x34x7	12.00	34.00	7.00		TC
SC 12x35x5	12.00	35.00	5.00		SC
TC 12x35x7	12.00	35.00	7.00		TC
SC 12x35x10	12.00	35.00	10.00		SC
TC 12x35x10	12.00	35.00	10.00		TC
TC 12x37x7	12.00	37.00	7.00		TC
SC 12x37x10	12.00	37.00	10.00		SC
SC 12x45x7	12.00	45.00	7.00		SC
TC 12x45x7	12.00	45.00	7.00		TC
SC 13x20x4.5	13.00	20.00	4.50		SC
TC 13x20x5	13.00	20.00	5.00		TC
SC 13x22x4	13.00	22.00	4.00		SC
SC 13x22x5	13.00	22.00	5.00		SC
TC 13x22x5	13.00	22.00	5.00		TC
SC 13x22x6	13.00	22.00	6.00		SC
TC 13x22x6	13.00	22.00	6.00		TC
TC 13x22x7	13.00	22.00	7.00		TC
TC 13x23x7	13.00	23.00	7.00		TC
SC 13x24x5	13.00	24.00	5.00		SC
SC 13x24x6	13.00	24.00	6.00		SC
SC 13x24x7	13.00	24.00	7.00		SC
TC 13x24x7	13.00	24.00	7.00		TC
SC 13x25x5	13.00	25.00	5.00		SC
TC 13x25x5	13.00	25.00	5.00		TC
TC 13x25x7	13.00	25.00	7.00		TC
SCW 13x26x5	13.00	26.00	5.00		SCW
SC 13x26x7	13.00	26.00	7.00		SC
TC 13x26x7	13.00	26.00	7.00		TC
TC 13x26x9	13.00	26.00	9.00		TC
TC 13x27x7	13.00	27.00	7.00		TC
TC 13x28x5	13.00	28.00	5.00		TC
SC 13x28x7	13.00	28.00	7.00		SC
TC 13x28x7	13.00	28.00	7.00		TC
TC 13x30x7	13.00	30.00	7.00		TC
SC 13x30x8	13.00	30.00	8.00		SC
TC 13x30x8	13.00	30.00	8.00		TC
SC 13x32x6	13.00	32.00	6.00		SC
SC 13x32x7	13.00	32.00	7.00		SC
TC 13x32x7	13.00	32.00	7.00		TC
TC 13x35x7	13.00	35.00	7.00		TC
SC 14x20x5	14.00	20.00	5.00		SC
TC 14x20x7	14.00	20.00	7.00		TC
SC 14x21x4	14.00	21.00	4.00		SC
TC 14x21x4	14.00	21.00	4.00		TC
SC 14x22x4	14.00	22.00	4.00		SC
TC 14x22x4	14.00	22.00	4.00		TC
SC 14x22x5	14.00	22.00	5.00		SC
TC 14x22x5	14.00	22.00	5.00		TC
SC 14x22x6	14.00	22.00	6.00		SC
TC 14x22x6	14.00	22.00	6.00		TC
SC 14x22x7	14.00	22.00	7.00		SC
TC 14x22x7	14.00	22.00	7.00		TC
TC 14x23x6	14.00	23.00	6.00		TC
TC 14x24x4	14.00	24.00	4.00		TC
SC 14x24x5	14.00	24.00	5.00		SC
TC 14x24x5	14.00	24.00	5.00		TC
SC 14x24x6	14.00	24.00	6.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 14x24x6	14.00	24.00	6.00		TC
TC 14x24x6	14.00	24.00	6.00		TC
SC 14x24x7	14.00	24.00	7.00		SC
TC 14x24x7	14.00	24.00	7.00		TC
SC 14x24x7.6	14.00	24.00	7.60		SC
SC 14x24x8	14.00	24.00	8.00		SC
TC 14x24x8	14.00	24.00	8.00		TC
TC 14x25x4	14.00	25.00	4.00		TC
SC 14x25x5	14.00	25.00	5.00		SC
TC 14x25x5	14.00	25.00	5.00		TC
SC 14x25x6	14.00	25.00	6.00		SC
TC 14x25x7	14.00	25.00	7.00		TC
TC 14x25x9	14.00	25.00	9.00		TC
SC 14x26x5	14.00	26.00	5.00		SC
SC 14x26x6	14.00	26.00	6.00		SC
TC 14x26x6	14.00	26.00	6.00		TC
SC 14x26x7	14.00	26.00	7.00		SC
TC 14x26x7	14.00	26.00	7.00		TC
SC 14x26x8	14.00	26.00	8.00		SC
TC 14x26x8	14.00	26.00	8.00		TC
SC 14x27x6	14.00	27.00	6.00		SC
SC 14x27x7	14.00	27.00	7.00		SC
TC 14x27x7	14.00	27.00	7.00		TC
TC 14x27x10	14.00	27.00	10.00		TC
SC 14x28x6	14.00	28.00	6.00		SC
SC 14x28x7	14.00	28.00	7.00		SC
TC 14x28x7	14.00	28.00	7.00		TC
TC 14x28x8	14.00	28.00	8.00		TC
SC 14x28x10	14.00	28.00	10.00		SC
TC 14x29x7	14.00	29.00	7.00		TC
SC 14x30x4	14.00	30.00	4.00		SC
SC 14x30x7	14.00	30.00	7.00		SC
TC 14x30x7	14.00	30.00	7.00		TC
TC 14x30x7.5	14.00	30.00	7.50		TC
SC 14x30x8	14.00	30.00	8.00		SC
TC 14x30x8	14.00	30.00	8.00		TC
TC 14x30x9	14.00	30.00	9.00		TC
TC 14x30x10	14.00	30.00	10.00		TC
SC 14x32x5	14.00	32.00	5.00		SC
TC 14x32x7	14.00	32.00	7.00		TC
TC 14x32x7.5	14.00	32.00	7.50		TC
SC 14x32x9	14.00	32.00	9.00		SC
TC 14x32x10	14.00	32.00	10.00		TC
TC 14x33x6	14.00	33.00	6.00		TC
SC 14x35x4.5	14.00	35.00	4.50		SC
TC 14x35x7	14.00	35.00	7.00		TC
TC 14x35x8	14.00	35.00	8.00		TC
TC 14x35x10	14.00	35.00	10.00		TC
TC 14x36x7	14.00	36.00	7.00		TC
TC 14x40x7	14.00	40.00	7.00		TC
TC 14x40x10	14.00	40.00	10.00		TC
SC 14x42x6	14.00	42.00	6.00		SC
SC 15x21x5	15.00	21.00	5.00		SC
TC 15x21x5	15.00	21.00	5.00		TC
TC 15x22x4	15.00	22.00	4.00		TC
TC 15x22x5	15.00	22.00	5.00		TC
SC 15x22x6	15.00	22.00	6.00		SC
SC 15x22x7	15.00	22.00	7.00		SC
TC 15x22x7	15.00	22.00	7.00		TC
TC 15x23x7	15.00	23.00	7.00		TC
SC 15x24x4	15.00	24.00	4.00		SC
SC 15x24x5	15.00	24.00	5.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 15x24x5	15.00	24.00	5.00		TC
TC 15x24x6	15.00	24.00	6.00		TC
SC 15x24x7	15.00	24.00	7.00		SC
TC 15x24x7	15.00	24.00	7.00		TC
SC 15x25x5	15.00	25.00	5.00		SC
TC 15x25x5	15.00	25.00	5.00		TC
SC 15x25x6	15.00	25.00	6.00		SC
TC 15x25x6	15.00	25.00	6.00		TC
SC 15x25x7	15.00	25.00	7.00		SC
SC 15x25x7	15.00	25.00	7.00		SC
TC 15x25x7	15.00	25.00	7.00		TC
TC 15x25x8	15.00	25.00	8.00		TC
SC 15x25x10	15.00	25.00	10.00		SC
SC 15x26x4	15.00	26.00	4.00		SC
TC7 15x26x5x10	15.00	26.00	5.00	10.00	TC7
SC 15x26x5	15.00	26.00	5.00		SC
TC 15x26x5	15.00	26.00	5.00		TC
SC 15x26x6	15.00	26.00	6.00		SC
TC 15x26x6	15.00	26.00	6.00		TC
SC 15x26x7	15.00	26.00	7.00		SC
TC 15x26x7	15.00	26.00	7.00		TC
SCW 15x26x7	15.00	26.00	7.00		SCW
TC 15x26x8	15.00	26.00	8.00		TC
TC 15x26x9	15.00	26.00	9.00		TC
TC 15x27x7	15.00	27.00	7.00		TC
TC 15x27x8	15.00	27.00	8.00		TC
SC 15x28x4	15.00	28.00	4.00		SC
TC 15x28x4	15.00	28.00	4.00		TC
SC 15x28x5	15.00	28.00	5.00		SC
SC 15x28x6	15.00	28.00	6.00		SC
TC 15x28x6	15.00	28.00	6.00		TC
SC 15x28x7	15.00	28.00	7.00		SC
TC 15x28x7	15.00	28.00	7.00		TC
TC 15x28x8	15.00	28.00	8.00		TC
TC 15x28x10	15.00	28.00	10.00		TC
TC 15x29x7	15.00	29.00	7.00		TC
SC 15x30x4.5	15.00	30.00	4.50		SC
SC 15x30x5	15.00	30.00	5.00		SC
TC 15x30x5	15.00	30.00	5.00		TC
SC 15x30x6	15.00	30.00	6.00		SC
SC 15x30x7	15.00	30.00	7.00		SC
TC 15x30x7	15.00	30.00	7.00		TC
TC 15x30x7.5	15.00	30.00	7.50		TC
SC 15x30x8	15.00	30.00	8.00		SC
TC 15x30x8	15.00	30.00	8.00		TC
SC 15x30x10	15.00	30.00	10.00		SC
TC 15x30x10	15.00	30.00	10.00		TC
TC 15x31x4	15.00	31.00	4.00		TC
TC 15x31x7	15.00	31.00	7.00		TC
TC 15x32x5	15.00	32.00	5.00		TC
SC 15x32x7	15.00	32.00	7.00		SC
TC 15x32x7	15.00	32.00	7.00		TC
TC 15x32x7.5	15.00	32.00	7.50		TC
TC 15x32x9	15.00	32.00	9.00		TC
SC 15x33x7	15.00	33.00	7.00		SC
TC 15x33x7	15.00	33.00	7.00		TC
SC 15x35x4	15.00	35.00	4.00		SC
SC 15x35x5	15.00	35.00	5.00		SC
TC 15x35x5	15.00	35.00	5.00		TC
TC 15x35x6	15.00	35.00	6.00		TC
SC 15x35x7	15.00	35.00	7.00		SC
TC 15x35x7	15.00	35.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 15x35x8	15.00	35.00	8.00		SC
TC 15x35x8	15.00	35.00	8.00		TC
TC 15x35x10	15.00	35.00	10.00		TC
SC 15x36x6	15.00	36.00	6.00		SC
TC 15x36x7	15.00	36.00	7.00		TC
TC 15x37x7	15.00	37.00	7.00		TC
TC 15x38x7	15.00	38.00	7.00		TC
TC 15x38x10	15.00	38.00	10.00		TC
TC 15x40x7	15.00	40.00	7.00		TC
SC 15x40x8	15.00	40.00	8.00		SC
TC 15x40x8	15.00	40.00	8.00		TC
SC 15x40x10	15.00	40.00	10.00		SC
TC 15x40x10	15.00	40.00	10.00		TC
SC 15x42x7	15.00	42.00	7.00		SC
TC 15x42x7	15.00	42.00	7.00		TC
TC 15x42x8	15.00	42.00	8.00		TC
TC 15x42x10	15.00	42.00	10.00		TC
TC 16x21x6	16.00	21.00	6.00		TC
SC 16x22x3	16.00	22.00	3.00		SC
SC 16x22x4	16.00	22.00	4.00		SC
TC 16x22x4	16.00	22.00	4.00		TC
TC 16x22x7	16.00	22.00	7.00		TC
SC 16x23x6.5	16.00	23.00	6.50		SC
SC 16x24x4	16.00	24.00	4.00		SC
TC 16x24x4	16.00	24.00	4.00		TC
SC 16x24x5	16.00	24.00	5.00		SC
TC 16x24x5	16.00	24.00	5.00		TC
SC 16x24x6	16.00	24.00	6.00		SC
TC 16x24x6	16.00	24.00	6.00		TC
SC 16x24x7	16.00	24.00	7.00		SC
TC 16x24x7	16.00	24.00	7.00		TC
TC 16x25x5	16.00	25.00	5.00		TC
TC 16x25x6	16.00	25.00	6.00		TC
TC 16x25x7	16.00	25.00	7.00		TC
SC 16x26x5	16.00	26.00	5.00		SC
TC 16x26x5	16.00	26.00	5.00		TC
TC 16x26x6	16.00	26.00	6.00		TC
SC 16x26x7	16.00	26.00	7.00		SC
TC 16x26x7	16.00	26.00	7.00		TC
SC 16x27x6	16.00	27.00	6.00		SC
TC 16x27x7	16.00	27.00	7.00		TC
TC 16x28x6	16.00	28.00	6.00		TC
SC 16x28x7	16.00	28.00	7.00		SC
TC 16x28x7	16.00	28.00	7.00		TC
TC 16x28x7	16.00	28.00	7.00		TC
TC 16x29x7	16.00	29.00	7.00		TC
SC 16x30x4.5	16.00	30.00	4.50		SC
TC 16x30x4,5	16.00	30.00	4.50		TC
SC 16x30x5	16.00	30.00	5.00		SC
TC 16x30x5	16.00	30.00	5.00		TC
TC 16x30x6	16.00	30.00	6.00		TC
SC 16x30x7	16.00	30.00	7.00		SC
TC 16x30x7	16.00	30.00	7.00		TC
TC 16x30x7	16.00	30.00	7.00		TC
TC 16x30x8	16.00	30.00	8.00		TC
SC 16x30x10	16.00	30.00	10.00		SC
TC 16x30x10	16.00	30.00	10.00		TC
SC 16x32x7	16.00	32.00	7.00		SC
TC 16x32x7	16.00	32.00	7.00		TC
TC 16x32x8	16.00	32.00	8.00		TC
TC 16x32x10	16.00	32.00	10.00		TC
TC 16x34x4	16.00	34.00	4.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 16x35x7	16.00	35.00	7.00		SC
TC 16x35x7	16.00	35.00	7.00		TC
SC 16x35x8	16.00	35.00	8.00		SC
TC 16x35x8	16.00	35.00	8.00		TC
SC 16x35x10	16.00	35.00	10.00		SC
TC 16x35x10	16.00	35.00	10.00		TC
TC 16x36x7	16.00	36.00	7.00		TC
TC 16x37x7	16.00	37.00	7.00		TC
SC 16x38x7	16.00	38.00	7.00		SC
TC 16x38x8	16.00	38.00	8.00		TC
SC 16x40x7	16.00	40.00	7.00		SC
TC 16x40x7	16.00	40.00	7.00		TC
SC 16x40x8	16.00	40.00	8.00		SC
SC 16x40x10	16.00	40.00	10.00		SC
TC 16x40x10	16.00	40.00	10.00		TC
TC 16x42x6	16.00	42.00	6.00		TC
TC 16x47x7	16.00	47.00	7.00		TC
TC 17x24x4	17.00	24.00	4.00		TC
SC 17x24x5	17.00	24.00	5.00		SC
TC 17x24x5	17.00	24.00	5.00		TC
TC 17x24x7	17.00	24.00	7.00		TC
SC 17x25x4	17.00	25.00	4.00		SC
TC 17x25x4	17.00	25.00	4.00		TC
SC 17x25x5	17.00	25.00	5.00		SC
TC 17x25x6	17.00	25.00	6.00		TC
SC 17x25x7	17.00	25.00	7.00		SC
TC 17x25x7	17.00	25.00	7.00		TC
TC 17x25x10	17.00	25.00	10.00		TC
SC 17x26x6	17.00	26.00	6.00		SC
TC 17x26x6	17.00	26.00	6.00		TC
TC 17x26x7	17.00	26.00	7.00		TC
TC 17x26x8	17.00	26.00	8.00		TC
SC 17x27x5	17.00	27.00	5.00		SC
TC 17x27x5	17.00	27.00	5.00		TC
TC 17x27x5	17.00	27.00	5.00		TC
SC 17x27x6	17.00	27.00	6.00		SC
TCW 17x27x6	17.00	27.00	6.00		TCW
SC 17x27x7	17.00	27.00	7.00		SC
TC 17x27x7	17.00	27.00	7.00		TC
TC 17x27x8	17.00	27.00	8.00		TC
TC 17x27x10	17.00	27.00	10.00		TC
TC 17x28x4	17.00	28.00	4.00		TC
SC 17x28x4.5	17.00	28.00	4.50		SC
TC 17x28x4,5	17.00	28.00	4.50		TC
TC7 17x28x5x10	17.00	28.00	5.00	10.00	TC7
SC 17x28x5	17.00	28.00	5.00		SC
TC 17x28x5	17.00	28.00	5.00		TC
SC 17x28x6	17.00	28.00	6.00		SC
TC 17x28x6	17.00	28.00	6.00		TC
SC 17x28x7	17.00	28.00	7.00		SC
TC 17x28x7	17.00	28.00	7.00		TC
TC 17x28x7	17.00	28.00	7.00		TC
SC 17x28x7.3	17.00	28.00	7.30		SC
TC 17x28x8	17.00	28.00	8.00		TC
SC 17x29x5	17.00	29.00	5.00		SC
TC 17x29x5	17.00	29.00	5.00		TC
TC 17x29x7	17.00	29.00	7.00		TC
SC 17x30x5	17.00	30.00	5.00		SC
TC 17x30x5	17.00	30.00	5.00		TC
SC 17x30x6	17.00	30.00	6.00		SC
TC 17x30x6	17.00	30.00	6.00		TC
SC 17x30x7	17.00	30.00	7.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 17x30x7	17.00	30.00	7.00		TC
TC 17x30x8	17.00	30.00	8.00		TC
TC 17x30x10	17.00	30.00	10.00		TC
SC 17x31x7	17.00	31.00	7.00		SC
TC 17x31x7	17.00	31.00	7.00		TC
TC 17x31x8	17.00	31.00	8.00		TC
SC 17x32x5	17.00	32.00	5.00		SC
TC 17x32x5	17.00	32.00	5.00		TC
TC 17x32x6	17.00	32.00	6.00		TC
SC 17x32x7	17.00	32.00	7.00		SC
TC 17x32x7	17.00	32.00	7.00		TC
SC 17x32x8	17.00	32.00	8.00		SC
TC 17x32x8	17.00	32.00	8.00		TC
TC 17x33x7	17.00	33.00	7.00		TC
TC 17x34x4	17.00	34.00	4.00		TC
SC 17x34x7	17.00	34.00	7.00		SC
TC 17x34x7	17.00	34.00	7.00		TC
SC 17x35x5	17.00	35.00	5.00		SC
TC 17x35x5	17.00	35.00	5.00		TC
TC 17x35x6	17.00	35.00	6.00		TC
SC 17x35x7	17.00	35.00	7.00		SC
TC 17x35x7	17.00	35.00	7.00		TC
SC 17x35x8	17.00	35.00	8.00		SC
TC 17x35x8	17.00	35.00	8.00		TC
TC 17x35x10	17.00	35.00	10.00		TC
TC 17x36x7	17.00	36.00	7.00		TC
SC 17x37x7	17.00	37.00	7.00		SC
TC 17x37x7	17.00	37.00	7.00		TC
TC 17x37x10	17.00	37.00	10.00		TC
SC 17x38x7	17.00	38.00	7.00		SC
TC 17x38x7	17.00	38.00	7.00		TC
TC 17x38x8	17.00	38.00	8.00		TC
TC 17x38x10	17.00	38.00	10.00		TC
TC 17x40x5	17.00	40.00	5.00		TC
TC 17x40x5	17.00	40.00	5.00		TC
SC 17x40x6	17.00	40.00	6.00		SC
SC 17x40x7	17.00	40.00	7.00		SC
TC 17x40x7	17.00	40.00	7.00		TC
TC 17x40x8	17.00	40.00	8.00		TC
TC 17x40x8.5	17.00	40.00	8.50		TC
TC 17x40x10	17.00	40.00	10.00		TC
TC 17x42x7	17.00	42.00	7.00		TC
TC 17x45x7	17.00	45.00	7.00		TC
TC 17x46x6	17.00	46.00	6.00		TC
SC 17x47x7	17.00	47.00	7.00		SC
TC 17x47x7	17.00	47.00	7.00		TC
TC 17x47x8	17.00	47.00	8.00		TC
SC 17x47x10	17.00	47.00	10.00		SC
TC 17x47x10	17.00	47.00	10.00		TC
SC 18x24x4	18.00	24.00	4.00		SC
TC 18x24x5	18.00	24.00	5.00		TC
TC 18x24x7	18.00	24.00	7.00		TC
TC 18x25x7	18.00	25.00	7.00		TC
SC 18x26x6	18.00	26.00	6.00		SC
TC 18x26x7	18.00	26.00	7.00		TC
SC 18x27x5	18.00	27.00	5.00		SC
TC 18x27x7	18.00	27.00	7.00		TC
TC 18x28x4.5	18.00	28.00	4.50		TC
SC 18x28x6	18.00	28.00	6.00		SC
TC 18x28x6	18.00	28.00	6.00		TC
SC 18x28x7	18.00	28.00	7.00		SC
TC 18x28x7	18.00	28.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 18x28x8	18.00	28.00	8.00		TC
TC 18x28x10	18.00	28.00	10.00		TC
SC 18x29x5	18.00	29.00	5.00		SC
TC 18x29x7	18.00	29.00	7.00		TC
SC 18x30x5	18.00	30.00	5.00		SC
TC 18x30x5	18.00	30.00	5.00		TC
TC 18x30x6	18.00	30.00	6.00		TC
SC 18x30x7	18.00	30.00	7.00		SC
TC 18x30x7	18.00	30.00	7.00		TC
TC 18x30x7	18.00	30.00	7.00		TC
TC 18x30x8	18.00	30.00	8.00		TC
TC 18x30x10	18.00	30.00	10.00		TC
TC 18x31x7	18.00	31.00	7.00		TC
SCW 18x32x4.7	18.00	32.00	4.70		SCW
TC7 18x32x5x8	18.00	32.00	5.00	8.00	TC7
TC 18x32x6	18.00	32.00	6.00		TC
SC 18x32x7	18.00	32.00	7.00		SC
TC 18x32x7	18.00	32.00	7.00		TC
TC 18x32x8	18.00	32.00	8.00		TC
TC 18x32x10	18.00	32.00	10.00		TC
TC 18x34x7	18.00	34.00	7.00		TC
SC 18x35x5	18.00	35.00	5.00		SC
SC 18x35x7	18.00	35.00	7.00		SC
TC 18x35x7	18.00	35.00	7.00		TC
TC 18x35x7	18.00	35.00	7.00		TC
TC 18x35x8	18.00	35.00	8.00		TC
SC 18x35x10	18.00	35.00	10.00		SC
TC 18x35x10	18.00	35.00	10.00		TC
SC 18x36x7	18.00	36.00	7.00		SC
SC 18x37x5	18.00	37.00	5.00		SC
TC 18x37x7	18.00	37.00	7.00		TC
TC 18x37x8	18.00	37.00	8.00		TC
SC 18x38x5	18.00	38.00	5.00		SC
TC 18x38x7	18.00	38.00	7.00		TC
TC 18x38x10	18.00	38.00	10.00		TC
SC 18x40x7	18.00	40.00	7.00		SC
TC 18x40x7	18.00	40.00	7.00		TC
TC 18x40x9	18.00	40.00	9.00		TC
SC 18x40x10	18.00	40.00	10.00		SC
TC 18x40x10	18.00	40.00	10.00		TC
TC 18x42x7	18.00	42.00	7.00		TC
TC 18x42x10	18.00	42.00	10.00		TC
SC 18x47x10	18.00	47.00	10.00		SC
TC 19x25x6	19.00	25.00	6.00		TC
TC 19x27x5	19.00	27.00	5.00		TC
SC 19x27x6	19.00	27.00	6.00		SC
TC 19x27x7	19.00	27.00	7.00		TC
TC 19x27x10	19.00	27.00	10.00		TC
SC 19x28x6	19.00	28.00	6.00		SC
TC 19x28x7	19.00	28.00	7.00		TC
TC 19x29x7	19.00	29.00	7.00		TC
SC 19x30x5	19.00	30.00	5.00		SC
SC 19x30x7	19.00	30.00	7.00		SC
TC 19x30x7	19.00	30.00	7.00		TC
SC 19x30x8	19.00	30.00	8.00		SC
TC 19x31x7	19.00	31.00	7.00		TC
SC 19x32x5	19.00	32.00	5.00		SC
TC 19x32x5	19.00	32.00	5.00		TC
TC 19x32x6	19.00	32.00	6.00		TC
SC 19x32x7	19.00	32.00	7.00		SC
TC 19x32x7	19.00	32.00	7.00		TC
TCW 19x32x7	19.00	32.00	7.00		TCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 19x32x8	19.00	32.00	8.00		TC
TC 19x32x8	19.00	32.00	8.00		TC
TC8 19x32x8.5	19.00	32.00	8.50		TC8
TC 19x32x10	19.00	32.00	10.00		TC
TC 19x33x7	19.00	33.00	7.00		TC
TC 19x33x8	19.00	33.00	8.00		TC
TC 19x34x7	19.00	34.00	7.00		TC
TC 19x35x5	19.00	35.00	5.00		TC
SC 19x35x6	19.00	35.00	6.00		SC
SC 19x35x7	19.00	35.00	7.00		SC
TC 19x35x7	19.00	35.00	7.00		TC
TC 19x35x7	19.00	35.00	7.00		TC
SC 19x35x8	19.00	35.00	8.00		SC
TC 19x35x8	19.00	35.00	8.00		TC
SC 19x35x10	19.00	35.00	10.00		SC
TC 19x35x10	19.00	35.00	10.00		TC
TC 19x36x7	19.00	36.00	7.00		TC
SC 19x36x8.5	19.00	36.00	8.50		SC
TC 19x37x7	19.00	37.00	7.00		TC
TC 19x37x10	19.00	37.00	10.00		TC
TC 19x38x7	19.00	38.00	7.00		TC
TC 19x38x8	19.00	38.00	8.00		TC
TC 19x38x10	19.00	38.00	10.00		TC
TC 19x40x7	19.00	40.00	7.00		TC
SC 19x40x8	19.00	40.00	8.00		SC
TC 19x40x10	19.00	40.00	10.00		TC
TC 19x41x7	19.00	41.00	7.00		TC
SC 19x42x7	19.00	42.00	7.00		SC
TC 19x42x7	19.00	42.00	7.00		TC
TC 19x47x7	19.00	47.00	7.00		TC
SC 19x47x10	19.00	47.00	10.00		SC
TC 19x47x10	19.00	47.00	10.00		TC
TC 19x52x7.9	19.00	52.00	7.90		TC
TC 20x25x5	20.00	25.00	5.00		TC
TC 20x25x7	20.00	25.00	7.00		TC
TC 20x25x8	20.00	25.00	8.00		TC
SC 20x26x4	20.00	26.00	4.00		SC
TC 20x26x4	20.00	26.00	4.00		TC
TC 20x26x5	20.00	26.00	5.00		TC
TC 20x26x5.6	20.00	26.00	5.60		TC
TC 20x27x5	20.00	27.00	5.00		TC
SC 20x28x4	20.00	28.00	4.00		SC
TC 20x28x4	20.00	28.00	4.00		TC
SC 20x28x5	20.00	28.00	5.00		SC
SC 20x28x6	20.00	28.00	6.00		SC
TC 20x28x6	20.00	28.00	6.00		TC
SC 20x28x7	20.00	28.00	7.00		SC
TC 20x28x7	20.00	28.00	7.00		TC
SC 20x30x4	20.00	30.00	4.00		SC
TC 20x30x4.5	20.00	30.00	4.50		TC
SC 20x30x5	20.00	30.00	5.00		SC
SC 20x30x5	20.00	30.00	5.00		SC
TC 20x30x5	20.00	30.00	5.00		TC
TC 20x30x5.5	20.00	30.00	5.50		TC
SC 20x30x6	20.00	30.00	6.00		SC
TC 20x30x6	20.00	30.00	6.00		TC
SC 20x30x7	20.00	30.00	7.00		SC
TC 20x30x7	20.00	30.00	7.00		TC
TC 20x30x7	20.00	30.00	7.00		TC
TC8 20x30x7	20.00	30.00	7.00		TC8
TC 20x30x7.5	20.00	30.00	7.50		TC
TC 20x30x8	20.00	30.00	8.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 20x30x9	20.00	30.00	9.00		TC
TC 20x30x10	20.00	30.00	10.00		TC
TC 20x31x5	20.00	31.00	5.00		TC
TC8 20x31x6	20.00	31.00	6.00		TC8
TC 20x31x7	20.00	31.00	7.00		TC
SC 20x32x5	20.00	32.00	5.00		SC
TC 20x32x5	20.00	32.00	5.00		TC
TC 20x32x5	20.00	32.00	5.00		TC
TCW 20x32x5.5	20.00	32.00	5.50		TCW
SC 20x32x6	20.00	32.00	6.00		SC
TC 20x32x6	20.00	32.00	6.00		TC
TCW 20x32x6	20.00	32.00	6.00		TCW
SC 20x32x7	20.00	32.00	7.00		SC
SC 20x32x7	20.00	32.00	7.00		SC
TC 20x32x7	20.00	32.00	7.00		TC
SCW 20x32x7	20.00	32.00	7.00		SCW
TCW 20x32x7	20.00	32.00	7.00		TCW
TC 20x32x7.5	20.00	32.00	7.50		TC
TC 20x32x8	20.00	32.00	8.00		TC
TC 20x32x10	20.00	32.00	10.00		TC
SC 20x33x6	20.00	33.00	6.00		SC
TC 20x33x7	20.00	33.00	7.00		TC
TC 20x33x10	20.00	33.00	10.00		TC
SC 20x34x4	20.00	34.00	4.00		SC
SC 20x34x5	20.00	34.00	5.00		SC
SC 20x34x6	20.00	34.00	6.00		SC
SC 20x34x6.5	20.00	34.00	6.50		SC
SC 20x34x7	20.00	34.00	7.00		SC
TC 20x34x7	20.00	34.00	7.00		TC
TC 20x34x7	20.00	34.00	7.00		TC
SC 20x35x4	20.00	35.00	4.00		SC
TC 20x35x5	20.00	35.00	5.00		TC
SC 20x35x5.5	20.00	35.00	5.50		SC
TCW 20x35x5,5	20.00	35.00	5.50		TCW
SC 20x35x6	20.00	35.00	6.00		SC
TC 20x35x6	20.00	35.00	6.00		TC
SC 20x35x7	20.00	35.00	7.00		SC
TC 20x35x7	20.00	35.00	7.00		TC
TC 20x35x8	20.00	35.00	8.00		TC
TC 20x35x9	20.00	35.00	9.00		TC
SC 20x35x10	20.00	35.00	10.00		SC
TC 20x35x10	20.00	35.00	10.00		TC
TC 20x35x10	20.00	35.00	10.00		TC
TC 20x35x12	20.00	35.00	12.00		TC
SC 20x36x7	20.00	36.00	7.00		SC
TC 20x36x7	20.00	36.00	7.00		TC
TC 20x36x7	20.00	36.00	7.00		TC
SC 20x36x8	20.00	36.00	8.00		SC
TC 20x36x8	20.00	36.00	8.00		TC
TC 20x36x10	20.00	36.00	10.00		TC
TC 20x36x12	20.00	36.00	12.00		TC
TC 20x37x6	20.00	37.00	6.00		TC
SC 20x37x7	20.00	37.00	7.00		SC
TC 20x37x7	20.00	37.00	7.00		TC
SC 20x37x8	20.00	37.00	8.00		SC
TC 20x37x8	20.00	37.00	8.00		TC
TC 20x37x10	20.00	37.00	10.00		TC
SC 20x38x5	20.00	38.00	5.00		SC
TC 20x38x5	20.00	38.00	5.00		TC
SC 20x38x7	20.00	38.00	7.00		SC
TC 20x38x7	20.00	38.00	7.00		TC
SC 20x38x8	20.00	38.00	8.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 20x38x8	20.00	38.00	8.00		TC
TC 20x38x10	20.00	38.00	10.00		TC
TC 20x38x15	20.00	38.00	15.00		TC
TC 20x39x6	20.00	39.00	6.00		TC
TC 20x40x5	20.00	40.00	5.00		TC
SC 20x40x7	20.00	40.00	7.00		SC
TC 20x40x7	20.00	40.00	7.00		TC
TC 20x40x8	20.00	40.00	8.00		TC
TC 20x40x9	20.00	40.00	9.00		TC
SC 20x40x10	20.00	40.00	10.00		SC
TC 20x40x10	20.00	40.00	10.00		TC
TC 20x40x12	20.00	40.00	12.00		TC
SC 20x42x5.5	20.00	42.00	5.50		SC
SC 20x42x6	20.00	42.00	6.00		SC
TC 20x42x6	20.00	42.00	6.00		TC
SC 20x42x7	20.00	42.00	7.00		SC
TC 20x42x7	20.00	42.00	7.00		TC
SCW 20x42x7	20.00	42.00	7.00		SCW
TC 20x42x8	20.00	42.00	8.00		TC
TC 20x42x10	20.00	42.00	10.00		TC
TC 20x42x12	20.00	42.00	12.00		TC
TC 20x43x7	20.00	43.00	7.00		TC
TC 20x44x7	20.00	44.00	7.00		TC
TC 20x45x7	20.00	45.00	7.00		TC
TC 20x45x8	20.00	45.00	8.00		TC
TC 20x45x10	20.00	45.00	10.00		TC
TC 20x45x12	20.00	45.00	12.00		TC
TC 20x46x8	20.00	46.00	8.00		TC
SC 20x47x5	20.00	47.00	5.00		SC
TC 20x47x6	20.00	47.00	6.00		TC
SC 20x47x7	20.00	47.00	7.00		SC
TC 20x47x7	20.00	47.00	7.00		TC
TC 20x47x8	20.00	47.00	8.00		TC
SC 20x47x8.5	20.00	47.00	8.50		SC
TC 20x47x8,5	20.00	47.00	8.50		TC
TC 20x47x9	20.00	47.00	9.00		TC
SC 20x47x10	20.00	47.00	10.00		SC
TC 20x47x10	20.00	47.00	10.00		TC
TC 20x47x12	20.00	47.00	12.00		TC
TC 20x47x13	20.00	47.00	13.00		TC
SC 20x48x7	20.00	48.00	7.00		SC
TC 20x48x7	20.00	48.00	7.00		TC
TC 20x48x8	20.00	48.00	8.00		TC
TC 20x48x10	20.00	48.00	10.00		TC
TC 20x49x7	20.00	49.00	7.00		TC
TC 20x49x7	20.00	49.00	7.00		TC
TC 20x50x5	20.00	50.00	5.00		TC
TC 20x50x8	20.00	50.00	8.00		TC
TC 20x50x9	20.00	50.00	9.00		TC
TC 20x50x10	20.00	50.00	10.00		TC
SC 20x52x6	20.00	52.00	6.00		SC
TC 20x52x6	20.00	52.00	6.00		TC
SC 20x52x7	20.00	52.00	7.00		SC
TC 20x52x7	20.00	52.00	7.00		TC
TCW 20x52x7.5	20.00	52.00	7.50		TCW
SC 20x52x8	20.00	52.00	8.00		SC
TC 20x52x8	20.00	52.00	8.00		TC
TC 20x52x9	20.00	52.00	9.00		TC
SC 20x52x10	20.00	52.00	10.00		SC
TC 20x52x10	20.00	52.00	10.00		TC
TC 20x52x12	20.00	52.00	12.00		TC
TC 20x62x7	20.00	62.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 21x28x4	21.00	28.00	4.00		SC
TC 21x30x6.5	21.00	30.00	6.50		TC
TC 21x30x10	21.00	30.00	10.00		TC
TC 21x31x7	21.00	31.00	7.00		TC
TC 21x32x5	21.00	32.00	5.00		TC
TC 21x33x7	21.00	33.00	7.00		TC
SC 21x35x6	21.00	35.00	6.00		SC
SC 21x35x6.5	21.00	35.00	6.50		SC
TC 21x35x7	21.00	35.00	7.00		TC
SC 21x36x7	21.00	36.00	7.00		SC
TC 21x36x7	21.00	36.00	7.00		TC
TC 21x37x5.5	21.00	37.00	5.50		TC
TC 21x37x7	21.00	37.00	7.00		TC
TC 21x40x7	21.00	40.00	7.00		TC
TC 21x48x8	21.00	48.00	8.00		TC
TC 22x28x4	22.00	28.00	4.00		TC
SC 22x28x8	22.00	28.00	8.00		SC
TC 22x29x4	22.00	29.00	4.00		TC
TC 22x30x4	22.00	30.00	4.00		TC
TC 22x30x7	22.00	30.00	7.00		TC
TC 22x30x8	22.00	30.00	8.00		TC
TC 22x30x10	22.00	30.00	10.00		TC
SC 22x31x5	22.00	31.00	5.00		SC
TC 22x31x7	22.00	31.00	7.00		TC
TC 22x32x4.5	22.00	32.00	4.50		TC
SC 22x32x5	22.00	32.00	5.00		SC
TC 22x32x5	22.00	32.00	5.00		TC
SC 22x32x5.5	22.00	32.00	5.50		SC
SC 22x32x6	22.00	32.00	6.00		SC
SC 22x32x6	22.00	32.00	6.00		SC
TC 22x32x6	22.00	32.00	6.00		TC
SC 22x32x7	22.00	32.00	7.00		SC
TC 22x32x7	22.00	32.00	7.00		TC
TC 22x32x7	22.00	32.00	7.00		TC
TC 22x32x7	22.00	32.00	7.00		TC
TC 22x32x8	22.00	32.00	8.00		TC
TC 22x33x7	22.00	33.00	7.00		TC
TC 22x33x10	22.00	33.00	10.00		TC
TC 22x34x5	22.00	34.00	5.00		TC
TC 22x34x6	22.00	34.00	6.00		TC
SC 22x34x7	22.00	34.00	7.00		SC
TC 22x34x7	22.00	34.00	7.00		TC
TC 22x34x7	22.00	34.00	7.00		TC
TC 22x35x5	22.00	35.00	5.00		TC
SCW 22x35x5	22.00	35.00	5.00		SCW
SC 22x35x5.5	22.00	35.00	5.50		SC
SC 22x35x6	22.00	35.00	6.00		SC
SC 22x35x6	22.00	35.00	6.00		SC
TC 22x35x6	22.00	35.00	6.00		TC
SC 22x35x6.4	22.00	35.00	6.40		SC
SC 22x35x7	22.00	35.00	7.00		SC
TC 22x35x7	22.00	35.00	7.00		TC
TC 22x35x7	22.00	35.00	7.00		TC
SC 22x35x8	22.00	35.00	8.00		SC
TC 22x35x8	22.00	35.00	8.00		TC
TC 22x35x9	22.00	35.00	9.00		TC
SC 22x35x10	22.00	35.00	10.00		SC
TC 22x35x10	22.00	35.00	10.00		TC
TC 22x36x5	22.00	36.00	5.00		TC
SC 22x36x6	22.00	36.00	6.00		SC
TC 22x36x6	22.00	36.00	6.00		TC
SC 22x36x7	22.00	36.00	7.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 22x36x7	22.00	36.00	7.00		TC
TC 22x36x8	22.00	36.00	8.00		TC
TC 22x36x10	22.00	36.00	10.00		TC
TC 22x37x5	22.00	37.00	5.00		TC
TC 22x37x6	22.00	37.00	6.00		TC
TC 22x37x7	22.00	37.00	7.00		TC
TC 22x37x8	22.00	37.00	8.00		TC
TC 22x38x5	22.00	38.00	5.00		TC
SC 22x38x6	22.00	38.00	6.00		SC
TC 22x38x7	22.00	38.00	7.00		TC
TC 22x38x7	22.00	38.00	7.00		TC
SC 22x38x8	22.00	38.00	8.00		SC
TC 22x38x8	22.00	38.00	8.00		TC
TC 22x38x8	22.00	38.00	8.00		TC
TC 22x38x10	22.00	38.00	10.00		TC
TC 22x39x7	22.00	39.00	7.00		TC
TC 22x40x4	22.00	40.00	4.00		TC
SC 22x40x7	22.00	40.00	7.00		SC
TC 22x40x7	22.00	40.00	7.00		TC
TC 22x40x8	22.00	40.00	8.00		TC
TCW 22x40x8	22.00	40.00	8.00		TCW
SC 22x40x10	22.00	40.00	10.00		SC
TC 22x40x10	22.00	40.00	10.00		TC
TC 22x40x11	22.00	40.00	11.00		TC
TC 22x40x12	22.00	40.00	12.00		TC
TC 22x42x5	22.00	42.00	5.00		TC
TC 22x42x6	22.00	42.00	6.00		TC
SC 22x42x7	22.00	42.00	7.00		SC
TC 22x42x7	22.00	42.00	7.00		TC
TC 22x42x8	22.00	42.00	8.00		TC
TC 22x42x10	22.00	42.00	10.00		TC
TC 22x42x11	22.00	42.00	11.00		TC
TC 22x43x6	22.00	43.00	6.00		TC
TC 22x44x7	22.00	44.00	7.00		TC
TC 22x45x5	22.00	45.00	5.00		TC
SC 22x45x7	22.00	45.00	7.00		SC
TC 22x45x7	22.00	45.00	7.00		TC
TC 22x45x8	22.00	45.00	8.00		TC
TC 22x45x10	22.00	45.00	10.00		TC
TC 22x46x8	22.00	46.00	8.00		TC
SC 22x47x7	22.00	47.00	7.00		SC
TC 22x47x7	22.00	47.00	7.00		TC
SC 22x47x10	22.00	47.00	10.00		SC
TC 22x47x10	22.00	47.00	10.00		TC
TC 22x47x12	22.00	47.00	12.00		TC
TC 22x48x7	22.00	48.00	7.00		TC
TC 22x48x11	22.00	48.00	11.00		TC
TC 22x50x5	22.00	50.00	5.00		TC
SC 22x50x7	22.00	50.00	7.00		SC
TC 22x50x7	22.00	50.00	7.00		TC
TC 22x50x10	22.00	50.00	10.00		TC
TC 22x52x8	22.00	52.00	8.00		TC
TC 22x52x10	22.00	52.00	10.00		TC
TC 22x55x7	22.00	55.00	7.00		TC
TC 22x56x7	22.00	56.00	7.00		TC
SC 22x62x5.4	22.00	62.00	5.40		SC
TC 22x62x10	22.00	62.00	10.00		TC
TC 23x32x7	23.00	32.00	7.00		TC
TC 23x34x8	23.00	34.00	8.00		TC
TC 23x35x7	23.00	35.00	7.00		TC
TC 23x35x7	23.00	35.00	7.00		TC
TC 23x35x8	23.00	35.00	8.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 23x36x6	23.00	36.00	6.00		SC
TC 23x36x6	23.00	36.00	6.00		TC
SCW 23x36x6	23.00	36.00	6.00		SCW
TC 23x36x7	23.00	36.00	7.00		TC
TC 23x36x10	23.00	36.00	10.00		TC
TC 23x36x13	23.00	36.00	13.00		TC
SC 23x37x6	23.00	37.00	6.00		SC
SC 23x37x7	23.00	37.00	7.00		SC
TC 23x37x7	23.00	37.00	7.00		TC
TC 23x38x6	23.00	38.00	6.00		TC
TC 23x38x7	23.00	38.00	7.00		TC
TC 23x38x10	23.00	38.00	10.00		TC
SC 23x40x6	23.00	40.00	6.00		SC
TC 23x40x6	23.00	40.00	6.00		TC
TC 23x40x7	23.00	40.00	7.00		TC
SC 23x40x8	23.00	40.00	8.00		SC
TC 23x40x8	23.00	40.00	8.00		TC
SC 23x40x10	23.00	40.00	10.00		SC
TC 23x40x10	23.00	40.00	10.00		TC
TC 23x42x6	23.00	42.00	6.00		TC
TC 23x42x7	23.00	42.00	7.00		TC
TC 23x42x8	23.00	42.00	8.00		TC
SC 23x42x10	23.00	42.00	10.00		SC
TC 23x43x8	23.00	43.00	8.00		TC
TC 23x43x8	23.00	43.00	8.00		TC
TC 23x43x10	23.00	43.00	10.00		TC
TC 23x47x7	23.00	47.00	7.00		TC
TC 23x47x8	23.00	47.00	8.00		TC
TC 23x47x10	23.00	47.00	10.00		TC
TC 24x32x4	24.00	32.00	4.00		TC
TC 24x32x7	24.00	32.00	7.00		TC
TC 24x33x7	24.00	33.00	7.00		TC
TC 24x34x7	24.00	34.00	7.00		TC
SC 24x35x6	24.00	35.00	6.00		SC
SC 24x35x6	24.00	35.00	6.00		SC
TC 24x35x6	24.00	35.00	6.00		TC
SC 24x35x7	24.00	35.00	7.00		SC
TC 24x35x7	24.00	35.00	7.00		TC
TC 24x35x8	24.00	35.00	8.00		TC
TC 24x36x5.5	24.00	36.00	5.50		TC
SC 24x36x6	24.00	36.00	6.00		SC
TC 24x36x7	24.00	36.00	7.00		TC
TC 24x36x8	24.00	36.00	8.00		TC
SC 24x37x5	24.00	37.00	5.00		SC
SC 24x37x5	24.00	37.00	5.00		SC
SC 24x37x7	24.00	37.00	7.00		SC
TC 24x37x7	24.00	37.00	7.00		TC
TC 24x38x7	24.00	38.00	7.00		TC
TC7 24x38x8x12	24.00	38.00	8.00	12.00	TC7
TC 24x38x8	24.00	38.00	8.00		TC
TC 24x38x8.5	24.00	38.00	8.50		TC
TC 24x38x10	24.00	38.00	10.00		TC
SC 24x40x6.5	24.00	40.00	6.50		SC
SC 24x40x7	24.00	40.00	7.00		SC
TC 24x40x7	24.00	40.00	7.00		TC
TC 24x40x7.5	24.00	40.00	7.50		TC
SC 24x40x8	24.00	40.00	8.00		SC
TC 24x40x8	24.00	40.00	8.00		TC
TC 24x40x8	24.00	40.00	8.00		TC
TC 24x40x8	24.00	40.00	8.00		TC
SC 24x40x10	24.00	40.00	10.00		SC
TC 24x42x7	24.00	42.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 24x42x8	24.00	42.00	8.00		TC
SC 24x42x10	24.00	42.00	10.00		SC
TC 24x43x6	24.00	43.00	6.00		TC
TC 24x43x7	24.00	43.00	7.00		TC
TC 24x43x8,5	24.00	43.00	8.50		TC
TC 24x45x6	24.00	45.00	6.00		TC
TC 24x45x7	24.00	45.00	7.00		TC
TC 24x45x8	24.00	45.00	8.00		TC
TC8 24x45x9.5	24.00	45.00	9.50		TC8
TC 24x45x10	24.00	45.00	10.00		TC
TC 24x45x11	24.00	45.00	11.00		TC
TC 24x46x8	24.00	46.00	8.00		TC
TC 24x46x10	24.00	46.00	10.00		TC
SC 24x47x6	24.00	47.00	6.00		SC
SC 24x47x6.4	24.00	47.00	6.40		SC
SC 24x47x7	24.00	47.00	7.00		SC
TC 24x47x7	24.00	47.00	7.00		TC
SC 24x47x10	24.00	47.00	10.00		SC
TC 24x47x10	24.00	47.00	10.00		TC
TC 24x48x7	24.00	48.00	7.00		TC
TC 24x49x8	24.00	49.00	8.00		TC
TC 24x49x12	24.00	49.00	12.00		TC
TC 24x50x12	24.00	50.00	12.00		TC
TC 24x52x7	24.00	52.00	7.00		TC
TC 24x52x8	24.00	52.00	8.00		TC
SC 24x52x10	24.00	52.00	10.00		SC
TC 24x55x10	24.00	55.00	10.00		TC
TC 24x62x7	24.00	62.00	7.00		TC
TC 24x77x18	24.00	77.00	18.00		TC
TC 25x32x4	25.00	32.00	4.00		TC
SC 25x32x6	25.00	32.00	6.00		SC
TC 25x32x6	25.00	32.00	6.00		TC
TC 25x32x7	25.00	32.00	7.00		TC
SC 25x33x4	25.00	33.00	4.00		SC
SC 25x33x6	25.00	33.00	6.00		SC
TC 25x33x6	25.00	33.00	6.00		TC
TC 25x34x5	25.00	34.00	5.00		TC
SC 25x34x7	25.00	34.00	7.00		SC
TC 25x34x7	25.00	34.00	7.00		TC
SC 25x35x5	25.00	35.00	5.00		SC
TC 25x35x5	25.00	35.00	5.00		TC
SC 25x35x6	25.00	35.00	6.00		SC
TC 25x35x6	25.00	35.00	6.00		TC
TC 25x35x6	25.00	35.00	6.00		TC
SC 25x35x7	25.00	35.00	7.00		SC
TC 25x35x7	25.00	35.00	7.00		TC
TC 25x35x7	25.00	35.00	7.00		TC
TC8 25x35x7	25.00	35.00	7.00		TC8
SCW 25x35x7	25.00	35.00	7.00		SCW
TCW 25x35x7	25.00	35.00	7.00		TCW
TC 25x35x8	25.00	35.00	8.00		TC
TC 25x35x8.5	25.00	35.00	8.50		TC
SC 25x35x9	25.00	35.00	9.00		SC
TC 25x35x9	25.00	35.00	9.00		TC
TC 25x35x10	25.00	35.00	10.00		TC
TC 25x36x4	25.00	36.00	4.00		TC
TC 25x36x6	25.00	36.00	6.00		TC
TC 25x36x6	25.00	36.00	6.00		TC
SC 25x36x7	25.00	36.00	7.00		SC
TC 25x36x7	25.00	36.00	7.00		TC
TC 25x36x8	25.00	36.00	8.00		TC
SC 25x37x5	25.00	37.00	5.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 25x37x5	25.00	37.00	5.00		TC
SC 25x37x6	25.00	37.00	6.00		SC
TC 25x37x6	25.00	37.00	6.00		TC
SC 25x37x7	25.00	37.00	7.00		SC
TC 25x37x7	25.00	37.00	7.00		TC
TC 25x37x7	25.00	37.00	7.00		TC
SCW 25x37x7	25.00	37.00	7.00		SCW
SC 25x37x7.5	25.00	37.00	7.50		SC
SC 25x37x8	25.00	37.00	8.00		SC
TC 25x37x8	25.00	37.00	8.00		TC
TC 25x37x8	25.00	37.00	8.00		TC
SC 25x38x5	25.00	38.00	5.00		SC
TC 25x38x6	25.00	38.00	6.00		TC
TC 25x38x6	25.00	38.00	6.00		TC
SC 25x38x7	25.00	38.00	7.00		SC
SC 25x38x7	25.00	38.00	7.00		SC
TC 25x38x7	25.00	38.00	7.00		TC
TC 25x38x7	25.00	38.00	7.00		TC
TC 25x38x8	25.00	38.00	8.00		TC
TC 25x38x10	25.00	38.00	10.00		TC
TC 25x39x8	25.00	39.00	8.00		TC
SC 25x40x5	25.00	40.00	5.00		SC
TC 25x40x5	25.00	40.00	5.00		TC
TC 25x40x6	25.00	40.00	6.00		TC
TC 25x40x6	25.00	40.00	6.00		TC
SC 25x40x7	25.00	40.00	7.00		SC
TC 25x40x7	25.00	40.00	7.00		TC
TC8 25x40x7	25.00	40.00	7.00		TC8
TCW 25x40x7	25.00	40.00	7.00		TCW
TC 25x40x7.5	25.00	40.00	7.50		TC
SC 25x40x8	25.00	40.00	8.00		SC
TC 25x40x8	25.00	40.00	8.00		TC
TC 25x40x8	25.00	40.00	8.00		TC
TC 25x40x9	25.00	40.00	9.00		TC
TC8 25x40x9	25.00	40.00	9.00		TC8
SC 25x40x10	25.00	40.00	10.00		SC
TC 25x40x10	25.00	40.00	10.00		TC
TC 25x40x11	25.00	40.00	11.00		TC
TC 25x40x12	25.00	40.00	12.00		TC
TC 25x41x6	25.00	41.00	6.00		TC
TC 25x41x7	25.00	41.00	7.00		TC
SC 25x42x4	25.00	42.00	4.00		SC
TC 25x42x5	25.00	42.00	5.00		TC
TC 25x42x5.5	25.00	42.00	5.50		TC
SC 25x42x6	25.00	42.00	6.00		SC
TC 25x42x6	25.00	42.00	6.00		TC
SC 25x42x7	25.00	42.00	7.00		SC
TC 25x42x7	25.00	42.00	7.00		TC
SC 25x42x8	25.00	42.00	8.00		SC
SC 25x42x8	25.00	42.00	8.00		SC
TC 25x42x8	25.00	42.00	8.00		TC
SC 25x42x8.5	25.00	42.00	8.50		SC
TC 25x42x8,5	25.00	42.00	8.50		TC
SC 25x42x10	25.00	42.00	10.00		SC
TC 25x42x10	25.00	42.00	10.00		TC
TC 25x42x12	25.00	42.00	12.00		TC
TC 25x43x6	25.00	43.00	6.00		TC
TC 25x43x7	25.00	43.00	7.00		TC
TC 25x43x8	25.00	43.00	8.00		TC
TC 25x43x9	25.00	43.00	9.00		TC
SC 25x43x10	25.00	43.00	10.00		SC
TC 25x43x10	25.00	43.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 25x43x12	25.00	43.00	12.00		TC
TC 25x44x6.5	25.00	44.00	6.50		TC
TC 25x44x7	25.00	44.00	7.00		TC
TC 25x44x8	25.00	44.00	8.00		TC
TC 25x44x8.4	25.00	44.00	8.40		TC
TC 25x44x10	25.00	44.00	10.00		TC
SC 25x45x6.5	25.00	45.00	6.50		SC
TC 25x45x7	25.00	45.00	7.00		TC
TC 25x45x8	25.00	45.00	8.00		TC
TCW 25x45x8	25.00	45.00	8.00		TCW
TC 25x45x9	25.00	45.00	9.00		TC
SC 25x45x10	25.00	45.00	10.00		SC
TC 25x45x10	25.00	45.00	10.00		TC
TC 25x45x11	25.00	45.00	11.00		TC
TC 25x45x12	25.00	45.00	12.00		TC
SC 25x46x7	25.00	46.00	7.00		SC
TC 25x46x7	25.00	46.00	7.00		TC
SC 25x47x5	25.00	47.00	5.00		SC
TC 25x47x5	25.00	47.00	5.00		TC
SC 25x47x6	25.00	47.00	6.00		SC
TC 25x47x6	25.00	47.00	6.00		TC
SC 25x47x7	25.00	47.00	7.00		SC
TC 25x47x7	25.00	47.00	7.00		TC
TCW 25x47x7	25.00	47.00	7.00		TCW
SC 25x47x8	25.00	47.00	8.00		SC
TC 25x47x8	25.00	47.00	8.00		TC
TC8 25x47x8	25.00	47.00	8.00		TC8
TC8 25x47x9.5	25.00	47.00	9.50		TC8
SC 25x47x10	25.00	47.00	10.00		SC
TC 25x47x10	25.00	47.00	10.00		TC
TCW 25x47x10	25.00	47.00	10.00		TCW
TC 25x47x12	25.00	47.00	12.00		TC
TC 25x48x7	25.00	48.00	7.00		TC
SC 25x48x8	25.00	48.00	8.00		SC
TC 25x48x8	25.00	48.00	8.00		TC
TC 25x48x10	25.00	48.00	10.00		TC
TC 25x49x10	25.00	49.00	10.00		TC
TC 25x50x7	25.00	50.00	7.00		TC
TC 25x50x8	25.00	50.00	8.00		TC
SC 25x50x10	25.00	50.00	10.00		SC
TC 25x50x10	25.00	50.00	10.00		TC
TC 25x50x12	25.00	50.00	12.00		TC
TC 25x51x10	25.00	51.00	10.00		TC
TC 25x52x5	25.00	52.00	5.00		TC
SC 25x52x7	25.00	52.00	7.00		SC
TC 25x52x7	25.00	52.00	7.00		TC
SC 25x52x8	25.00	52.00	8.00		SC
TC 25x52x8	25.00	52.00	8.00		TC
TC 25x52x9.5	25.00	52.00	9.50		TC
SC 25x52x10	25.00	52.00	10.00		SC
TC 25x52x10	25.00	52.00	10.00		TC
TC8 25x52x10	25.00	52.00	10.00		TC8
TC 25x52x12	25.00	52.00	12.00		TC
TC 25x53x10	25.00	53.00	10.00		TC
TC 25x54x8	25.00	54.00	8.00		TC
TC 25x55x8	25.00	55.00	8.00		TC
TC 25x55x9	25.00	55.00	9.00		TC
TC 25x55x10	25.00	55.00	10.00		TC
TC 25x55x12	25.00	55.00	12.00		TC
TC 25x56x12	25.00	56.00	12.00		TC
TC 25x58x10	25.00	58.00	10.00		TC
TC 25x60x7	25.00	60.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 25x60x10	25.00	60.00	10.00		TC
SC 25x62x6	25.00	62.00	6.00		SC
TC 25x62x6	25.00	62.00	6.00		TC
SC 25x62x7	25.00	62.00	7.00		SC
TC 25x62x7	25.00	62.00	7.00		TC
SC 25x62x8	25.00	62.00	8.00		SC
TC 25x62x8	25.00	62.00	8.00		TC
TC9 25x62x10x13	25.00	62.00	10.00	13.00	TC9
SC 25x62x10	25.00	62.00	10.00		SC
TC 25x62x10	25.00	62.00	10.00		TC
TC 25x62x12	25.00	62.00	12.00		TC
TC 25x65x10	25.00	65.00	10.00		TC
TC 25x66x8.5	25.00	66.00	8.50		TC
TC 25x70x10	25.00	70.00	10.00		TC
SC 25x72x7	25.00	72.00	7.00		SC
TC 25x72x7	25.00	72.00	7.00		TC
TC 25x72x8	25.00	72.00	8.00		TC
TC 25x80x10	25.00	80.00	10.00		TC
SC 26x34x4	26.00	34.00	4.00		SC
SCW 26x35x5	26.00	35.00	5.00		SCW
TC 26x35x7	26.00	35.00	7.00		TC
TC 26x36x5	26.00	36.00	5.00		TC
TC 26x36x7	26.00	36.00	7.00		TC
SC 26x37x6	26.00	37.00	6.00		SC
SC 26x37x7	26.00	37.00	7.00		SC
TC 26x37x7	26.00	37.00	7.00		TC
TC 26x37x8	26.00	37.00	8.00		TC
SC 26x38x5	26.00	38.00	5.00		SC
TC 26x38x5	26.00	38.00	5.00		TC
TC 26x38x7	26.00	38.00	7.00		TC
SC 26x38x8	26.00	38.00	8.00		SC
TC 26x38x8	26.00	38.00	8.00		TC
SC 26x39x5	26.00	39.00	5.00		SC
TC 26x40x5	26.00	40.00	5.00		TC
SC 26x40x6	26.00	40.00	6.00		SC
TC 26x40x7	26.00	40.00	7.00		TC
TC 26x40x8	26.00	40.00	8.00		TC
TC 26x40x8	26.00	40.00	8.00		TC
TC 26x40x10	26.00	40.00	10.00		TC
TC 26x41x7	26.00	41.00	7.00		TC
SC 26x42x6	26.00	42.00	6.00		SC
SC 26x42x7	26.00	42.00	7.00		SC
TC 26x42x7	26.00	42.00	7.00		TC
TC 26x42x7	26.00	42.00	7.00		TC
SC 26x42x8	26.00	42.00	8.00		SC
TC 26x42x8	26.00	42.00	8.00		TC
TC 26x42x8	26.00	42.00	8.00		TC
TCW 26x42x8	26.00	42.00	8.00		TCW
TC 26x42x10	26.00	42.00	10.00		TC
TC 26x42x10	26.00	42.00	10.00		TC
TC 26x43x7	26.00	43.00	7.00		TC
TC 26x43x8	26.00	43.00	8.00		TC
TC 26x43x10	26.00	43.00	10.00		TC
TC 26x44x7	26.00	44.00	7.00		TC
TC 26x45x7	26.00	45.00	7.00		TC
TC 26x45x8	26.00	45.00	8.00		TC
TC 26x45x10	26.00	45.00	10.00		TC
TC 26x47x5	26.00	47.00	5.00		TC
TC 26x47x6	26.00	47.00	6.00		TC
SC 26x47x7	26.00	47.00	7.00		SC
TC 26x47x8	26.00	47.00	8.00		TC
SC 26x47x9	26.00	47.00	9.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 26x47x10	26.00	47.00	10.00		SC
TC 26x47x10	26.00	47.00	10.00		TC
TC 26x47x11	26.00	47.00	11.00		TC
TC 26x47x12	26.00	47.00	12.00		TC
TC 26x48x7	26.00	48.00	7.00		TC
TC 26x48x7	26.00	48.00	7.00		TC
TC 26x48x8	26.00	48.00	8.00		TC
TC 26x50x7	26.00	50.00	7.00		TC
TC 26x50x10	26.00	50.00	10.00		TC
SC 26x52x7	26.00	52.00	7.00		SC
TC 26x52x7	26.00	52.00	7.00		TC
SC 26x52x8	26.00	52.00	8.00		SC
TC 26x62x9	26.00	62.00	9.00		TC
TC 26x72x10	26.00	72.00	10.00		TC
TC 27x35x6	27.00	35.00	6.00		TC
TC 27x36x6	27.00	36.00	6.00		TC
SC 27x36x7	27.00	36.00	7.00		SC
TC 27x37x4	27.00	37.00	4.00		TC
SC 27x37x5	27.00	37.00	5.00		SC
TC 27x37x6	27.00	37.00	6.00		TC
SC 27x37x7	27.00	37.00	7.00		SC
TC 27x37x7	27.00	37.00	7.00		TC
TCW 27x37x7	27.00	37.00	7.00		TCW
TC 27x37x8	27.00	37.00	8.00		TC
TC 27x37x8.5	27.00	37.00	8.50		TC
TC 27x38x5	27.00	38.00	5.00		TC
TC 27x38x6	27.00	38.00	6.00		TC
TC 27x38x6	27.00	38.00	6.00		TC
TC 27x38x7	27.00	38.00	7.00		TC
TC 27x40x4.5	27.00	40.00	4.50		TC
TC 27x40x5	27.00	40.00	5.00		TC
SC 27x40x6	27.00	40.00	6.00		SC
TC 27x40x6	27.00	40.00	6.00		TC
TC 27x40x6	27.00	40.00	6.00		TC
TC 27x40x7	27.00	40.00	7.00		TC
TC 27x40x7	27.00	40.00	7.00		TC
TC 27x40x8	27.00	40.00	8.00		TC
TC 27x40x8	27.00	40.00	8.00		TC
TC 27x40x8	27.00	40.00	8.00		TC
TC 27x40x10	27.00	40.00	10.00		TC
TC 27x40x12	27.00	40.00	12.00		TC
TC 27x41x7	27.00	41.00	7.00		TC
SC 27x41x10	27.00	41.00	10.00		SC
TC 27x42x5	27.00	42.00	5.00		TC
TC 27x42x7	27.00	42.00	7.00		TC
TC 27x42x7	27.00	42.00	7.00		TC
TC 27x42x8	27.00	42.00	8.00		TC
SC 27x42x10	27.00	42.00	10.00		SC
TC 27x42x10	27.00	42.00	10.00		TC
TC 27x42x10	27.00	42.00	10.00		TC
TC 27x43x7	27.00	43.00	7.00		TC
SC 27x43x8	27.00	43.00	8.00		SC
TC 27x43x8	27.00	43.00	8.00		TC
TCW 27x43x8	27.00	43.00	8.00		TCW
TC 27x43x9	27.00	43.00	9.00		TC
TC 27x43x9	27.00	43.00	9.00		TC
TC 27x43x9	27.00	43.00	9.00		TC
TC 27x44x6	27.00	44.00	6.00		TC
TC 27x45x8	27.00	45.00	8.00		TC
TC 27x45x9	27.00	45.00	9.00		TC
TC 27x45x9	27.00	45.00	9.00		TC
SC 27x47x6	27.00	47.00	6.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 27x47x7	27.00	47.00	7.00		TC
TCW 27x47x7	27.00	47.00	7.00		TCW
TC 27x47x8	27.00	47.00	8.00		TC
SC 27x47x10	27.00	47.00	10.00		SC
TC 27x47x10	27.00	47.00	10.00		TC
TC 27x48x8	27.00	48.00	8.00		TC
TC 27x49x7.5	27.00	49.00	7.50		TC
SC 27x49x10	27.00	49.00	10.00		SC
TC 27x50x10	27.00	50.00	10.00		TC
TC 27x52x8	27.00	52.00	8.00		TC
TC 27x53x7	27.00	53.00	7.00		TC
TC 27x55x7	27.00	55.00	7.00		TC
TC8 27x72x9.5	27.00	72.00	9.50		TC8
TC8 27x80x10	27.00	80.00	10.00		TC8
SC 28x35x5	28.00	35.00	5.00		SC
TC 28x35x5	28.00	35.00	5.00		TC
TC 28x35x6	28.00	35.00	6.00		TC
TC 28x35x7	28.00	35.00	7.00		TC
TC 28x35x8	28.00	35.00	8.00		TC
TC 28x35x9	28.00	35.00	9.00		TC
TC 28x35x10	28.00	35.00	10.00		TC
TC 28x36x7	28.00	36.00	7.00		TC
TC 28x37x4	28.00	37.00	4.00		TC
TC 28x37x6	28.00	37.00	6.00		TC
SC 28x37x7	28.00	37.00	7.00		SC
TC 28x37x7	28.00	37.00	7.00		TC
TC 28x37x8	28.00	37.00	8.00		TC
TC 28x38x5	28.00	38.00	5.00		TC
SC 28x38x5.5	28.00	38.00	5.50		SC
SC 28x38x6	28.00	38.00	6.00		SC
TC 28x38x6	28.00	38.00	6.00		TC
TCW 28x38x6	28.00	38.00	6.00		TCW
SC 28x38x6.5	28.00	38.00	6.50		SC
SC 28x38x7	28.00	38.00	7.00		SC
SC 28x38x7	28.00	38.00	7.00		SC
TC 28x38x7	28.00	38.00	7.00		TC
TCW 28x38x7	28.00	38.00	7.00		TCW
TC 28x38x8	28.00	38.00	8.00		TC
SC 28x38x10	28.00	38.00	10.00		SC
TC 28x38x10	28.00	38.00	10.00		TC
TC 28x40x5	28.00	40.00	5.00		TC
SC 28x40x7	28.00	40.00	7.00		SC
TC 28x40x7	28.00	40.00	7.00		TC
SCW 28x40x7	28.00	40.00	7.00		SCW
TC 28x40x8	28.00	40.00	8.00		TC
TC 28x40x8	28.00	40.00	8.00		TC
TC 28x40x9	28.00	40.00	9.00		TC
TC 28x40x10	28.00	40.00	10.00		TC
TC 28x41x7	28.00	41.00	7.00		TC
TC 28x41x7	28.00	41.00	7.00		TC
TCW 28x42x5	28.00	42.00	5.00		TCW
SC 28x42x5.5	28.00	42.00	5.50		SC
TC 28x42x6	28.00	42.00	6.00		TC
SC 28x42x7	28.00	42.00	7.00		SC
TC 28x42x7	28.00	42.00	7.00		TC
TC8 28x42x7	28.00	42.00	7.00		TC8
TCW 28x42x7	28.00	42.00	7.00		TCW
TC 28x42x8	28.00	42.00	8.00		TC
TC 28x42x8	28.00	42.00	8.00		TC
TC 28x42x10	28.00	42.00	10.00		TC
TC 28x42x11	28.00	42.00	11.00		TC
TC 28x43x6	28.00	43.00	6.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 28x43x7	28.00	43.00	7.00		SC
TC 28x43x8	28.00	43.00	8.00		TC
TC 28x43x10	28.00	43.00	10.00		TC
TC 28x44x6	28.00	44.00	6.00		TC
TCW 28x44x6	28.00	44.00	6.00		TCW
TC 28x44x7	28.00	44.00	7.00		TC
TC 28x44x7	28.00	44.00	7.00		TC
TC9 28x44x8x11	28.00	44.00	8.00	11.00	TC9
TC 28x44x8	28.00	44.00	8.00		TC
TC 28x45x5	28.00	45.00	5.00		TC
SC 28x45x6	28.00	45.00	6.00		SC
TC 28x45x7	28.00	45.00	7.00		TC
SC 28x45x8	28.00	45.00	8.00		SC
TC 28x45x8	28.00	45.00	8.00		TC
TC 28x45x8	28.00	45.00	8.00		TC
TC 28x45x8	28.00	45.00	8.00		TC
TC 28x45x8.7	28.00	45.00	8.70		TC
TC 28x45x10	28.00	45.00	10.00		TC
TC 28x46x7	28.00	46.00	7.00		TC
SC 28x47x5	28.00	47.00	5.00		SC
TC 28x47x5	28.00	47.00	5.00		TC
TC 28x47x6	28.00	47.00	6.00		TC
SC 28x47x7	28.00	47.00	7.00		SC
TC 28x47x7	28.00	47.00	7.00		TC
TC 28x47x8	28.00	47.00	8.00		TC
TC 28x47x8	28.00	47.00	8.00		TC
SC 28x47x8.5	28.00	47.00	8.50		SC
TC 28x47x9	28.00	47.00	9.00		TC
SC 28x47x10	28.00	47.00	10.00		SC
TC 28x47x10	28.00	47.00	10.00		TC
TC8 28x47x10	28.00	47.00	10.00		TC8
TC 28x48x7	28.00	48.00	7.00		TC
TC 28x48x7	28.00	48.00	7.00		TC
TC 28x48x8	28.00	48.00	8.00		TC
TC 28x48x10	28.00	48.00	10.00		TC
TC 28x48x11	28.00	48.00	11.00		TC
TC 28x50x5	28.00	50.00	5.00		TC
SC 28x50x6	28.00	50.00	6.00		SC
TC 28x50x7	28.00	50.00	7.00		TC
SC 28x50x8	28.00	50.00	8.00		SC
TC 28x50x8	28.00	50.00	8.00		TC
TC 28x50x10	28.00	50.00	10.00		TC
TC 28x51x8	28.00	51.00	8.00		TC
TC 28x51x10	28.00	51.00	10.00		TC
SC 28x52x5	28.00	52.00	5.00		SC
TC 28x52x6	28.00	52.00	6.00		TC
SC 28x52x7	28.00	52.00	7.00		SC
TC 28x52x7	28.00	52.00	7.00		TC
TC 28x52x8	28.00	52.00	8.00		TC
SC 28x52x10	28.00	52.00	10.00		SC
TC 28x52x10	28.00	52.00	10.00		TC
TC 28x54x10	28.00	54.00	10.00		TC
TC 28x55x8	28.00	55.00	8.00		TC
TC 28x55x10	28.00	55.00	10.00		TC
TC 28x56x6	28.00	56.00	6.00		TC
TC 28x56x7	28.00	56.00	7.00		TC
TCW 28x56x7	28.00	56.00	7.00		TCW
TC 28x56x8	28.00	56.00	8.00		TC
TC 28x56x10	28.00	56.00	10.00		TC
TC 28x57x7	28.00	57.00	7.00		TC
TC 28x58x6	28.00	58.00	6.00		TC
TC 28x58x10	28.00	58.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 28x62x10	28.00	62.00	10.00		SC
TC 28x62x10	28.00	62.00	10.00		TC
TC 28x70x10	28.00	70.00	10.00		TC
TCW 28x70x10	28.00	70.00	10.00		TCW
SC 28x72x10	28.00	72.00	10.00		SC
TC 29x36x7	29.00	36.00	7.00		TC
TC 29x36x8	29.00	36.00	8.00		TC
TC 29x38x4	29.00	38.00	4.00		TC
SC 29x40x7	29.00	40.00	7.00		SC
TC 29x40x7	29.00	40.00	7.00		TC
SC 29x41x5	29.00	41.00	5.00		SC
TC 29x42x6	29.00	42.00	6.00		TC
TC 29x42x7	29.00	42.00	7.00		TC
TC 29x43x8	29.00	43.00	8.00		TC
TC 29x43x8	29.00	43.00	8.00		TC
TC 29x44x7	29.00	44.00	7.00		TC
TC 29x45x8	29.00	45.00	8.00		TC
TC 29x45x9	29.00	45.00	9.00		TC
TC 29x46x7	29.00	46.00	7.00		TC
TC 29x46x10	29.00	46.00	10.00		TC
TC 29x47x7	29.00	47.00	7.00		TC
TC 29x47x8	29.00	47.00	8.00		TC
TC 29x47x10	29.00	47.00	10.00		TC
TC 29x47x10	29.00	47.00	10.00		TC
TC 29x48x10	29.00	48.00	10.00		TC
TC 29x50x9	29.00	50.00	9.00		TC
SC 29x50x10	29.00	50.00	10.00		SC
TC 29x50x10	29.00	50.00	10.00		TC
TC 29x52x7	29.00	52.00	7.00		TC
TC 29x52x11	29.00	52.00	11.00		TC
TC 29x56x10	29.00	56.00	10.00		TC
TC 29x60x7	29.00	60.00	7.00		TC
SC 30x37x4	30.00	37.00	4.00		SC
TC 30x37x6	30.00	37.00	6.00		TC
SC 30x37x8	30.00	37.00	8.00		SC
TC 30x37x8	30.00	37.00	8.00		TC
TC 30x38x5	30.00	38.00	5.00		TC
TC 30x38x6	30.00	38.00	6.00		TC
TC 30x38x7	30.00	38.00	7.00		TC
TC 30x38x8	30.00	38.00	8.00		TC
TC 30x38x10	30.00	38.00	10.00		TC
SC 30x40x4	30.00	40.00	4.00		SC
SC 30x40x5	30.00	40.00	5.00		SC
TC 30x40x5	30.00	40.00	5.00		TC
TC 30x40x6	30.00	40.00	6.00		TC
SC 30x40x7	30.00	40.00	7.00		SC
TC 30x40x7	30.00	40.00	7.00		TC
SCW 30x40x7	30.00	40.00	7.00		SCW
SCW 30x40x7	30.00	40.00	7.00		SCW
TCW 30x40x7	30.00	40.00	7.00		TCW
SC 30x40x8	30.00	40.00	8.00		SC
TC 30x40x8	30.00	40.00	8.00		TC
SC 30x40x10	30.00	40.00	10.00		SC
TC 30x40x10	30.00	40.00	10.00		TC
TC 30x40x12	30.00	40.00	12.00		TC
SC 30x41x7	30.00	41.00	7.00		SC
TC 30x41x7	30.00	41.00	7.00		TC
TC 30x41x8	30.00	41.00	8.00		TC
TC 30x41x10	30.00	41.00	10.00		TC
TC 30x41x10	30.00	41.00	10.00		TC
SC 30x42x4.5	30.00	42.00	4.50		SC
TC 30x42x4,5	30.00	42.00	4.50		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 30x42x6	30.00	42.00	6.00		SC
TCW 30x42x6	30.00	42.00	6.00		TCW
SC 30x42x7	30.00	42.00	7.00		SC
TC 30x42x7	30.00	42.00	7.00		TC
TC 30x42x7	30.00	42.00	7.00		TC
TCW 30x42x7	30.00	42.00	7.00		TCW
SC 30x42x8	30.00	42.00	8.00		SC
TC 30x42x8	30.00	42.00	8.00		TC
TC 30x42x8	30.00	42.00	8.00		TC
TC 30x42x8	30.00	42.00	8.00		TC
TC 30x42x10	30.00	42.00	10.00		TC
TC 30x43x7	30.00	43.00	7.00		TC
TC 30x43x7	30.00	43.00	7.00		TC
TC 30x43x8	30.00	43.00	8.00		TC
TC 30x43x8.5	30.00	43.00	8.50		TC
TC 30x43x9	30.00	43.00	9.00		TC
TC 30x44x5	30.00	44.00	5.00		TC
TC 30x44x7	30.00	44.00	7.00		TC
TC 30x44x7	30.00	44.00	7.00		TC
TC 30x44x8	30.00	44.00	8.00		TC
TC8 30x44x8	30.00	44.00	8.00		TC8
SC 30x44x9	30.00	44.00	9.00		SC
TC 30x44x9	30.00	44.00	9.00		TC
TC 30x44x9	30.00	44.00	9.00		TC
SC 30x44x10	30.00	44.00	10.00		SC
TC 30x44x10	30.00	44.00	10.00		TC
SC 30x45x5	30.00	45.00	5.00		SC
TCW 30x45x5	30.00	45.00	5.00		TCW
SC 30x45x6	30.00	45.00	6.00		SC
TC 30x45x6	30.00	45.00	6.00		TC
SC 30x45x7	30.00	45.00	7.00		SC
TC 30x45x7	30.00	45.00	7.00		TC
TC 30x45x7	30.00	45.00	7.00		TC
TC8 30x45x7	30.00	45.00	7.00		TC8
SC 30x45x8	30.00	45.00	8.00		SC
SC 30x45x8	30.00	45.00	8.00		SC
TC 30x45x8	30.00	45.00	8.00		TC
TC 30x45x8	30.00	45.00	8.00		TC
TC 30x45x9	30.00	45.00	9.00		TC
SC 30x45x10	30.00	45.00	10.00		SC
TC 30x45x10	30.00	45.00	10.00		TC
TC 30x45x12	30.00	45.00	12.00		TC
TC 30x45x13	30.00	45.00	13.00		TC
TC 30x46x7	30.00	46.00	7.00		TC
TC 30x46x7	30.00	46.00	7.00		TC
SC 30x46x8	30.00	46.00	8.00		SC
TC 30x46x8	30.00	46.00	8.00		TC
TC 30x46x8	30.00	46.00	8.00		TC
TC 30x46x8	30.00	46.00	8.00		TC
TC 30x46x10	30.00	46.00	10.00		TC
SC 30x47x5	30.00	47.00	5.00		SC
TC 30x47x5	30.00	47.00	5.00		TC
SC 30x47x6	30.00	47.00	6.00		SC
TC 30x47x6	30.00	47.00	6.00		TC
SC 30x47x7	30.00	47.00	7.00		SC
TC 30x47x7	30.00	47.00	7.00		TC
TC 30x47x7	30.00	47.00	7.00		TC
SC 30x47x8	30.00	47.00	8.00		SC
TC 30x47x8	30.00	47.00	8.00		TC
SC 30x47x8.5	30.00	47.00	8.50		SC
SC 30x47x10	30.00	47.00	10.00		SC
TC 30x47x10	30.00	47.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 30x48x7	30.00	48.00	7.00		SC
TC 30x48x7	30.00	48.00	7.00		TC
SC 30x48x8	30.00	48.00	8.00		SC
TC 30x48x8	30.00	48.00	8.00		TC
TC 30x48x8	30.00	48.00	8.00		TC
SCW 30x48x8	30.00	48.00	8.00		SCW
TC 30x48x10	30.00	48.00	10.00		TC
TC 30x48x12	30.00	48.00	12.00		TC
TC 30x49x8	30.00	49.00	8.00		TC
SC 30x50x5	30.00	50.00	5.00		SC
TC 30x50x6	30.00	50.00	6.00		TC
SC 30x50x7	30.00	50.00	7.00		SC
TC 30x50x7	30.00	50.00	7.00		TC
SC 30x50x8	30.00	50.00	8.00		SC
TC 30x50x8	30.00	50.00	8.00		TC
SC 30x50x10	30.00	50.00	10.00		SC
TC 30x50x10	30.00	50.00	10.00		TC
SC 30x50x11	30.00	50.00	11.00		SC
TC 30x50x11	30.00	50.00	11.00		TC
TC 30x50x12	30.00	50.00	12.00		TC
TC 30x51x10	30.00	51.00	10.00		TC
SC 30x52x4	30.00	52.00	4.00		SC
SC 30x52x6	30.00	52.00	6.00		SC
SC 30x52x7	30.00	52.00	7.00		SC
TC 30x52x7	30.00	52.00	7.00		TC
TCW 30x52x7	30.00	52.00	7.00		TCW
TCW 30x52x7	30.00	52.00	7.00		TCW
SC 30x52x8	30.00	52.00	8.00		SC
TC 30x52x8	30.00	52.00	8.00		TC
TC 30x52x8	30.00	52.00	8.00		TC
SC 30x52x10	30.00	52.00	10.00		SC
TC 30x52x10	30.00	52.00	10.00		TC
TC 30x52x11	30.00	52.00	11.00		TC
TC 30x52x12	30.00	52.00	12.00		TC
TC 30x54x6	30.00	54.00	6.00		TC
TC 30x54x9	30.00	54.00	9.00		TC
TC 30x54x9	30.00	54.00	9.00		TC
SC 30x55x7	30.00	55.00	7.00		SC
TC 30x55x7	30.00	55.00	7.00		TC
TC 30x55x8	30.00	55.00	8.00		TC
SC 30x55x10	30.00	55.00	10.00		SC
TC 30x55x10	30.00	55.00	10.00		TC
TC 30x55x10	30.00	55.00	10.00		TC
TCW 30x55x10	30.00	55.00	10.00		TCW
TC 30x55x11	30.00	55.00	11.00		TC
TC 30x55x12	30.00	55.00	12.00		TC
TC 30x55x12	30.00	55.00	12.00		TC
TC 30x56x8	30.00	56.00	8.00		TC
SC 30x56x10	30.00	56.00	10.00		SC
TC 30x56x10	30.00	56.00	10.00		TC
SC 30x56x12	30.00	56.00	12.00		SC
TC 30x56x12	30.00	56.00	12.00		TC
TC 30x57x10	30.00	57.00	10.00		TC
TC 30x58x8	30.00	58.00	8.00		TC
TC 30x58x10	30.00	58.00	10.00		TC
TC 30x60x7	30.00	60.00	7.00		TC
TC 30x60x8	30.00	60.00	8.00		TC
SC 30x60x10	30.00	60.00	10.00		SC
TC 30x60x10	30.00	60.00	10.00		TC
TC 30x60x12	30.00	60.00	12.00		TC
TC 30x62x4	30.00	62.00	4.00		TC
TC 30x62x5	30.00	62.00	5.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 30x62x7	30.00	62.00	7.00		SC
TC 30x62x7	30.00	62.00	7.00		TC
TC 30x62x8	30.00	62.00	8.00		TC
TC 30x62x9	30.00	62.00	9.00		TC
SC 30x62x10	30.00	62.00	10.00		SC
TC 30x62x10	30.00	62.00	10.00		TC
TC 30x62x11	30.00	62.00	11.00		TC
SC 30x62x12	30.00	62.00	12.00		SC
TC 30x62x12	30.00	62.00	12.00		TC
TC 30x65x10	30.00	65.00	10.00		TC
TC 30x68x6	30.00	68.00	6.00		TC
TC 30x68x10	30.00	68.00	10.00		TC
TC 30x68x12	30.00	68.00	12.00		TC
TC 30x70x10	30.00	70.00	10.00		TC
SC 30x72x6	30.00	72.00	6.00		SC
TC 30x72x7	30.00	72.00	7.00		TC
TC 30x72x8	30.00	72.00	8.00		TC
TCW 30x72x8	30.00	72.00	8.00		TCW
TC 30x72x9	30.00	72.00	9.00		TC
SC 30x72x10	30.00	72.00	10.00		SC
TC 30x72x10	30.00	72.00	10.00		TC
TC 30x75x9	30.00	75.00	9.00		TC
TC 30x75x10	30.00	75.00	10.00		TC
TC 30x77x9	30.00	77.00	9.00		TC
TC 30x77x10	30.00	77.00	10.00		TC
TC 30x80x10	30.00	80.00	10.00		TC
TC 30x90x7	30.00	90.00	7.00		TC
TC 31x40x7	31.00	40.00	7.00		TC
SC 31x42x8	31.00	42.00	8.00		SC
TC 31x42x8	31.00	42.00	8.00		TC
SC 31x43x5.6	31.00	43.00	5.60		SC
SC 31x45x6	31.00	45.00	6.00		SC
SC 31x45x7	31.00	45.00	7.00		SC
TC 31x45x7	31.00	45.00	7.00		TC
TC 31x46x7	31.00	46.00	7.00		TC
TC 31x46x8	31.00	46.00	8.00		TC
SC 31x47x7	31.00	47.00	7.00		SC
TC 31x47x7	31.00	47.00	7.00		TC
TC 31x47x10	31.00	47.00	10.00		TC
TC 31x48x10	31.00	48.00	10.00		TC
TC 31x49x7	31.00	49.00	7.00		TC
TC 31x50x7	31.00	50.00	7.00		TC
SC 31x50x8	31.00	50.00	8.00		SC
TC 31x50x8	31.00	50.00	8.00		TC
TC 31x50x8	31.00	50.00	8.00		TC
TC 31x52x6	31.00	52.00	6.00		TC
TC 31x52x7	31.00	52.00	7.00		TC
TC 32x40x5	32.00	40.00	5.00		TC
SC 32x40x7	32.00	40.00	7.00		SC
TC 32x40x7	32.00	40.00	7.00		TC
TC 32x40x10	32.00	40.00	10.00		TC
TC 32x41x7	32.00	41.00	7.00		TC
TC 32x42x6	32.00	42.00	6.00		TC
TC 32x42x6	32.00	42.00	6.00		TC
SC 32x42x7	32.00	42.00	7.00		SC
TC 32x42x7	32.00	42.00	7.00		TC
SCW 32x42x7	32.00	42.00	7.00		SCW
TCW 32x42x7	32.00	42.00	7.00		TCW
TCW 32x42x7	32.00	42.00	7.00		TCW
TC 32x42x8	32.00	42.00	8.00		TC
TC 32x42x10	32.00	42.00	10.00		TC
TC 32x43x7	32.00	43.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 32x43x10	32.00	43.00	10.00		TC
TC 32x44x5	32.00	44.00	5.00		TC
TC 32x44x6	32.00	44.00	6.00		TC
TC 32x44x6	32.00	44.00	6.00		TC
TC 32x44x7	32.00	44.00	7.00		TC
TC 32x44x8	32.00	44.00	8.00		TC
TC 32x44x9	32.00	44.00	9.00		TC
SC 32x44x10	32.00	44.00	10.00		SC
TC 32x44x10	32.00	44.00	10.00		TC
SC 32x45x5	32.00	45.00	5.00		SC
SC 32x45x6	32.00	45.00	6.00		SC
TC 32x45x6	32.00	45.00	6.00		TC
TC 32x45x6	32.00	45.00	6.00		TC
TC 32x45x6.5	32.00	45.00	6.50		TC
SC 32x45x7	32.00	45.00	7.00		SC
TC 32x45x7	32.00	45.00	7.00		TC
SC 32x45x8	32.00	45.00	8.00		SC
TC 32x45x8	32.00	45.00	8.00		TC
TC 32x45x8	32.00	45.00	8.00		TC
SC 32x45x10	32.00	45.00	10.00		SC
TC 32x45x10	32.00	45.00	10.00		TC
TC 32x46x6	32.00	46.00	6.00		TC
TC 32x46x6	32.00	46.00	6.00		TC
TCW 32x46x6	32.00	46.00	6.00		TCW
SC 32x46x7	32.00	46.00	7.00		SC
TC 32x46x7	32.00	46.00	7.00		TC
TC 32x46x7	32.00	46.00	7.00		TC
TC 32x46x8	32.00	46.00	8.00		TC
TC 32x46x8	32.00	46.00	8.00		TC
TC 32x47x6	32.00	47.00	6.00		TC
TC 32x47x6	32.00	47.00	6.00		TC
SC 32x47x7	32.00	47.00	7.00		SC
TC 32x47x7	32.00	47.00	7.00		TC
TC 32x47x8	32.00	47.00	8.00		TC
TC 32x47x8	32.00	47.00	8.00		TC
TCW 32x47x8	32.00	47.00	8.00		TCW
TC 32x47x10	32.00	47.00	10.00		TC
TC 32x47x10	32.00	47.00	10.00		TC
TCW 32x47x10	32.00	47.00	10.00		TCW
TC 32x48x7	32.00	48.00	7.00		TC
TC 32x48x7	32.00	48.00	7.00		TC
SC 32x48x8	32.00	48.00	8.00		SC
TC 32x48x8	32.00	48.00	8.00		TC
TC 32x48x8	32.00	48.00	8.00		TC
TC 32x48x8	32.00	48.00	8.00		TC
TC8 32x48x8	32.00	48.00	8.00		TC8
TC 32x48x10	32.00	48.00	10.00		TC
TC 32x48x10	32.00	48.00	10.00		TC
TC8 32x50x6.5	32.00	50.00	6.50		TC8
TC 32x50x7	32.00	50.00	7.00		TC
SC 32x50x8	32.00	50.00	8.00		SC
TC 32x50x8	32.00	50.00	8.00		TC
TC 32x50x8	32.00	50.00	8.00		TC
TC 32x50x10	32.00	50.00	10.00		TC
TC 32x50x10	32.00	50.00	10.00		TC
TC 32x50x11	32.00	50.00	11.00		TC
SC 32x52x5	32.00	52.00	5.00		SC
TC 32x52x5	32.00	52.00	5.00		TC
SC 32x52x7	32.00	52.00	7.00		SC
TC 32x52x7	32.00	52.00	7.00		TC
TC 32x52x8	32.00	52.00	8.00		TC
TC 32x52x8	32.00	52.00	8.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 32x52x9	32.00	52.00	9.00		TC
SC 32x52x10	32.00	52.00	10.00		SC
TC 32x52x10	32.00	52.00	10.00		TC
TC 32x52x10	32.00	52.00	10.00		TC
TC8 32x52x10	32.00	52.00	10.00		TC8
TC 32x52x11	32.00	52.00	11.00		TC
TC 32x52x11	32.00	52.00	11.00		TC
TC 32x52x12	32.00	52.00	12.00		TC
TC 32x53x7	32.00	53.00	7.00		TC
TC 32x53x7	32.00	53.00	7.00		TC
TC 32x54x7	32.00	54.00	7.00		TC
TC 32x54x8	32.00	54.00	8.00		TC
TC 32x54x10	32.00	54.00	10.00		TC
TC 32x55x6.5	32.00	55.00	6.50		TC
TC 32x55x7	32.00	55.00	7.00		TC
TC 32x55x8	32.00	55.00	8.00		TC
TC 32x55x8	32.00	55.00	8.00		TC
TC 32x55x9	32.00	55.00	9.00		TC
TC 32x55x10	32.00	55.00	10.00		TC
TC 32x55x11	32.00	55.00	11.00		TC
TC 32x55x15	32.00	55.00	15.00		TC
TC 32x56x8	32.00	56.00	8.00		TC
TC 32x56x10	32.00	56.00	10.00		TC
TC 32x56x10	32.00	56.00	10.00		TC
TC 32x56x12	32.00	56.00	12.00		TC
TC 32x57x7	32.00	57.00	7.00		TC
TC 32x58x8	32.00	58.00	8.00		TC
TC 32x58x10	32.00	58.00	10.00		TC
TC 32x58x12	32.00	58.00	12.00		TC
TC 32x60x8	32.00	60.00	8.00		TC
TC 32x60x10	32.00	60.00	10.00		TC
SC 32x62x6	32.00	62.00	6.00		SC
TC 32x62x7	32.00	62.00	7.00		TC
TC 32x62x8	32.00	62.00	8.00		TC
TC 32x62x10	32.00	62.00	10.00		TC
TC 32x62x12	32.00	62.00	12.00		TC
TC 32x65x7.5	32.00	65.00	7.50		TC
TC 32x65x8	32.00	65.00	8.00		TC
TC 32x65x10	32.00	65.00	10.00		TC
TC 32x68x8	32.00	68.00	8.00		TC
TC 32x70x8	32.00	70.00	8.00		TC
TC 32x70x10	32.00	70.00	10.00		TC
TC 32x70x11	32.00	70.00	11.00		TC
TC 32x72x8	32.00	72.00	8.00		TC
SC 32x72x10	32.00	72.00	10.00		SC
TC 32x72x10	32.00	72.00	10.00		TC
TC 32x73x10	32.00	73.00	10.00		TC
TC 32x80x12	32.00	80.00	12.00		TC
TC 33x43x7	33.00	43.00	7.00		TC
TC 33x44x7	33.00	44.00	7.00		TC
TC 33x44x8	33.00	44.00	8.00		TC
SC 33x45x7	33.00	45.00	7.00		SC
TC 33x45x8	33.00	45.00	8.00		TC
TC 33x45x10	33.00	45.00	10.00		TC
TC 33x46x7	33.00	46.00	7.00		TC
TC 33x46x7	33.00	46.00	7.00		TC
TC 33x47x7	33.00	47.00	7.00		TC
TC 33x47x8	33.00	47.00	8.00		TC
TC 33x47x8	33.00	47.00	8.00		TC
TC 33x48x6	33.00	48.00	6.00		TC
TC 33x48x8	33.00	48.00	8.00		TC
TC 33x48x8	33.00	48.00	8.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 33x49x8	33.00	49.00	8.00		TC
SC 33x50x6	33.00	50.00	6.00		SC
TC 33x50x6	33.00	50.00	6.00		TC
TC 33x50x7	33.00	50.00	7.00		TC
SC 33x50x10	33.00	50.00	10.00		SC
TC 33x50x10	33.00	50.00	10.00		TC
TC 33x50x12	33.00	50.00	12.00		TC
TC 33x50x12	33.00	50.00	12.00		TC
TC 33x52x5	33.00	52.00	5.00		TC
SC 33x52x6	33.00	52.00	6.00		SC
TC9 33x52x7x12	33.00	52.00	7.00	12.00	TC9
SC 33x52x8	33.00	52.00	8.00		SC
TC9 33x52x9x13.5	33.00	52.00	9.00	13.50	TC9
TC 33x52x10	33.00	52.00	10.00		TC
SC 33x54x6.5	33.00	54.00	6.50		SC
TC 33x55x10	33.00	55.00	10.00		TC
TC7 33x56x8.8x15	33.00	56.00	8.80	15.00	TC7
TC 33x56x10	33.00	56.00	10.00		TC
TC 33x56x12	33.00	56.00	12.00		TC
TC 33x60x8	33.00	60.00	8.00		TC
TC 33x62x7	33.00	62.00	7.00		TC
TC 33x62x12	33.00	62.00	12.00		TC
TC 33x65x8	33.00	65.00	8.00		TC
SC 33x66x12	33.00	66.00	12.00		SC
SCW 33x66x13	33.00	66.00	13.00		SCW
TC 33x72x10	33.00	72.00	10.00		TC
TC 34x41x7	34.00	41.00	7.00		TC
TC 34x42x5	34.00	42.00	5.00		TC
TC 34x44x7	34.00	44.00	7.00		TC
TC 34x44x8	34.00	44.00	8.00		TC
TC 34x45x6	34.00	45.00	6.00		TC
TC 34x45x8	34.00	45.00	8.00		TC
TC 34x46x7	34.00	46.00	7.00		TC
TC 34x46x8	34.00	46.00	8.00		TC
TC 34x46x10	34.00	46.00	10.00		TC
TC 34x47x7	34.00	47.00	7.00		TC
TCW 34x47x7	34.00	47.00	7.00		TCW
TC 34x47x8	34.00	47.00	8.00		TC
TCW 34x47x8	34.00	47.00	8.00		TCW
TC 34x47x9	34.00	47.00	9.00		TC
TC 34x48x7	34.00	48.00	7.00		TC
TC 34x48x7	34.00	48.00	7.00		TC
SC 34x48x7.5	34.00	48.00	7.50		SC
TC 34x48x8	34.00	48.00	8.00		TC
TC 34x48x8	34.00	48.00	8.00		TC
TC 34x49x7	34.00	49.00	7.00		TC
TC 34x50x7	34.00	50.00	7.00		TC
TC 34x50x7	34.00	50.00	7.00		TC
TC 34x50x8	34.00	50.00	8.00		TC
TC 34x50x8	34.00	50.00	8.00		TC
TC 34x50x10	34.00	50.00	10.00		TC
TC 34x50x12	34.00	50.00	12.00		TC
TC 34x52x6	34.00	52.00	6.00		TC
TC 34x52x7	34.00	52.00	7.00		TC
TC 34x52x7	34.00	52.00	7.00		TC
SCW 34x52x7	34.00	52.00	7.00		SCW
SC 34x52x7.5	34.00	52.00	7.50		SC
SC 34x52x8	34.00	52.00	8.00		SC
TC 34x52x8	34.00	52.00	8.00		TC
TC9 34x52x9x14	34.00	52.00	9.00	14.00	TC9
TC 34x52x10	34.00	52.00	10.00		TC
TC 34x52x11	34.00	52.00	11.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 34x53x8	34.00	53.00	8.00		TC
TC7 34x54x8x11.5	34.00	54.00	8.00	11.50	TC7
TC 34x54x8	34.00	54.00	8.00		TC
TC7 34x54x9x15.5	34.00	54.00	9.00	15.50	TC7
TC7 34x54x9x15.5	34.00	54.00	9.00	15.50	TC7
TC 34x54x10	34.00	54.00	10.00		TC
TC 34x55x9	34.00	55.00	9.00		TC
TC 34x55x11	34.00	55.00	11.00		TC
TC 34x55x11	34.00	55.00	11.00		TC
TC 34x56x8	34.00	56.00	8.00		TC
TC 34x56x10	34.00	56.00	10.00		TC
TC 34x58x6	34.00	58.00	6.00		TC
TC 34x58x10	34.00	58.00	10.00		TC
TC 34x60x12	34.00	60.00	12.00		TC
TC 34x62x6	34.00	62.00	6.00		TC
TC 34x62x7	34.00	62.00	7.00		TC
TC 34x62x8	34.00	62.00	8.00		TC
SC 34x62x10	34.00	62.00	10.00		SC
TC 34x62x10	34.00	62.00	10.00		TC
TC 34x62x14	34.00	62.00	14.00		TC
TC7 34x63x9x15.5	34.00	63.00	9.00	15.50	TC7
TC7 34x63x9x15.5	34.00	63.00	9.00	15.50	TC7
TC 34x65x9	34.00	65.00	9.00		TC
TC 34x70x10	34.00	70.00	10.00		TC
TC 34x72x10	34.00	72.00	10.00		TC
TC 34x72x12	34.00	72.00	12.00		TC
SC 35x42x4	35.00	42.00	4.00		SC
TC 35x42x6	35.00	42.00	6.00		TC
TC 35x42x8	35.00	42.00	8.00		TC
TC 35x43x6	35.00	43.00	6.00		TC
SC 35x44x4	35.00	44.00	4.00		SC
TC 35x44x7	35.00	44.00	7.00		TC
SC 35x45x4	35.00	45.00	4.00		SC
SC 35x45x5	35.00	45.00	5.00		SC
SC 35x45x6	35.00	45.00	6.00		SC
TC 35x45x6	35.00	45.00	6.00		TC
SC 35x45x7	35.00	45.00	7.00		SC
TC 35x45x7	35.00	45.00	7.00		TC
TC 35x45x8	35.00	45.00	8.00		TC
TC 35x45x10	35.00	45.00	10.00		TC
TC 35x45x12	35.00	45.00	12.00		TC
SC 35x46x7	35.00	46.00	7.00		SC
TC 35x46x7	35.00	46.00	7.00		TC
TC 35x46x10	35.00	46.00	10.00		TC
TC 35x47x4.5	35.00	47.00	4.50		TC
SC 35x47x5	35.00	47.00	5.00		SC
TC 35x47x5	35.00	47.00	5.00		TC
SCW 35x47x5	35.00	47.00	5.00		SCW
TC 35x47x6	35.00	47.00	6.00		TC
SC 35x47x7	35.00	47.00	7.00		SC
TC 35x47x7	35.00	47.00	7.00		TC
SCW 35x47x7	35.00	47.00	7.00		SCW
TCW 35x47x7	35.00	47.00	7.00		TCW
TC 35x47x7.5	35.00	47.00	7.50		TC
TC 35x47x8	35.00	47.00	8.00		TC
TCW 35x47x8	35.00	47.00	8.00		TCW
SC 35x47x9	35.00	47.00	9.00		SC
SC 35x47x10	35.00	47.00	10.00		SC
TC 35x47x10	35.00	47.00	10.00		TC
TC 35x47x12	35.00	47.00	12.00		TC
TC 35x48x7	35.00	48.00	7.00		TC
TC 35x48x7	35.00	48.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 35x48x8	35.00	48.00	8.00		TC
TC 35x48x8	35.00	48.00	8.00		TC
TC 35x48x9	35.00	48.00	9.00		TC
TC 35x48x10	35.00	48.00	10.00		TC
TCW 35x48x10	35.00	48.00	10.00		TCW
TC 35x49x6	35.00	49.00	6.00		TC
TC 35x49x6	35.00	49.00	6.00		TC
TC 35x49x7	35.00	49.00	7.00		TC
TC 35x49x8	35.00	49.00	8.00		TC
SC 35x50x5	35.00	50.00	5.00		SC
TC 35x50x5	35.00	50.00	5.00		TC
TC 35x50x6	35.00	50.00	6.00		TC
SC 35x50x7	35.00	50.00	7.00		SC
TC 35x50x7	35.00	50.00	7.00		TC
SCW 35x50x7	35.00	50.00	7.00		SCW
TCW 35x50x7	35.00	50.00	7.00		TCW
SC 35x50x8	35.00	50.00	8.00		SC
SC 35x50x8	35.00	50.00	8.00		SC
TC 35x50x8	35.00	50.00	8.00		TC
TC 35x50x8	35.00	50.00	8.00		TC
TC 35x50x8	35.00	50.00	8.00		TC
TC 35x50x9	35.00	50.00	9.00		TC
SC 35x50x10	35.00	50.00	10.00		SC
TC 35x50x10	35.00	50.00	10.00		TC
TC 35x50x10	35.00	50.00	10.00		TC
TCW 35x50x10	35.00	50.00	10.00		TCW
TC 35x50x11	35.00	50.00	11.00		TC
TC 35x50x11	35.00	50.00	11.00		TC
SC 35x50x12	35.00	50.00	12.00		SC
TC 35x50x12	35.00	50.00	12.00		TC
TC 35x51x7	35.00	51.00	7.00		TC
TC 35x51x8	35.00	51.00	8.00		TC
TC 35x51x10	35.00	51.00	10.00		TC
TC 35x52x5	35.00	52.00	5.00		TC
SC 35x52x6	35.00	52.00	6.00		SC
TC 35x52x6	35.00	52.00	6.00		TC
SC 35x52x7	35.00	52.00	7.00		SC
TC 35x52x7	35.00	52.00	7.00		TC
SCW 35x52x7	35.00	52.00	7.00		SCW
SC 35x52x8	35.00	52.00	8.00		SC
TC 35x52x8	35.00	52.00	8.00		TC
TC 35x52x8	35.00	52.00	8.00		TC
TC 35x52x8	35.00	52.00	8.00		TC
TCW 35x52x8	35.00	52.00	8.00		TCW
TC 35x52x9	35.00	52.00	9.00		TC
TC 35x52x9.5	35.00	52.00	9.50		TC
SC 35x52x10	35.00	52.00	10.00		SC
TC 35x52x10	35.00	52.00	10.00		TC
TC 35x52x11	35.00	52.00	11.00		TC
TC 35x52x12	35.00	52.00	12.00		TC
SC 35x53x7	35.00	53.00	7.00		SC
TC 35x53x7	35.00	53.00	7.00		TC
TC 35x54x6	35.00	54.00	6.00		TC
TC7 35x54x8x11.5	35.00	54.00	8.00	11.50	TC7
TC 35x54x8	35.00	54.00	8.00		TC
TC 35x54x8	35.00	54.00	8.00		TC
TC 35x54x8	35.00	54.00	8.00		TC
TC 35x54x10	35.00	54.00	10.00		TC
TC 35x54x12	35.00	54.00	12.00		TC
TC 35x55x7	35.00	55.00	7.00		TC
SC 35x55x8	35.00	55.00	8.00		SC
TC 35x55x8	35.00	55.00	8.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 35x55x8	35.00	55.00	8.00		TC
TC 35x55x8	35.00	55.00	8.00		TC
TC7 35x55x9x15.5	35.00	55.00	9.00	15.50	TC7
TC 35x55x9	35.00	55.00	9.00		TC
TCW 35x55x9	35.00	55.00	9.00		TCW
SC 35x55x10	35.00	55.00	10.00		SC
TC 35x55x10	35.00	55.00	10.00		TC
TC 35x55x10	35.00	55.00	10.00		TC
TC 35x55x11	35.00	55.00	11.00		TC
TC 35x55x12	35.00	55.00	12.00		TC
TC 35x55x12	35.00	55.00	12.00		TC
SCW 35x55x12	35.00	55.00	12.00		SCW
TC 35x56x5.8	35.00	56.00	5.80		TC
TC7 35x56x7.5x11.5	35.00	56.00	7.50	11.50	TC7
TC7 35x56x8x11.5	35.00	56.00	8.00	11.50	TC7
SC 35x56x8	35.00	56.00	8.00		SC
TC 35x56x8	35.00	56.00	8.00		TC
TC 35x56x8	35.00	56.00	8.00		TC
TC7 35x56x9x12.5	35.00	56.00	9.00	12.50	TC7
TC7 35x56x9x15	35.00	56.00	9.00	15.00	TC7
TC7 35x56x9x15	35.00	56.00	9.00	15.00	TC7
TC7 35x56x10x13.5	35.00	56.00	10.00	13.50	TC7
SC 35x56x10	35.00	56.00	10.00		SC
TC 35x56x10	35.00	56.00	10.00		TC
SC 35x56x12	35.00	56.00	12.00		SC
TC 35x56x12	35.00	56.00	12.00		TC
SC 35x57x6	35.00	57.00	6.00		SC
SCW 35x57x8.8	35.00	57.00	8.80		SCW
TC7 35x57x9x15	35.00	57.00	9.00	15.00	TC7
TC 35x57x9	35.00	57.00	9.00		TC
TCW 35x57x9	35.00	57.00	9.00		TCW
TCW 35x57x9	35.00	57.00	9.00		TCW
TC 35x57x10	35.00	57.00	10.00		TC
TC 35x58x6	35.00	58.00	6.00		TC
TC7 35x58x8x11	35.00	58.00	8.00	11.00	TC7
SC 35x58x9	35.00	58.00	9.00		SC
TC 35x58x9	35.00	58.00	9.00		TC
TC7 35x58x10x13	35.00	58.00	10.00	13.00	TC7
SC 35x58x10	35.00	58.00	10.00		SC
TC 35x58x10	35.00	58.00	10.00		TC
TC 35x58x12	35.00	58.00	12.00		TC
TC 35x58x13	35.00	58.00	13.00		TC
TC 35x58x18	35.00	58.00	18.00		TC
TC 35x59x12	35.00	59.00	12.00		TC
TC 35x60x7	35.00	60.00	7.00		TC
SC 35x60x8	35.00	60.00	8.00		SC
TC 35x60x8	35.00	60.00	8.00		TC
SC 35x60x10	35.00	60.00	10.00		SC
TC 35x60x10	35.00	60.00	10.00		TC
TC 35x60x11	35.00	60.00	11.00		TC
TC 35x60x12	35.00	60.00	12.00		TC
TC7 35x61x9x13.5	35.00	61.00	9.00	13.50	TC7
TC 35x62x6	35.00	62.00	6.00		TC
SC 35x62x7	35.00	62.00	7.00		SC
TC 35x62x7	35.00	62.00	7.00		TC
SCW 35x62x7	35.00	62.00	7.00		SCW
TC7 35x62x8x11.5	35.00	62.00	8.00	11.50	TC7
SC 35x62x8	35.00	62.00	8.00		SC
TC 35x62x8	35.00	62.00	8.00		TC
TC8 35x62x8	35.00	62.00	8.00		TC8
TC 35x62x9.5	35.00	62.00	9.50		TC
TC 35x62x9.5	35.00	62.00	9.50		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 35x62x10	35.00	62.00	10.00		SC
TC 35x62x10	35.00	62.00	10.00		TC
TCW 35x62x10	35.00	62.00	10.00		TCW
TC 35x62x11	35.00	62.00	11.00		TC
TC 35x62x12	35.00	62.00	12.00		TC
TC7 35x63x10x22	35.00	63.00	10.00	22.00	TC7
TC 35x64x10	35.00	64.00	10.00		TC
TC 35x64x12	35.00	64.00	12.00		TC
TC 35x64x13	35.00	64.00	13.00		TC
TC 35x64x13	35.00	64.00	13.00		TC
TC 35x65x7	35.00	65.00	7.00		TC
TC8 35x65x8	35.00	65.00	8.00		TC8
SC 35x65x10	35.00	65.00	10.00		SC
TC 35x65x10	35.00	65.00	10.00		TC
TC 35x65x12	35.00	65.00	12.00		TC
TC7 35x67x12x18	35.00	67.00	12.00	18.00	TC7
TC 35x67x12	35.00	67.00	12.00		TC
SC 35x68x6	35.00	68.00	6.00		SC
TC 35x68x6	35.00	68.00	6.00		TC
SC 35x68x8	35.00	68.00	8.00		SC
TC 35x68x8	35.00	68.00	8.00		TC
TC7 35x68x9x12.5	35.00	68.00	9.00	12.50	TC7
TC7 35x68x9x12.5	35.00	68.00	9.00	12.50	TC7
SC 35x68x10	35.00	68.00	10.00		SC
TC 35x68x10	35.00	68.00	10.00		TC
SC 35x68x12	35.00	68.00	12.00		SC
TC7 35x69x8x13	35.00	69.00	8.00	13.00	TC7
TC 35x70x8	35.00	70.00	8.00		TC
TC 35x70x10	35.00	70.00	10.00		TC
TC 35x70x12	35.00	70.00	12.00		TC
SC 35x72x7	35.00	72.00	7.00		SC
TC 35x72x7	35.00	72.00	7.00		TC
TC 35x72x8	35.00	72.00	8.00		TC
SC 35x72x10	35.00	72.00	10.00		SC
TC 35x72x10	35.00	72.00	10.00		TC
TC 35x72x11	35.00	72.00	11.00		TC
SC 35x72x12	35.00	72.00	12.00		SC
TC 35x72x12	35.00	72.00	12.00		TC
TC 35x75x7	35.00	75.00	7.00		TC
TC 35x75x8	35.00	75.00	8.00		TC
TC 35x75x10	35.00	75.00	10.00		TC
TC 35x75x12	35.00	75.00	12.00		TC
TC7 35x76x9x12.5	35.00	76.00	9.00	12.50	TC7
TC 35x78x8	35.00	78.00	8.00		TC
TC 35x80x6	35.00	80.00	6.00		TC
SC 35x80x8	35.00	80.00	8.00		SC
TC 35x80x8	35.00	80.00	8.00		TC
SC 35x80x10	35.00	80.00	10.00		SC
TC 35x80x10	35.00	80.00	10.00		TC
SC 35x80x12	35.00	80.00	12.00		SC
TC 35x80x12	35.00	80.00	12.00		TC
SC 35x80x13	35.00	80.00	13.00		SC
TC 35x80x13	35.00	80.00	13.00		TC
SC 35x82x6	35.00	82.00	6.00		SC
TC 35x82x7	35.00	82.00	7.00		TC
TC 35x82x10	35.00	82.00	10.00		TC
TC 35x90x13	35.00	90.00	13.00		TC
TC 36x44x5	36.00	44.00	5.00		TC
TC 36x45x7	36.00	45.00	7.00		TC
TC 36x46x6	36.00	46.00	6.00		TC
TC 36x46x7	36.00	46.00	7.00		TC
TC 36x46x9	36.00	46.00	9.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 36x47x7	36.00	47.00	7.00		SC
TC 36x47x7	36.00	47.00	7.00		TC
TC 36x47x7	36.00	47.00	7.00		TC
TC 36x47x8	36.00	47.00	8.00		TC
TC 36x48x6	36.00	48.00	6.00		TC
TC 36x48x7	36.00	48.00	7.00		TC
TC 36x48x8	36.00	48.00	8.00		TC
TC 36x48x10	36.00	48.00	10.00		TC
TC 36x48x10	36.00	48.00	10.00		TC
TC 36x49x7	36.00	49.00	7.00		TC
TC 36x49x7	36.00	49.00	7.00		TC
TC 36x49x10	36.00	49.00	10.00		TC
TC 36x50x5	36.00	50.00	5.00		TC
SC 36x50x7	36.00	50.00	7.00		SC
TC 36x50x7	36.00	50.00	7.00		TC
TCW 36x50x7	36.00	50.00	7.00		TCW
TC 36x50x8	36.00	50.00	8.00		TC
SCW 36x50x8	36.00	50.00	8.00		SCW
TC 36x50x10	36.00	50.00	10.00		TC
TC 36x51x7	36.00	51.00	7.00		TC
TC 36x51x8	36.00	51.00	8.00		TC
SC 36x52x6.3	36.00	52.00	6.30		SC
SC 36x52x7	36.00	52.00	7.00		SC
TC 36x52x7	36.00	52.00	7.00		TC
TC 36x52x8	36.00	52.00	8.00		TC
TC 36x52x8	36.00	52.00	8.00		TC
TC 36x52x10	36.00	52.00	10.00		TC
TC 36x52x10	36.00	52.00	10.00		TC
TC8 36x52x10	36.00	52.00	10.00		TC8
SCW 36x53x8	36.00	53.00	8.00		SCW
SC 36x54x7	36.00	54.00	7.00		SC
TC 36x54x7	36.00	54.00	7.00		TC
SC 36x54x7.5	36.00	54.00	7.50		SC
TC 36x54x7,5	36.00	54.00	7.50		TC
SC 36x54x8	36.00	54.00	8.00		SC
TC 36x54x8	36.00	54.00	8.00		TC
TC 36x54x10	36.00	54.00	10.00		TC
TC 36x54x10	36.00	54.00	10.00		TC
TC 36x54x11	36.00	54.00	11.00		TC
TC 36x55x10	36.00	55.00	10.00		TC
TC 36x55x12	36.00	55.00	12.00		TC
TC 36x56x8	36.00	56.00	8.00		TC
SC 36x56x10	36.00	56.00	10.00		SC
TC 36x56x10	36.00	56.00	10.00		TC
TC 36x56x12	36.00	56.00	12.00		TC
TCW 36x57x10	36.00	57.00	10.00		TCW
TC 36x58x8	36.00	58.00	8.00		TC
SC 36x58x10	36.00	58.00	10.00		SC
TC 36x58x12	36.00	58.00	12.00		TC
TC 36x59x7	36.00	59.00	7.00		TC
TC 36x60x6	36.00	60.00	6.00		TC
TC 36x60x7	36.00	60.00	7.00		TC
TC 36x60x10	36.00	60.00	10.00		TC
TC 36x60x12	36.00	60.00	12.00		TC
SC 36x62x7	36.00	62.00	7.00		SC
TC 36x62x7	36.00	62.00	7.00		TC
TCW 36x62x7	36.00	62.00	7.00		TCW
TC 36x62x10	36.00	62.00	10.00		TC
SC 36x68x10	36.00	68.00	10.00		SC
TC 36x72x7	36.00	72.00	7.00		TC
SC 36x83x12	36.00	83.00	12.00		SC
TC 37x45x7	37.00	45.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 37x47x6	37.00	47.00	6.00		TC
TC 37x47x10	37.00	47.00	10.00		TC
TC 37x50x6	37.00	50.00	6.00		TC
SC 37x50x7	37.00	50.00	7.00		SC
TC 37x50x7	37.00	50.00	7.00		TC
TC 37x50x9	37.00	50.00	9.00		TC
TC 37x50x10	37.00	50.00	10.00		TC
SC 37x52x7	37.00	52.00	7.00		SC
SC 37x52x8	37.00	52.00	8.00		SC
TC 37x52x8	37.00	52.00	8.00		TC
TC 37x53x7	37.00	53.00	7.00		TC
TC 37x55x8	37.00	55.00	8.00		TC
SC 37x56x9	37.00	56.00	9.00		SC
TC 37x57x10	37.00	57.00	10.00		TC
TC 37x57x10	37.00	57.00	10.00		TC
TCW 37x57x10	37.00	57.00	10.00		TCW
TC 37x58x7	37.00	58.00	7.00		TC
TC 37x58x10	37.00	58.00	10.00		TC
TC 37x58x13	37.00	58.00	13.00		TC
TC8 37x60x10	37.00	60.00	10.00		TC8
TCW 37x61x10	37.00	61.00	10.00		TCW
SC 37x62x8	37.00	62.00	8.00		SC
TC 37x62x8	37.00	62.00	8.00		TC
TC9 37x62x10x17	37.00	62.00	10.00	17.00	TC9
SC 37x62x10	37.00	62.00	10.00		SC
TC 37x62x10	37.00	62.00	10.00		TC
TC7 37x64x11x16	37.00	64.00	11.00	16.00	TC7
TC 37x64x13	37.00	64.00	13.00		TC
TC7 37x65x10x17	37.00	65.00	10.00	17.00	TC7
TC7 37x67x10x17	37.00	67.00	10.00	17.00	TC7
TC 37x72x7	37.00	72.00	7.00		TC
TC 37x74x11	37.00	74.00	11.00		TC
SC 37x80x10	37.00	80.00	10.00		SC
SC 37x80x12	37.00	80.00	12.00		SC
SC 37x80x13	37.00	80.00	13.00		SC
TC 38x47x7	38.00	47.00	7.00		TC
SC 38x47x10	38.00	47.00	10.00		SC
TC 38x47x10	38.00	47.00	10.00		TC
TC 38x48x6	38.00	48.00	6.00		TC
TC 38x48x7	38.00	48.00	7.00		TC
TC 38x48x10	38.00	48.00	10.00		TC
TC 38x49x8	38.00	49.00	8.00		TC
SC 38x50x6	38.00	50.00	6.00		SC
TC 38x50x6	38.00	50.00	6.00		TC
TCW 38x50x6	38.00	50.00	6.00		TCW
SC 38x50x7	38.00	50.00	7.00		SC
SC 38x50x7	38.00	50.00	7.00		SC
TC 38x50x7	38.00	50.00	7.00		TC
TC7 38x50x8x13	38.00	50.00	8.00	13.00	TC7
SC 38x50x8	38.00	50.00	8.00		SC
TC 38x50x8	38.00	50.00	8.00		TC
TC 38x50x8	38.00	50.00	8.00		TC
TC 38x50x8	38.00	50.00	8.00		TC
TC 38x50x9	38.00	50.00	9.00		TC
TC 38x50x10	38.00	50.00	10.00		TC
TC 38x50x10	38.00	50.00	10.00		TC
TC 38x50x11	38.00	50.00	11.00		TC
TC 38x51x7	38.00	51.00	7.00		TC
TC 38x51x8	38.00	51.00	8.00		TC
TC 38x52x6	38.00	52.00	6.00		TC
TCW 38x52x6	38.00	52.00	6.00		TCW
SC 38x52x7	38.00	52.00	7.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 38x52x7	38.00	52.00	7.00		SC
TC 38x52x7	38.00	52.00	7.00		TC
TCW 38x52x7	38.00	52.00	7.00		TCW
SC 38x52x8	38.00	52.00	8.00		SC
SC 38x52x8	38.00	52.00	8.00		SC
TC 38x52x8	38.00	52.00	8.00		TC
TC 38x52x8	38.00	52.00	8.00		TC
TC 38x52x8.5	38.00	52.00	8.50		TC
TC 38x52x9	38.00	52.00	9.00		TC
SC 38x52x10	38.00	52.00	10.00		SC
TC 38x52x10	38.00	52.00	10.00		TC
TC 38x52x10	38.00	52.00	10.00		TC
SC 38x53x7	38.00	53.00	7.00		SC
TC 38x53x8	38.00	53.00	8.00		TC
TC 38x53x8	38.00	53.00	8.00		TC
TC 38x54x7	38.00	54.00	7.00		TC
TC 38x54x7	38.00	54.00	7.00		TC
TC7 38x54x8x11.5	38.00	54.00	8.00	11.50	TC7
TC7 38x54x9x15	38.00	54.00	9.00	15.00	TC7
TC7 38x54x9x15.5	38.00	54.00	9.00	15.50	TC7
SC 38x54x10	38.00	54.00	10.00		SC
TC 38x54x10	38.00	54.00	10.00		TC
SC 38x55x6	38.00	55.00	6.00		SC
TC 38x55x6	38.00	55.00	6.00		TC
SC 38x55x7	38.00	55.00	7.00		SC
TC 38x55x7	38.00	55.00	7.00		TC
TC 38x55x7	38.00	55.00	7.00		TC
TC 38x55x8	38.00	55.00	8.00		TC
TC 38x55x8	38.00	55.00	8.00		TC
TC 38x55x9	38.00	55.00	9.00		TC
TC 38x55x9	38.00	55.00	9.00		TC
SC 38x55x10	38.00	55.00	10.00		SC
TC 38x55x10	38.00	55.00	10.00		TC
TC 38x56x7	38.00	56.00	7.00		TC
TC 38x56x8	38.00	56.00	8.00		TC
TC7 38x56x9x15	38.00	56.00	9.00	15.00	TC7
SC 38x56x10	38.00	56.00	10.00		SC
TC 38x56x10	38.00	56.00	10.00		TC
TC 38x56x12	38.00	56.00	12.00		TC
TC 38x57x10	38.00	57.00	10.00		TC
TC 38x58x7	38.00	58.00	7.00		TC
TC 38x58x8	38.00	58.00	8.00		TC
TC7 38x58x10x17	38.00	58.00	10.00	17.00	TC7
TC 38x58x10	38.00	58.00	10.00		TC
TC 38x58x11	38.00	58.00	11.00		TC
TC 38x58x11	38.00	58.00	11.00		TC
TC 38x58x11	38.00	58.00	11.00		TC
TC 38x58x12	38.00	58.00	12.00		TC
TC 38x59x9	38.00	59.00	9.00		TC
TC 38x60x8	38.00	60.00	8.00		TC
TCW 38x60x8	38.00	60.00	8.00		TCW
TC 38x60x9	38.00	60.00	9.00		TC
TC 38x60x10	38.00	60.00	10.00		TC
SC 38x62x7	38.00	62.00	7.00		SC
TC 38x62x7	38.00	62.00	7.00		TC
SC 38x62x8	38.00	62.00	8.00		SC
TC 38x62x8	38.00	62.00	8.00		TC
TCW 38x62x8	38.00	62.00	8.00		TCW
TC9 38x62x9x11.5	38.00	62.00	9.00	11.50	TC9
TC 38x62x9	38.00	62.00	9.00		TC
SC 38x62x10	38.00	62.00	10.00		SC
TC 38x62x10	38.00	62.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 38x62x10	38.00	62.00	10.00		TC
SC 38x62x11	38.00	62.00	11.00		SC
TC 38x62x12	38.00	62.00	12.00		TC
TC7 38x63x9x15	38.00	63.00	9.00	15.00	TC7
TC 38x64x12	38.00	64.00	12.00		TC
SC 38x65x8	38.00	65.00	8.00		SC
TC 38x65x8	38.00	65.00	8.00		TC
TC 38x65x9	38.00	65.00	9.00		TC
TC 38x65x10	38.00	65.00	10.00		TC
TC 38x65x11	38.00	65.00	11.00		TC
TC 38x65x12	38.00	65.00	12.00		TC
TC 38x65x13	38.00	65.00	13.00		TC
TC 38x66x8	38.00	66.00	8.00		TC
TC 38x68x8	38.00	68.00	8.00		TC
TC 38x68x12	38.00	68.00	12.00		TC
TC 38x70x10	38.00	70.00	10.00		TC
TC 38x72x10	38.00	72.00	10.00		TC
TC 38x72x12	38.00	72.00	12.00		TC
SC 38x74x10	38.00	74.00	10.00		SC
TC 38x74x11	38.00	74.00	11.00		TC
TC 38x80x8	38.00	80.00	8.00		TC
TC 38x80x10	38.00	80.00	10.00		TC
TC 38x85x10	38.00	85.00	10.00		TC
SC 39x51x7.5	39.00	51.00	7.50		SC
TC 39x51x7,5	39.00	51.00	7.50		TC
TC 39x53x9.5	39.00	53.00	9.50		TC
TC 39x55x9	39.00	55.00	9.00		TC
TC 39x56x7	39.00	56.00	7.00		TC
TCW 39x57x9.7	39.00	57.00	9.70		TCW
TC 39x59x8	39.00	59.00	8.00		TC
TC 39x62x6	39.00	62.00	6.00		TC
TC 39x65x8	39.00	65.00	8.00		TC
SC 39x65x9	39.00	65.00	9.00		SC
TC7 39x68x9x15.5	39.00	68.00	9.00	15.50	TC7
TC7 39x68x16x22.5	39.00	68.00	16.00	22.50	TC7
TC 39x72x8	39.00	72.00	8.00		TC
TCW 39x72x8	39.00	72.00	8.00		TCW
TC 40x50x5	40.00	50.00	5.00		TC
TC 40x50x6.5	40.00	50.00	6.50		TC
SC 40x50x7	40.00	50.00	7.00		SC
TC 40x50x7	40.00	50.00	7.00		TC
SC 40x50x8	40.00	50.00	8.00		SC
TC 40x50x8	40.00	50.00	8.00		TC
SC 40x50x10	40.00	50.00	10.00		SC
TC 40x50x10	40.00	50.00	10.00		TC
SC 40x52x6	40.00	52.00	6.00		SC
TC 40x52x6	40.00	52.00	6.00		TC
TC 40x52x6	40.00	52.00	6.00		TC
SC 40x52x6.5	40.00	52.00	6.50		SC
TC9 40x52x7x10.5	40.00	52.00	7.00	10.50	TC9
SC 40x52x7	40.00	52.00	7.00		SC
SC 40x52x7	40.00	52.00	7.00		SC
TC 40x52x7	40.00	52.00	7.00		TC
TC 40x52x7	40.00	52.00	7.00		TC
TC 40x52x7	40.00	52.00	7.00		TC
TCW 40x52x7	40.00	52.00	7.00		TCW
TC 40x52x8	40.00	52.00	8.00		TC
TCW 40x52x8	40.00	52.00	8.00		TCW
TC 40x52x9	40.00	52.00	9.00		TC
TC 40x52x10	40.00	52.00	10.00		TC
TC 40x53x8	40.00	53.00	8.00		TC
TC 40x53x8.5	40.00	53.00	8.50		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 40x54x6	40.00	54.00	6.00		TC
TCW 40x54x6.8	40.00	54.00	6.80		TCW
TC 40x54x7	40.00	54.00	7.00		TC
TC 40x54x7	40.00	54.00	7.00		TC
TC 40x54x8	40.00	54.00	8.00		TC
TC 40x54x10	40.00	54.00	10.00		TC
SC 40x55x6	40.00	55.00	6.00		SC
TC 40x55x6	40.00	55.00	6.00		TC
TC 40x55x6	40.00	55.00	6.00		TC
SC 40x55x7	40.00	55.00	7.00		SC
TC 40x55x7	40.00	55.00	7.00		TC
TCW 40x55x7	40.00	55.00	7.00		TCW
TCW 40x55x7	40.00	55.00	7.00		TCW
SC 40x55x8	40.00	55.00	8.00		SC
TC 40x55x8	40.00	55.00	8.00		TC
TC 40x55x8	40.00	55.00	8.00		TC
TC 40x55x8	40.00	55.00	8.00		TC
TC8 40x55x8	40.00	55.00	8.00		TC8
TC 40x55x9	40.00	55.00	9.00		TC
SC 40x55x10	40.00	55.00	10.00		SC
TC 40x55x10	40.00	55.00	10.00		TC
TCW 40x55x10	40.00	55.00	10.00		TCW
TC 40x55x12	40.00	55.00	12.00		TC
TC 40x56x6.5	40.00	56.00	6.50		TC
SC 40x56x7	40.00	56.00	7.00		SC
SC 40x56x7	40.00	56.00	7.00		SC
TC 40x56x7	40.00	56.00	7.00		TC
TC 40x56x7	40.00	56.00	7.00		TC
TCW 40x56x7	40.00	56.00	7.00		TCW
TC7 40x56x8x9.5	40.00	56.00	8.00	9.50	TC7
TC7 40x56x8x11.5	40.00	56.00	8.00	11.50	TC7
TC7 40x56x8x11.5	40.00	56.00	8.00	11.50	TC7
TC7 40x56x8x13	40.00	56.00	8.00	13.00	TC7
SC 40x56x8	40.00	56.00	8.00		SC
TC 40x56x8	40.00	56.00	8.00		TC
TC 40x56x8	40.00	56.00	8.00		TC
TC9 40x56x9x12.5	40.00	56.00	9.00	12.50	TC9
TC7 40x56x9x15.5	40.00	56.00	9.00	15.50	TC7
TC 40x56x10	40.00	56.00	10.00		TC
SC 40x56x12	40.00	56.00	12.00		SC
TC 40x56x12	40.00	56.00	12.00		TC
TC 40x57x7	40.00	57.00	7.00		TC
TC 40x57x10	40.00	57.00	10.00		TC
SC 40x58x6	40.00	58.00	6.00		SC
TC 40x58x6	40.00	58.00	6.00		TC
TC 40x58x6.5	40.00	58.00	6.50		TC
TC7 40x58x7x12	40.00	58.00	7.00	12.00	TC7
TC7 40x58x8x11.5	40.00	58.00	8.00	11.50	TC7
SC 40x58x8	40.00	58.00	8.00		SC
TC 40x58x8	40.00	58.00	8.00		TC
TC 40x58x8	40.00	58.00	8.00		TC
TC 40x58x8	40.00	58.00	8.00		TC
TC7 40x58x9x13.5	40.00	58.00	9.00	13.50	TC7
TC7 40x58x9x14	40.00	58.00	9.00	14.00	TC7
SC 40x58x9	40.00	58.00	9.00		SC
TC7 40x58x9.5x15	40.00	58.00	9.50	15.00	TC7
SC 40x58x10	40.00	58.00	10.00		SC
TC 40x58x10	40.00	58.00	10.00		TC
TC 40x58x10	40.00	58.00	10.00		TC
TC 40x58x10	40.00	58.00	10.00		TC
TCW 40x58x10	40.00	58.00	10.00		TCW
TC 40x58x11	40.00	58.00	11.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC8 40x58x11	40.00	58.00	11.00		TC8
SC 40x58x12	40.00	58.00	12.00		SC
TC 40x58x12	40.00	58.00	12.00		TC
TC 40x59x10	40.00	59.00	10.00		TC
SC 40x60x5.5	40.00	60.00	5.50		SC
TC 40x60x6	40.00	60.00	6.00		TC
SC 40x60x7	40.00	60.00	7.00		SC
TC 40x60x7	40.00	60.00	7.00		TC
SC 40x60x8	40.00	60.00	8.00		SC
TC 40x60x8	40.00	60.00	8.00		TC
SC 40x60x10	40.00	60.00	10.00		SC
SC 40x60x10	40.00	60.00	10.00		SC
TC 40x60x10	40.00	60.00	10.00		TC
TCW 40x60x10	40.00	60.00	10.00		TCW
SC 40x60x12	40.00	60.00	12.00		SC
TC 40x60x12	40.00	60.00	12.00		TC
SC 40x62x7	40.00	62.00	7.00		SC
TC 40x62x7	40.00	62.00	7.00		TC
TC7 40x62x8x11.5	40.00	62.00	8.00	11.50	TC7
SC 40x62x8	40.00	62.00	8.00		SC
TC 40x62x8	40.00	62.00	8.00		TC
TC8 40x62x8	40.00	62.00	8.00		TC8
TC 40x62x9	40.00	62.00	9.00		TC
SC 40x62x10	40.00	62.00	10.00		SC
TC 40x62x10	40.00	62.00	10.00		TC
TC 40x62x10	40.00	62.00	10.00		TC
TC 40x62x11	40.00	62.00	11.00		TC
TC 40x62x11	40.00	62.00	11.00		TC
SC 40x62x11.5	40.00	62.00	11.50		SC
TC 40x62x11,5	40.00	62.00	11.50		TC
SC 40x62x12	40.00	62.00	12.00		SC
TC 40x62x12	40.00	62.00	12.00		TC
TC 40x62x12	40.00	62.00	12.00		TC
TC 40x63x7	40.00	63.00	7.00		TC
TC7 40x63x8x11.5	40.00	63.00	8.00	11.50	TC7
TC 40x63x8.5	40.00	63.00	8.50		TC
TC 40x64x4	40.00	64.00	4.00		TC
TC7 40x64x9x15	40.00	64.00	9.00	15.00	TC7
TC 40x64x10	40.00	64.00	10.00		TC
TC 40x64x12	40.00	64.00	12.00		TC
TC 40x65x7	40.00	65.00	7.00		TC
TC 40x65x8	40.00	65.00	8.00		TC
SC 40x65x10	40.00	65.00	10.00		SC
TC 40x65x10	40.00	65.00	10.00		TC
TC7 40x65x11.5x18.1	40.00	65.00	11.50	18.10	TC7
TC 40x65x12	40.00	65.00	12.00		TC
TC 40x65x12	40.00	65.00	12.00		TC
TC 40x67x12	40.00	67.00	12.00		TC
TC 40x68x5	40.00	68.00	5.00		TC
SC 40x68x7	40.00	68.00	7.00		SC
TC 40x68x7	40.00	68.00	7.00		TC
SC 40x68x8	40.00	68.00	8.00		SC
TC 40x68x8	40.00	68.00	8.00		TC
TC7 40x68x9x12.5	40.00	68.00	9.00	12.50	TC7
SC 40x68x10	40.00	68.00	10.00		SC
TC 40x68x10	40.00	68.00	10.00		TC
SC 40x68x12	40.00	68.00	12.00		SC
TC 40x68x12	40.00	68.00	12.00		TC
TC 40x70x8	40.00	70.00	8.00		TC
TC8 40x70x8	40.00	70.00	8.00		TC8
SC 40x70x10	40.00	70.00	10.00		SC
TC 40x70x10	40.00	70.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC7 40x70x12x16	40.00	70.00	12.00	16.00	TC7
TC 40x70x12	40.00	70.00	12.00		TC
SC 40x72x7	40.00	72.00	7.00		SC
TC 40x72x7	40.00	72.00	7.00		TC
TC 40x72x8	40.00	72.00	8.00		TC
SC 40x72x10	40.00	72.00	10.00		SC
TC 40x72x10	40.00	72.00	10.00		TC
TC 40x72x12	40.00	72.00	12.00		TC
TC 40x72x16	40.00	72.00	16.00		TC
TC7 40x74x10x17	40.00	74.00	10.00	17.00	TC7
TC 40x74x10	40.00	74.00	10.00		TC
SC 40x75x7	40.00	75.00	7.00		SC
TC 40x75x10	40.00	75.00	10.00		TC
TC 40x75x12	40.00	75.00	12.00		TC
TC 40x75x12	40.00	75.00	12.00		TC
TC 40x75x13	40.00	75.00	13.00		TC
TCW 40x76x7	40.00	76.00	7.00		TCW
TC 40x76x8	40.00	76.00	8.00		TC
TC 40x78x7	40.00	78.00	7.00		TC
SC 40x80x7	40.00	80.00	7.00		SC
TC 40x80x7	40.00	80.00	7.00		TC
SC 40x80x8	40.00	80.00	8.00		SC
TC 40x80x8	40.00	80.00	8.00		TC
SC 40x80x10	40.00	80.00	10.00		SC
TC 40x80x10	40.00	80.00	10.00		TC
TC 40x80x12	40.00	80.00	12.00		TC
SC 40x80x13	40.00	80.00	13.00		SC
SC 40x85x10	40.00	85.00	10.00		SC
TC 40x85x10	40.00	85.00	10.00		TC
TC 40x85x12	40.00	85.00	12.00		TC
SC 40x88x6	40.00	88.00	6.00		SC
SC 40x90x8	40.00	90.00	8.00		SC
TC 40x90x8	40.00	90.00	8.00		TC
SC 40x90x10	40.00	90.00	10.00		SC
TC 40x90x10	40.00	90.00	10.00		TC
SC 40x90x12	40.00	90.00	12.00		SC
TC 40x90x12	40.00	90.00	12.00		TC
TC 40x110x10	40.00	110.00	10.00		TC
TC 41x51x5	41.00	51.00	5.00		TC
TC 41x53x7	41.00	53.00	7.00		TC
TC 41x54x7	41.00	54.00	7.00		TC
TC 41x55x7	41.00	55.00	7.00		TC
SC 41x56x7	41.00	56.00	7.00		SC
TC 41x56x7	41.00	56.00	7.00		TC
TC 41x56x8	41.00	56.00	8.00		TC
TC 41x58x9.5	41.00	58.00	9.50		TC
TC7 41x59x10x16.5	41.00	59.00	10.00	16.50	TC7
TC7 41x61x8x13	41.00	61.00	8.00	13.00	TC7
TC 41x62x8	41.00	62.00	8.00		TC
TC 41x62x9	41.00	62.00	9.00		TC
TC7 41x63x9x12.5	41.00	63.00	9.00	12.50	TC7
TC 41x64x10	41.00	64.00	10.00		TC
TC7 41x69x8.5x16	41.00	69.00	8.50	16.00	TC7
TC7 41x74x11x17.5	41.00	74.00	11.00	17.50	TC7
TC 42x50x6	42.00	50.00	6.00		TC
TC 42x50x7	42.00	50.00	7.00		TC
TC 42x50x10	42.00	50.00	10.00		TC
TC 42x51x7	42.00	51.00	7.00		TC
TC 42x52x4	42.00	52.00	4.00		TC
TC 42x52x6	42.00	52.00	6.00		TC
SC 42x52x7	42.00	52.00	7.00		SC
TC 42x52x7	42.00	52.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 42x52x8	42.00	52.00	8.00		TC
SC 42x52x10	42.00	52.00	10.00		SC
TC 42x52x12	42.00	52.00	12.00		TC
TCW 42x53x7	42.00	53.00	7.00		TCW
TCW 42x54x6	42.00	54.00	6.00		TCW
TC 42x54x7	42.00	54.00	7.00		TC
TC 42x55x6	42.00	55.00	6.00		TC
SC 42x55x7	42.00	55.00	7.00		SC
TC 42x55x7	42.00	55.00	7.00		TC
TC 42x55x7	42.00	55.00	7.00		TC
TCW 42x55x7	42.00	55.00	7.00		TCW
SC 42x55x8	42.00	55.00	8.00		SC
TC 42x55x8	42.00	55.00	8.00		TC
TC 42x55x9	42.00	55.00	9.00		TC
TCW 42x55x9	42.00	55.00	9.00		TCW
TC 42x55x10	42.00	55.00	10.00		TC
TC 42x56x6	42.00	56.00	6.00		TC
SC 42x56x7	42.00	56.00	7.00		SC
TC 42x56x7	42.00	56.00	7.00		TC
TC 42x56x7	42.00	56.00	7.00		TC
TC 42x56x7	42.00	56.00	7.00		TC
SCW 42x56x7	42.00	56.00	7.00		SCW
TCW 42x56x7	42.00	56.00	7.00		TCW
TC 42x56x10	42.00	56.00	10.00		TC
TC 42x57x7	42.00	57.00	7.00		TC
TC 42x58x7	42.00	58.00	7.00		TC
TC 42x58x8	42.00	58.00	8.00		TC
TC 42x58x8	42.00	58.00	8.00		TC
TC 42x58x9.5	42.00	58.00	9.50		TC
SC 42x58x10	42.00	58.00	10.00		SC
TC 42x58x10	42.00	58.00	10.00		TC
TC 42x58x12	42.00	58.00	12.00		TC
TC7 42x59x6x10.5	42.00	59.00	6.00	10.50	TC7
SC 42x59x7.7	42.00	59.00	7.70		SC
TC 42x60x6	42.00	60.00	6.00		TC
TC 42x60x6.5	42.00	60.00	6.50		TC
TC 42x60x7	42.00	60.00	7.00		TC
TC 42x60x7	42.00	60.00	7.00		TC
TC 42x60x8	42.00	60.00	8.00		TC
TC 42x60x9	42.00	60.00	9.00		TC
TC 42x60x9	42.00	60.00	9.00		TC
SC 42x60x10	42.00	60.00	10.00		SC
TC 42x60x10	42.00	60.00	10.00		TC
SC 42x60x12	42.00	60.00	12.00		SC
TC 42x60x12	42.00	60.00	12.00		TC
SC 42x62x6	42.00	62.00	6.00		SC
SC 42x62x7	42.00	62.00	7.00		SC
TC 42x62x7	42.00	62.00	7.00		TC
TCW 42x62x7	42.00	62.00	7.00		TCW
SC 42x62x8	42.00	62.00	8.00		SC
TC 42x62x8	42.00	62.00	8.00		TC
TC 42x62x8	42.00	62.00	8.00		TC
TC 42x62x8	42.00	62.00	8.00		TC
TC8 42x62x8	42.00	62.00	8.00		TC8
TC 42x62x9	42.00	62.00	9.00		TC
SC 42x62x10	42.00	62.00	10.00		SC
TC 42x62x10	42.00	62.00	10.00		TC
TC 42x62x10	42.00	62.00	10.00		TC
TC 42x62x12	42.00	62.00	12.00		TC
TC 42x63x7	42.00	63.00	7.00		TC
TC7 42x63x9x12.3	42.00	63.00	9.00	12.30	TC7
SC 42x64x7	42.00	64.00	7.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 42x64x8	42.00	64.00	8.00		TC
TC 42x64x10	42.00	64.00	10.00		TC
TC 42x65x7.5	42.00	65.00	7.50		TC
SC 42x65x8	42.00	65.00	8.00		SC
TC 42x65x8	42.00	65.00	8.00		TC
TC 42x65x9	42.00	65.00	9.00		TC
SC 42x65x10	42.00	65.00	10.00		SC
TC 42x65x10	42.00	65.00	10.00		TC
TC 42x65x10	42.00	65.00	10.00		TC
TC 42x65x12	42.00	65.00	12.00		TC
TCW 42x66x6	42.00	66.00	6.00		TCW
TC 42x66x7	42.00	66.00	7.00		TC
TCW 42x66x8	42.00	66.00	8.00		TCW
TC8 42x66x10	42.00	66.00	10.00		TC8
TC 42x67x10	42.00	67.00	10.00		TC
TC 42x68x8	42.00	68.00	8.00		TC
TC 42x68x10	42.00	68.00	10.00		TC
TC 42x68x10	42.00	68.00	10.00		TC
TC 42x70x8	42.00	70.00	8.00		TC
TC 42x70x10	42.00	70.00	10.00		TC
TC 42x70x12	42.00	70.00	12.00		TC
SC 42x72x8	42.00	72.00	8.00		SC
TC 42x72x8	42.00	72.00	8.00		TC
SC 42x72x10	42.00	72.00	10.00		SC
TC 42x72x10	42.00	72.00	10.00		TC
SCW 42x72x10	42.00	72.00	10.00		SCW
TC 42x72x12	42.00	72.00	12.00		TC
TC 42x75x10	42.00	75.00	10.00		TC
TC 42x75x12	42.00	75.00	12.00		TC
TC 42x75x12	42.00	75.00	12.00		TC
TC 42x76x8	42.00	76.00	8.00		TC
TC 42x76x12	42.00	76.00	12.00		TC
TC 42x78x10	42.00	78.00	10.00		TC
TC 42x80x10	42.00	80.00	10.00		TC
SC 42x85x8	42.00	85.00	8.00		SC
TC 42x85x8	42.00	85.00	8.00		TC
TC 43x50x7	43.00	50.00	7.00		TC
SC 43x53x5	43.00	53.00	5.00		SC
SC 43x54x7.5	43.00	54.00	7.50		SC
TC 43x55x6	43.00	55.00	6.00		TC
TC 43x55x6	43.00	55.00	6.00		TC
SC 43x55x7	43.00	55.00	7.00		SC
SC 43x55x8	43.00	55.00	8.00		SC
TC 43x55x8	43.00	55.00	8.00		TC
TC 43x55x9	43.00	55.00	9.00		TC
TC 43x58x7	43.00	58.00	7.00		TC
TC 43x58x7	43.00	58.00	7.00		TC
TC 43x58x8	43.00	58.00	8.00		TC
TC 43x58x8	43.00	58.00	8.00		TC
TC 43x58x8	43.00	58.00	8.00		TC
TC 43x60x7	43.00	60.00	7.00		TC
TC 43x60x9	43.00	60.00	9.00		TC
SC 43x60x10	43.00	60.00	10.00		SC
TC 43x62x6	43.00	62.00	6.00		TC
SC 43x62x8	43.00	62.00	8.00		SC
TC 43x62x8	43.00	62.00	8.00		TC
TC 43x62x12	43.00	62.00	12.00		TC
TC7 43x63x12x19	43.00	63.00	12.00	19.00	TC7
TC 43x65x7	43.00	65.00	7.00		TC
TC 43x65x9	43.00	65.00	9.00		TC
TC 43x65x10	43.00	65.00	10.00		TC
TC 43x66x10	43.00	66.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 43x75x10	43.00	75.00	10.00		SC
TC 44x52x10	44.00	52.00	10.00		TC
SC 44x54x5	44.00	54.00	5.00		SC
TC 44x54x7	44.00	54.00	7.00		TC
TC 44x55x7	44.00	55.00	7.00		TC
TC 44x58x8	44.00	58.00	8.00		TC
SC 44x59x6.8	44.00	59.00	6.80		SC
TC7 44x60x7x10	44.00	60.00	7.00	10.00	TC7
TC 44x60x7	44.00	60.00	7.00		TC
TC 44x60x7	44.00	60.00	7.00		TC
SC 44x60x8	44.00	60.00	8.00		SC
TC7 44x60x9x13	44.00	60.00	9.00	13.00	TC7
TC 44x60x9	44.00	60.00	9.00		TC
TC 44x60x9.5	44.00	60.00	9.50		TC
SC 44x60x10	44.00	60.00	10.00		SC
TC7 44x62x7x11.5	44.00	62.00	7.00	11.50	TC7
TC 44x62x7	44.00	62.00	7.00		TC
TC7 44x62x7.8x13	44.00	62.00	7.80	13.00	TC7
TC 44x62x8	44.00	62.00	8.00		TC
TC 44x62x9	44.00	62.00	9.00		TC
SC 44x62x10	44.00	62.00	10.00		SC
TC 44x62x10	44.00	62.00	10.00		TC
TC 44x62x10	44.00	62.00	10.00		TC
TC9 44x63x8x14	44.00	63.00	8.00	14.00	TC9
TC 44x65x8	44.00	65.00	8.00		TC
SC 44x65x10	44.00	65.00	10.00		SC
TC 44x65x10	44.00	65.00	10.00		TC
TC 44x65x11	44.00	65.00	11.00		TC
SC 44x68x8	44.00	68.00	8.00		SC
SC 44x68x8	44.00	68.00	8.00		SC
TC 44x68x8	44.00	68.00	8.00		TC
TC 44x70x12	44.00	70.00	12.00		TC
SC 44x72x8	44.00	72.00	8.00		SC
TC 44x72x8	44.00	72.00	8.00		TC
TCW 44x72x8	44.00	72.00	8.00		TCW
SC 44x72x10	44.00	72.00	10.00		SC
TC7 44x74x11x16.5	44.00	74.00	11.00	16.50	TC7
TC 44x75x6	44.00	75.00	6.00		TC
TC 44x75x7	44.00	75.00	7.00		TC
TC7 44x80x7x12.5	44.00	80.00	7.00	12.50	TC7
TC 44x92x10	44.00	92.00	10.00		TC
TC 45x52x4	45.00	52.00	4.00		TC
TC 45x52x8	45.00	52.00	8.00		TC
TC 45x54x4.5	45.00	54.00	4.50		TC
SC 45x55x4	45.00	55.00	4.00		SC
TC 45x55x5	45.00	55.00	5.00		TC
TC 45x55x6	45.00	55.00	6.00		TC
SC 45x55x7	45.00	55.00	7.00		SC
TC 45x55x7	45.00	55.00	7.00		TC
TC 45x55x8	45.00	55.00	8.00		TC
TC 45x55x10	45.00	55.00	10.00		TC
TC 45x55x12	45.00	55.00	12.00		TC
SC 45x56x6	45.00	56.00	6.00		SC
TC 45x56x6	45.00	56.00	6.00		TC
TC 45x56x8	45.00	56.00	8.00		TC
TC 45x56x10	45.00	56.00	10.00		TC
TC 45x57x5.5	45.00	57.00	5.50		TC
TC 45x57x7	45.00	57.00	7.00		TC
TC 45x57x8	45.00	57.00	8.00		TC
TC 45x57x9	45.00	57.00	9.00		TC
TC 45x58x7	45.00	58.00	7.00		TC
SCW 45x58x7	45.00	58.00	7.00		SCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SCW 45x58x7	45.00	58.00	7.00		SCW
SC 45x58x8	45.00	58.00	8.00		SC
TC 45x58x8	45.00	58.00	8.00		TC
TC 45x58x8	45.00	58.00	8.00		TC
TC 45x58x10	45.00	58.00	10.00		TC
TC 45x59x7	45.00	59.00	7.00		TC
TC 45x59x10	45.00	59.00	10.00		TC
SC 45x60x7	45.00	60.00	7.00		SC
TC 45x60x7	45.00	60.00	7.00		TC
SC 45x60x8	45.00	60.00	8.00		SC
TC 45x60x8	45.00	60.00	8.00		TC
SCW 45x60x8	45.00	60.00	8.00		SCW
TC 45x60x9	45.00	60.00	9.00		TC
TC 45x60x9	45.00	60.00	9.00		TC
TCW 45x60x9	45.00	60.00	9.00		TCW
SC 45x60x10	45.00	60.00	10.00		SC
TC 45x60x10	45.00	60.00	10.00		TC
TC 45x60x10	45.00	60.00	10.00		TC
TC 45x60x12	45.00	60.00	12.00		TC
TC7 45x61x8x10	45.00	61.00	8.00	10.00	TC7
SC 45x62x6	45.00	62.00	6.00		SC
TC 45x62x6	45.00	62.00	6.00		TC
TC 45x62x6	45.00	62.00	6.00		TC
SC 45x62x7	45.00	62.00	7.00		SC
TC 45x62x7	45.00	62.00	7.00		TC
TCW 45x62x7	45.00	62.00	7.00		TCW
SC 45x62x8	45.00	62.00	8.00		SC
TC 45x62x8	45.00	62.00	8.00		TC
TCW 45x62x8	45.00	62.00	8.00		TCW
SC 45x62x9	45.00	62.00	9.00		SC
TC 45x62x9	45.00	62.00	9.00		TC
TC 45x62x9	45.00	62.00	9.00		TC
TC7 45x62x10x15.5	45.00	62.00	10.00	15.50	TC7
SC 45x62x10	45.00	62.00	10.00		SC
TC 45x62x10	45.00	62.00	10.00		TC
TC 45x62x10	45.00	62.00	10.00		TC
TCW 45x62x10	45.00	62.00	10.00		TCW
TC 45x62x12	45.00	62.00	12.00		TC
TC 45x62x12	45.00	62.00	12.00		TC
TC 45x63x7	45.00	63.00	7.00		TC
TC 45x63x7,5	45.00	63.00	7.50		TC
TC 45x64x7	45.00	64.00	7.00		TC
TC7 45x64x9x11.5	45.00	64.00	9.00	11.50	TC7
TC 45x64x10	45.00	64.00	10.00		TC
SC 45x65x7	45.00	65.00	7.00		SC
TC 45x65x7	45.00	65.00	7.00		TC
TCW 45x65x7	45.00	65.00	7.00		TCW
SC 45x65x8	45.00	65.00	8.00		SC
TC 45x65x8	45.00	65.00	8.00		TC
TC 45x65x9	45.00	65.00	9.00		TC
SC 45x65x10	45.00	65.00	10.00		SC
TC 45x65x10	45.00	65.00	10.00		TC
TC9 45x65x11x17	45.00	65.00	11.00	17.00	TC9
TC 45x65x12	45.00	65.00	12.00		TC
SCW 45x65x12	45.00	65.00	12.00		SCW
TC 45x66x10	45.00	66.00	10.00		TC
TCW 45x67x8	45.00	67.00	8.00		TCW
TC 45x67x10	45.00	67.00	10.00		TC
TC 45x68x7	45.00	68.00	7.00		TC
SC 45x68x8	45.00	68.00	8.00		SC
TC 45x68x8	45.00	68.00	8.00		TC
TC 45x68x8.5	45.00	68.00	8.50		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 45x68x9	45.00	68.00	9.00		TC
SC 45x68x10	45.00	68.00	10.00		SC
TC 45x68x10	45.00	68.00	10.00		TC
TC 45x68x12	45.00	68.00	12.00		TC
TC 45x68x12	45.00	68.00	12.00		TC
TC8 45x68x12	45.00	68.00	12.00		TC8
TC7 45x68x12.5x19.5	45.00	68.00	12.50	19.50	TC7
TC 45x68x15	45.00	68.00	15.00		TC
SC 45x70x7	45.00	70.00	7.00		SC
SC 45x70x8	45.00	70.00	8.00		SC
TC 45x70x8	45.00	70.00	8.00		TC
SC 45x70x10	45.00	70.00	10.00		SC
TC 45x70x10	45.00	70.00	10.00		TC
TC 45x70x12	45.00	70.00	12.00		TC
SC 45x72x8	45.00	72.00	8.00		SC
TC 45x72x8	45.00	72.00	8.00		TC
SC 45x72x10	45.00	72.00	10.00		SC
TC 45x72x10	45.00	72.00	10.00		TC
SCW 45x72x10	45.00	72.00	10.00		SCW
SC 45x72x12	45.00	72.00	12.00		SC
TC 45x72x12	45.00	72.00	12.00		TC
TC 45x75x7	45.00	75.00	7.00		TC
SC 45x75x8	45.00	75.00	8.00		SC
TC 45x75x8	45.00	75.00	8.00		TC
SCW 45x75x8	45.00	75.00	8.00		SCW
SC 45x75x10	45.00	75.00	10.00		SC
TC 45x75x10	45.00	75.00	10.00		TC
TC 45x75x12	45.00	75.00	12.00		TC
TC 45x75x12	45.00	75.00	12.00		TC
TC 45x78x12	45.00	78.00	12.00		TC
TC 45x80x7	45.00	80.00	7.00		TC
TC 45x80x8	45.00	80.00	8.00		TC
TC7 45x80x10x16.5	45.00	80.00	10.00	16.50	TC7
SC 45x80x10	45.00	80.00	10.00		SC
TC 45x80x10	45.00	80.00	10.00		TC
TC 45x80x12	45.00	80.00	12.00		TC
SC 45x80x13	45.00	80.00	13.00		SC
TC 45x82x12	45.00	82.00	12.00		TC
TC 45x85x8	45.00	85.00	8.00		TC
SC 45x85x10	45.00	85.00	10.00		SC
TC 45x85x10	45.00	85.00	10.00		TC
TC 45x85x10	45.00	85.00	10.00		TC
TC 45x85x12	45.00	85.00	12.00		TC
SC 45x90x10	45.00	90.00	10.00		SC
TC 45x90x10	45.00	90.00	10.00		TC
SC 45x93x6	45.00	93.00	6.00		SC
SC 45x100x10	45.00	100.00	10.00		SC
TC 45x100x10	45.00	100.00	10.00		TC
TC 46x54x9	46.00	54.00	9.00		TC
TC 46x58x7	46.00	58.00	7.00		TC
TCW 46x58x7	46.00	58.00	7.00		TCW
TC 46x60x7	46.00	60.00	7.00		TC
TC 46x60x7	46.00	60.00	7.00		TC
TC 46x60x10	46.00	60.00	10.00		TC
TC 46x62x8	46.00	62.00	8.00		TC
TC8 46x62x8	46.00	62.00	8.00		TC8
SC 46x62x9	46.00	62.00	9.00		SC
TC 46x63x6.5	46.00	63.00	6.50		TC
TC 46x63x8	46.00	63.00	8.00		TC
TC 46x65x9	46.00	65.00	9.00		TC
SC 46x65x10	46.00	65.00	10.00		SC
TC 46x68x8	46.00	68.00	8.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 46x70x8	46.00	70.00	8.00		TC
TC 46x70x8	46.00	70.00	8.00		TC
SC 46x72x10	46.00	72.00	10.00		SC
SC 47x56x7	47.00	56.00	7.00		SC
TC 47x57x7	47.00	57.00	7.00		TC
TC 47x58x5	47.00	58.00	5.00		TC
TC8 47x58x7	47.00	58.00	7.00		TC8
TC 47x60x7	47.00	60.00	7.00		TC
TC 47x60x12	47.00	60.00	12.00		TC
TC 47x62x6	47.00	62.00	6.00		TC
SCW 47x62x6	47.00	62.00	6.00		SCW
TC 47x62x7	47.00	62.00	7.00		TC
SC 47x62x8	47.00	62.00	8.00		SC
TC 47x62x8	47.00	62.00	8.00		TC
TC 47x63x6	47.00	63.00	6.00		TC
TC 47x64x6	47.00	64.00	6.00		TC
SC 47x65x8	47.00	65.00	8.00		SC
TC 47x65x8	47.00	65.00	8.00		TC
TC 47x65x10	47.00	65.00	10.00		TC
SCW 47x66x8	47.00	66.00	8.00		SCW
TC 47x68x10	47.00	68.00	10.00		TC
TC8 47x69x10	47.00	69.00	10.00		TC8
TC 47x70x10	47.00	70.00	10.00		TC
TC 47x84x10	47.00	84.00	10.00		TC
TC 47x88x12	47.00	88.00	12.00		TC
TC 48x58x4	48.00	58.00	4.00		TC
TC 48x58x7	48.00	58.00	7.00		TC
TC 48x58x11	48.00	58.00	11.00		TC
TC 48x59x6	48.00	59.00	6.00		TC
TC 48x60x7	48.00	60.00	7.00		TC
TC 48x60x7	48.00	60.00	7.00		TC
TC 48x60x8	48.00	60.00	8.00		TC
TC 48x60x10	48.00	60.00	10.00		TC
TC 48x62x7	48.00	62.00	7.00		TC
SC 48x62x8	48.00	62.00	8.00		SC
TC 48x62x8	48.00	62.00	8.00		TC
TC 48x62x9	48.00	62.00	9.00		TC
TC 48x62x9	48.00	62.00	9.00		TC
TC 48x62x10	48.00	62.00	10.00		TC
TC 48x62x12	48.00	62.00	12.00		TC
TC 48x63x6	48.00	63.00	6.00		TC
SC 48x64x7	48.00	64.00	7.00		SC
SC 48x65x7	48.00	65.00	7.00		SC
TC 48x65x7	48.00	65.00	7.00		TC
TC 48x65x8	48.00	65.00	8.00		TC
TC 48x65x9	48.00	65.00	9.00		TC
TC 48x65x9	48.00	65.00	9.00		TC
TC8 48x65x9	48.00	65.00	9.00		TC8
SC 48x65x10	48.00	65.00	10.00		SC
TC 48x65x10	48.00	65.00	10.00		TC
TC 48x65x10	48.00	65.00	10.00		TC
TC 48x65x12	48.00	65.00	12.00		TC
TC 48x67x11	48.00	67.00	11.00		TC
TC 48x68x7	48.00	68.00	7.00		TC
TC 48x68x8	48.00	68.00	8.00		TC
TCW 48x68x8	48.00	68.00	8.00		TCW
SC 48x68x10	48.00	68.00	10.00		SC
TC 48x68x10	48.00	68.00	10.00		TC
TC 48x68x11	48.00	68.00	11.00		TC
TC 48x68x12	48.00	68.00	12.00		TC
TC8 48x68x12	48.00	68.00	12.00		TC8
TC 48x68x14	48.00	68.00	14.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 48x70x7	48.00	70.00	7.00		TC
TC 48x70x9	48.00	70.00	9.00		TC
TC 48x70x9	48.00	70.00	9.00		TC
TC 48x70x10	48.00	70.00	10.00		TC
TC 48x70x10	48.00	70.00	10.00		TC
TC 48x70x12	48.00	70.00	12.00		TC
TC 48x70x12	48.00	70.00	12.00		TC
TC 48x70x12	48.00	70.00	12.00		TC
SC 48x72x7	48.00	72.00	7.00		SC
TC 48x72x7	48.00	72.00	7.00		TC
TC8 48x72x7	48.00	72.00	7.00		TC8
SC 48x72x8	48.00	72.00	8.00		SC
TC 48x72x8	48.00	72.00	8.00		TC
TCW 48x72x8	48.00	72.00	8.00		TCW
TC 48x72x9	48.00	72.00	9.00		TC
SC 48x72x10	48.00	72.00	10.00		SC
TC 48x72x10	48.00	72.00	10.00		TC
TC 48x72x12	48.00	72.00	12.00		TC
TC 48x73x8	48.00	73.00	8.00		TC
TC 48x74x10	48.00	74.00	10.00		TC
TC 48x74x12	48.00	74.00	12.00		TC
TC 48x75x10	48.00	75.00	10.00		TC
TC 48x75x12	48.00	75.00	12.00		TC
TC 48x76x10	48.00	76.00	10.00		TC
TC 48x76x12	48.00	76.00	12.00		TC
SC 48x80x10	48.00	80.00	10.00		SC
TC 48x80x10	48.00	80.00	10.00		TC
TC 48x82x10	48.00	82.00	10.00		TC
TC9 48x84x9x13.6	48.00	84.00	9.00	13.60	TC9
SC 48x85x10	48.00	85.00	10.00		SC
TC 48x85x10	48.00	85.00	10.00		TC
TC 48x90x13	48.00	90.00	13.00		TC
TC 48x95x8	48.00	95.00	8.00		TC
TC 48x100x8	48.00	100.00	8.00		TC
TC 49x60x7	49.00	60.00	7.00		TC
TCW 49x60x7	49.00	60.00	7.00		TCW
TC 49x62x6	49.00	62.00	6.00		TC
TC 49x64x8	49.00	64.00	8.00		TC
TC 49x64x8	49.00	64.00	8.00		TC
SC 49x65x9	49.00	65.00	9.00		SC
TC 49x65x10	49.00	65.00	10.00		TC
TC 49x68x10	49.00	68.00	10.00		TC
TC9 49x75x11x12	49.00	75.00	11.00	12.00	TC9
TC 49x76x15	49.00	76.00	15.00		TC
TC 49x82x12	49.00	82.00	12.00		TC
TC9 49x85x8x9.5	49.00	85.00	8.00	9.50	TC9
TC 49x92x10	49.00	92.00	10.00		TC
TC 50x58x4	50.00	58.00	4.00		TC
TC 50x60x4	50.00	60.00	4.00		TC
TC 50x60x7	50.00	60.00	7.00		TC
SC 50x60x8	50.00	60.00	8.00		SC
TC 50x60x8	50.00	60.00	8.00		TC
TC 50x60x10	50.00	60.00	10.00		TC
TC 50x60x12	50.00	60.00	12.00		TC
SC 50x62x7	50.00	62.00	7.00		SC
TC 50x62x7	50.00	62.00	7.00		TC
TC 50x62x7	50.00	62.00	7.00		TC
TC8 50x62x7	50.00	62.00	7.00		TC8
SC 50x62x8	50.00	62.00	8.00		SC
TC 50x62x9	50.00	62.00	9.00		TC
TC 50x62x10	50.00	62.00	10.00		TC
TC 50x62x12	50.00	62.00	12.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 50x63x8	50.00	63.00	8.00		TC
TC 50x64x6.5	50.00	64.00	6.50		TC
TC 50x64x8	50.00	64.00	8.00		TC
TC 50x64x9	50.00	64.00	9.00		TC
TC 50x64x10	50.00	64.00	10.00		TC
SC 50x65x8	50.00	65.00	8.00		SC
TC 50x65x8	50.00	65.00	8.00		TC
TC 50x65x8	50.00	65.00	8.00		TC
TCW 50x65x8	50.00	65.00	8.00		TCW
TC 50x65x9	50.00	65.00	9.00		TC
SC 50x65x10	50.00	65.00	10.00		SC
TC 50x65x10	50.00	65.00	10.00		TC
TC 50x65x12	50.00	65.00	12.00		TC
TC 50x66x6	50.00	66.00	6.00		TC
SC 50x66x8	50.00	66.00	8.00		SC
TC 50x66x8	50.00	66.00	8.00		TC
TC 50x67x9	50.00	67.00	9.00		TC
TC 50x67x9	50.00	67.00	9.00		TC
TC 50x67x10	50.00	67.00	10.00		TC
TC 50x67x11	50.00	67.00	11.00		TC
TC 50x68x7	50.00	68.00	7.00		TC
SC 50x68x8	50.00	68.00	8.00		SC
TC 50x68x8	50.00	68.00	8.00		TC
TC7 50x68x9x15	50.00	68.00	9.00	15.00	TC7
TC 50x68x9	50.00	68.00	9.00		TC
TC 50x68x9	50.00	68.00	9.00		TC
SC 50x68x10	50.00	68.00	10.00		SC
TC 50x68x10	50.00	68.00	10.00		TC
TCW 50x68x10	50.00	68.00	10.00		TCW
TC9 50x68x11.5x16	50.00	68.00	11.50	16.00	TC9
TC 50x68x12	50.00	68.00	12.00		TC
TC 50x70x7	50.00	70.00	7.00		TC
SC 50x70x8	50.00	70.00	8.00		SC
TC 50x70x8	50.00	70.00	8.00		TC
TC 50x70x9	50.00	70.00	9.00		TC
TC7 50x70x10x16	50.00	70.00	10.00	16.00	TC7
SC 50x70x10	50.00	70.00	10.00		SC
TC 50x70x10	50.00	70.00	10.00		TC
TC 50x70x11	50.00	70.00	11.00		TC
SC 50x70x12	50.00	70.00	12.00		SC
TC 50x70x12	50.00	70.00	12.00		TC
TC 50x70x13	50.00	70.00	13.00		TC
TC 50x72x7	50.00	72.00	7.00		TC
TC9 50x72x8x11	50.00	72.00	8.00	11.00	TC9
SC 50x72x8	50.00	72.00	8.00		SC
TC 50x72x8	50.00	72.00	8.00		TC
SCW 50x72x8	50.00	72.00	8.00		SCW
TC 50x72x9	50.00	72.00	9.00		TC
TC 50x72x9	50.00	72.00	9.00		TC
SC 50x72x10	50.00	72.00	10.00		SC
TC 50x72x10	50.00	72.00	10.00		TC
SC 50x72x12	50.00	72.00	12.00		SC
TC 50x72x12	50.00	72.00	12.00		TC
TC 50x72x12	50.00	72.00	12.00		TC
TC8 50x72x12	50.00	72.00	12.00		TC8
TC 50x72x14	50.00	72.00	14.00		TC
TC 50x73x9	50.00	73.00	9.00		TC
TC 50x74x12	50.00	74.00	12.00		TC
TC 50x75x8	50.00	75.00	8.00		TC
SC 50x75x10	50.00	75.00	10.00		SC
TC 50x75x10	50.00	75.00	10.00		TC
TC 50x75x12	50.00	75.00	12.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 50x76x10	50.00	76.00	10.00		TC
TC 50x76x10	50.00	76.00	10.00		TC
TC 50x76x12	50.00	76.00	12.00		TC
TC 50x78x8	50.00	78.00	8.00		TC
TC 50x78x12	50.00	78.00	12.00		TC
SC 50x80x8	50.00	80.00	8.00		SC
TC 50x80x8	50.00	80.00	8.00		TC
SC 50x80x10	50.00	80.00	10.00		SC
TC 50x80x10	50.00	80.00	10.00		TC
TC 50x80x12	50.00	80.00	12.00		TC
TC 50x80x13	50.00	80.00	13.00		TC
TC 50x81x12	50.00	81.00	12.00		TC
TC 50x82x12	50.00	82.00	12.00		TC
TC 50x82x12	50.00	82.00	12.00		TC
TC 50x85x8	50.00	85.00	8.00		TC
SC 50x85x10	50.00	85.00	10.00		SC
TC 50x85x10	50.00	85.00	10.00		TC
TC 50x85x12	50.00	85.00	12.00		TC
TC 50x87x13	50.00	87.00	13.00		TC
TC 50x90x8	50.00	90.00	8.00		TC
SC 50x90x10	50.00	90.00	10.00		SC
TC 50x90x10	50.00	90.00	10.00		TC
TC 50x90x12	50.00	90.00	12.00		TC
TC 50x90x13	50.00	90.00	13.00		TC
TC 50x92x10	50.00	92.00	10.00		TC
SC 50x98x6	50.00	98.00	6.00		SC
TC 50x100x10	50.00	100.00	10.00		TC
TC 50x100x13	50.00	100.00	13.00		TC
TC 50x105x10	50.00	105.00	10.00		TC
SC 50x110x10	50.00	110.00	10.00		SC
TC 50x110x10	50.00	110.00	10.00		TC
TC 50x125x10	50.00	125.00	10.00		TC
TC 50x130x15	50.00	130.00	15.00		TC
SC 51x62x7	51.00	62.00	7.00		SC
TCW 51x65x7	51.00	65.00	7.00		TCW
TC 51x65x13	51.00	65.00	13.00		TC
SC 51x66x6.5	51.00	66.00	6.50		SC
TC 52x60x7	52.00	60.00	7.00		TC
TC 52x62x7	52.00	62.00	7.00		TC
SC 52x62x8	52.00	62.00	8.00		SC
TC 52x62x8	52.00	62.00	8.00		TC
TC 52x62x9	52.00	62.00	9.00		TC
TC 52x62x10	52.00	62.00	10.00		TC
TC 52x63x6	52.00	63.00	6.00		TC
TC 52x63x8	52.00	63.00	8.00		TC
TC 52x64x9	52.00	64.00	9.00		TC
SC 52x65x8	52.00	65.00	8.00		SC
TC 52x65x8	52.00	65.00	8.00		TC
TC 52x65x9	52.00	65.00	9.00		TC
TC 52x65x10	52.00	65.00	10.00		TC
SC 52x66x6	52.00	66.00	6.00		SC
TC 52x66x7	52.00	66.00	7.00		TC
SC 52x66x9	52.00	66.00	9.00		SC
TC 52x67x7	52.00	67.00	7.00		TC
TC 52x68x7	52.00	68.00	7.00		TC
SC 52x68x8	52.00	68.00	8.00		SC
TC 52x68x8	52.00	68.00	8.00		TC
TCW 52x68x8	52.00	68.00	8.00		TCW
TCW 52x68x8	52.00	68.00	8.00		TCW
SC 52x68x10	52.00	68.00	10.00		SC
TC 52x68x10	52.00	68.00	10.00		TC
TCW 52x68x10	52.00	68.00	10.00		TCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TCW 52x68x10	52.00	68.00	10.00		TCW
SC 52x69x10	52.00	69.00	10.00		SC
TC 52x70x8.5	52.00	70.00	8.50		TC
TC 52x70x9	52.00	70.00	9.00		TC
TC 52x70x10	52.00	70.00	10.00		TC
TC 52x70x13	52.00	70.00	13.00		TC
TC 52x71x8	52.00	71.00	8.00		TC
SC 52x72x8	52.00	72.00	8.00		SC
TC 52x72x8	52.00	72.00	8.00		TC
TC 52x72x9	52.00	72.00	9.00		TC
TC 52x72x10	52.00	72.00	10.00		TC
TC 52x72x10	52.00	72.00	10.00		TC
TC 52x72x12	52.00	72.00	12.00		TC
SC 52x75x8	52.00	75.00	8.00		SC
TC 52x75x8	52.00	75.00	8.00		TC
TC 52x75x10	52.00	75.00	10.00		TC
SCW 52x75x10	52.00	75.00	10.00		SCW
SC 52x75x12	52.00	75.00	12.00		SC
TC 52x75x12	52.00	75.00	12.00		TC
TC 52x75x12	52.00	75.00	12.00		TC
TC 52x75x12	52.00	75.00	12.00		TC
TC 52x76x9	52.00	76.00	9.00		TC
SC 52x78x9	52.00	78.00	9.00		SC
TC 52x78x10	52.00	78.00	10.00		TC
SC 52x80x8	52.00	80.00	8.00		SC
TC 52x80x8	52.00	80.00	8.00		TC
SC 52x80x10	52.00	80.00	10.00		SC
TC 52x80x10	52.00	80.00	10.00		TC
TC 52x80x12	52.00	80.00	12.00		TC
TC 52x80x13	52.00	80.00	13.00		TC
TC 52x85x9	52.00	85.00	9.00		TC
SC 52x85x10	52.00	85.00	10.00		SC
TC 52x85x10	52.00	85.00	10.00		TC
SC 52x85x13	52.00	85.00	13.00		SC
TC 52x85x13	52.00	85.00	13.00		TC
TC 52x90x10	52.00	90.00	10.00		TC
SCW 52x100x10	52.00	100.00	10.00		SCW
TC 53x68x10	53.00	68.00	10.00		TC
SC 53x71x9	53.00	71.00	9.00		SC
TC 53x72x10	53.00	72.00	10.00		TC
TC 53x73x10	53.00	73.00	10.00		TC
TC 53x80x13	53.00	80.00	13.00		TC
SC 53x85x8	53.00	85.00	8.00		SC
TC 54x64x9	54.00	64.00	9.00		TC
TC 54x65x9	54.00	65.00	9.00		TC
TC 54x65x10	54.00	65.00	10.00		TC
TC 54x65x13	54.00	65.00	13.00		TC
TC 54x66x7	54.00	66.00	7.00		TC
TC 54x68x9	54.00	68.00	9.00		TC
TC 54x68x10	54.00	68.00	10.00		TC
TC7 54x70x6x10	54.00	70.00	6.00	10.00	TC7
TC 54x70x8	54.00	70.00	8.00		TC
TC 54x70x9	54.00	70.00	9.00		TC
TC 54x70x10	54.00	70.00	10.00		TC
TC 54x71x8	54.00	71.00	8.00		TC
TC 54x72x10	54.00	72.00	10.00		TC
TC 54x72x10	54.00	72.00	10.00		TC
TC 54x73x8	54.00	73.00	8.00		TC
TC 54x73x10	54.00	73.00	10.00		TC
SC 54x73x12.3	54.00	73.00	12.30		SC
TC 54x74x10	54.00	74.00	10.00		TC
TC 54x75x10	54.00	75.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 54x76x8	54.00	76.00	8.00		TC
SC 54x76x12	54.00	76.00	12.00		SC
TC 54x76x12	54.00	76.00	12.00		TC
TC 54x78x12	54.00	78.00	12.00		TC
TC 54x80x10	54.00	80.00	10.00		TC
TC 54x81x10	54.00	81.00	10.00		TC
SC 54x81x11	54.00	81.00	11.00		SC
TC 54x82x11	54.00	82.00	11.00		TC
SC 54x85x8	54.00	85.00	8.00		SC
TC 54x85x8	54.00	85.00	8.00		TC
TC 54x85x10	54.00	85.00	10.00		TC
TC 54x90x8	54.00	90.00	8.00		TC
SC 55x63x5	55.00	63.00	5.00		SC
TC 55x65x8	55.00	65.00	8.00		TC
TC 55x65x10	55.00	65.00	10.00		TC
TC 55x68x6	55.00	68.00	6.00		TC
SCW 55x68x6	55.00	68.00	6.00		SCW
TC 55x68x7	55.00	68.00	7.00		TC
SC 55x68x8	55.00	68.00	8.00		SC
TC 55x68x8	55.00	68.00	8.00		TC
TC 55x68x10	55.00	68.00	10.00		TC
TC 55x68x12	55.00	68.00	12.00		TC
SC 55x70x8	55.00	70.00	8.00		SC
TC 55x70x8	55.00	70.00	8.00		TC
TC 55x70x9	55.00	70.00	9.00		TC
SC 55x70x10	55.00	70.00	10.00		SC
TC 55x70x10	55.00	70.00	10.00		TC
TC 55x70x12	55.00	70.00	12.00		TC
TC 55x72x6	55.00	72.00	6.00		TC
TC 55x72x6.5	55.00	72.00	6.50		TC
SC 55x72x7	55.00	72.00	7.00		SC
SC 55x72x8	55.00	72.00	8.00		SC
TC 55x72x8	55.00	72.00	8.00		TC
TC 55x72x9	55.00	72.00	9.00		TC
SC 55x72x10	55.00	72.00	10.00		SC
TC 55x72x10	55.00	72.00	10.00		TC
TC 55x72x10	55.00	72.00	10.00		TC
TC 55x72x12	55.00	72.00	12.00		TC
TC 55x73x6	55.00	73.00	6.00		TC
TC 55x73x10	55.00	73.00	10.00		TC
SC 55x75x7	55.00	75.00	7.00		SC
TC 55x75x8	55.00	75.00	8.00		TC
TC 55x75x9	55.00	75.00	9.00		TC
SC 55x75x10	55.00	75.00	10.00		SC
TC 55x75x10	55.00	75.00	10.00		TC
TC 55x75x10	55.00	75.00	10.00		TC
TC 55x75x12	55.00	75.00	12.00		TC
TC 55x76x10	55.00	76.00	10.00		TC
TC 55x76x12	55.00	76.00	12.00		TC
TC 55x77x8	55.00	77.00	8.00		TC
TC 55x77x8.5	55.00	77.00	8.50		TC
TC 55x78x7	55.00	78.00	7.00		TC
TC 55x78x8	55.00	78.00	8.00		TC
TC 55x78x9	55.00	78.00	9.00		TC
SC 55x78x12	55.00	78.00	12.00		SC
TC 55x78x12	55.00	78.00	12.00		TC
TC 55x78x12	55.00	78.00	12.00		TC
SC 55x80x8	55.00	80.00	8.00		SC
TC 55x80x8	55.00	80.00	8.00		TC
SC 55x80x10	55.00	80.00	10.00		SC
TC 55x80x10	55.00	80.00	10.00		TC
TCW 55x80x10	55.00	80.00	10.00		TCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 55x80x12	55.00	80.00	12.00		SC
TC 55x80x12	55.00	80.00	12.00		TC
SC 55x80x13	55.00	80.00	13.00		SC
TC 55x82x9	55.00	82.00	9.00		TC
TC 55x82x10	55.00	82.00	10.00		TC
TC 55x82x12	55.00	82.00	12.00		TC
SC 55x85x8	55.00	85.00	8.00		SC
TC 55x85x8	55.00	85.00	8.00		TC
SC 55x85x10	55.00	85.00	10.00		SC
TC 55x85x10	55.00	85.00	10.00		TC
TC 55x85x12	55.00	85.00	12.00		TC
SC 55x85x13	55.00	85.00	13.00		SC
TC 55x85x14	55.00	85.00	14.00		TC
TC 55x88x10	55.00	88.00	10.00		TC
TC 55x90x8	55.00	90.00	8.00		TC
SC 55x90x10	55.00	90.00	10.00		SC
TC 55x90x10	55.00	90.00	10.00		TC
TCW 55x90x10	55.00	90.00	10.00		TCW
SC 55x90x12	55.00	90.00	12.00		SC
TC 55x90x13	55.00	90.00	13.00		TC
SC 55x92x9	55.00	92.00	9.00		SC
TC 55x92x9	55.00	92.00	9.00		TC
TC 55x95x10	55.00	95.00	10.00		TC
TC 55x100x8	55.00	100.00	8.00		TC
TC 55x100x10	55.00	100.00	10.00		TC
SC 55x100x12	55.00	100.00	12.00		SC
TC 55x100x12	55.00	100.00	12.00		TC
SC 55x100x12,5	55.00	100.00	12.50		SC
SCW 55x110x10	55.00	110.00	10.00		SCW
TC 55x120x12	55.00	120.00	12.00		TC
TC 56x68x6	56.00	68.00	6.00		TC
SC 56x70x8	56.00	70.00	8.00		SC
TC 56x70x9	56.00	70.00	9.00		TC
SC 56x72x8	56.00	72.00	8.00		SC
TC 56x72x8	56.00	72.00	8.00		TC
TC 56x72x9	56.00	72.00	9.00		TC
TC 56x72x10	56.00	72.00	10.00		TC
TC 56x73x10	56.00	73.00	10.00		TC
TC 56x75x8	56.00	75.00	8.00		TC
TC 56x76x8	56.00	76.00	8.00		TC
TC 56x76x9	56.00	76.00	9.00		TC
TC8 56x77x9	56.00	77.00	9.00		TC8
SC 56x80x8	56.00	80.00	8.00		SC
TC 56x80x10	56.00	80.00	10.00		TC
TC 56x80x13	56.00	80.00	13.00		TC
SC 56x85x8	56.00	85.00	8.00		SC
TC 56x85x8	56.00	85.00	8.00		TC
TC 56x85x10	56.00	85.00	10.00		TC
SC 56x85x13	56.00	85.00	13.00		SC
SC 56x90x10	56.00	90.00	10.00		SC
TC 56x90x10	56.00	90.00	10.00		TC
SC 56x100x10	56.00	100.00	10.00		SC
TC 57x67x6	57.00	67.00	6.00		TC
TC 57x71x9	57.00	71.00	9.00		TC
TCW 57x73x8	57.00	73.00	8.00		TCW
TC 57x75x12	57.00	75.00	12.00		TC
TC 57x77x10	57.00	77.00	10.00		TC
TC 57x80x12	57.00	80.00	12.00		TC
TC 57x85x10	57.00	85.00	10.00		TC
TC 57x85x12	57.00	85.00	12.00		TC
TC 57x85x15	57.00	85.00	15.00		TC
SC 57x90x13	57.00	90.00	13.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 58x68x9	58.00	68.00	9.00		TC
TC 58x70x7	58.00	70.00	7.00		TC
TC 58x70x7.8	58.00	70.00	7.80		TC
TC 58x70x9	58.00	70.00	9.00		TC
TC 58x70x11	58.00	70.00	11.00		TC
TC 58x72x7	58.00	72.00	7.00		TC
SC 58x72x8	58.00	72.00	8.00		SC
TC 58x72x8	58.00	72.00	8.00		TC
TCW 58x72x8	58.00	72.00	8.00		TCW
TC 58x72x9	58.00	72.00	9.00		TC
TC 58x72x9	58.00	72.00	9.00		TC
TC 58x72x10	58.00	72.00	10.00		TC
TC 58x72x10	58.00	72.00	10.00		TC
TC 58x74x10	58.00	74.00	10.00		TC
TC 58x74x10	58.00	74.00	10.00		TC
TC 58x75x8	58.00	75.00	8.00		TC
TC7 58x75x9x14.5	58.00	75.00	9.00	14.50	TC7
TC 58x75x9	58.00	75.00	9.00		TC
TC 58x75x10	58.00	75.00	10.00		TC
TC 58x75x11	58.00	75.00	11.00		TC
TC 58x75x12	58.00	75.00	12.00		TC
TC 58x78x9	58.00	78.00	9.00		TC
TC7 58x78x10x14	58.00	78.00	10.00	14.00	TC7
TC 58x78x12	58.00	78.00	12.00		TC
TC 58x80x7	58.00	80.00	7.00		TC
SC 58x80x8	58.00	80.00	8.00		SC
TC 58x80x8	58.00	80.00	8.00		TC
TCW 58x80x8	58.00	80.00	8.00		TCW
TC 58x80x9	58.00	80.00	9.00		TC
TC 58x80x9	58.00	80.00	9.00		TC
SC 58x80x10	58.00	80.00	10.00		SC
TC 58x80x10	58.00	80.00	10.00		TC
TC 58x80x10	58.00	80.00	10.00		TC
SC 58x80x11	58.00	80.00	11.00		SC
TC 58x80x12	58.00	80.00	12.00		TC
TC 58x80x13	58.00	80.00	13.00		TC
TC 58x82x10	58.00	82.00	10.00		TC
TC 58x82x12	58.00	82.00	12.00		TC
TC 58x85x8	58.00	85.00	8.00		TC
TC 58x85x10	58.00	85.00	10.00		TC
SC 58x85x12	58.00	85.00	12.00		SC
TC 58x85x12	58.00	85.00	12.00		TC
TC 58x86x12	58.00	86.00	12.00		TC
SC 58x90x10	58.00	90.00	10.00		SC
TC 58x90x10	58.00	90.00	10.00		TC
SC 58x90x11	58.00	90.00	11.00		SC
TC 58x90x13	58.00	90.00	13.00		TC
TC 58x92x8	58.00	92.00	8.00		TC
TC7 58x102x11x19	58.00	102.00	11.00	19.00	TC7
TC7 58x103x12x19.5	58.00	103.00	12.00	19.50	TC7
TC 59x72x12	59.00	72.00	12.00		TC
TC 59x78x10	59.00	78.00	10.00		TC
SC 60x70x7	60.00	70.00	7.00		SC
SC 60x70x8	60.00	70.00	8.00		SC
TC 60x70x8	60.00	70.00	8.00		TC
TC 60x70x10	60.00	70.00	10.00		TC
TC 60x70x12	60.00	70.00	12.00		TC
SC 60x72x8	60.00	72.00	8.00		SC
TC 60x72x9	60.00	72.00	9.00		TC
TC 60x72x10	60.00	72.00	10.00		TC
TC 60x72x12	60.00	72.00	12.00		TC
SC 60x74x10	60.00	74.00	10.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 60x74x10	60.00	74.00	10.00		TC
SC 60x75x8	60.00	75.00	8.00		SC
TC 60x75x8	60.00	75.00	8.00		TC
TC 60x75x8	60.00	75.00	8.00		TC
SC 60x75x9	60.00	75.00	9.00		SC
TC 60x75x9	60.00	75.00	9.00		TC
TC 60x75x10	60.00	75.00	10.00		TC
TC 60x75x12	60.00	75.00	12.00		TC
TC 60x76x7	60.00	76.00	7.00		TC
TC 60x76x9	60.00	76.00	9.00		TC
TC 60x77x9	60.00	77.00	9.00		TC
TC 60x77x12	60.00	77.00	12.00		TC
SC 60x78x9	60.00	78.00	9.00		SC
TC 60x78x9	60.00	78.00	9.00		TC
TC 60x78x10	60.00	78.00	10.00		TC
SCW 60x78x10	60.00	78.00	10.00		SCW
TC 60x80x7	60.00	80.00	7.00		TC
TCW 60x80x7.5	60.00	80.00	7.50		TCW
SC 60x80x8	60.00	80.00	8.00		SC
TC 60x80x8	60.00	80.00	8.00		TC
TC 60x80x8	60.00	80.00	8.00		TC
TC 60x80x9	60.00	80.00	9.00		TC
TC 60x80x9	60.00	80.00	9.00		TC
SC 60x80x10	60.00	80.00	10.00		SC
TC 60x80x10	60.00	80.00	10.00		TC
SCW 60x80x10	60.00	80.00	10.00		SCW
TCW 60x80x10	60.00	80.00	10.00		TCW
SC 60x80x12	60.00	80.00	12.00		SC
TC 60x80x12	60.00	80.00	12.00		TC
SC 60x80x13	60.00	80.00	13.00		SC
TC 60x80x13	60.00	80.00	13.00		TC
TC 60x82x7	60.00	82.00	7.00		TC
TC 60x82x7	60.00	82.00	7.00		TC
TC 60x82x8	60.00	82.00	8.00		TC
TC 60x82x9	60.00	82.00	9.00		TC
SC 60x82x12	60.00	82.00	12.00		SC
TC 60x82x12	60.00	82.00	12.00		TC
TC 60x82x12	60.00	82.00	12.00		TC
TC 60x82x12	60.00	82.00	12.00		TC
TC7 60x83x14x21.5	60.00	83.00	14.00	21.50	TC7
TC 60x84x10	60.00	84.00	10.00		TC
TC 60x85x6	60.00	85.00	6.00		TC
TC 60x85x7	60.00	85.00	7.00		TC
SC 60x85x8	60.00	85.00	8.00		SC
TC 60x85x8	60.00	85.00	8.00		TC
SC 60x85x10	60.00	85.00	10.00		SC
TC 60x85x10	60.00	85.00	10.00		TC
TC 60x85x10	60.00	85.00	10.00		TC
SC 60x85x12	60.00	85.00	12.00		SC
TC 60x85x12	60.00	85.00	12.00		TC
SC 60x85x13	60.00	85.00	13.00		SC
TC 60x85x13	60.00	85.00	13.00		TC
TC 60x85x13	60.00	85.00	13.00		TC
TC 60x86x10	60.00	86.00	10.00		TC
SC 60x90x8	60.00	90.00	8.00		SC
TC 60x90x8	60.00	90.00	8.00		TC
SC 60x90x10	60.00	90.00	10.00		SC
TC 60x90x10	60.00	90.00	10.00		TC
TC 60x90x11	60.00	90.00	11.00		TC
TC 60x90x12	60.00	90.00	12.00		TC
TC 60x90x13	60.00	90.00	13.00		TC
TC 60x92x12	60.00	92.00	12.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 60x95x8	60.00	95.00	8.00		TC
SC 60x95x10	60.00	95.00	10.00		SC
TC 60x95x10	60.00	95.00	10.00		TC
TC 60x95x11	60.00	95.00	11.00		TC
TC 60x95x12	60.00	95.00	12.00		TC
TC 60x95x13	60.00	95.00	13.00		TC
SC 60x100x10	60.00	100.00	10.00		SC
TC 60x100x10	60.00	100.00	10.00		TC
TC 60x100x12	60.00	100.00	12.00		TC
TC 60x100x13	60.00	100.00	13.00		TC
TC 60x104x12	60.00	104.00	12.00		TC
SC 60x110x10	60.00	110.00	10.00		SC
TC 60x110x10	60.00	110.00	10.00		TC
SCW 60x110x10	60.00	110.00	10.00		SCW
SC 60x110x12	60.00	110.00	12.00		SC
TC 60x110x12	60.00	110.00	12.00		TC
TC 60x120x13	60.00	120.00	13.00		TC
TC 60x130x10	60.00	130.00	10.00		TC
TC 62x70x12	62.00	70.00	12.00		TC
TC 62x74x8	62.00	74.00	8.00		TC
TC 62x75x10	62.00	75.00	10.00		TC
TC 62x75x12	62.00	75.00	12.00		TC
TC 62x78x10	62.00	78.00	10.00		TC
TC 62x78x12	62.00	78.00	12.00		TC
TC 62x80x9	62.00	80.00	9.00		TC
SC 62x80x10	62.00	80.00	10.00		SC
TC 62x80x10	62.00	80.00	10.00		TC
TC 62x80x12	62.00	80.00	12.00		TC
TC 62x80x12	62.00	80.00	12.00		TC
TC8 62x80x12	62.00	80.00	12.00		TC8
TCW 62x80x12	62.00	80.00	12.00		TCW
TC 62x81x10	62.00	81.00	10.00		TC
TC 62x82x10	62.00	82.00	10.00		TC
TC 62x82x12	62.00	82.00	12.00		TC
TC 62x85x8	62.00	85.00	8.00		TC
SC 62x85x10	62.00	85.00	10.00		SC
TC 62x85x10	62.00	85.00	10.00		TC
TC 62x85x12	62.00	85.00	12.00		TC
TC 62x85x13	62.00	85.00	13.00		TC
TC 62x88x12	62.00	88.00	12.00		TC
TC 62x89x12	62.00	89.00	12.00		TC
SC 62x90x10	62.00	90.00	10.00		SC
TC 62x90x10	62.00	90.00	10.00		TC
TC 62x90x12	62.00	90.00	12.00		TC
TC 62x90x13	62.00	90.00	13.00		TC
TC 62x93x12	62.00	93.00	12.00		TC
SC 62x95x10	62.00	95.00	10.00		SC
TC 62x95x10	62.00	95.00	10.00		TC
TC 62x95x12	62.00	95.00	12.00		TC
TC 62x100x10	62.00	100.00	10.00		TC
SC 62x100x12	62.00	100.00	12.00		SC
TC 62x100x12	62.00	100.00	12.00		TC
TC 62x110x13	62.00	110.00	13.00		TC
TC 63x80x9	63.00	80.00	9.00		TC
TC 63x80x10	63.00	80.00	10.00		TC
TC 63x80x12	63.00	80.00	12.00		TC
TC 63x82x10	63.00	82.00	10.00		TC
SC 63x83x8	63.00	83.00	8.00		SC
TC 63x85x12	63.00	85.00	12.00		TC
TC 63x88x10	63.00	88.00	10.00		TC
TC 63x88x12	63.00	88.00	12.00		TC
SC 63x90x10	63.00	90.00	10.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 63x90x10	63.00	90.00	10.00		TC
TC 63x90x12	63.00	90.00	12.00		TC
TC 63x90x13	63.00	90.00	13.00		TC
SC 63x100x10	63.00	100.00	10.00		SC
TC 63x100x10	63.00	100.00	10.00		TC
TC 63x100x13	63.00	100.00	13.00		TC
TC 64x79x8	64.00	79.00	8.00		TC
TC 64x80x8	64.00	80.00	8.00		TC
TC 64x80x8	64.00	80.00	8.00		TC
TC 64x80x10	64.00	80.00	10.00		TC
TC 64x80x12	64.00	80.00	12.00		TC
TC 64x80x13	64.00	80.00	13.00		TC
TC 64x85x10	64.00	85.00	10.00		TC
TC 64x85x12	64.00	85.00	12.00		TC
TC 64x85x16	64.00	85.00	16.00		TC
TC 64x90x10	64.00	90.00	10.00		TC
TC 64x95x10	64.00	95.00	10.00		TC
TC 64x120x12	64.00	120.00	12.00		TC
SC 65x75x5	65.00	75.00	5.00		SC
TC 65x75x5	65.00	75.00	5.00		TC
TC 65x75x8	65.00	75.00	8.00		TC
TC 65x75x10	65.00	75.00	10.00		TC
TC 65x75x12	65.00	75.00	12.00		TC
TC 65x78x8	65.00	78.00	8.00		TC
TC 65x78x12	65.00	78.00	12.00		TC
TC 65x79x7	65.00	79.00	7.00		TC
SC 65x80x6	65.00	80.00	6.00		SC
TC 65x80x7	65.00	80.00	7.00		TC
SC 65x80x8	65.00	80.00	8.00		SC
TC 65x80x8	65.00	80.00	8.00		TC
SCW 65x80x8	65.00	80.00	8.00		SCW
SC 65x80x10	65.00	80.00	10.00		SC
TC 65x80x10	65.00	80.00	10.00		TC
TC 65x80x12	65.00	80.00	12.00		TC
TC 65x81x7	65.00	81.00	7.00		TC
TC 65x82x9	65.00	82.00	9.00		TC
SC 65x82x10	65.00	82.00	10.00		SC
TC 65x82x10	65.00	82.00	10.00		TC
TC 65x82x12	65.00	82.00	12.00		TC
TC 65x83x8.5	65.00	83.00	8.50		TC
TC 65x84x9	65.00	84.00	9.00		TC
SC 65x85x8	65.00	85.00	8.00		SC
TC 65x85x8	65.00	85.00	8.00		TC
TC 65x85x8	65.00	85.00	8.00		TC
SC 65x85x10	65.00	85.00	10.00		SC
TC 65x85x10	65.00	85.00	10.00		TC
TC 65x85x10	65.00	85.00	10.00		TC
TCW 65x85x10	65.00	85.00	10.00		TCW
TC 65x85x12	65.00	85.00	12.00		TC
SC 65x85x13	65.00	85.00	13.00		SC
TC 65x85x13	65.00	85.00	13.00		TC
TC 65x85x13	65.00	85.00	13.00		TC
TC 65x86x10	65.00	86.00	10.00		TC
TC 65x88x8	65.00	88.00	8.00		TC
TC 65x88x10	65.00	88.00	10.00		TC
TC7 65x88x12x18.5	65.00	88.00	12.00	18.50	TC7
TC 65x88x12	65.00	88.00	12.00		TC
TC 65x88x12	65.00	88.00	12.00		TC
TC 65x88x13	65.00	88.00	13.00		TC
TC 65x89x12	65.00	89.00	12.00		TC
TC 65x90x7	65.00	90.00	7.00		TC
TC 65x90x8	65.00	90.00	8.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC7 65x90x9x13	65.00	90.00	9.00	13.00	TC7
SC 65x90x10	65.00	90.00	10.00		SC
TC 65x90x10	65.00	90.00	10.00		TC
TC 65x90x10	65.00	90.00	10.00		TC
SCW 65x90x10	65.00	90.00	10.00		SCW
TCW 65x90x10	65.00	90.00	10.00		TCW
SC 65x90x12	65.00	90.00	12.00		SC
TC 65x90x12	65.00	90.00	12.00		TC
SC 65x90x13	65.00	90.00	13.00		SC
TC 65x90x13	65.00	90.00	13.00		TC
TC 65x92x10	65.00	92.00	10.00		TC
SC 65x95x10	65.00	95.00	10.00		SC
TC 65x95x10	65.00	95.00	10.00		TC
TC 65x95x12	65.00	95.00	12.00		TC
TC 65x95x13	65.00	95.00	13.00		TC
TC 65x95x14	65.00	95.00	14.00		TC
TC 65x100x8	65.00	100.00	8.00		TC
TC 65x100x9.5	65.00	100.00	9.50		TC
SC 65x100x10	65.00	100.00	10.00		SC
TC 65x100x10	65.00	100.00	10.00		TC
SC 65x100x12	65.00	100.00	12.00		SC
TC 65x100x12	65.00	100.00	12.00		TC
TC 65x100x13	65.00	100.00	13.00		TC
TC 65x102x13	65.00	102.00	13.00		TC
TC 65x105x12	65.00	105.00	12.00		TC
TC 65x110x10	65.00	110.00	10.00		TC
TC 65x110x12	65.00	110.00	12.00		TC
TC 65x110x13	65.00	110.00	13.00		TC
TC 65x115x12	65.00	115.00	12.00		TC
TC 65x115x13	65.00	115.00	13.00		TC
SC 65x120x10	65.00	120.00	10.00		SC
TC 65x120x10	65.00	120.00	10.00		TC
TC 65x120x12	65.00	120.00	12.00		TC
TC 65x120x13	65.00	120.00	13.00		TC
TC 65x120x15	65.00	120.00	15.00		TC
TC 65x140x14	65.00	140.00	14.00		TC
SC 66x85x10	66.00	85.00	10.00		SC
TC 67x82x7	67.00	82.00	7.00		TC
TC 67x82x7.5	67.00	82.00	7.50		TC
TC 67x85x10	67.00	85.00	10.00		TC
TC 68x80x8	68.00	80.00	8.00		TC
SC 68x80x10	68.00	80.00	10.00		SC
TC 68x80x10	68.00	80.00	10.00		TC
SC 68x82x7	68.00	82.00	7.00		SC
TC 68x82x7	68.00	82.00	7.00		TC
TC 68x82x10	68.00	82.00	10.00		TC
TC 68x83x10	68.00	83.00	10.00		TC
SC 68x85x10	68.00	85.00	10.00		SC
TC 68x85x10	68.00	85.00	10.00		TC
TC 68x86x8	68.00	86.00	8.00		TC
SC 68x88x8	68.00	88.00	8.00		SC
SC 68x88x10	68.00	88.00	10.00		SC
TC 68x88x10	68.00	88.00	10.00		TC
SC 68x88x13	68.00	88.00	13.00		SC
TC 68x90x8	68.00	90.00	8.00		TC
SC 68x90x10	68.00	90.00	10.00		SC
TC 68x90x10	68.00	90.00	10.00		TC
TC 68x90x12	68.00	90.00	12.00		TC
TC 68x90x13	68.00	90.00	13.00		TC
TC 68x92x10	68.00	92.00	10.00		TC
TC 68x92x12	68.00	92.00	12.00		TC
TC 68x95x8	68.00	95.00	8.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 68x95x10	68.00	95.00	10.00		SC
TC 68x95x13	68.00	95.00	13.00		TC
TC 68x95x13	68.00	95.00	13.00		TC
TC 68x98x10	68.00	98.00	10.00		TC
SC 68x100x10	68.00	100.00	10.00		SC
TC 68x100x10	68.00	100.00	10.00		TC
TC 68x100x12	68.00	100.00	12.00		TC
SC 68x100x13	68.00	100.00	13.00		SC
TC 68x100x13	68.00	100.00	13.00		TC
SC 68x110x13	68.00	110.00	13.00		SC
SC 68x115x13	68.00	115.00	13.00		SC
TC 69x89x13	69.00	89.00	13.00		TC
TC 69x92x12	69.00	92.00	12.00		TC
TC 69x110x10	69.00	110.00	10.00		TC
TC 70x80x6	70.00	80.00	6.00		TC
TC 70x80x8	70.00	80.00	8.00		TC
TC 70x80x10	70.00	80.00	10.00		TC
TC 70x80x12	70.00	80.00	12.00		TC
TC 70x82x8.5	70.00	82.00	8.50		TC
TC 70x83x10	70.00	83.00	10.00		TC
SC 70x85x7	70.00	85.00	7.00		SC
SC 70x85x8	70.00	85.00	8.00		SC
TC 70x85x8	70.00	85.00	8.00		TC
TC 70x85x9	70.00	85.00	9.00		TC
TC 70x85x10	70.00	85.00	10.00		TC
TC 70x85x12	70.00	85.00	12.00		TC
SC 70x86x12	70.00	86.00	12.00		SC
TCW 70x87x8.5	70.00	87.00	8.50		TCW
TC 70x87x10	70.00	87.00	10.00		TC
TC 70x87x10	70.00	87.00	10.00		TC
TC 70x88x8	70.00	88.00	8.00		TC
SCW 70x88x8	70.00	88.00	8.00		SCW
TCW 70x88x8	70.00	88.00	8.00		TCW
TC 70x88x10	70.00	88.00	10.00		TC
TC 70x88x12	70.00	88.00	12.00		TC
TC 70x88x12	70.00	88.00	12.00		TC
TC 70x90x7	70.00	90.00	7.00		TC
TC 70x90x8	70.00	90.00	8.00		TC
SC 70x90x10	70.00	90.00	10.00		SC
SC 70x90x10	70.00	90.00	10.00		SC
TC 70x90x10	70.00	90.00	10.00		TC
TC 70x90x10	70.00	90.00	10.00		TC
SCW 70x90x10	70.00	90.00	10.00		SCW
TCW 70x90x10	70.00	90.00	10.00		TCW
SC 70x90x12	70.00	90.00	12.00		SC
TC 70x90x12	70.00	90.00	12.00		TC
TC 70x90x13	70.00	90.00	13.00		TC
TC 70x92x8.5	70.00	92.00	8.50		TC
TC 70x92x9	70.00	92.00	9.00		TC
TC 70x92x10	70.00	92.00	10.00		TC
TC 70x92x12	70.00	92.00	12.00		TC
TC 70x92x12	70.00	92.00	12.00		TC
TC 70x92x12	70.00	92.00	12.00		TC
SC 70x95x10	70.00	95.00	10.00		SC
TC 70x95x10	70.00	95.00	10.00		TC
TC 70x95x12	70.00	95.00	12.00		TC
TC7 70x95x13x20	70.00	95.00	13.00	20.00	TC7
SC 70x95x13	70.00	95.00	13.00		SC
TC 70x95x13	70.00	95.00	13.00		TC
SC 70x100x10	70.00	100.00	10.00		SC
TC 70x100x10	70.00	100.00	10.00		TC
TCW 70x100x10	70.00	100.00	10.00		TCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 70x100x12	70.00	100.00	12.00		SC
TC 70x100x12	70.00	100.00	12.00		TC
TC 70x100x13	70.00	100.00	13.00		TC
TC 70x100x14	70.00	100.00	14.00		TC
TC 70x102x12	70.00	102.00	12.00		TC
TC 70x102x13	70.00	102.00	13.00		TC
TC 70x105x10	70.00	105.00	10.00		TC
TC 70x105x12	70.00	105.00	12.00		TC
SC 70x105x13	70.00	105.00	13.00		SC
TC 70x105x13	70.00	105.00	13.00		TC
SC 70x110x8	70.00	110.00	8.00		SC
SC 70x110x10	70.00	110.00	10.00		SC
TC 70x110x10	70.00	110.00	10.00		TC
SC 70x110x12	70.00	110.00	12.00		SC
TC 70x110x12	70.00	110.00	12.00		TC
SC 70x110x13	70.00	110.00	13.00		SC
TC 70x110x13	70.00	110.00	13.00		TC
TC 70x112x13	70.00	112.00	13.00		TC
TC 70x115x12	70.00	115.00	12.00		TC
TC 70x115x13	70.00	115.00	13.00		TC
TC 70x115x15	70.00	115.00	15.00		TC
TCW 70x120x10	70.00	120.00	10.00		TCW
TC 70x120x12	70.00	120.00	12.00		TC
SC 70x120x13	70.00	120.00	13.00		SC
TC 70x120x13	70.00	120.00	13.00		TC
SC 70x125x12	70.00	125.00	12.00		SC
TC 70x125x12	70.00	125.00	12.00		TC
TC 70x125x13	70.00	125.00	13.00		TC
SC 71x88x8	71.00	88.00	8.00		SC
TC 71x88x8	71.00	88.00	8.00		TC
TC 72x86x7.5	72.00	86.00	7.50		TC
TC 72x86x9	72.00	86.00	9.00		TC
TC 72x90x8	72.00	90.00	8.00		TC
SC 72x90x10	72.00	90.00	10.00		SC
TC 72x90x10	72.00	90.00	10.00		TC
SC 72x92x9.5	72.00	92.00	9.50		SC
TC 72x92x9,5	72.00	92.00	9.50		TC
TCW 72x92x9,5	72.00	92.00	9.50		TCW
TC 72x92x12	72.00	92.00	12.00		TC
TC 72x94x12	72.00	94.00	12.00		TC
TC 72x94x12	72.00	94.00	12.00		TC
SC 72x95x10	72.00	95.00	10.00		SC
TC 72x95x10	72.00	95.00	10.00		TC
SC 72x95x12	72.00	95.00	12.00		SC
TC 72x95x12	72.00	95.00	12.00		TC
TC 72x95x13	72.00	95.00	13.00		TC
TC 72x96x9	72.00	96.00	9.00		TC
SC 72x100x10	72.00	100.00	10.00		SC
TC 72x100x10	72.00	100.00	10.00		TC
SC 72x100x12	72.00	100.00	12.00		SC
TC 72x105x13	72.00	105.00	13.00		TC
TC 72x110x10	72.00	110.00	10.00		TC
TC 72x115x10	72.00	115.00	10.00		TC
TC 73x90x8	73.00	90.00	8.00		TC
TC 73x97x12	73.00	97.00	12.00		TC
TC 73x98x12	73.00	98.00	12.00		TC
TC 73x100x10	73.00	100.00	10.00		TC
TCW 74x88x8	74.00	88.00	8.00		TCW
TC 74x89x7	74.00	89.00	7.00		TC
TC 74x90x10	74.00	90.00	10.00		TC
TC 74x94x10	74.00	94.00	10.00		TC
TC 74x95x7	74.00	95.00	7.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 74x97x13	74.00	97.00	13.00		TC
TC 74x98x12	74.00	98.00	12.00		TC
TC 74x100x13	74.00	100.00	13.00		TC
SC 75x85x7	75.00	85.00	7.00		SC
SC 75x90x8	75.00	90.00	8.00		SC
TC 75x90x8	75.00	90.00	8.00		TC
TCW 75x90x8	75.00	90.00	8.00		TCW
SC 75x90x10	75.00	90.00	10.00		SC
TC 75x90x10	75.00	90.00	10.00		TC
TC 75x90x12	75.00	90.00	12.00		TC
SC 75x91x12	75.00	91.00	12.00		SC
TC 75x92x12	75.00	92.00	12.00		TC
TC 75x92x12	75.00	92.00	12.00		TC
TC 75x93x9	75.00	93.00	9.00		TC
TC 75x94x10	75.00	94.00	10.00		TC
TC 75x95x8	75.00	95.00	8.00		TC
TCW 75x95x8	75.00	95.00	8.00		TCW
TC7 75x95x10x14	75.00	95.00	10.00	14.00	TC7
SC 75x95x10	75.00	95.00	10.00		SC
TC 75x95x10	75.00	95.00	10.00		TC
TC 75x95x10	75.00	95.00	10.00		TC
SCW 75x95x10	75.00	95.00	10.00		SCW
SC 75x95x12	75.00	95.00	12.00		SC
TC 75x95x12	75.00	95.00	12.00		TC
SCW 75x95x12	75.00	95.00	12.00		SCW
TCW 75x95x12	75.00	95.00	12.00		TCW
SC 75x95x13	75.00	95.00	13.00		SC
TC 75x95x13	75.00	95.00	13.00		TC
TC7 75x97x9x13	75.00	97.00	9.00	13.00	TC7
TC 75x100x7	75.00	100.00	7.00		TC
TC 75x100x8.5	75.00	100.00	8.50		TC
SC 75x100x10	75.00	100.00	10.00		SC
TC 75x100x10	75.00	100.00	10.00		TC
SC 75x100x12	75.00	100.00	12.00		SC
TC 75x100x12	75.00	100.00	12.00		TC
TC7 75x100x13x20	75.00	100.00	13.00	20.00	TC7
TC 75x100x13	75.00	100.00	13.00		TC
TC 75x100x13	75.00	100.00	13.00		TC
TC 75x102x13	75.00	102.00	13.00		TC
SC 75x105x12	75.00	105.00	12.00		SC
SC 75x105x13	75.00	105.00	13.00		SC
TC 75x105x13	75.00	105.00	13.00		TC
TC 75x105x15	75.00	105.00	15.00		TC
TC 75x105x15	75.00	105.00	15.00		TC
TC 75x106x10	75.00	106.00	10.00		TC
TCW 75x107x8	75.00	107.00	8.00		TCW
TC 75x108x13	75.00	108.00	13.00		TC
TC 75x110x10	75.00	110.00	10.00		TC
SC 75x110x12	75.00	110.00	12.00		SC
TC 75x110x12	75.00	110.00	12.00		TC
SC 75x110x13	75.00	110.00	13.00		SC
TC 75x110x13	75.00	110.00	13.00		TC
TC8 75x110x13	75.00	110.00	13.00		TC8
TC 75x115x8	75.00	115.00	8.00		TC
TC 75x115x9.5	75.00	115.00	9.50		TC
SC 75x115x10	75.00	115.00	10.00		SC
TC 75x115x10	75.00	115.00	10.00		TC
SC 75x115x12	75.00	115.00	12.00		SC
TC 75x115x13	75.00	115.00	13.00		TC
TC 75x118x12	75.00	118.00	12.00		TC
TC 75x120x10	75.00	120.00	10.00		TC
SC 75x120x12	75.00	120.00	12.00		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 75x120x12	75.00	120.00	12.00		TC
TC 75x120x12.5	75.00	120.00	12.50		TC
TC 75x120x13	75.00	120.00	13.00		TC
TC 75x121x13	75.00	121.00	13.00		TC
TC 75x125x13	75.00	125.00	13.00		TC
TC 75x130x10	75.00	130.00	10.00		TC
SC 75x130x13	75.00	130.00	13.00		SC
TC 75x130x13	75.00	130.00	13.00		TC
TC 75x134x10	75.00	134.00	10.00		TC
TC 75x150x12	75.00	150.00	12.00		TC
TCW 76x92x9.5	76.00	92.00	9.50		TCW
TC 76x92x10	76.00	92.00	10.00		TC
TC 76x93x10	76.00	93.00	10.00		TC
TC 76x94x8.5	76.00	94.00	8.50		TC
TC 76x94x12	76.00	94.00	12.00		TC
TC 76x95x10	76.00	95.00	10.00		TC
TC 76x98x12	76.00	98.00	12.00		TC
TC 76x105x12	76.00	105.00	12.00		TC
TC 76x105x13	76.00	105.00	13.00		TC
TCW 76x108x8.5	76.00	108.00	8.50		TCW
TC 77x100x10	77.00	100.00	10.00		TC
SC 77x100x11,5	77.00	100.00	11.50		SC
TC 77x100x11,5	77.00	100.00	11.50		TC
TC 78x95x13	78.00	95.00	13.00		TC
SC 78x100x10	78.00	100.00	10.00		SC
SC 78x100x10	78.00	100.00	10.00		SC
TC 78x100x10	78.00	100.00	10.00		TC
TC 78x100x13	78.00	100.00	13.00		TC
TC 78x105x13	78.00	105.00	13.00		TC
TCW 78x110x8.5	78.00	110.00	8.50		TCW
SC 78x110x12	78.00	110.00	12.00		SC
TC 78x110x12	78.00	110.00	12.00		TC
SC 78x110x13	78.00	110.00	13.00		SC
TC 78x110x13	78.00	110.00	13.00		TC
TC 78x115x10	78.00	115.00	10.00		TC
TC 79x89x8	79.00	89.00	8.00		TC
TCW 79x97x10	79.00	97.00	10.00		TCW
TC 79x99x8	79.00	99.00	8.00		TC
TC 80x90x10	80.00	90.00	10.00		TC
SC 80x95x5	80.00	95.00	5.00		SC
TC 80x95x8	80.00	95.00	8.00		TC
TC 80x95x10	80.00	95.00	10.00		TC
TC 80x96x7.5	80.00	96.00	7.50		TC
TC 80x96x9	80.00	96.00	9.00		TC
TC 80x97x10	80.00	97.00	10.00		TC
TC 80x98x10	80.00	98.00	10.00		TC
TC 80x98x10	80.00	98.00	10.00		TC
TC 80x98x12	80.00	98.00	12.00		TC
TC 80x100x7	80.00	100.00	7.00		TC
TC 80x100x8	80.00	100.00	8.00		TC
TCW 80x100x8	80.00	100.00	8.00		TCW
TC 80x100x8.5	80.00	100.00	8.50		TC
TC9 80x100x10x14	80.00	100.00	10.00	14.00	TC9
SC 80x100x10	80.00	100.00	10.00		SC
TC 80x100x10	80.00	100.00	10.00		TC
TC 80x100x10	80.00	100.00	10.00		TC
TC 80x100x10	80.00	100.00	10.00		TC
TC8 80x100x10	80.00	100.00	10.00		TC8
TCW 80x100x10	80.00	100.00	10.00		TCW
SC 80x100x12	80.00	100.00	12.00		SC
TC 80x100x12	80.00	100.00	12.00		TC
TC 80x100x12	80.00	100.00	12.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TCW 80x100x12	80.00	100.00	12.00		TCW
SC 80x100x13	80.00	100.00	13.00		SC
SC 80x100x13	80.00	100.00	13.00		SC
TC 80x100x13	80.00	100.00	13.00		TC
TC 80x100x13	80.00	100.00	13.00		TC
SCW 80x100x13	80.00	100.00	13.00		SCW
TC7 80x105x9.5x11.5	80.00	105.00	9.50	11.50	TC7
SC 80x105x10	80.00	105.00	10.00		SC
TC 80x105x10	80.00	105.00	10.00		TC
TC7 80x105x12x18.5	80.00	105.00	12.00	18.50	TC7
TC 80x105x12	80.00	105.00	12.00		TC
SC 80x105x13	80.00	105.00	13.00		SC
TC 80x105x13	80.00	105.00	13.00		TC
TC 80x105x13	80.00	105.00	13.00		TC
TC 80x110x8.5	80.00	110.00	8.50		TC
SC 80x110x10	80.00	110.00	10.00		SC
TC 80x110x10	80.00	110.00	10.00		TC
SC 80x110x12	80.00	110.00	12.00		SC
TC 80x110x12	80.00	110.00	12.00		TC
TCW 80x110x12	80.00	110.00	12.00		TCW
TC 80x110x13	80.00	110.00	13.00		TC
SC 80x115x10	80.00	115.00	10.00		SC
TC 80x115x10	80.00	115.00	10.00		TC
TC 80x115x12	80.00	115.00	12.00		TC
TC 80x115x13	80.00	115.00	13.00		TC
TC 80x118x12	80.00	118.00	12.00		TC
TC 80x119x12	80.00	119.00	12.00		TC
SC 80x120x12	80.00	120.00	12.00		SC
SC 80x120x13	80.00	120.00	13.00		SC
TC 80x120x13	80.00	120.00	13.00		TC
TC 80x125x10	80.00	125.00	10.00		TC
SC 80x125x12	80.00	125.00	12.00		SC
TC 80x125x12	80.00	125.00	12.00		TC
TC 80x125x13	80.00	125.00	13.00		TC
TC 80x125x14	80.00	125.00	14.00		TC
TC 80x130x13	80.00	130.00	13.00		TC
TC 80x132x15	80.00	132.00	15.00		TC
TC 80x140x12	80.00	140.00	12.00		TC
TC 80x140x13	80.00	140.00	13.00		TC
TC 82x100x13	82.00	100.00	13.00		TC
TC 82x105x10	82.00	105.00	10.00		TC
TC 82x105x12	82.00	105.00	12.00		TC
SCW 82x105x12	82.00	105.00	12.00		SCW
TC 82x105x13	82.00	105.00	13.00		TC
SC 82x110x12	82.00	110.00	12.00		SC
SC 82x110x13	82.00	110.00	13.00		SC
TC 82x115x13	82.00	115.00	13.00		TC
TC 83x100x9	83.00	100.00	9.00		TC
TC 83x104x9	83.00	104.00	9.00		TC
TC 83x110x13	83.00	110.00	13.00		TC
TC 83x117x14	83.00	117.00	14.00		TC
TC 84x97x9	84.00	97.00	9.00		TC
SC 84x100x10	84.00	100.00	10.00		SC
TC 84x100x10	84.00	100.00	10.00		TC
TC 84x104x8.5	84.00	104.00	8.50		TC
TC 84x104x11	84.00	104.00	11.00		TC
TC 84x117x8	84.00	117.00	8.00		TC
SC 85x100x6	85.00	100.00	6.00		SC
SC 85x100x9	85.00	100.00	9.00		SC
TC 85x100x9	85.00	100.00	9.00		TC
TCW 85x100x9	85.00	100.00	9.00		TCW
TC 85x100x10	85.00	100.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 85x100x12	85.00	100.00	12.00		TC
TC 85x100x13	85.00	100.00	13.00		TC
TC 85x102x12	85.00	102.00	12.00		TC
TC 85x102x12	85.00	102.00	12.00		TC
TC 85x103x8	85.00	103.00	8.00		TC
TCW 85x105x9	85.00	105.00	9.00		TCW
TC 85x105x9.5	85.00	105.00	9.50		TC
SC 85x105x10	85.00	105.00	10.00		SC
TC 85x105x10	85.00	105.00	10.00		TC
TC 85x105x10	85.00	105.00	10.00		TC
TCW 85x105x11	85.00	105.00	11.00		TCW
TC 85x105x12	85.00	105.00	12.00		TC
TC 85x105x12	85.00	105.00	12.00		TC
TCW 85x105x12	85.00	105.00	12.00		TCW
TCW 85x105x12	85.00	105.00	12.00		TCW
SC 85x105x13	85.00	105.00	13.00		SC
TC 85x105x13	85.00	105.00	13.00		TC
TC 85x105x13	85.00	105.00	13.00		TC
SC 85x110x10	85.00	110.00	10.00		SC
SCW 85x110x10	85.00	110.00	10.00		SCW
TCW 85x110x10	85.00	110.00	10.00		TCW
SC 85x110x12	85.00	110.00	12.00		SC
TC 85x110x12	85.00	110.00	12.00		TC
SC 85x110x13	85.00	110.00	13.00		SC
TC 85x110x13	85.00	110.00	13.00		TC
TC 85x110x13	85.00	110.00	13.00		TC
TC 85x111x10	85.00	111.00	10.00		TC
TC 85x115x12	85.00	115.00	12.00		TC
SC 85x115x13	85.00	115.00	13.00		SC
TC 85x115x13	85.00	115.00	13.00		TC
SC 85x115x15	85.00	115.00	15.00		SC
TC 85x115x15	85.00	115.00	15.00		TC
TCW 85x117x8	85.00	117.00	8.00		TCW
TCW 85x119x8	85.00	119.00	8.00		TCW
TCW 85x119x8.5	85.00	119.00	8.50		TCW
TC 85x120x10	85.00	120.00	10.00		TC
SC 85x120x12	85.00	120.00	12.00		SC
TC 85x120x12	85.00	120.00	12.00		TC
TC 85x120x13	85.00	120.00	13.00		TC
TC 85x120x15	85.00	120.00	15.00		TC
TC 85x125x12	85.00	125.00	12.00		TC
TC 85x125x13	85.00	125.00	13.00		TC
TC 85x125x14	85.00	125.00	14.00		TC
TC 85x130x10	85.00	130.00	10.00		TC
SC 85x130x12	85.00	130.00	12.00		SC
TC 85x130x12	85.00	130.00	12.00		TC
TC 85x130x13	85.00	130.00	13.00		TC
TC 85x130x14	85.00	130.00	14.00		TC
TC 85x140x12	85.00	140.00	12.00		TC
TC 85x150x12	85.00	150.00	12.00		TC
TC 86x100x8	86.00	100.00	8.00		TC
TC 86x100x10	86.00	100.00	10.00		TC
TC 86x100x10	86.00	100.00	10.00		TC
TC 86x103x10	86.00	103.00	10.00		TC
TC 86x104x11	86.00	104.00	11.00		TC
TC 87x100x8	87.00	100.00	8.00		TC
TCW 88x104x8.5	88.00	104.00	8.50		TCW
TC 88x104x10	88.00	104.00	10.00		TC
TC 88x106x8.5	88.00	106.00	8.50		TC
TC 88x106x10	88.00	106.00	10.00		TC
TC 88x108x11	88.00	108.00	11.00		TC
TCW 88x108x11	88.00	108.00	11.00		TCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 88x110x8	88.00	110.00	8.00		TC
SC 88x110x12	88.00	110.00	12.00		SC
TC 88x160x13	88.00	160.00	13.00		TC
SC 89x105x9.5	89.00	105.00	9.50		SC
TC 89x105x10	89.00	105.00	10.00		TC
TC 90x100x7	90.00	100.00	7.00		TC
TC 90x100x12	90.00	100.00	12.00		TC
TCW 90x104x11	90.00	104.00	11.00		TCW
TC 90x105x6	90.00	105.00	6.00		TC
TC 90x105x8	90.00	105.00	8.00		TC
TC 90x105x10	90.00	105.00	10.00		TC
TC 90x105x12	90.00	105.00	12.00		TC
TC 90x105x13	90.00	105.00	13.00		TC
SC 90x106x12	90.00	106.00	12.00		SC
TC 90x110x7	90.00	110.00	7.00		TC
TCW 90x110x7	90.00	110.00	7.00		TCW
TCW 90x110x7	90.00	110.00	7.00		TCW
TC 90x110x8	90.00	110.00	8.00		TC
TCW 90x110x8	90.00	110.00	8.00		TCW
TC7 90x110x9x11.5	90.00	110.00	9.00	11.50	TC7
TC 90x110x9	90.00	110.00	9.00		TC
SC 90x110x10	90.00	110.00	10.00		SC
TC 90x110x10	90.00	110.00	10.00		TC
TC 90x110x10	90.00	110.00	10.00		TC
TC 90x110x11	90.00	110.00	11.00		TC
SCW 90x110x11	90.00	110.00	11.00		SCW
TCW 90x110x11	90.00	110.00	11.00		TCW
SC 90x110x12	90.00	110.00	12.00		SC
TC 90x110x12	90.00	110.00	12.00		TC
TCW 90x110x12	90.00	110.00	12.00		TCW
SC 90x110x13	90.00	110.00	13.00		SC
TC 90x110x13	90.00	110.00	13.00		TC
TC 90x110x15	90.00	110.00	15.00		TC
TC 90x112x12	90.00	112.00	12.00		TC
TC 90x112x14	90.00	112.00	14.00		TC
TC 90x114x12	90.00	114.00	12.00		TC
SC 90x115x9	90.00	115.00	9.00		SC
TC 90x115x10	90.00	115.00	10.00		TC
TC 90x115x12	90.00	115.00	12.00		TC
TC 90x115x12	90.00	115.00	12.00		TC
SC 90x115x13	90.00	115.00	13.00		SC
TC 90x115x13	90.00	115.00	13.00		TC
TC 90x118x12	90.00	118.00	12.00		TC
TC 90x120x10	90.00	120.00	10.00		TC
TCW 90x120x11	90.00	120.00	11.00		TCW
SC 90x120x12	90.00	120.00	12.00		SC
TC 90x120x12	90.00	120.00	12.00		TC
TC 90x120x13	90.00	120.00	13.00		TC
TC 90x125x12	90.00	125.00	12.00		TC
TC 90x125x13	90.00	125.00	13.00		TC
TC 90x125x15	90.00	125.00	15.00		TC
TC8 90x125x15	90.00	125.00	15.00		TC8
TC 90x130x10	90.00	130.00	10.00		TC
SC 90x130x12	90.00	130.00	12.00		SC
TC 90x130x12	90.00	130.00	12.00		TC
TC 90x130x13	90.00	130.00	13.00		TC
TC 90x135x13	90.00	135.00	13.00		TC
TC 90x140x12	90.00	140.00	12.00		TC
SC 90x140x13	90.00	140.00	13.00		SC
TC 90x160x10	90.00	160.00	10.00		TC
TC 91x111x7.5	91.00	111.00	7.50		TC
TC 91x111x9	91.00	111.00	9.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 91x111x10	91.00	111.00	10.00		TC
TC 91x114x9	91.00	114.00	9.00		TC
TC 92x108x8	92.00	108.00	8.00		TC
TCW 92x108x9.5	92.00	108.00	9.50		TCW
TCW 92x110x7	92.00	110.00	7.00		TCW
TC 92x110x8.5	92.00	110.00	8.50		TC
SCW 92x110x9	92.00	110.00	9.00		SCW
TCW 92x110x9.5	92.00	110.00	9.50		TCW
SC 92x110x10	92.00	110.00	10.00		SC
TC 92x110x10	92.00	110.00	10.00		TC
TC 92x120x12	92.00	120.00	12.00		TC
TCW 92x125x12	92.00	125.00	12.00		TCW
TCW 93x114x13	93.00	114.00	13.00		TCW
TC 94x170x8	94.00	170.00	8.00		TC
TC 95x105x13	95.00	105.00	13.00		TC
SC 95x110x6	95.00	110.00	6.00		SC
SC 95x110x10	95.00	110.00	10.00		SC
TC 95x110x10	95.00	110.00	10.00		TC
TC 95x110x10	95.00	110.00	10.00		TC
TC 95x110x11	95.00	110.00	11.00		TC
TC 95x110x11	95.00	110.00	11.00		TC
TC 95x110x11	95.00	110.00	11.00		TC
SC 95x110x12	95.00	110.00	12.00		SC
TC 95x110x12	95.00	110.00	12.00		TC
TC 95x110x13	95.00	110.00	13.00		TC
TC 95x114x12	95.00	114.00	12.00		TC
TC 95x115x8.5	95.00	115.00	8.50		TC
TC 95x115x10	95.00	115.00	10.00		TC
TC 95x115x12	95.00	115.00	12.00		TC
TC 95x115x12	95.00	115.00	12.00		TC
TCW 95x115x12	95.00	115.00	12.00		TCW
SC 95x115x13	95.00	115.00	13.00		SC
TC 95x115x13	95.00	115.00	13.00		TC
TC 95x118x8.5	95.00	118.00	8.50		TC
TC 95x118x10	95.00	118.00	10.00		TC
SC 95x120x8	95.00	120.00	8.00		SC
TC 95x120x8	95.00	120.00	8.00		TC
TC 95x120x10	95.00	120.00	10.00		TC
SC 95x120x12	95.00	120.00	12.00		SC
TC 95x120x12	95.00	120.00	12.00		TC
SC 95x120x13	95.00	120.00	13.00		SC
TC 95x120x13	95.00	120.00	13.00		TC
TC 95x120x13	95.00	120.00	13.00		TC
TCW 95x120x13	95.00	120.00	13.00		TCW
TC 95x125x10	95.00	125.00	10.00		TC
SC 95x125x12	95.00	125.00	12.00		SC
TC 95x125x12	95.00	125.00	12.00		TC
TC 95x125x13	95.00	125.00	13.00		TC
SC 95x130x12	95.00	130.00	12.00		SC
TC 95x130x12	95.00	130.00	12.00		TC
TC 95x130x13	95.00	130.00	13.00		TC
TC 95x130x15	95.00	130.00	15.00		TC
TC 95x135x12	95.00	135.00	12.00		TC
TC 95x135x13	95.00	135.00	13.00		TC
TC 95x136x12	95.00	136.00	12.00		TC
SC 95x145x10	95.00	145.00	10.00		SC
TC 95x145x13	95.00	145.00	13.00		TC
TC 95x170x13	95.00	170.00	13.00		TC
TCW 96x116x9	96.00	116.00	9.00		TCW
TC9 96x124x14x20.5	96.00	124.00	14.00	20.50	TC9
TC 97x115x12	97.00	115.00	12.00		TC
TC 97x117x7.5	97.00	117.00	7.50		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 98x116x10	98.00	116.00	10.00		TC
SC 98x120x13	98.00	120.00	13.00		SC
TC 98x120x13	98.00	120.00	13.00		TC
TCW 100x110x7	100.00	110.00	7.00		TCW
SC 100x110x10	100.00	110.00	10.00		SC
TC 100x110x12	100.00	110.00	12.00		TC
TC 100x114x10	100.00	114.00	10.00		TC
TC 100x115x9	100.00	115.00	9.00		TC
TC 100x115x10	100.00	115.00	10.00		TC
TC 100x115x12	100.00	115.00	12.00		TC
TC 100x115x13	100.00	115.00	13.00		TC
TC 100x118x8.5	100.00	118.00	8.50		TC
TC 100x118x10	100.00	118.00	10.00		TC
TC 100x119x9.5	100.00	119.00	9.50		TC
SC 100x120x7.5	100.00	120.00	7.50		SC
SC 100x120x10	100.00	120.00	10.00		SC
TC 100x120x10	100.00	120.00	10.00		TC
SC 100x120x11	100.00	120.00	11.00		SC
TC 100x120x11	100.00	120.00	11.00		TC
TC 100x120x11	100.00	120.00	11.00		TC
SC 100x120x12	100.00	120.00	12.00		SC
TC 100x120x12	100.00	120.00	12.00		TC
TC7 100x120x13x18	100.00	120.00	13.00	18.00	TC7
SC 100x120x13	100.00	120.00	13.00		SC
TC 100x120x13	100.00	120.00	13.00		TC
TC 100x120x13	100.00	120.00	13.00		TC
TC 100x125x10	100.00	125.00	10.00		TC
SC 100x125x12	100.00	125.00	12.00		SC
TC 100x125x12	100.00	125.00	12.00		TC
TC 100x125x13	100.00	125.00	13.00		TC
TC 100x125x13	100.00	125.00	13.00		TC
TC 100x127x10	100.00	127.00	10.00		TC
TC 100x130x10	100.00	130.00	10.00		TC
SC 100x130x12	100.00	130.00	12.00		SC
TC 100x130x12	100.00	130.00	12.00		TC
TC 100x130x13	100.00	130.00	13.00		TC
TCW 100x130x13	100.00	130.00	13.00		TCW
TC 100x130x14	100.00	130.00	14.00		TC
TC 100x135x10	100.00	135.00	10.00		TC
TC 100x135x10	100.00	135.00	10.00		TC
TC 100x135x12	100.00	135.00	12.00		TC
TC 100x135x13	100.00	135.00	13.00		TC
SC 100x135x14	100.00	135.00	14.00		SC
TC 100x135x14	100.00	135.00	14.00		TC
TC 100x135x15	100.00	135.00	15.00		TC
SC 100x140x12	100.00	140.00	12.00		SC
TC 100x140x12	100.00	140.00	12.00		TC
SC 100x140x13	100.00	140.00	13.00		SC
TC 100x140x13	100.00	140.00	13.00		TC
TC 100x145x14	100.00	145.00	14.00		TC
TC 100x150x10	100.00	150.00	10.00		TC
SC 100x150x12	100.00	150.00	12.00		SC
TC 100x150x12	100.00	150.00	12.00		TC
SC 100x150x13	100.00	150.00	13.00		SC
TC 100x150x13	100.00	150.00	13.00		TC
TC 100x155x14	100.00	155.00	14.00		TC
TC 100x155x16	100.00	155.00	16.00		TC
TC 100x160x12	100.00	160.00	12.00		TC
TC 100x170x15	100.00	170.00	15.00		TC
TC 100x180x12	100.00	180.00	12.00		TC
TC 101x116x8	101.00	116.00	8.00		TC
TC 102x130x13	102.00	130.00	13.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 104x137x13	104.00	137.00	13.00		TC
TC 104x139x13	104.00	139.00	13.00		TC
TC 105x120x11	105.00	120.00	11.00		TC
SC 105x120x13	105.00	120.00	13.00		SC
TC 105x120x13	105.00	120.00	13.00		TC
TC 105x125x10	105.00	125.00	10.00		TC
TC 105x125x11.7	105.00	125.00	11.70		TC
TC 105x125x12	105.00	125.00	12.00		TC
SC 105x125x13	105.00	125.00	13.00		SC
SC 105x125x13	105.00	125.00	13.00		SC
TC 105x125x13	105.00	125.00	13.00		TC
SC 105x130x12	105.00	130.00	12.00		SC
TC 105x130x12	105.00	130.00	12.00		TC
TC 105x130x12	105.00	130.00	12.00		TC
TC 105x130x13	105.00	130.00	13.00		TC
TC 105x130x15	105.00	130.00	15.00		TC
TC 105x135x9	105.00	135.00	9.00		TC
TC 105x135x12	105.00	135.00	12.00		TC
TC 105x135x13	105.00	135.00	13.00		TC
TC 105x135x13	105.00	135.00	13.00		TC
TC 105x135x14	105.00	135.00	14.00		TC
TC 105x135x14	105.00	135.00	14.00		TC
TC 105x135x15	105.00	135.00	15.00		TC
SC 105x135x16	105.00	135.00	16.00		SC
SC 105x140x12	105.00	140.00	12.00		SC
TC 105x140x12	105.00	140.00	12.00		TC
TC 105x140x13	105.00	140.00	13.00		TC
SC 105x140x14	105.00	140.00	14.00		SC
TC 105x140x15	105.00	140.00	15.00		TC
TC 105x145x12	105.00	145.00	12.00		TC
TC 105x145x14	105.00	145.00	14.00		TC
TC 105x145x15	105.00	145.00	15.00		TC
SC 105x150x15	105.00	150.00	15.00		SC
SC 105x160x12	105.00	160.00	12.00		SC
TC 105x160x12	105.00	160.00	12.00		TC
TC 106x126x12	106.00	126.00	12.00		TC
TC 106x126x12	106.00	126.00	12.00		TC
TC 108x135x9	108.00	135.00	9.00		TC
TC 109x137x13	109.00	137.00	13.00		TC
TC 110x125x12	110.00	125.00	12.00		TC
SC 110x130x10	110.00	130.00	10.00		SC
SC 110x130x12	110.00	130.00	12.00		SC
TC 110x130x12	110.00	130.00	12.00		TC
TC 110x130x12	110.00	130.00	12.00		TC
SC 110x130x13	110.00	130.00	13.00		SC
SC 110x130x13	110.00	130.00	13.00		SC
TC 110x130x13	110.00	130.00	13.00		TC
TCW 110x130x13	110.00	130.00	13.00		TCW
TC 110x130x14	110.00	130.00	14.00		TC
TC 110x135x9	110.00	135.00	9.00		TC
TC 110x135x9	110.00	135.00	9.00		TC
TC 110x135x10	110.00	135.00	10.00		TC
SC 110x135x12	110.00	135.00	12.00		SC
TC 110x135x12	110.00	135.00	12.00		TC
TC 110x135x12	110.00	135.00	12.00		TC
TC 110x135x13	110.00	135.00	13.00		TC
TC9 110x140x9x13	110.00	140.00	9.00	13.00	TC9
SC 110x140x12	110.00	140.00	12.00		SC
TC 110x140x12	110.00	140.00	12.00		TC
TC 110x140x13	110.00	140.00	13.00		TC
TC 110x140x14	110.00	140.00	14.00		TC
TC 110x140x14	110.00	140.00	14.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 110x142x14	110.00	142.00	14.00		TC
TC 110x145x13	110.00	145.00	13.00		TC
TC 110x145x13	110.00	145.00	13.00		TC
TC 110x145x14	110.00	145.00	14.00		TC
TC 110x145x15	110.00	145.00	15.00		TC
SC 110x150x13	110.00	150.00	13.00		SC
TC 110x150x13	110.00	150.00	13.00		TC
TC 110x150x14	110.00	150.00	14.00		TC
TC 110x160x12	110.00	160.00	12.00		TC
TC 110x160x14	110.00	160.00	14.00		TC
TC 110x165x12	110.00	165.00	12.00		TC
TC 110x167x17	110.00	167.00	17.00		TC
TC 110x170x12	110.00	170.00	12.00		TC
TC 112x140x13	112.00	140.00	13.00		TC
TC 112x142x14	112.00	142.00	14.00		TC
TC 114x135x12	114.00	135.00	12.00		TC
SC 115x130x12	115.00	130.00	12.00		SC
TC 115x130x12	115.00	130.00	12.00		TC
SC 115x135x10	115.00	135.00	10.00		SC
TCW 115x135x10	115.00	135.00	10.00		TCW
SC 115x135x13	115.00	135.00	13.00		SC
TC 115x135x13	115.00	135.00	13.00		TC
SC 115x140x12	115.00	140.00	12.00		SC
TC 115x140x12	115.00	140.00	12.00		TC
SC 115x140x13	115.00	140.00	13.00		SC
TC 115x140x13	115.00	140.00	13.00		TC
TC 115x140x13	115.00	140.00	13.00		TC
TC 115x140x14	115.00	140.00	14.00		TC
TC 115x140x15	115.00	140.00	15.00		TC
TC 115x140x16	115.00	140.00	16.00		TC
TC 115x145x12	115.00	145.00	12.00		TC
TC 115x145x13	115.00	145.00	13.00		TC
TC 115x145x14	115.00	145.00	14.00		TC
TC 115x145x16	115.00	145.00	16.00		TC
SC 115x150x12	115.00	150.00	12.00		SC
TC 115x150x12	115.00	150.00	12.00		TC
TC 115x150x14	115.00	150.00	14.00		TC
TC 115x150x15	115.00	150.00	15.00		TC
TC 115x150x16	115.00	150.00	16.00		TC
TC 115x159x14	115.00	159.00	14.00		TC
TC 115x160x15	115.00	160.00	15.00		TC
TC 115x170x12	115.00	170.00	12.00		TC
TC 116x132x12	116.00	132.00	12.00		TC
TC7 116x146x12x18	116.00	146.00	12.00	18.00	TC7
SC 118x140x13	118.00	140.00	13.00		SC
TC 120x140x7.5	120.00	140.00	7.50		TC
SC 120x140x10	120.00	140.00	10.00		SC
TC 120x140x12	120.00	140.00	12.00		TC
SC 120x140x13	120.00	140.00	13.00		SC
TC 120x140x13	120.00	140.00	13.00		TC
TC 120x140x13	120.00	140.00	13.00		TC
TC 120x140x14	120.00	140.00	14.00		TC
TC 120x140x15	120.00	140.00	15.00		TC
TC 120x145x12	120.00	145.00	12.00		TC
TC 120x145x15	120.00	145.00	15.00		TC
TC 120x146x13	120.00	146.00	13.00		TC
SC 120x150x12	120.00	150.00	12.00		SC
TC 120x150x12	120.00	150.00	12.00		TC
SC 120x150x13	120.00	150.00	13.00		SC
TC 120x150x13	120.00	150.00	13.00		TC
TC 120x150x14	120.00	150.00	14.00		TC
TC 120x150x14	120.00	150.00	14.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 120x150x15	120.00	150.00	15.00		TC
TC9 120x153x15x18	120.00	153.00	15.00	18.00	TC9
TC 120x153x15	120.00	153.00	15.00		TC
TC 120x155x14	120.00	155.00	14.00		TC
TC 120x155x15	120.00	155.00	15.00		TC
TC 120x155x16	120.00	155.00	16.00		TC
TC 120x159x14	120.00	159.00	14.00		TC
SC 120x160x12	120.00	160.00	12.00		SC
TC 120x160x12	120.00	160.00	12.00		TC
SC 120x160x13	120.00	160.00	13.00		SC
TC 120x160x14	120.00	160.00	14.00		TC
TC 120x160x15	120.00	160.00	15.00		TC
TC 120x162x14	120.00	162.00	14.00		TC
TC 120x165x14	120.00	165.00	14.00		TC
TC 120x170x12	120.00	170.00	12.00		TC
TC 120x180x15	120.00	180.00	15.00		TC
TC 120x200x14	120.00	200.00	14.00		TC
TC 120x215x15	120.00	215.00	15.00		TC
TC 122x140x13	122.00	140.00	13.00		TC
TC7 122x150x12x18	122.00	150.00	12.00	18.00	TC7
TC 124x159x14	124.00	159.00	14.00		TC
TC 124x170x14,5	124.00	170.00	14.50		TC
TC 125x143x13	125.00	143.00	13.00		TC
TCW 125x143x13	125.00	143.00	13.00		TCW
TC 125x145x12	125.00	145.00	12.00		TC
TC 125x145x13	125.00	145.00	13.00		TC
TC 125x145x14	125.00	145.00	14.00		TC
TC7 125x150x12x18	125.00	150.00	12.00	18.00	TC7
SC 125x150x12	125.00	150.00	12.00		SC
TC 125x150x12	125.00	150.00	12.00		TC
SC 125x150x13	125.00	150.00	13.00		SC
TC 125x150x13	125.00	150.00	13.00		TC
TC 125x150x13	125.00	150.00	13.00		TC
TC 125x150x14	125.00	150.00	14.00		TC
TC 125x150x15	125.00	150.00	15.00		TC
TC 125x152x12	125.00	152.00	12.00		TC
TC7 125x155x14x23	125.00	155.00	14.00	23.00	TC7
TC 125x155x14	125.00	155.00	14.00		TC
TC 125x155x14	125.00	155.00	14.00		TC
SC 125x160x12	125.00	160.00	12.00		SC
SC 125x160x13	125.00	160.00	13.00		SC
TC 125x160x14	125.00	160.00	14.00		TC
TC 125x160x15	125.00	160.00	15.00		TC
SC 125x160x16	125.00	160.00	16.00		SC
TC 125x175x13	125.00	175.00	13.00		TC
TC 127x150x13	127.00	150.00	13.00		TC
TC 128x148x10	128.00	148.00	10.00		TC
TC 128x150x13	128.00	150.00	13.00		TC
TC 130x140x12	130.00	140.00	12.00		TC
TC 130x150x10	130.00	150.00	10.00		TC
TC 130x150x12	130.00	150.00	12.00		TC
TC 130x150x13	130.00	150.00	13.00		TC
SC 130x155x10	130.00	155.00	10.00		SC
TC 130x155x10	130.00	155.00	10.00		TC
TC 130x155x14	130.00	155.00	14.00		TC
SC 130x160x12	130.00	160.00	12.00		SC
TC 130x160x12	130.00	160.00	12.00		TC
TC 130x160x13	130.00	160.00	13.00		TC
TC 130x160x14	130.00	160.00	14.00		TC
TC 130x160x14	130.00	160.00	14.00		TC
TC 130x160x15	130.00	160.00	15.00		TC
TC 130x165x13	130.00	165.00	13.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 130x165x14	130.00	165.00	14.00		TC
TC 130x165x15	130.00	165.00	15.00		TC
SC 130x170x12	130.00	170.00	12.00		SC
TC 130x170x12	130.00	170.00	12.00		TC
TC 130x170x13	130.00	170.00	13.00		TC
TC 130x170x15	130.00	170.00	15.00		TC
TC 130x180x13	130.00	180.00	13.00		TC
SC 130x182x16	130.00	182.00	16.00		SC
TC 130x190x12	130.00	190.00	12.00		TC
TC 130x200x12	130.00	200.00	12.00		TC
SC 130x200x15	130.00	200.00	15.00		SC
TC 131x145x7	131.00	145.00	7.00		TC
TC 132x160x14	132.00	160.00	14.00		TC
TC 133x157x14	133.00	157.00	14.00		TC
TC 135x155x12	135.00	155.00	12.00		TC
TC 135x155x13	135.00	155.00	13.00		TC
SC 135x160x12	135.00	160.00	12.00		SC
SC 135x160x13	135.00	160.00	13.00		SC
TC 135x160x13	135.00	160.00	13.00		TC
SC 135x160x15	135.00	160.00	15.00		SC
TC 135x160x15	135.00	160.00	15.00		TC
TC 135x165x13	135.00	165.00	13.00		TC
TC7 135x165x14x20	135.00	165.00	14.00	20.00	TC7
TC 135x165x14	135.00	165.00	14.00		TC
TC 135x165x15	135.00	165.00	15.00		TC
SC 135x170x12	135.00	170.00	12.00		SC
TC 135x170x12	135.00	170.00	12.00		TC
SC 135x170x15	135.00	170.00	15.00		SC
TC 135x170x15	135.00	170.00	15.00		TC
TC 135x175x12	135.00	175.00	12.00		TC
TC 135x175x15	135.00	175.00	15.00		TC
TC 138x160x14	138.00	160.00	14.00		TC
TC 138x160x15	138.00	160.00	15.00		TC
TC 140x160x10	140.00	160.00	10.00		TC
TCW 140x160x10	140.00	160.00	10.00		TCW
SC 140x160x12	140.00	160.00	12.00		SC
TC 140x160x12	140.00	160.00	12.00		TC
TC 140x160x13	140.00	160.00	13.00		TC
TC 140x160x14	140.00	160.00	14.00		TC
TC 140x160x14	140.00	160.00	14.00		TC
TC 140x160x15	140.00	160.00	15.00		TC
TC 140x165x13	140.00	165.00	13.00		TC
TC 140x165x15	140.00	165.00	15.00		TC
TC 140x168x15	140.00	168.00	15.00		TC
SC 140x170x12	140.00	170.00	12.00		SC
TC 140x170x12	140.00	170.00	12.00		TC
TC 140x170x13	140.00	170.00	13.00		TC
TC 140x170x14	140.00	170.00	14.00		TC
SC 140x170x15	140.00	170.00	15.00		SC
TC 140x170x15	140.00	170.00	15.00		TC
TC 140x175x13	140.00	175.00	13.00		TC
TC 140x175x15	140.00	175.00	15.00		TC
SC 140x180x10	140.00	180.00	10.00		SC
SC 140x180x12	140.00	180.00	12.00		SC
TC 140x180x12	140.00	180.00	12.00		TC
TC 140x180x15	140.00	180.00	15.00		TC
TC 140x185x16	140.00	185.00	16.00		TC
TC 140x200x12	140.00	200.00	12.00		TC
SC 140x215x12	140.00	215.00	12.00		SC
TC 140x250x15	140.00	250.00	15.00		TC
TC 142x157x10	142.00	157.00	10.00		TC
TC 142x168x14	142.00	168.00	14.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SC 143x165x10	143.00	165.00	10.00		SC
SC 144x160x12	144.00	160.00	12.00		SC
TC 145x160x12	145.00	160.00	12.00		TC
TC 145x165x13	145.00	165.00	13.00		TC
TC 145x165x14	145.00	165.00	14.00		TC
TC 145x167x13	145.00	167.00	13.00		TC
TC 145x168x10	145.00	168.00	10.00		TC
TC 145x168x13	145.00	168.00	13.00		TC
TC7 145x170x12x16	145.00	170.00	12.00	16.00	TC7
TC 145x170x13	145.00	170.00	13.00		TC
SC 145x170x15	145.00	170.00	15.00		SC
TC 145x170x15	145.00	170.00	15.00		TC
SC 145x175x13	145.00	175.00	13.00		SC
TC 145x175x13	145.00	175.00	13.00		TC
TC 145x175x14	145.00	175.00	14.00		TC
SC 145x175x15	145.00	175.00	15.00		SC
TC 145x175x15	145.00	175.00	15.00		TC
TC 145x180x12	145.00	180.00	12.00		TC
TC 145x180x15	145.00	180.00	15.00		TC
TC 145x230x17	145.00	230.00	17.00		TC
TC 148x170x15	148.00	170.00	15.00		TC
TC 150x168x13	150.00	168.00	13.00		TC
SC 150x170x12	150.00	170.00	12.00		SC
TC 150x170x13	150.00	170.00	13.00		TC
TC 150x170x15	150.00	170.00	15.00		TC
TC 150x172x12	150.00	172.00	12.00		TC
SC 150x172x15	150.00	172.00	15.00		SC
TCW 150x172x18	150.00	172.00	18.00		TCW
TC 150x175x10	150.00	175.00	10.00		TC
TC 150x176x15	150.00	176.00	15.00		TC
SC 150x180x12	150.00	180.00	12.00		SC
TC 150x180x12	150.00	180.00	12.00		TC
SC 150x180x13	150.00	180.00	13.00		SC
SC 150x180x13	150.00	180.00	13.00		SC
TC 150x180x13	150.00	180.00	13.00		TC
TC 150x180x14	150.00	180.00	14.00		TC
SC 150x180x15	150.00	180.00	15.00		SC
TC 150x180x15	150.00	180.00	15.00		TC
TC 150x180x15	150.00	180.00	15.00		TC
TC 150x185x16	150.00	185.00	16.00		TC
TC 150x190x15	150.00	190.00	15.00		TC
SC 150x200x10	150.00	200.00	10.00		SC
TC 150x200x13	150.00	200.00	13.00		TC
TC 150x210x15	150.00	210.00	15.00		TC
TC 150x225x12	150.00	225.00	12.00		TC
SC 150x225x15	150.00	225.00	15.00		SC
TC 154x172x14	154.00	172.00	14.00		TC
TC 154x180x18	154.00	180.00	18.00		TC
TC9 155x167x8x11.5	155.00	167.00	8.00	11.50	TC9
TC 155x172x14	155.00	172.00	14.00		TC
TC 155x174x12	155.00	174.00	12.00		TC
SC 155x175x12	155.00	175.00	12.00		SC
TC 155x180x10	155.00	180.00	10.00		TC
TC 155x180x12	155.00	180.00	12.00		TC
TC 155x180x13	155.00	180.00	13.00		TC
SC 155x180x15	155.00	180.00	15.00		SC
TC 155x180x15	155.00	180.00	15.00		TC
TC 155x185x14	155.00	185.00	14.00		TC
TC 155x185x16	155.00	185.00	16.00		TC
SC 155x190x15	155.00	190.00	15.00		SC
TC 155x190x15	155.00	190.00	15.00		TC
TC 160x180x10	160.00	180.00	10.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 160x180x13	160.00	180.00	13.00		TC
TC 160x180x14	160.00	180.00	14.00		TC
TC 160x180x15	160.00	180.00	15.00		TC
TC 160x182x18	160.00	182.00	18.00		TC
SC 160x185x10	160.00	185.00	10.00		SC
TC 160x185x10	160.00	185.00	10.00		TC
SC 160x185x12	160.00	185.00	12.00		SC
TC 160x185x13	160.00	185.00	13.00		TC
SC 160x190x13	160.00	190.00	13.00		SC
TC 160x190x13	160.00	190.00	13.00		TC
TC 160x190x14	160.00	190.00	14.00		TC
SC 160x190x15	160.00	190.00	15.00		SC
TC 160x190x15	160.00	190.00	15.00		TC
TC 160x195x15	160.00	195.00	15.00		TC
SC 160x200x12	160.00	200.00	12.00		SC
TC 160x200x12	160.00	200.00	12.00		TC
TC 160x200x14	160.00	200.00	14.00		TC
TC 160x200x15	160.00	200.00	15.00		TC
TC 160x200x16	160.00	200.00	16.00		TC
TC 160x215x15	160.00	215.00	15.00		TC
SC 160x220x12	160.00	220.00	12.00		SC
TC 160x220x15	160.00	220.00	15.00		TC
TC 160x240x15	160.00	240.00	15.00		TC
TC 160x290x18	160.00	290.00	18.00		TC
SC 165x180x8	165.00	180.00	8.00		SC
TC 165x186x14	165.00	186.00	14.00		TC
SC 165x190x13	165.00	190.00	13.00		SC
TC 165x190x13	165.00	190.00	13.00		TC
TC 165x190x14	165.00	190.00	14.00		TC
TC 165x190x15	165.00	190.00	15.00		TC
TC 165x195x15	165.00	195.00	15.00		TC
TC 165x200x14	165.00	200.00	14.00		TC
SC 170x190x7	170.00	190.00	7.00		SC
TC 170x190x8.5	170.00	190.00	8.50		TC
TC 170x190x10	170.00	190.00	10.00		TC
TC 170x190x14	170.00	190.00	14.00		TC
SC 170x190x15	170.00	190.00	15.00		SC
TC 170x195x15	170.00	195.00	15.00		TC
SC 170x200x12	170.00	200.00	12.00		SC
TC 170x200x13	170.00	200.00	13.00		TC
SC 170x200x15	170.00	200.00	15.00		SC
TC 170x200x15	170.00	200.00	15.00		TC
TC 170x202x12	170.00	202.00	12.00		TC
TC 170x205x15	170.00	205.00	15.00		TC
TC 170x205x17	170.00	205.00	17.00		TC
SC 170x210x15	170.00	210.00	15.00		SC
TC 170x210x15	170.00	210.00	15.00		TC
TC 173x197x8	173.00	197.00	8.00		TC
TC 175x190x15	175.00	190.00	15.00		TC
SC 175x200x15	175.00	200.00	15.00		SC
TC 175x200x15	175.00	200.00	15.00		TC
SC 175x210x15	175.00	210.00	15.00		SC
TC 175x210x15	175.00	210.00	15.00		TC
TC 175x215x15	175.00	215.00	15.00		TC
TC 175x230x20	175.00	230.00	20.00		TC
TC 177x208x13	177.00	208.00	13.00		TC
SC 180x200x7	180.00	200.00	7.00		SC
TC 180x200x14	180.00	200.00	14.00		TC
SC 180x200x15	180.00	200.00	15.00		SC
TC 180x200x15	180.00	200.00	15.00		TC
TC 180x205x15	180.00	205.00	15.00		TC
SC 180x210x12.5	180.00	210.00	12.50		SC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 180x210x15	180.00	210.00	15.00		TC
TC 180x215x15	180.00	215.00	15.00		TC
SC 180x220x15	180.00	220.00	15.00		SC
TC 180x220x15	180.00	220.00	15.00		TC
TC 180x220x16	180.00	220.00	16.00		TC
SC 185x210x13	185.00	210.00	13.00		SC
TC 185x210x13	185.00	210.00	13.00		TC
TC 185x210x13	185.00	210.00	13.00		TC
TC 185x210x15	185.00	210.00	15.00		TC
TC 185x215x15	185.00	215.00	15.00		TC
TC 185x215x16	185.00	215.00	16.00		TC
SC 186x203x8	186.00	203.00	8.00		SC
TC 190x210x10	190.00	210.00	10.00		TC
TC 190x210x15	190.00	210.00	15.00		TC
SC 190x215x16	190.00	215.00	16.00		SC
SC 190x220x15	190.00	220.00	15.00		SC
TC 190x220x15	190.00	220.00	15.00		TC
TC 190x220x15	190.00	220.00	15.00		TC
TC 190x225x12	190.00	225.00	12.00		TC
TC 190x225x16	190.00	225.00	16.00		TC
TC 190x225x18	190.00	225.00	18.00		TC
TC 190x230x15	190.00	230.00	15.00		TC
TC 190x230x16	190.00	230.00	16.00		TC
SC 193x210x8	193.00	210.00	8.00		SC
TC 195x225x16	195.00	225.00	16.00		TC
TC 195x230x15	195.00	230.00	15.00		TC
TC 195x230x16	195.00	230.00	16.00		TC
TC 195x230x20	195.00	230.00	20.00		TC
TC 195x235x16	195.00	235.00	16.00		TC
TC 200x220x12	200.00	220.00	12.00		TC
SC 200x225x15	200.00	225.00	15.00		SC
TC 200x225x15	200.00	225.00	15.00		TC
TC 200x230x13	200.00	230.00	13.00		TC
SC 200x230x15	200.00	230.00	15.00		SC
TC 200x230x15	200.00	230.00	15.00		TC
TC 200x230x15	200.00	230.00	15.00		TC
SC 200x230x16	200.00	230.00	16.00		SC
TC 200x235x15	200.00	235.00	15.00		TC
TC 200x240x15	200.00	240.00	15.00		TC
TC 200x240x20	200.00	240.00	20.00		TC
SC 200x250x15	200.00	250.00	15.00		SC
TC 200x250x15	200.00	250.00	15.00		TC
TC 200x250x16	200.00	250.00	16.00		TC
TC 200x250x20	200.00	250.00	20.00		TC
TC 205x225x18	205.00	225.00	18.00		TC
SC 205x230x16	205.00	230.00	16.00		SC
TC 205x230x16	205.00	230.00	16.00		TC
TC 205x235x18	205.00	235.00	18.00		TC
SC 210x240x15	210.00	240.00	15.00		SC
TC 210x240x15	210.00	240.00	15.00		TC
TC 210x245x18	210.00	245.00	18.00		TC
SC 210x250x15	210.00	250.00	15.00		SC
TC 210x250x15	210.00	250.00	15.00		TC
TC 210x250x16	210.00	250.00	16.00		TC
TC 210x255x16	210.00	255.00	16.00		TC
TC 210x260x16	210.00	260.00	16.00		TC
TC 210x270x16	210.00	270.00	16.00		TC
SC 215x240x12	215.00	240.00	12.00		SC
TC 215x240x15	215.00	240.00	15.00		TC
TC 215x240x18	215.00	240.00	18.00		TC
TC 220x247x15	220.00	247.00	15.00		TC
TC 220x250x15	220.00	250.00	15.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 220x250x20	220.00	250.00	20.00		TC
TC 220x255x16	220.00	255.00	16.00		TC
TC 220x260x14	220.00	260.00	14.00		TC
TC 220x260x16	220.00	260.00	16.00		TC
TC 220x270x17	220.00	270.00	17.00		TC
TC 222x245x13	222.00	245.00	13.00		TC
SC 230x260x15	230.00	260.00	15.00		SC
TC 230x260x15	230.00	260.00	15.00		TC
TC 230x270x15	230.00	270.00	15.00		TC
TC 230x270x20	230.00	270.00	20.00		TC
TC 235x275x16	235.00	275.00	16.00		TC
SC 240x270x15	240.00	270.00	15.00		SC
TC 240x270x15	240.00	270.00	15.00		TC
SC 240x280x15	240.00	280.00	15.00		SC
TC 240x280x18	240.00	280.00	18.00		TC
TC 240x280x20	240.00	280.00	20.00		TC
SC 250x280x15	250.00	280.00	15.00		SC
TC 250x280x15	250.00	280.00	15.00		TC
TC 250x285x18	250.00	285.00	18.00		TC
TC 250x290x15	250.00	290.00	15.00		TC
SC 260x290x15	260.00	290.00	15.00		SC
TC 260x290x15	260.00	290.00	15.00		TC
TC 260x300x18	260.00	300.00	18.00		TC
SC 260x300x20	260.00	300.00	20.00		SC
TC 260x300x20	260.00	300.00	20.00		TC
TC 260x320x20	260.00	320.00	20.00		TC
TC 260x320x25	260.00	320.00	25.00		TC
TC 265x290x16	265.00	290.00	16.00		TC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TC 270x310x18	270.00	310.00	18.00		TC
SC 280x310x15	280.00	310.00	15.00		SC
TC 280x310x15	280.00	310.00	15.00		TC
TC 280x320x20	280.00	320.00	20.00		TC
TC 285x320x20	285.00	320.00	20.00		TC
TC 290x330x18	290.00	330.00	18.00		TC
SC 300x340x18	300.00	340.00	18.00		SC
TC 300x340x18	300.00	340.00	18.00		TC
TC 300x360x25	300.00	360.00	25.00		TC
TC 310x332x10	310.00	332.00	10.00		TC
TC 310x350x18	310.00	350.00	18.00		TC
TC 320x350x20	320.00	350.00	20.00		TC
TC 320x360x18	320.00	360.00	18.00		TC
SC 320x360x20	320.00	360.00	20.00		SC
TC 320x360x20	320.00	360.00	20.00		TC
SC 340x380x18	340.00	380.00	18.00		SC
TC 340x380x20	340.00	380.00	20.00		TC
TC 350x390x18	350.00	390.00	18.00		TC
TC 360x400x18	360.00	400.00	18.00		TC
SC 360x400x20	360.00	400.00	20.00		SC
TC 360x400x20	360.00	400.00	20.00		TC
SC 380x420x20	380.00	420.00	20.00		SC
TC 380x420x20	380.00	420.00	20.00		TC
SC 400x425x15	400.00	425.00	15.00		SC
TC 400x440x20	400.00	440.00	20.00		TC
TC 420x460x20	420.00	460.00	20.00		TC
SC 430x480x30	430.00	480.00	30.00		SC
TC 440x480x20	440.00	480.00	20.00		TC

BAGUES D'ÉTANCHÉITÉ STANDARD

SB / SB2 / TB / TB2 / TB7 / TB27 / TB8 / TB28 / TB9 / TB29

Image profil SB

11.3 SB / SB2 / TB / TB2 / TB7 / TB27 / TB8 / TB28 / TB9 / TB29 PROFILES

		Spring-loaded sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip + axial lip	Spring-loaded sealing lip + 2 anti-pollution sealing lip	Spring-loaded sealing lip + 2 anti-pollution sealing lip + axial lip
		S	**T**	**T7**	**T8**	**T9**
Single rubber covered metal casing	**B**	**SB**	**TB**	**TB7**	**TB8**	**TB9**
Single outer metal casing	**B2**	**SB2**	**TB2**	**TB27**	**TB28**	**TB29**

DESCRIPTION

Shaft seal composed of a single outer metal cage and a spring-loaded sealing lip. Available with or without an additional radial and/or axial anti-pollution sealing lip, and with or without a coating on the inside of the metal casing.

APPLICATIONS

Shaft sealing
Motors
Pumps
Transmissions

ADVANTAGES

Good radial rigidity, particularly for large diameters

Good stability when assembled, preventing the bounce-back effect

Sealing for low and high viscosity fluids

Reduced risk of internal corrosion (type B cage only)

Modern primary sealing lip with low radial forces

Standard, average or increased protection against undesirable air contaminants

MATERIALS

Rubber

ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

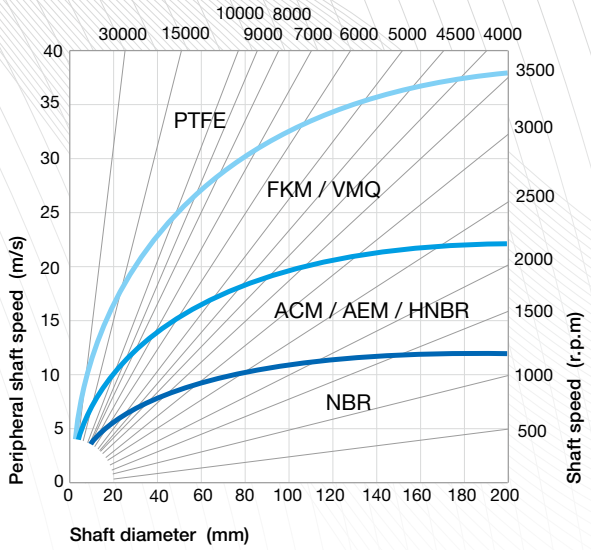
Steel - AISI 1010

Spring

Steel - AISI 1070 - 1090
Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	The shaft seals with an additional protective lip are limited to a speed of 8 m/sec.
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

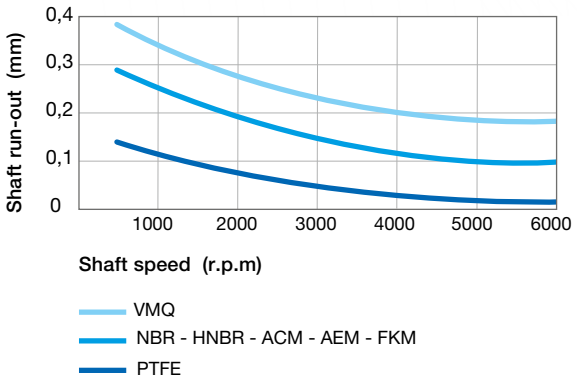
Shaft tolerance

Tolerance	ISO h11

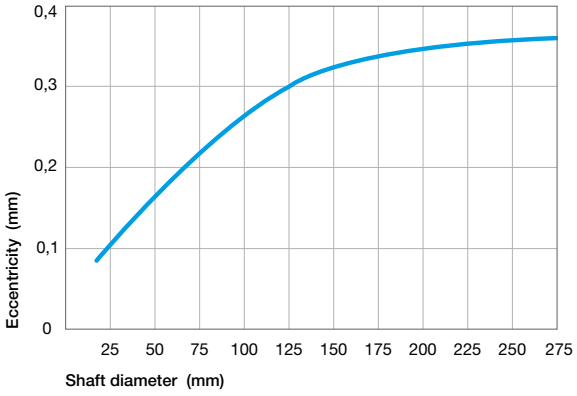
Shaft roundness

Roundness	IT 8

Shaft run out



Eccentricity



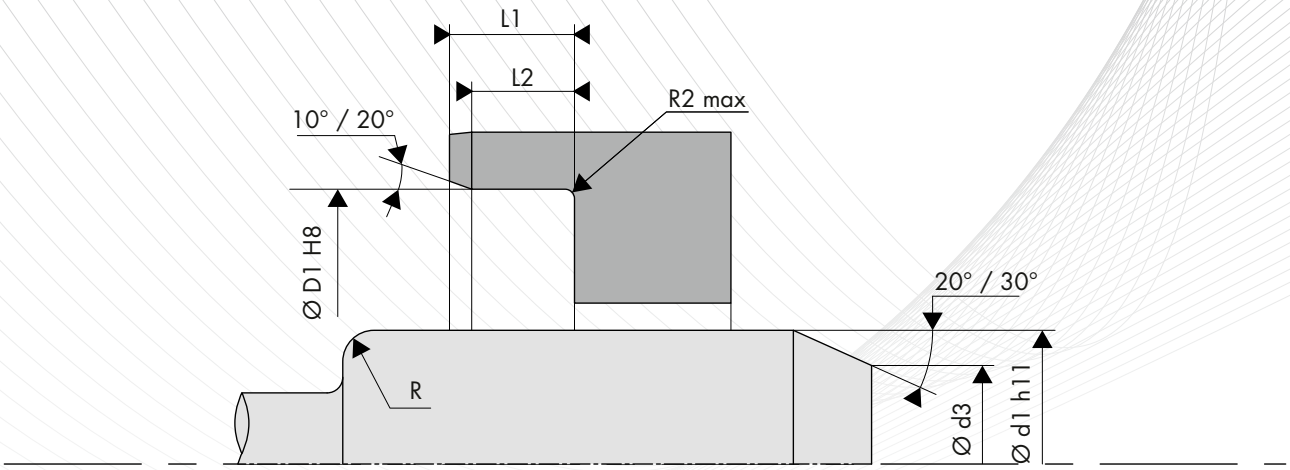
HOUSING DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8



DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB 5x30x6	5.00	30.00	6.00		TB
SB 8x14x4	8.00	14.00	4.00		SB
TB 8x14x6	8.00	14.00	6.00		TB
TB 8x15x5	8.00	15.00	5.00		TB
SB 8x15x8	8.00	15.00	8.00		SB
SB 8x16x5	8.00	16.00	5.00		SB
SB 8x16x7	8.00	16.00	7.00		SB
TB 8x22x4	8.00	22.00	4.00		TB
SB 8x22x7	8.00	22.00	7.00		SB
SB 9x16x5	9.00	16.00	5.00		SB
SB 9x17x4.5	9.00	17.00	4.50		SB
SB 9x18x6	9.00	18.00	6.00		SB
SB 9x19x5	9.00	19.00	5.00		SB
TB 9x19x7	9.00	19.00	7.00		TB
SB 10x16x6	10.00	16.00	6.00		SB
SB 10x17x4.5	10.00	17.00	4.50		SB
SB 10x17x5	10.00	17.00	5.00		SB
SB 10x20x5	10.00	20.00	5.00		SB
TB 10x20x7	10.00	20.00	7.00		TB
SB 10x30x7	10.00	30.00	7.00		SB
SB 11x17x4	11.00	17.00	4.00		SB
TB 11x17x4	11.00	17.00	4.00		TB
TB 11x20x4	11.00	20.00	4.00		TB
TB 11x20x4,5	11.00	20.00	4.50		TB
SB 11x22x7	11.00	22.00	7.00		SB
SB 12x18x4	12.00	18.00	4.00		SB
SB 12x19x5	12.00	19.00	5.00		SB
SB 12x20x5	12.00	20.00	5.00		SB
TB 12x20x5	12.00	20.00	5.00		TB
TB 12x20x5.5	12.00	20.00	5.50		TB
SB 12x22x4	12.00	22.00	4.00		SB
TB 12x22x4,5	12.00	22.00	4.50		TB
SB 12x22x5	12.00	22.00	5.00		SB
SB 12x22x7	12.00	22.00	7.00		SB
TB 12x23x8	12.00	23.00	8.00		TB
SB 12x24x7	12.00	24.00	7.00		SB
SB2 12x25x5	12.00	25.00	5.00		SB2
SB2 12x28x7	12.00	28.00	7.00		SB2
SB2 12x32x6	12.00	32.00	6.00		SB2
SB2 12x32x7	12.00	32.00	7.00		SB2
TB2 12x32x7	12.00	32.00	7.00		TB2
TB 13x19x4	13.00	19.00	4.00		TB

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB 13x20x5.5	13.00	20.00	5.50		TB
TB 13x22x5	13.00	22.00	5.00		TB
SB 13x24x6	13.00	24.00	6.00		SB
SB 13x25x7	13.00	25.00	7.00		SB
TB 13x25x7	13.00	25.00	7.00		TB
TB 13x25x10	13.00	25.00	10.00		TB
SB2 13x28x7	13.00	28.00	7.00		SB2
SB 14x22x5	14.00	22.00	5.00		SB
SB 14x24x6	14.00	24.00	6.00		SB
TB 14x24x6	14.00	24.00	6.00		TB
TB 14x24x7	14.00	24.00	7.00		TB
TB 14x25x7	14.00	25.00	7.00		TB
SB2 14x28x7	14.00	28.00	7.00		SB2
TB2 14x28x8	14.00	28.00	8.00		TB2
TB2 14x32x7	14.00	32.00	7.00		TB2
SB 15x20x3	15.00	20.00	3.00		SB
TB 15x21x5	15.00	21.00	5.00		TB
SB2 15x22x4	15.00	22.00	4.00		SB2
TB 15x22x4	15.00	22.00	4.00		TB
SB 15x24x7	15.00	24.00	7.00		SB
TB 15x24x7	15.00	24.00	7.00		TB
SB 15x25x5	15.00	25.00	5.00		SB
SB 15x25x6	15.00	25.00	6.00		SB
TB 15x25x7	15.00	25.00	7.00		TB
TB2 15x26x4	15.00	26.00	4.00		TB2
TB 15x26x6	15.00	26.00	6.00		TB
SB2 15x26x7	15.00	26.00	7.00		SB2
TB 15x26x7	15.00	26.00	7.00		TB
SB 15x26x9	15.00	26.00	9.00		SB
SB 15x28x7	15.00	28.00	7.00		SB
TB2 15x30x6	15.00	30.00	6.00		TB2
SB2 15x30x7	15.00	30.00	7.00		SB2
TB 15x30x7	15.00	30.00	7.00		TB
TB2 15x30x8	15.00	30.00	8.00		TB2
SB2 15x35x5	15.00	35.00	5.00		SB2
SB2 15x35x7	15.00	35.00	7.00		SB2
TB 15x35x7	15.00	35.00	7.00		TB
TB 16x21x4.5	16.00	21.00	4.50		TB
SB 16x24x4	16.00	24.00	4.00		SB
TB 16x24x4	16.00	24.00	4.00		TB
TB 16x24x6	16.00	24.00	6.00		TB
SB 16x24x7	16.00	24.00	7.00		SB

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB 16x25x7	16.00	25.00	7.00		TB
SB 16x26x7	16.00	26.00	7.00		SB
SB 16x28x7	16.00	28.00	7.00		SB
TB 16x28x7	16.00	28.00	7.00		TB
SB2 16x30x6.4	16.00	30.00	6.40		SB2
TB 16x30x7	16.00	30.00	7.00		TB
TB2 16x30x7	16.00	30.00	7.00		TB2
SB 16x32x7	16.00	32.00	7.00		SB
TB 17x26x7	17.00	26.00	7.00		TB
SB 17x28x5	17.00	28.00	5.00		SB
SB2 17x28x6	17.00	28.00	6.00		SB2
TB 17x28x6	17.00	28.00	6.00		TB
SB 17x28x7	17.00	28.00	7.00		SB
TB 17x28x7	17.00	28.00	7.00		TB
TB2 17x28x7	17.00	28.00	7.00		TB2
TB 17x30x6	17.00	30.00	6.00		TB
SB2 17x30x7	17.00	30.00	7.00		SB2
TB 17x30x7	17.00	30.00	7.00		TB
TB2 17x30x7	17.00	30.00	7.00		TB2
TB2 17x32x7	17.00	32.00	7.00		TB2
TB 17x32x9	17.00	32.00	9.00		TB
SB2 17x33x7	17.00	33.00	7.00		SB2
TB 17x33x7	17.00	33.00	7.00		TB
SB2 17x33x8	17.00	33.00	8.00		SB2
TB 17x34x4	17.00	34.00	4.00		TB
SB 17x34x4.5	17.00	34.00	4.50		SB
TB 17x34x8	17.00	34.00	8.00		TB
SB2 17x35x7	17.00	35.00	7.00		SB2
SB2 17x35x8	17.00	35.00	8.00		SB2
TB 17x40x5	17.00	40.00	5.00		TB
TB2 17x40x6	17.00	40.00	6.00		TB2
SB2 17x40x10	17.00	40.00	10.00		SB2
TB 18x25x4	18.00	25.00	4.00		TB
TB 18x28x7	18.00	28.00	7.00		TB
TB 18x28x8	18.00	28.00	8.00		TB
TB2 18x30x7	18.00	30.00	7.00		TB2
TB2 18x30x8	18.00	30.00	8.00		TB2
TB 18x32x7	18.00	32.00	7.00		TB
TB 19x30x7	19.00	30.00	7.00		TB
SB 19x32x7	19.00	32.00	7.00		SB
TB 19x32x8	19.00	32.00	8.00		TB
TB2 19x35x8	19.00	35.00	8.00		TB2
SB 19x37x10	19.00	37.00	10.00		SB
SB2 19x37x10	19.00	37.00	10.00		SB2
SB 20x26x4	20.00	26.00	4.00		SB
TB 20x27x6	20.00	27.00	6.00		TB
TB 20x28x4	20.00	28.00	4.00		TB
TB 20x28x6	20.00	28.00	6.00		TB
SB 20x28x8	20.00	28.00	8.00		SB
SB 20x30x5	20.00	30.00	5.00		SB
TB2 20x30x6	20.00	30.00	6.00		TB2
SB 20x30x7	20.00	30.00	7.00		SB
TB 20x30x7	20.00	30.00	7.00		TB
SB 20x31x7	20.00	31.00	7.00		SB
TB 20x31x7	20.00	31.00	7.00		TB
SB 20x32x5	20.00	32.00	5.00		SB
SB 20x32x7	20.00	32.00	7.00		SB
TB 20x32x7	20.00	32.00	7.00		TB
TB 20x32x8	20.00	32.00	8.00		TB
SB2 20x35x7	20.00	35.00	7.00		SB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB2 20x35x7	20.00	35.00	7.00		TB2
TB 20x35x8	20.00	35.00	8.00		TB
TB 20x35x10	20.00	35.00	10.00		TB
TB2 20x40x4	20.00	40.00	4.00		TB2
SB2 20x40x7	20.00	40.00	7.00		SB2
TB 20x40x7	20.00	40.00	7.00		TB
SB2 20x40x10	20.00	40.00	10.00		SB2
TB2 20x40x10	20.00	40.00	10.00		TB2
SB2 20x42x7	20.00	42.00	7.00		SB2
SB 20x42x8	20.00	42.00	8.00		SB
SB2 20x47x7	20.00	47.00	7.00		SB2
TB2 20x47x7	20.00	47.00	7.00		TB2
TB 21x28x5.5	21.00	28.00	5.50		TB
TB 21x32x6	21.00	32.00	6.00		TB
TB 21x32x7	21.00	32.00	7.00		TB
SB 22x31x7	22.00	31.00	7.00		SB
SB 22x32x5,5	22.00	32.00	5.50		SB
SB2 22x32x7	22.00	32.00	7.00		SB2
TB 22x35x5	22.00	35.00	5.00		TB
SB2 22x35x7	22.00	35.00	7.00		SB2
TB2 22x35x7	22.00	35.00	7.00		TB2
SB 22x35x8	22.00	35.00	8.00		SB
TB2 22x36x8	22.00	36.00	8.00		TB2
SB2 22x36x10	22.00	36.00	10.00		SB2
TB 22x38x8	22.00	38.00	8.00		TB
TB2 22x38x10	22.00	38.00	10.00		TB2
SB2 22x40x7	22.00	40.00	7.00		SB2
TB2 22x42x7	22.00	42.00	7.00		TB2
SB2 22x42x10	22.00	42.00	10.00		SB2
TB2 22x42x10	22.00	42.00	10.00		TB2
TB 23x35x8	23.00	35.00	8.00		TB
TB 23x35x8	23.00	35.00	8.00		TB
TB2 24x30x5	24.00	30.00	5.00		TB2
TB 24x32x4	24.00	32.00	4.00		TB
SB 24x32x7	24.00	32.00	7.00		SB
TB 24x35x8.5	24.00	35.00	8.50		TB
TB 24x36x6	24.00	36.00	6.00		TB
TB2 24x40x8	24.00	40.00	8.00		TB2
TB2 24x62x4.8	24.00	62.00	4.80		TB2
TB 25x32x7	25.00	32.00	7.00		TB
TB 25x33x5	25.00	33.00	5.00		TB
TB 25x34x5	25.00	34.00	5.00		TB
SB 25x35x6	25.00	35.00	6.00		SB
SB2 25x35x7	25.00	35.00	7.00		SB2
TB 25x35x7	25.00	35.00	7.00		TB
TB2 25x35x7	25.00	35.00	7.00		TB2
TB 25x35x8	25.00	35.00	8.00		TB
TB 25x35x10	25.00	35.00	10.00		TB
SB2 25x36x7.3	25.00	36.00	7.30		SB2
SB 25x37x7	25.00	37.00	7.00		SB
TB 25x37x7	25.00	37.00	7.00		TB
TB2 25x38x7	25.00	38.00	7.00		TB2
TB2 25x38x10	25.00	38.00	10.00		TB2
SB2 25x40x7	25.00	40.00	7.00		SB2
TB2 25x40x7	25.00	40.00	7.00		TB2
TB2 25x40x8	25.00	40.00	8.00		TB2
SB2 25x40x10	25.00	40.00	10.00		SB2
SB2 25x42x8	25.00	42.00	8.00		SB2
TB2 25x43x8	25.00	43.00	8.00		TB2
TB 25x45x8	25.00	45.00	8.00		TB

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SB2 25x45x10	25.00	45.00	10.00		SB2
TB2 25x45x10	25.00	45.00	10.00		TB2
TB2 25x47x6	25.00	47.00	6.00		TB2
TB2 25x47x7	25.00	47.00	7.00		TB2
SB2 25x48x8	25.00	48.00	8.00		SB2
TB2 25x52x7.9	25.00	52.00	7.90		TB2
SB2 25x52x12	25.00	52.00	12.00		SB2
TB2 25x64x13	25.00	64.00	13.00		TB2
SB 26x32x5	26.00	32.00	5.00		SB
TB 26x37x6	26.00	37.00	6.00		TB
SB 26x37x7	26.00	37.00	7.00		SB
TB 26x37x7	26.00	37.00	7.00		TB
SB 26x38x6	26.00	38.00	6.00		SB
SB2 26x42x8	26.00	42.00	8.00		SB2
TB 26x43x6	26.00	43.00	6.00		TB
SB 26x45x10	26.00	45.00	10.00		SB
SB 27x37x7	27.00	37.00	7.00		SB
TB 27x43x9	27.00	43.00	9.00		TB
TB 27x48x8	27.00	48.00	8.00		TB
SB2 27x52x8	27.00	52.00	8.00		SB2
TB 28x34x7	28.00	34.00	7.00		TB
TB 28x36x6	28.00	36.00	6.00		TB
SB 28x37x4	28.00	37.00	4.00		SB
TB 28x37x6	28.00	37.00	6.00		TB
SB 28x38x7	28.00	38.00	7.00		SB
SB 28x38x10	28.00	38.00	10.00		SB
SB 28x40x7	28.00	40.00	7.00		SB
TB 28x40x8	28.00	40.00	8.00		TB
TB 28x41x8	28.00	41.00	8.00		TB
SB 28x43x10	28.00	43.00	10.00		SB
SB2 28x43x10	28.00	43.00	10.00		SB2
SB2 28x47x8	28.00	47.00	8.00		SB2
TB2 28x47x8	28.00	47.00	8.00		TB2
SB2 28x47x10	28.00	47.00	10.00		SB2
SB2 28x48x11	28.00	48.00	11.00		SB2
TB2 28x48x11	28.00	48.00	11.00		TB2
TB2 28x52x7	28.00	52.00	7.00		TB2
TB 29x36x7	29.00	36.00	7.00		TB
TB 29x41x7	29.00	41.00	7.00		TB
TB2 29x45x8	29.00	45.00	8.00		TB2
SB2 29x45x10	29.00	45.00	10.00		SB2
TB 30x37x6.5	30.00	37.00	6.50		TB
SB 30x40x4	30.00	40.00	4.00		SB
SB 30x40x7	30.00	40.00	7.00		SB
TB 30x40x7	30.00	40.00	7.00		TB
SB 30x40x8	30.00	40.00	8.00		SB
TB 30x40x10	30.00	40.00	10.00		TB
SB 30x42x6	30.00	42.00	6.00		SB
TB2 30x42x6	30.00	42.00	6.00		TB2
SB2 30x42x7	30.00	42.00	7.00		SB2
TB 30x42x7	30.00	42.00	7.00		TB
SB2 30x43x8	30.00	43.00	8.00		SB2
SB 30x44x9	30.00	44.00	9.00		SB
TB2 30x45x6	30.00	45.00	6.00		TB2
SB2 30x45x7	30.00	45.00	7.00		SB2
SB2 30x45x8	30.00	45.00	8.00		SB2
TB2 30x45x8	30.00	45.00	8.00		TB2
SB2 30x47x6.5	30.00	47.00	6.50		SB2
SB2 30x47x7	30.00	47.00	7.00		SB2
TB 30x47x7	30.00	47.00	7.00		TB
SB2 30x47x8	30.00	47.00	8.00		SB2
SB2 30x50x11	30.00	50.00	11.00		SB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB2 30x50x11	30.00	50.00	11.00		TB2
SB2 30x50x12	30.00	50.00	12.00		SB2
SB2 30x52x7	30.00	52.00	7.00		SB2
SB2 30x52x7	30.00	52.00	7.00		SB2
TB2 30x52x7	30.00	52.00	7.00		TB2
SB2 30x52x8	30.00	52.00	8.00		SB2
TB2 30x52x10	30.00	52.00	10.00		TB2
TB2 30x55x7	30.00	55.00	7.00		TB2
TB2 30x55x8	30.00	55.00	8.00		TB2
SB2 30x55x12	30.00	55.00	12.00		SB2
TB2 30x60x8	30.00	60.00	8.00		TB2
TB2 30x62x6	30.00	62.00	6.00		TB2
SB2 30x62x10	30.00	62.00	10.00		SB2
TB 32x39x6	32.00	39.00	6.00		TB
TB 32x39x8	32.00	39.00	8.00		TB
TB 32x42x7	32.00	42.00	7.00		TB
SB 32x43x10	32.00	43.00	10.00		SB
SB 32x44x9	32.00	44.00	9.00		SB
TB2 32x45x7	32.00	45.00	7.00		TB2
SB2 32x46x8	32.00	46.00	8.00		SB2
TB2 32x47x7	32.00	47.00	7.00		TB2
TB 32x47x10	32.00	47.00	10.00		TB
SB2 32x48x8	32.00	48.00	8.00		SB2
TB2 32x50x7	32.00	50.00	7.00		TB2
SB 32x50x8	32.00	50.00	8.00		SB
TB 32x50x10	32.00	50.00	10.00		TB
TB2 32x51x8	32.00	51.00	8.00		TB2
TB2 32x52x7	32.00	52.00	7.00		TB2
TB2 32x52x10	32.00	52.00	10.00		TB2
TB2 32x52x11	32.00	52.00	11.00		TB2
TB2 32x56x10	32.00	56.00	10.00		TB2
TB2 32x56x11	32.00	56.00	11.00		TB2
TB2 32x58x12	32.00	58.00	12.00		TB2
TB2 32x65x12	32.00	65.00	12.00		TB2
TB2 32x72x7	32.00	72.00	7.00		TB2
TB 33x44x7	33.00	44.00	7.00		TB
TB 33x44x8	33.00	44.00	8.00		TB
TB2 33x50x8	33.00	50.00	8.00		TB2
TB2 33x55x9.5	33.00	55.00	9.50		TB2
TB 34x41x4	34.00	41.00	4.00		TB
TB 34x44x7	34.00	44.00	7.00		TB
SB2 34x46x8	34.00	46.00	8.00		SB2
SB2 34x48x8	34.00	48.00	8.00		SB2
TB2 34x48x8	34.00	48.00	8.00		TB2
TB2 34x52x7	34.00	52.00	7.00		TB2
SB2 34x52x10	34.00	52.00	10.00		SB2
TB2 34x65x12	34.00	65.00	12.00		TB2
TB 35x44x7	35.00	44.00	7.00		TB
SB 35x45x7	35.00	45.00	7.00		SB
TB 35x45x8	35.00	45.00	8.00		TB
TB 35x47x6	35.00	47.00	6.00		TB
SB 35x47x7	35.00	47.00	7.00		SB
TB 35x47x8	35.00	47.00	8.00		TB
TB 35x48x7	35.00	48.00	7.00		TB
TB 35x50x9	35.00	50.00	9.00		TB
TB 35x50x9.5	35.00	50.00	9.50		TB
SB2 35x50x10	35.00	50.00	10.00		SB2
TB2 35x51x9	35.00	51.00	9.00		TB2
SB2 35x52x6	35.00	52.00	6.00		SB2
SB2 35x52x7	35.00	52.00	7.00		SB2
SB2 35x52x8.8	35.00	52.00	8.80		SB2
TB2 35x52x11	35.00	52.00	11.00		TB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB2 35x54x8	35.00	54.00	8.00		TB2
TB2 35x55x5	35.00	55.00	5.00		TB2
TB2 35x55x8	35.00	55.00	8.00		TB2
TB2 35x55x10	35.00	55.00	10.00		TB2
TB2 35x55x11	35.00	55.00	11.00		TB2
SB2 35x55x12	35.00	55.00	12.00		SB2
SB2 35x56x8	35.00	56.00	8.00		SB2
TB2 35x56x10	35.00	56.00	10.00		TB2
SB2 35x56x12	35.00	56.00	12.00		SB2
SB2 35x57x8	35.00	57.00	8.00		SB2
TB2 35x57x9	35.00	57.00	9.00		TB2
TB2 35x58x8	35.00	58.00	8.00		TB2
TB2 35x58x9	35.00	58.00	9.00		TB2
TB2 35x58x10	35.00	58.00	10.00		TB2
TB2 35x62x7	35.00	62.00	7.00		TB2
SB2 35x62x10	35.00	62.00	10.00		SB2
TB2 35x62x12	35.00	62.00	12.00		TB2
TB7 35x63x10x16.5	35.00	63.00	10.00	16.50	TB7
TB2 35x64x8	35.00	64.00	8.00		TB2
TB2 35x64x12	35.00	64.00	12.00		TB2
TB 35x64x13	35.00	64.00	13.00		TB
TB7 35x65x12x19	35.00	65.00	12.00	19.00	TB7
TB2 35x65x12	35.00	65.00	12.00		TB2
TB2 35x65x12	35.00	65.00	12.00		TB2
TB2 35x72x9.5	35.00	72.00	9.50		TB2
TB2 35x72x10	35.00	72.00	10.00		TB2
SB2 35x80x8	35.00	80.00	8.00		SB2
TB2 35x81x10	35.00	81.00	10.00		TB2
SB2 35x85x10	35.00	85.00	10.00		SB2
SB 36x46x9	36.00	46.00	9.00		SB
TB 36x46x9	36.00	46.00	9.00		TB
TB2 36x54x7	36.00	54.00	7.00		TB2
TB2 36x54x11	36.00	54.00	11.00		TB2
TB2 36x55x6.5	36.00	55.00	6.50		TB2
TB2 36x58x8	36.00	58.00	8.00		TB2
SB2 36x68x8	36.00	68.00	8.00		SB2
TB2 36x68x12	36.00	68.00	12.00		TB2
TB 37x50x6	37.00	50.00	6.00		TB
TB2 37x52x8	37.00	52.00	8.00		TB2
TB2 37x56x9	37.00	56.00	9.00		TB2
SB 38x47x10	38.00	47.00	10.00		SB
SB2 38x50x7	38.00	50.00	7.00		SB2
TB 38x50x7	38.00	50.00	7.00		TB
TB 38x51x7	38.00	51.00	7.00		TB
TB2 38x52x6	38.00	52.00	6.00		TB2
SB 38x52x7	38.00	52.00	7.00		SB
TB2 38x52x7	38.00	52.00	7.00		TB2
SB2 38x52x10	38.00	52.00	10.00		SB2
SB 38x54x7	38.00	54.00	7.00		SB
TB2 38x54x11	38.00	54.00	11.00		TB2
TB 38x55x9	38.00	55.00	9.00		TB
TB2 38x56x9	38.00	56.00	9.00		TB2
TB2 38x58x8	38.00	58.00	8.00		TB2
TB2 38x58x8.5	38.00	58.00	8.50		TB2
TB2 38x58x10.5	38.00	58.00	10.50		TB2
TB2 38x58x11	38.00	58.00	11.00		TB2
TB2 38x60x8	38.00	60.00	8.00		TB2
TB2 38x62x11	38.00	62.00	11.00		TB2
TB2 38x65x8	38.00	65.00	8.00		TB2
TB2 38x65x9	38.00	65.00	9.00		TB2
TB2 38x70x10	38.00	70.00	10.00		TB2
TB7 38x74x11x18	38.00	74.00	11.00	18.00	TB7

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB7 38x74x11x18	38.00	74.00	11.00	18.00	TB7
TB2 38x74x11	38.00	74.00	11.00		TB2
TB2 38x74x11	38.00	74.00	11.00		TB2
SB2 38x90x8	38.00	90.00	8.00		SB2
TB 39x49x8.5	39.00	49.00	8.50		TB
TB2 39x60x9	39.00	60.00	9.00		TB2
TB2 39x60x10	39.00	60.00	10.00		TB2
TB2 40x47x4	40.00	47.00	4.00		TB2
TB 40x49x5.5	40.00	49.00	5.50		TB
TB 40x51x7	40.00	51.00	7.00		TB
SB 40x52x7	40.00	52.00	7.00		SB
TB 40x52x7	40.00	52.00	7.00		TB
TB2 40x52x8	40.00	52.00	8.00		TB2
TB 40x53x7	40.00	53.00	7.00		TB
TB 40x54x5	40.00	54.00	5.00		TB
TB2 40x54x7	40.00	54.00	7.00		TB2
TB2 40x54x7.5	40.00	54.00	7.50		TB2
SB2 40x54x8	40.00	54.00	8.00		SB2
TB2 40x55x6.5	40.00	55.00	6.50		TB2
TB2 40x55x8	40.00	55.00	8.00		TB2
TB2 40x55x9	40.00	55.00	9.00		TB2
TB 40x56x6,5	40.00	56.00	6.50		TB
SB2 40x56x7	40.00	56.00	7.00		SB2
TB2 40x56x7	40.00	56.00	7.00		TB2
TB2 40x56x8	40.00	56.00	8.00		TB2
TB2 40x56x10	40.00	56.00	10.00		TB2
TB2 40x60x10	40.00	60.00	10.00		TB2
TB2 40x60x12	40.00	60.00	12.00		TB2
TB2 40x62x9	40.00	62.00	9.00		TB2
SB2 40x62x10	40.00	62.00	10.00		SB2
TB2 40x62x10	40.00	62.00	10.00		TB2
TB2 40x62x11	40.00	62.00	11.00		TB2
TB2 40x62x12	40.00	62.00	12.00		TB2
TB2 40x62x13	40.00	62.00	13.00		TB2
TB7 40x64x12x17.5	40.00	64.00	12.00	17.50	TB7
SB2 40x65x9	40.00	65.00	9.00		SB2
TB2 40x65x12	40.00	65.00	12.00		TB2
SB2 40x66x6	40.00	66.00	6.00		SB2
SB2 40x68x8	40.00	68.00	8.00		SB2
TB2 40x68x10	40.00	68.00	10.00		TB2
TB2 40x68x11	40.00	68.00	11.00		TB2
TB2 40x72x12	40.00	72.00	12.00		TB2
TB7 40x74x9.5x15	40.00	74.00	9.50	15.00	TB7
SB2 40x75x8	40.00	75.00	8.00		SB2
TB2 40x80x10	40.00	80.00	10.00		TB2
TB2 40x85x11	40.00	85.00	11.00		TB2
TB2 40x86x10	40.00	86.00	10.00		TB2
SB2 40x90x8	40.00	90.00	8.00		SB2
TB 41x53x8	41.00	53.00	8.00		TB
TB 41x55x7	41.00	55.00	7.00		TB
TB 41x55x9	41.00	55.00	9.00		TB
TB2 41x61x9	41.00	61.00	9.00		TB2
SB2 41x65x9	41.00	65.00	9.00		SB2
TB2 41x65x10	41.00	65.00	10.00		TB2
TB7 41x74x9x14.5	41.00	74.00	9.00	14.50	TB7
TB 42x53x8	42.00	53.00	8.00		TB
TB 42x54x7,5	42.00	54.00	7.50		TB
TB2 42x55x6	42.00	55.00	6.00		TB2
TB 42x55x7	42.00	55.00	7.00		TB
TB2 42x55x7	42.00	55.00	7.00		TB2
TB2 42x55x8	42.00	55.00	8.00		TB2
SB2 42x55x9	42.00	55.00	9.00		SB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB2 42x55x9	42.00	55.00	9.00		TB2
TB2 42x56x7	42.00	56.00	7.00		TB2
TB2 42x56x7	42.00	56.00	7.00		TB2
TB 42x56x9	42.00	56.00	9.00		TB
SB 42x58x7	42.00	58.00	7.00		SB
TB2 42x58x8	42.00	58.00	8.00		TB2
SB2 42x60x9	42.00	60.00	9.00		SB2
TB2 42x60x9	42.00	60.00	9.00		TB2
SB2 42x62x6.5	42.00	62.00	6.50		SB2
TB2 42x62x7	42.00	62.00	7.00		TB2
SB2 42x62x8	42.00	62.00	8.00		SB2
TB2 42x64x10	42.00	64.00	10.00		TB2
SB2 42x65x12	42.00	65.00	12.00		SB2
TB2 42x65x12	42.00	65.00	12.00		TB2
TB7 42x70x9x15	42.00	70.00	9.00	15.00	TB7
SB2 42x72x10	42.00	72.00	10.00		SB2
TB2 42x72x12	42.00	72.00	12.00		TB2
TB 43x50x8	43.00	50.00	8.00		TB
TB 43x52x6.5	43.00	52.00	6.50		TB
SB 43x52x10	43.00	52.00	10.00		SB
TB 43x54x7,5	43.00	54.00	7.50		TB
TB 43x55x7.5	43.00	55.00	7.50		TB
SB 43x56x7	43.00	56.00	7.00		SB
TB2 43x59x7	43.00	59.00	7.00		TB2
SB2 43x60x8	43.00	60.00	8.00		SB2
TB2 43x63x7	43.00	63.00	7.00		TB2
TB2 43x63x9	43.00	63.00	9.00		TB2
TB 44x54x4.5	44.00	54.00	4.50		TB
SB 44x54x5.5	44.00	54.00	5.50		SB
TB 44x54x7.5	44.00	54.00	7.50		TB
SB2 44x56x7	44.00	56.00	7.00		SB2
SB2 44x58x7	44.00	58.00	7.00		SB2
SB 44x60x8	44.00	60.00	8.00		SB
TB2 44x60x10	44.00	60.00	10.00		TB2
TB 44x62x8	44.00	62.00	8.00		TB
SB2 44x65x8	44.00	65.00	8.00		SB2
TB7 44x72x7x10	44.00	72.00	7.00	10.00	TB7
TB2 44x72x8	44.00	72.00	8.00		TB2
SB2 44x80x12	44.00	80.00	12.00		SB2
TB 45x52x4	45.00	52.00	4.00		TB
TB 45x53x7	45.00	53.00	7.00		TB
TB 45x55x6	45.00	55.00	6.00		TB
SB2 45x55x7	45.00	55.00	7.00		SB2
TB 45x55x7	45.00	55.00	7.00		TB
TB 45x55x7.5	45.00	55.00	7.50		TB
TB2 45x58x9	45.00	58.00	9.00		TB2
TB2 45x59x10	45.00	59.00	10.00		TB2
SB2 45x60x8	45.00	60.00	8.00		SB2
TB2 45x60x9	45.00	60.00	9.00		TB2
SB 45x62x7	45.00	62.00	7.00		SB
TB2 45x62x7	45.00	62.00	7.00		TB2
TB2 45x62x9	45.00	62.00	9.00		TB2
TB2 45x62x9	45.00	62.00	9.00		TB2
TB 45x62x10	45.00	62.00	10.00		TB
TB2 45x63x7	45.00	63.00	7.00		TB2
SB2 45x64x12	45.00	64.00	12.00		SB2
TB2 45x65x5	45.00	65.00	5.00		TB2
TB2 45x65x8	45.00	65.00	8.00		TB2
SB2 45x65x9	45.00	65.00	9.00		SB2
TB2 45x65x9	45.00	65.00	9.00		TB2
TB 45x65x10	45.00	65.00	10.00		TB
TB2 45x65x10	45.00	65.00	10.00		TB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB2 45x65x12	45.00	65.00	12.00		TB2
TB2 45x68x11	45.00	68.00	11.00		TB2
SB2 45x68x12	45.00	68.00	12.00		SB2
TB2 45x68x12	45.00	68.00	12.00		TB2
TB2 45x72x10	45.00	72.00	10.00		TB2
TB2 45x72x12	45.00	72.00	12.00		TB2
TB2 45x72x12	45.00	72.00	12.00		TB2
TB2 45x75x12	45.00	75.00	12.00		TB2
TB2 45x75x12	45.00	75.00	12.00		TB2
TB7 45x78x11x18.5	45.00	78.00	11.00	18.50	TB7
TB2 45x78x12	45.00	78.00	12.00		TB2
SB2 45x85x8	45.00	85.00	8.00		SB2
SB 46x55x5.5	46.00	55.00	5.50		SB
TB 46x62x7	46.00	62.00	7.00		TB
TB2 46x78x10	46.00	78.00	10.00		TB2
TB 47x56x7	47.00	56.00	7.00		TB
SB2 47x62x9	47.00	62.00	9.00		SB2
TB2 47x68x10	47.00	68.00	10.00		TB2
TB7 47x69x10x16	47.00	69.00	10.00	16.00	TB7
TB7 47x80x10x16	47.00	80.00	10.00	16.00	TB7
TB 48x58x10	48.00	58.00	10.00		TB
TB 48x60x8	48.00	60.00	8.00		TB
TB 48x60x9	48.00	60.00	9.00		TB
TB 48x60x10	48.00	60.00	10.00		TB
TB2 48x62x7	48.00	62.00	7.00		TB2
SB2 48x62x8	48.00	62.00	8.00		SB2
TB2 48x62x8	48.00	62.00	8.00		TB2
SB 48x62x9	48.00	62.00	9.00		SB
TB 48x62x9	48.00	62.00	9.00		TB
TB2 48x62x9	48.00	62.00	9.00		TB2
TB2 48x63x9	48.00	63.00	9.00		TB2
TB2 48x64x12	48.00	64.00	12.00		TB2
TB 48x65x9	48.00	65.00	9.00		TB
TB2 48x65x9	48.00	65.00	9.00		TB2
TB 48x65x10	48.00	65.00	10.00		TB
TB2 48x65x10	48.00	65.00	10.00		TB2
TB2 48x69x10	48.00	69.00	10.00		TB2
TB2 48x69x10	48.00	69.00	10.00		TB2
TB2 48x70x9.5	48.00	70.00	9.50		TB2
SB2 48x70x12	48.00	70.00	12.00		SB2
TB2 48x70x12	48.00	70.00	12.00		TB2
TB2 48x70x13	48.00	70.00	13.00		TB2
TB2 48x72x7	48.00	72.00	7.00		TB2
TB2 48x73x7	48.00	73.00	7.00		TB2
TB2 48x74x11	48.00	74.00	11.00		TB2
TB 48x80x14	48.00	80.00	14.00		TB
SB2 48x82x8	48.00	82.00	8.00		SB2
TB2 48x82x12	48.00	82.00	12.00		TB2
SB2 48x90x8	48.00	90.00	8.00		SB2
SB 50x62x7	50.00	62.00	7.00		SB
TB 50x62x8	50.00	62.00	8.00		TB
TB 50x62x9	50.00	62.00	9.00		TB
TB 50x62x10	50.00	62.00	10.00		TB
TB 50x63x6	50.00	63.00	6.00		TB
TB 50x63x8	50.00	63.00	8.00		TB
SB 50x65x8	50.00	65.00	8.00		SB
TB 50x65x8	50.00	65.00	8.00		TB
TB 50x65x9	50.00	65.00	9.00		TB
TB7 50x65x10x14	50.00	65.00	10.00	14.00	TB7
TB 50x65x10	50.00	65.00	10.00		TB
TB 50x67x9	50.00	67.00	9.00		TB
TB2 50x68x7	50.00	68.00	7.00		TB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB2 50x68x9	50.00	68.00	9.00		TB2
TB2 50x68x9	50.00	68.00	9.00		TB2
TB2 50x69x10	50.00	69.00	10.00		TB2
TB2 50x70x7	50.00	70.00	7.00		TB2
TB2 50x70x9	50.00	70.00	9.00		TB2
TB2 50x70x10	50.00	70.00	10.00		TB2
TB2 50x70x12	50.00	70.00	12.00		TB2
TB 50x70x13	50.00	70.00	13.00		TB
TB 50x70x13.5	50.00	70.00	13.50		TB
TB2 50x72x8	50.00	72.00	8.00		TB2
SB2 50x72x9	50.00	72.00	9.00		SB2
TB2 50x72x10	50.00	72.00	10.00		TB2
SB2 50x72x12	50.00	72.00	12.00		SB2
TB2 50x72x12	50.00	72.00	12.00		TB2
TB 50x75x9	50.00	75.00	9.00		TB
SB2 50x80x8	50.00	80.00	8.00		SB2
SB2 50x80x10	50.00	80.00	10.00		SB2
TB2 50x80x10	50.00	80.00	10.00		TB2
TB2 50x80x13	50.00	80.00	13.00		TB2
TB2 50x81x13	50.00	81.00	13.00		TB2
TB7 50x82x8x11.5	50.00	82.00	8.00	11.50	TB7
TB2 50x90x10	50.00	90.00	10.00		TB2
SB 51x62x7	51.00	62.00	7.00		SB
TB2 51x63x8	51.00	63.00	8.00		TB2
TB2 51x72x10	51.00	72.00	10.00		TB2
TB2 52x62x9	52.00	62.00	9.00		TB2
TB2 52x63x8	52.00	63.00	8.00		TB2
TB 52x65x9	52.00	65.00	9.00		TB
TB2 52x68x8	52.00	68.00	8.00		TB2
TB2 52x68x13.5	52.00	68.00	13.50		TB2
TB7 52x70x9x15	52.00	70.00	9.00	15.00	TB7
SB2 52x70x9	52.00	70.00	9.00		SB2
TB2 52x70x9	52.00	70.00	9.00		TB2
TB2 52x70x10	52.00	70.00	10.00		TB2
TB2 52x72x7	52.00	72.00	7.00		TB2
TB7 52x72x8x11	52.00	72.00	8.00	11.00	TB7
TB2 52x72x8	52.00	72.00	8.00		TB2
TB2 52x72x10	52.00	72.00	10.00		TB2
TB2 52x72x12	52.00	72.00	12.00		TB2
TB2 52x73x10	52.00	73.00	10.00		TB2
SB2 52x75x12	52.00	75.00	12.00		SB2
TB2 52x75x12	52.00	75.00	12.00		TB2
TB2 52x82x8	52.00	82.00	8.00		TB2
TB 52x84x14	52.00	84.00	14.00		TB
TB 53x65x13	53.00	65.00	13.00		TB
SB2 53x68x10	53.00	68.00	10.00		SB2
SB2 53x68x10	53.00	68.00	10.00		SB2
SB2 54x65x8	54.00	65.00	8.00		SB2
TB 54x65x13	54.00	65.00	13.00		TB
TB2 54x70x9.5	54.00	70.00	9.50		TB2
TB2 54x73x10	54.00	73.00	10.00		TB2
TB7 54x76x8x11	54.00	76.00	8.00	11.00	TB7
TB2 54x81x10	54.00	81.00	10.00		TB2
TB7 54x82x8x11	54.00	82.00	8.00	11.00	TB7
TB 55x67x5	55.00	67.00	5.00		TB
TB2 55x70x8	55.00	70.00	8.00		TB2
TB2 55x70x8	55.00	70.00	8.00		TB2
TB 55x70x9	55.00	70.00	9.00		TB
TB 55x72x9	55.00	72.00	9.00		TB
TB2 55x72x9	55.00	72.00	9.00		TB2
TB 55x72x10	55.00	72.00	10.00		TB
TB2 55x72x12	55.00	72.00	12.00		TB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SB2 55x75x8	55.00	75.00	8.00		SB2
TB2 55x75x9	55.00	75.00	9.00		TB2
TB 55x75x10	55.00	75.00	10.00		TB
TB2 55x75x10	55.00	75.00	10.00		TB2
SB2 55x76x12	55.00	76.00	12.00		SB2
TB2 55x77x9	55.00	77.00	9.00		TB2
SB2 55x78x12	55.00	78.00	12.00		SB2
TB2 55x78x12	55.00	78.00	12.00		TB2
TB2 55x80x8	55.00	80.00	8.00		TB2
SB2 55x80x10	55.00	80.00	10.00		SB2
TB2 55x80x10	55.00	80.00	10.00		TB2
TB2 55x82x10	55.00	82.00	10.00		TB2
SB2 55x90x10	55.00	90.00	10.00		SB2
TB2 55x95x10	55.00	95.00	10.00		TB2
SB2 55x100x8	55.00	100.00	8.00		SB2
TB2 56x73x6	56.00	73.00	6.00		TB2
SB2 56x75x8	56.00	75.00	8.00		SB2
TB7 56x78x7.5x13	56.00	78.00	7.50	13.00	TB7
TB2 56x81x8	56.00	81.00	8.00		TB2
SB2 57x70x7.5	57.00	70.00	7.50		SB2
TB7 57x81x8x11.5	57.00	81.00	8.00	11.50	TB7
TB2 57x84x8	57.00	84.00	8.00		TB2
TB2 58x68x6	58.00	68.00	6.00		TB2
TB 58x68x9	58.00	68.00	9.00		TB
TB 58x70x9	58.00	70.00	9.00		TB
TB2 58x72x7	58.00	72.00	7.00		TB2
TB 58x75x9	58.00	75.00	9.00		TB
TB 58x75x15	58.00	75.00	15.00		TB
TB7 58x76x6.6x9.5	58.00	76.00	6.60	9.50	TB7
TB 58x76x10	58.00	76.00	10.00		TB
SB2 58x80x12	58.00	80.00	12.00		SB2
TB2 58x80x12	58.00	80.00	12.00		TB2
TB2 58x85x8	58.00	85.00	8.00		TB2
TB2 58x102x9	58.00	102.00	9.00		TB2
TB2 58x102x10	58.00	102.00	10.00		TB2
TB2 58x102x12	58.00	102.00	12.00		TB2
TB2 58x102x12	58.00	102.00	12.00		TB2
TB 59x72x9	59.00	72.00	9.00		TB
TB 59x72x12	59.00	72.00	12.00		TB
TB7 59x75x9x10.5	59.00	75.00	9.00	10.50	TB7
TB7 59x75x9x12.5	59.00	75.00	9.00	12.50	TB7
TB2 59x75x10	59.00	75.00	10.00		TB2
TB 60x70x7	60.00	70.00	7.00		TB
TB7 60x72x7x10	60.00	72.00	7.00	10.00	TB7
SB 60x72x7	60.00	72.00	7.00		SB
TB 60x72x7.5	60.00	72.00	7.50		TB
SB 60x72x8	60.00	72.00	8.00		SB
SB 60x72x18	60.00	72.00	18.00		SB
TB 60x74x7.5	60.00	74.00	7.50		TB
TB 60x75x8	60.00	75.00	8.00		TB
TB7 60x75x9x15	60.00	75.00	9.00	15.00	TB7
TB2 60x77x12	60.00	77.00	12.00		TB2
TB2 60x78x9	60.00	78.00	9.00		TB2
TB2 60x80x8	60.00	80.00	8.00		TB2
TB2 60x80x10	60.00	80.00	10.00		TB2
TB2 60x80x12	60.00	80.00	12.00		TB2
TB2 60x82x9	60.00	82.00	9.00		TB2
SB2 60x82x12	60.00	82.00	12.00		SB2
TB2 60x82x12	60.00	82.00	12.00		TB2
TB7 60x86x7x12	60.00	86.00	7.00	12.00	TB7
TB7 60x88x9.5x16.5	60.00	88.00	9.50	16.50	TB7
SB2 60x90x10	60.00	90.00	10.00		SB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
TB7 61x76x7x10	61.00	76.00	7.00	10.00	TB7
TB 62x76x9.5	62.00	76.00	9.50		TB
TB2 62x80x10	62.00	80.00	10.00		TB2
TB2 62x82x11	62.00	82.00	11.00		TB2
TB2 62x85x8	62.00	85.00	8.00		TB2
TB2 62x85x9	62.00	85.00	9.00		TB2
TB2 62x85x10	62.00	85.00	10.00		TB2
SB2 62x85x12	62.00	85.00	12.00		SB2
TB2 62x85x12	62.00	85.00	12.00		TB2
TB2 62x100x12	62.00	100.00	12.00		TB2
TB7 63x78x9x15	63.00	78.00	9.00	15.00	TB7
TB2 63x80x7.7	63.00	80.00	7.70		TB2
TB2 63x80x12	63.00	80.00	12.00		TB2
TB 64x77x12	64.00	77.00	12.00		TB
TB2 64x80x8	64.00	80.00	8.00		TB2
TB 64x89x12	64.00	89.00	12.00		TB
SB2 65x77x7.5	65.00	77.00	7.50		SB2
TB2 65x77x7.5	65.00	77.00	7.50		TB2
SB 65x80x8	65.00	80.00	8.00		SB
SB 65x80x8	65.00	80.00	8.00		SB
TB7 65x80x10x17	65.00	80.00	10.00	17.00	TB7
TB2 65x85x10	65.00	85.00	10.00		TB2
TB2 65x85x13	65.00	85.00	13.00		TB2
TB2 65x88x12	65.00	88.00	12.00		TB2
TB2 65x88x13	65.00	88.00	13.00		TB2
SB2 65x90x10	65.00	90.00	10.00		SB2
TB2 65x90x10	65.00	90.00	10.00		TB2
SB2 65x90x13	65.00	90.00	13.00		SB2
TB2 65x90x13	65.00	90.00	13.00		TB2
TB2 65x90x15	65.00	90.00	15.00		TB2
TB2 65x92x12	65.00	92.00	12.00		TB2
TB2 65x92x13	65.00	92.00	13.00		TB2
TB7 65x95x14x20.5	65.00	95.00	14.00	20.50	TB7
TB2 65x95x14	65.00	95.00	14.00		TB2
TB2 65x100x12	65.00	100.00	12.00		TB2
TB2 65x110x10	65.00	110.00	10.00		TB2
TB2 68x85x8	68.00	85.00	8.00		TB2
SB2 68x85x10	68.00	85.00	10.00		SB2
TB2 68x88x10	68.00	88.00	10.00		TB2
SB2 68x90x8.4	68.00	90.00	8.40		SB2
TB7 68x90x10x18	68.00	90.00	10.00	18.00	TB7
SB2 68x90x10	68.00	90.00	10.00		SB2
TB2 68x90x10	68.00	90.00	10.00		TB2
TB2 68x90x12	68.00	90.00	12.00		TB2
TB2 68x90x12	68.00	90.00	12.00		TB2
SB2 68x90x13	68.00	90.00	13.00		SB2
TB2 68x90x14	68.00	90.00	14.00		TB2
TB2 68x92x12	68.00	92.00	12.00		TB2
SB2 68x95x13	68.00	95.00	13.00		SB2
TB2 68x95x13	68.00	95.00	13.00		TB2
TB7 68x124x11.5x27	68.00	124.00	11.50	27.00	TB7
TB2 69x85x10	69.00	85.00	10.00		TB2
SB 70x85x8	70.00	85.00	8.00		SB
TB2 70x85x8	70.00	85.00	8.00		TB2
TB 70x88x12	70.00	88.00	12.00		TB
SB2 70x90x10	70.00	90.00	10.00		SB2
SB2 70x90x10	70.00	90.00	10.00		SB2
SB2 70x90x10	70.00	90.00	10.00		SB2
TB2 70x90x10	70.00	90.00	10.00		TB2
TB2 70x90x10	70.00	90.00	10.00		TB2
TB2 70x90x13.5	70.00	90.00	13.50		TB2
TB2 70x90x15	70.00	90.00	15.00		TB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SB2 70x95x13	70.00	95.00	13.00		SB2
TB2 70x95x13	70.00	95.00	13.00		TB2
TB7 70x95x14x20	70.00	95.00	14.00	20.00	TB7
TB2 70x100x12	70.00	100.00	12.00		TB2
SB2 70x100x13	70.00	100.00	13.00		SB2
TB2 70x100x13	70.00	100.00	13.00		TB2
TB2 70x100x14	70.00	100.00	14.00		TB2
SB2 70x105x10	70.00	105.00	10.00		SB2
SB2 72x88x8	72.00	88.00	8.00		SB2
TB2 72x90x8	72.00	90.00	8.00		TB2
TB2 72x94x8	72.00	94.00	8.00		TB2
TB2 72x94x10	72.00	94.00	10.00		TB2
TB2 72x102x15	72.00	102.00	15.00		TB2
TB2 72x105x13	72.00	105.00	13.00		TB2
TB2 73x90x8	73.00	90.00	8.00		TB2
TB 73x90x10	73.00	90.00	10.00		TB
TB2 73x100x10	73.00	100.00	10.00		TB2
SB 74x90x10	74.00	90.00	10.00		SB
TB 74x90x10	74.00	90.00	10.00		TB
TB2 74x100x10	74.00	100.00	10.00		TB2
SB 75x90x7	75.00	90.00	7.00		SB
SB 75x95x5	75.00	95.00	5.00		SB
TB2 75x95x7	75.00	95.00	7.00		TB2
SB2 75x95x9.5	75.00	95.00	9.50		SB2
TB2 75x95x10	75.00	95.00	10.00		TB2
TB 75x96x11	75.00	96.00	11.00		TB
TB2 75x96x11.2	75.00	96.00	11.20		TB2
SB2 75x100x10	75.00	100.00	10.00		SB2
TB2 75x100x10	75.00	100.00	10.00		TB2
TB2 75x100x10	75.00	100.00	10.00		TB2
TB2 75x100x12	75.00	100.00	12.00		TB2
TB7 75x100x13x18	75.00	100.00	13.00	18.00	TB7
TB7 75x100x13x19	75.00	100.00	13.00	19.00	TB7
SB2 75x100x13	75.00	100.00	13.00		SB2
TB2 75x100x13	75.00	100.00	13.00		TB2
TB2 75x102x13	75.00	102.00	13.00		TB2
TB2 75x105x13	75.00	105.00	13.00		TB2
TB2 75x105x15	75.00	105.00	15.00		TB2
TB2 75x110x13	75.00	110.00	13.00		TB2
TB2 75x112x12	75.00	112.00	12.00		TB2
TB2 75x121x13	75.00	121.00	13.00		TB2
TB 77x93x10	77.00	93.00	10.00		TB
TB2 77x100x13	77.00	100.00	13.00		TB2
TB7 78x100x14x20	78.00	100.00	14.00	20.00	TB7
SB2 80x100x10	80.00	100.00	10.00		SB2
TB2 80x100x10	80.00	100.00	10.00		TB2
TB2 80x100x10	80.00	100.00	10.00		TB2
TB2 80x100x12	80.00	100.00	12.00		TB2
SB2 80x100x13	80.00	100.00	13.00		SB2
TB2 80x100x13	80.00	100.00	13.00		TB2
SB2 80x105x13	80.00	105.00	13.00		SB2
TB2 80x105x13	80.00	105.00	13.00		TB2
TB2 80x105x15	80.00	105.00	15.00		TB2
TB2 80x110x13	80.00	110.00	13.00		TB2
TB2 80x110x13	80.00	110.00	13.00		TB2
TB2 80x115x15	80.00	115.00	15.00		TB2
TB2 80x120x13	80.00	120.00	13.00		TB2
TB7 80x127x16x24	80.00	127.00	16.00	24.00	TB7
TB 82x100x13	82.00	100.00	13.00		TB
TB 84x100x10	84.00	100.00	10.00		TB
TB 85x100x12	85.00	100.00	12.00		TB
SB 85x100x13	85.00	100.00	13.00		SB

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SB2 85x105x10	85.00	105.00	10.00		SB2
TB2 85x105x10	85.00	105.00	10.00		TB2
SB2 85x105x12	85.00	105.00	12.00		SB2
TB 85x105x12	85.00	105.00	12.00		TB
SB2 85x105x15	85.00	105.00	15.00		SB2
SB2 85x110x13	85.00	110.00	13.00		SB2
TB2 85x110x13	85.00	110.00	13.00		TB2
TB2 85x110x14	85.00	110.00	14.00		TB2
TB7 86x127x16x24	86.00	127.00	16.00	24.00	TB7
TB 90x110x13	90.00	110.00	13.00		TB
TB2 90x115x12.4	90.00	115.00	12.40		TB2
TB7 90x115x13x19	90.00	115.00	13.00	19.00	TB7
SB2 90x115x13	90.00	115.00	13.00		SB2
TB2 90x115x13	90.00	115.00	13.00		TB2
TB2 90x118x12	90.00	118.00	12.00		TB2
TB2 90x120x13	90.00	120.00	13.00		TB2
TB2 90x125x17	90.00	125.00	17.00		TB2
TB2 90x127x13	90.00	127.00	13.00		TB2
TB2 91x111x10	91.00	111.00	10.00		TB2
SB2 94x114x5	94.00	114.00	5.00		SB2
SB2 94x114x7	94.00	114.00	7.00		SB2
SB2 95x115x10	95.00	115.00	10.00		SB2
TB2 95x115x12	95.00	115.00	12.00		TB2
TB2 95x118x11	95.00	118.00	11.00		TB2
SB2 95x120x13	95.00	120.00	13.00		SB2
TB2 95x120x13	95.00	120.00	13.00		TB2
TB2 95x120x13	95.00	120.00	13.00		TB2
TB2 95x125x13	95.00	125.00	13.00		TB2
TB2 95x127x13	95.00	127.00	13.00		TB2
TB2 95x130x13	95.00	130.00	13.00		TB2
TB 96x114x12	96.00	114.00	12.00		TB
TB 97x114x12	97.00	114.00	12.00		TB
TB 100x114x7	100.00	114.00	7.00		TB
TB 100x114x12	100.00	114.00	12.00		TB
SB2 100x120x8	100.00	120.00	8.00		SB2
TB 100x120x10	100.00	120.00	10.00		TB
SB2 100x125x13	100.00	125.00	13.00		SB2
TB2 100x125x13	100.00	125.00	13.00		TB2
TB2 100x127x13	100.00	127.00	13.00		TB2
SB2 100x130x12	100.00	130.00	12.00		SB2
TB 101x114x10	101.00	114.00	10.00		TB
TB 105x125x13	105.00	125.00	13.00		TB
TB2 105x125x16	105.00	125.00	16.00		TB2
SB2 105x135x14	105.00	135.00	14.00		SB2
TB2 105x135x14	105.00	135.00	14.00		TB2
TB 110x130x13	110.00	130.00	13.00		TB
TB2 110x135x13	110.00	135.00	13.00		TB2
TB2 110x135x13	110.00	135.00	13.00		TB2
TB2 110x135x14	110.00	135.00	14.00		TB2
TB2 110x140x14	110.00	140.00	14.00		TB2
TB 114x135x13	114.00	135.00	13.00		TB
TB2 114x135x13	114.00	135.00	13.00		TB2
SB 115x135x13	115.00	135.00	13.00		SB
TB2 115x140x10	115.00	140.00	10.00		TB2
SB2 115x140x13	115.00	140.00	13.00		SB2
TB2 115x140x13	115.00	140.00	13.00		TB2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SB2 115x145x14	115.00	145.00	14.00		SB2
TB2 115x145x14	115.00	145.00	14.00		TB2
TB2 115x150x16	115.00	150.00	16.00		TB2
TB 118x136x13	118.00	136.00	13.00		TB
TB2 118x140x13	118.00	140.00	13.00		TB2
TB2 118x148x15	118.00	148.00	15.00		TB2
SB 120x140x13	120.00	140.00	13.00		SB
TB 120x140x13	120.00	140.00	13.00		TB
SB2 120x150x14	120.00	150.00	14.00		SB2
TB2 120x150x14	120.00	150.00	14.00		TB2
TB2 125x150x14	125.00	150.00	14.00		TB2
TB2 125x155x14	125.00	155.00	14.00		TB2
TB2 125x170x12	125.00	170.00	12.00		TB2
TB 127x147x11.5	127.00	147.00	11.50		TB
TB2 130x150x10	130.00	150.00	10.00		TB2
SB2 130x160x12	130.00	160.00	12.00		SB2
TB2 130x160x14	130.00	160.00	14.00		TB2
TB 134x152x11	134.00	152.00	11.00		TB
TB2 135x162x13	135.00	162.00	13.00		TB2
TB2 135x165x14	135.00	165.00	14.00		TB2
TB 138x152x12	138.00	152.00	12.00		TB
TB2 139x170x14	139.00	170.00	14.00		TB2
TB 140x160x14	140.00	160.00	14.00		TB
TB 140x165x16	140.00	165.00	16.00		TB
SB2 140x170x14	140.00	170.00	14.00		SB2
TB2 140x170x14	140.00	170.00	14.00		TB2
TB2 140x180x15	140.00	180.00	15.00		TB2
TB2 140x180x16	140.00	180.00	16.00		TB2
TB2 142x168x14	142.00	168.00	14.00		TB2
TB2 143x165x10	143.00	165.00	10.00		TB2
TB2 143x168x16	143.00	168.00	16.00		TB2
SB 145x160x7	145.00	160.00	7.00		SB
TB 145x165x10	145.00	165.00	10.00		TB
TB2 145x170x13	145.00	170.00	13.00		TB2
TB 145x170x15	145.00	170.00	15.00		TB
TB2 145x175x8	145.00	175.00	8.00		TB2
TB2 145x175x14	145.00	175.00	14.00		TB2
TB 150x168x13	150.00	168.00	13.00		TB
TB2 150x175x10	150.00	175.00	10.00		TB2
TB2 150x180x14	150.00	180.00	14.00		TB2
TB 154x172x14	154.00	172.00	14.00		TB
TB 155x175x13	155.00	175.00	13.00		TB
TB2 155x185x14	155.00	185.00	14.00		TB2
TB2 155x200x20	155.00	200.00	20.00		TB2
TB 160x180x13	160.00	180.00	13.00		TB
TB2 160x180x15	160.00	180.00	15.00		TB2
SB2 160x190x16	160.00	190.00	16.00		SB2
TB 162x182x14	162.00	182.00	14.00		TB
TB2 170x200x16	170.00	200.00	16.00		TB2
TB2 170x205x16	170.00	205.00	16.00		TB2
TB 180x200x12	180.00	200.00	12.00		TB
TB 180x200x15	180.00	200.00	15.00		TB
TB 180x200x16	180.00	200.00	16.00		TB
TB 200x230x13	200.00	230.00	13.00		TB
SB 230x254x12	230.00	254.00	12.00		SB

STANDARD SHAFT SEALS

SBC / SBCW / SBR / TBC / TBCW / TBR / TBC7 / TBCW7 / TBR7 / TBC8 / TBCW8 / TBR8 / TBC9 / TBCW9 / TBR9

SBC profile image

11.4 SBC / SBCW / SBR / TBC / TBCW / TBR / TBC7 / TBCW7 / TBR7 / TBC8 / TBCW8 / TBR8 / TBC9 / TBCW9 / TBR9 PROFILES

		Spring-loaded sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip + axial lip	Spring-loaded sealing lip + 2 anti-pollution sealing lip	Spring-loaded sealing lip + 2 anti-pollution sealing lip + axial lip
		S	**T**	**T7**	**T8**	**T9**
Single outer metal casing with rubber coating over half of the outside of the casing	**BC**	**SBC**	**TBC**	**TBC7**	**TBC8**	**TBC9**
Single outer metal casing with rubber coating on the inside and on the edge of the casing	**BR**	**SBR**	**TBR**	**TBR7**	**TBR8**	**TBR9**
Single outer metal casing with rubber grooves over half of the outside of the casing	**BCW**	**SBCW**	**TBCW**	**TBCW7**	**TBCW8**	**TBCW9**

DESCRIPTION

Shaft seal composed of a single outer metal casing with a rubber coating covering half of the outside of the casing and a spring-loaded sealing lip. Available with or without an additional radial and/or axial anti-pollution sealing lip, and with or without grooves on the outside.

APPLICATIONS

Shaft sealing
Engines
Pumps
Transmissions

ADVANTAGES

Good radial rigidity, particularly for large diameters
Good assembly stability
Good static sealing
Very limited bounce-back effect where grooves are present
Good thermal expansion compensation
Good heat transfer
Excellent resistance to corrosive fluids on the inside
Sealing for low and high viscosity fluids
Modern primary sealing lip with low radial forces
Standard, average or increased protection against undesirable air contaminants

MATERIALS

Rubber

ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

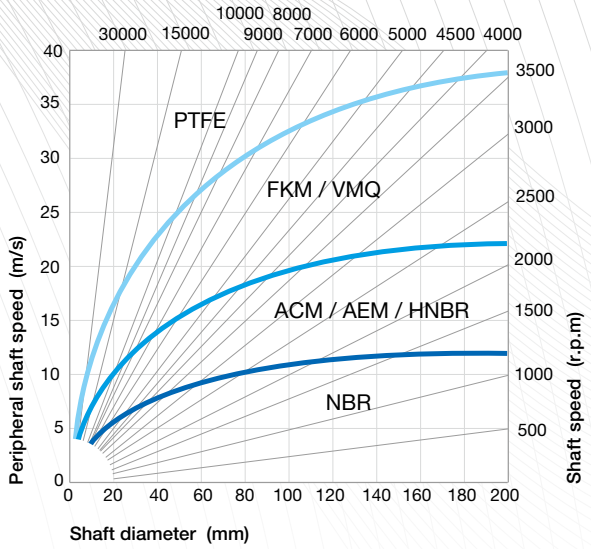
Steel - AISI 1010

Spring

Steel - AISI 1070 - 1090
Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	The shaft seals with an additional protective lip are limited to a speed of 8 m/sec.
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	Ra = 0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

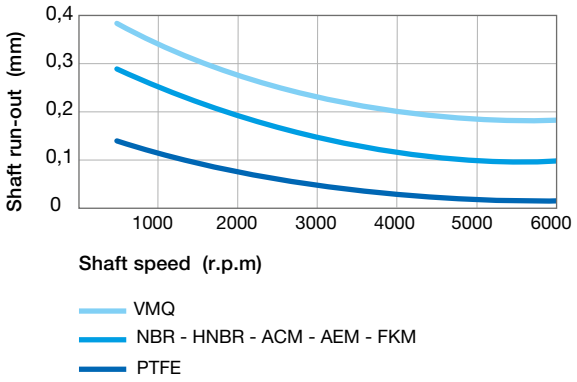
Shaft tolerance

Tolerance	ISO h11

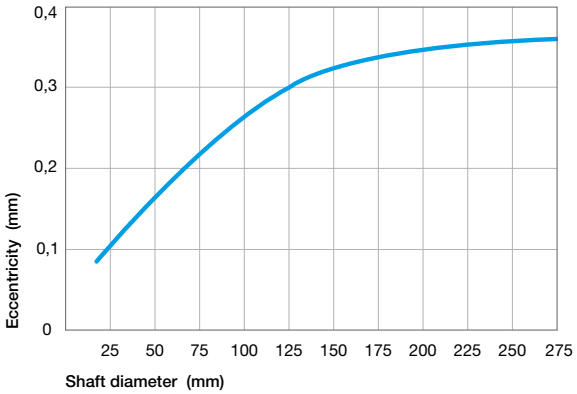
Shaft roundness

Roundness	IT 8

Shaft run out



Eccentricity



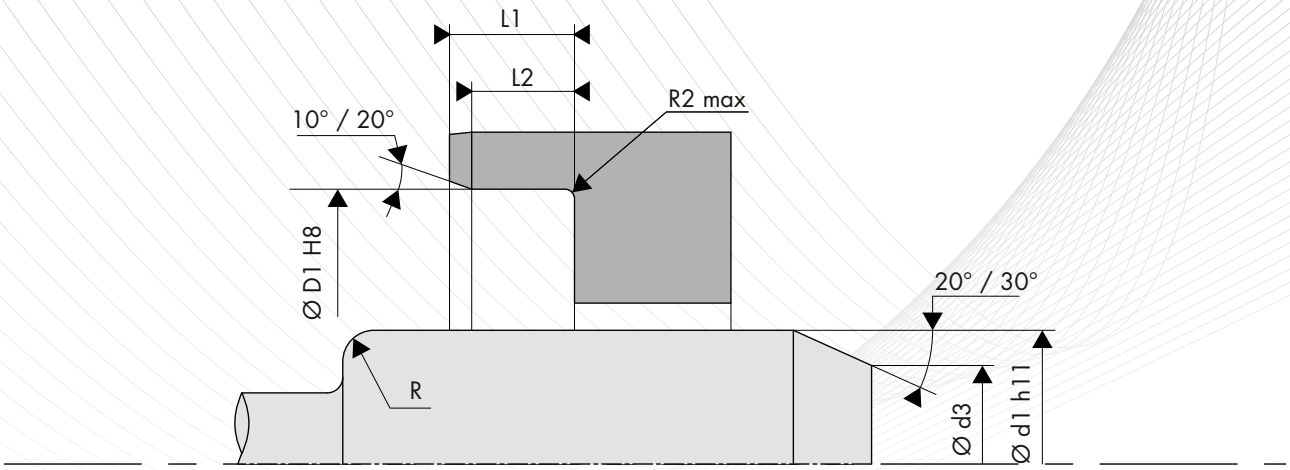
HOUSING DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8



DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
SBR 10x17x5	10.00	17.00	5.00	SBR
TBR 10x19x5	10.00	19.00	5.00	TBR
TBCW 10x27x8	10.00	27.00	8.00	TBCW
SBR 11x18x5	11.00	18.00	5.00	SBR
TBR 11x18x5	11.00	18.00	5.00	TBR
SBR 11x18x6	11.00	18.00	6.00	SBR
SBR 11x20x4.5	11.00	20.00	4.50	SBR
TBR 12x18x4.5	12.00	18.00	4.50	TBR
TBC 12x18x5.6	12.00	18.00	5.60	TBC
SBR 12x18x6	12.00	18.00	6.00	SBR
TBR 13x20x5	13.00	20.00	5.00	TBR
TBC 13x26x7	13.00	26.00	7.00	TBC
TBR 15x21x4.2	15.00	21.00	4.20	TBR
TBR 15x21x5	15.00	21.00	5.00	TBR
TBR 15x21x6	15.00	21.00	6.00	TBR
TBR 16x24x7	16.00	24.00	7.00	TBR
TBR 16x26x7	16.00	26.00	7.00	TBR
TBR 16x30x8	16.00	30.00	8.00	TBR
SBR 16x36x6.5	16.00	36.00	6.50	SBR
TBR 17x31x7.8	17.00	31.00	7.80	TBR
TBR 18x26x6	18.00	26.00	6.00	TBR
TBR 18x30x7	18.00	30.00	7.00	TBR
SBR 18x30x8	18.00	30.00	8.00	SBR
TBR 18x32x8	18.00	32.00	8.00	TBR
TBR 18x34x8	18.00	34.00	8.00	TBR
TBR 19x36x6	19.00	36.00	6.00	TBR
TBR 20x30x6	20.00	30.00	6.00	TBR
TBR 20x30x7	20.00	30.00	7.00	TBR
SBR 20x31x7	20.00	31.00	7.00	SBR
TBR 20x31x7	20.00	31.00	7.00	TBR
TBCW 20x31x7.3	20.00	31.00	7.30	TBCW
TBR 20x52x8	20.00	52.00	8.00	TBR
SBR 22x38x8	22.00	38.00	8.00	SBR
TBR 22x40x8	22.00	40.00	8.00	TBR
TBR 23x32x5	23.00	32.00	5.00	TBR
TBR 24x38x6	24.00	38.00	6.00	TBR
TBR 24x43x8.5	24.00	43.00	8.50	TBR
TBCW 25x36x7.3	25.00	36.00	7.30	TBCW
TBCW 25x37x7	25.00	37.00	7.00	TBCW
TBCW 26x41x6	26.00	41.00	6.00	TBCW
TBC 26x42x8	26.00	42.00	8.00	TBC
TBC 28x37x5.5	28.00	37.00	5.50	TBC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
SBR 28x40x7	28.00	40.00	7.00	SBR
SBR 28x40x7.5	28.00	40.00	7.50	SBR
TBR 28x40x8	28.00	40.00	8.00	TBR
TBR 28x48x11	28.00	48.00	11.00	TBR
TBC 30x40x7	30.00	40.00	7.00	TBC
TBR 30x41x7	30.00	41.00	7.00	TBR
TBR 30x41x8	30.00	41.00	8.00	TBR
TBR 30x41x10	30.00	41.00	10.00	TBR
SBR 30x42x7	30.00	42.00	7.00	SBR
TBC 30x42x7	30.00	42.00	7.00	TBC
TBC 30x44x7	30.00	44.00	7.00	TBC
TBR 30x44x7	30.00	44.00	7.00	TBR
TBR 30x48x7	30.00	48.00	7.00	TBR
TBCW 30x52x7	30.00	52.00	7.00	TBCW
TBC 31x50x8	31.00	50.00	8.00	TBC
TBR 32x45x7	32.00	45.00	7.00	TBR
TBR 32x46x6.7	32.00	46.00	6.70	TBR
TBR 32x46x8	32.00	46.00	8.00	TBR
TBR 33x44x8	33.00	44.00	8.00	TBR
TBR 33x46x8	33.00	46.00	8.00	TBR
TBC 34x48x7	34.00	48.00	7.00	TBC
TBR 35x47x8	35.00	47.00	8.00	TBR
TBC 35x48x7	35.00	48.00	7.00	TBC
TBCW 35x48x7	35.00	48.00	7.00	TBCW
TBC 35x49x7	35.00	49.00	7.00	TBC
TBC 35x50x8	35.00	50.00	8.00	TBC
TBCW 35x52x7	35.00	52.00	7.00	TBCW
TBCW 35x52x7	35.00	52.00	7.00	TBCW
SBR 35x52x8	35.00	52.00	8.00	SBR
TBC 35x65x10	35.00	65.00	10.00	TBC
SBR 36x46x9	36.00	46.00	9.00	SBR
TBR 36x50x7	36.00	50.00	7.00	TBR
TBR 38x47x7	38.00	47.00	7.00	TBR
SBR 38x47x10	38.00	47.00	10.00	SBR
TBR 38x55x8	38.00	55.00	8.00	TBR
TBR 38x55x8	38.00	55.00	8.00	TBR
TBR 38x58x11	38.00	58.00	11.00	TBR
TBC 40x52x6	40.00	52.00	6.00	TBC
TBR 40x54x6	40.00	54.00	6.00	TBR
TBR 40x54x8	40.00	54.00	8.00	TBR
SBR 40x55x7.5	40.00	55.00	7.50	SBR
TBCW 40x56x7	40.00	56.00	7.00	TBCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
TBCW 40x56x10	40.00	56.00	10.00	TBCW
TBR 40x57x8	40.00	57.00	8.00	TBR
TBR 40x68x10	40.00	68.00	10.00	TBR
SBR 40x72x10	40.00	72.00	10.00	SBR
TBR 41x53x7	41.00	53.00	7.00	TBR
TBR 41x56x7	41.00	56.00	7.00	TBR
TBR 42x53x7	42.00	53.00	7.00	TBR
SBR 42x54x7.5	42.00	54.00	7.50	SBR
TBR 42x55x7	42.00	55.00	7.00	TBR
SBR 42x55x8	42.00	55.00	8.00	SBR
SBR 42x55x9	42.00	55.00	9.00	SBR
TBC 42x55x10	42.00	55.00	10.00	TBC
TBCW 42x56x7	42.00	56.00	7.00	TBCW
TBR 42x60x8.5	42.00	60.00	8.50	TBR
SBR 42x60x12	42.00	60.00	12.00	SBR
TBCW 42x62x7	42.00	62.00	7.00	TBCW
TBCW 42x62x7	42.00	62.00	7.00	TBCW
TBR 42x65x12	42.00	65.00	12.00	TBR
TBCW 42x65x12	42.00	65.00	12.00	TBCW
SBR 42x72x10	42.00	72.00	10.00	SBR
TBC 42x72x10	42.00	72.00	10.00	TBC
TBR 43x65x7	43.00	65.00	7.00	TBR
SBR 45x60x9	45.00	60.00	9.00	SBR
TBR 45x60x9	45.00	60.00	9.00	TBR
TBCW 45x60x9	45.00	60.00	9.00	TBCW
TBR 45x61x10	45.00	61.00	10.00	TBR
TBCW 45x62x8	45.00	62.00	8.00	TBCW
TBC 45x63x7.5	45.00	63.00	7.50	TBC
TBC 45x63x7.5	45.00	63.00	7.50	TBC
TBCW 45x65x10	45.00	65.00	10.00	TBCW
TBCW 45x67x13	45.00	67.00	13.00	TBCW
TBCW 45x75x12	45.00	75.00	12.00	TBCW
TBR 48x65x8	48.00	65.00	8.00	TBR
TBC 48x65x10	48.00	65.00	10.00	TBC
TBC 48x70x9	48.00	70.00	9.00	TBC
TBR 48x79x18	48.00	79.00	18.00	TBR
TBCW 48x80x8	48.00	80.00	8.00	TBCW
TBR 49x72x8.6	49.00	72.00	8.60	TBR
TBR 50x70x9	50.00	70.00	9.00	TBR
TBR 51x65x7	51.00	65.00	7.00	TBR
TBCW 51x65x7	51.00	65.00	7.00	TBCW
TBR 52x63x9	52.00	63.00	9.00	TBR
TBR 52x64x9	52.00	64.00	9.00	TBR
TBC 52x68x8	52.00	68.00	8.00	TBC
TBC 52x70x9	52.00	70.00	9.00	TBC
TBR 52x70x9	52.00	70.00	9.00	TBR
TBR 52x70x10	52.00	70.00	10.00	TBR
TBR 54x64x9	54.00	64.00	9.00	TBR
TBR 54x65x13	54.00	65.00	13.00	TBR

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
TBR 57x67x6	57.00	67.00	6.00	TBR
TBC 57x71x9	57.00	71.00	9.00	TBC
TBR 57x72x8.4	57.00	72.00	8.40	TBR
TBR 58x75x9	58.00	75.00	9.00	TBR
TBCW 58x75x15.5	58.00	75.00	15.50	TBCW
TBC 60x73x11	60.00	73.00	11.00	TBC
TBC 60x74x8	60.00	74.00	8.00	TBC
TBCW 60x85x10	60.00	85.00	10.00	TBCW
TBR 62x73x9	62.00	73.00	9.00	TBR
TBR 68x95x13	68.00	95.00	13.00	TBR
TBR 70x92x12	70.00	92.00	12.00	TBR
TBCW 74x88x8	74.00	88.00	8.00	TBCW
TBR 74x100x10	74.00	100.00	10.00	TBR
TBCW 75x90x10	75.00	90.00	10.00	TBCW
TBC 75x95x10	75.00	95.00	10.00	TBC
TBR 75x95x13	75.00	95.00	13.00	TBR
TBC 75x100x10	75.00	100.00	10.00	TBC
TBC 75x100x10	75.00	100.00	10.00	TBC
TBCW 75x100x17	75.00	100.00	17.00	TBCW
TBR 75x121x13	75.00	121.00	13.00	TBR
TBCW 77x100x11.5	77.00	100.00	11.50	TBCW
TBC 80x98x10	80.00	98.00	10.00	TBC
TBCW 85x105x12	85.00	105.00	12.00	TBCW
TBCW 86x104x11	86.00	104.00	11.00	TBCW
TBCW 88x108x11	88.00	108.00	11.00	TBCW
TBC 90x104x11	90.00	104.00	11.00	TBC
TBC 90x110x10	90.00	110.00	10.00	TBC
TBCW 90x110x12	90.00	110.00	12.00	TBCW
TBCW 90x120x13	90.00	120.00	13.00	TBCW
TBC 95x110x10	95.00	110.00	10.00	TBC
TBCW 95x113x10	95.00	113.00	10.00	TBCW
TBC 95x115x13	95.00	115.00	13.00	TBC
TBR 95x130x15	95.00	130.00	15.00	TBR
TBCW 100x115x12	100.00	115.00	12.00	TBCW
TBCW 100x120x13	100.00	120.00	13.00	TBCW
TBCW 100x124x13	100.00	124.00	13.00	TBCW
TBCW 100x130x13	100.00	130.00	13.00	TBCW
TBCW 100x130x13	100.00	130.00	13.00	TBCW
TBR 110x125x8	110.00	125.00	8.00	TBR
TBC 110x140x13	110.00	140.00	13.00	TBC
TBR 110x140x14	110.00	140.00	14.00	TBR
TBR 120x140x12	120.00	140.00	12.00	TBR
TBCW 120x150x15	120.00	150.00	15.00	TBCW
TBCW 125x150x14	125.00	150.00	14.00	TBCW
TBCW 127x150x13	127.00	150.00	13.00	TBCW
TBCW 130x160x15	130.00	160.00	15.00	TBCW
TBCW 145x175x14	145.00	175.00	14.00	TBCW
TBCW 180x200x12	180.00	200.00	12.00	TBCW

STANDARD SHAFT SEALS

SA2 / TA2 / TA27 / TA28 / TA29

SA2 profile image

11.5 SA2 / TA2 / TA27 / TA28 / TA29 PROFILES

		Spring-loaded sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip + axial lip	Spring-loaded sealing lip + 2 anti-pollution sealing lip	Spring-loaded sealing lip + 2 anti-pollution sealing lip + axial lip
		S	**T**	**T7**	**T8**	**T9**
Single outer metal casing with metal reinforcement	**A2**	**SA2**	**TA2**	**TA27**	**TA28**	**TA29**

DESCRIPTION

Shaft seal composed of a single outer metal casing with a metal reinforcement and a spring-loaded sealing lip. Available with or without an additional radial and/or axial anti-pollution sealing lip.

APPLICATIONS

Shaft sealing
Engines
Pumps
Transmissions

ADVANTAGES

Excellent radial rigidity, particularly for large diameters

Very good assembly stability

Very limited bounce-back effect where grooves are present

Sealing for low and high viscosity fluids

Modern primary sealing lip with low radial forces

Standard, average or increased protection against undesirable air contaminants

MATERIALS

Rubber

ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

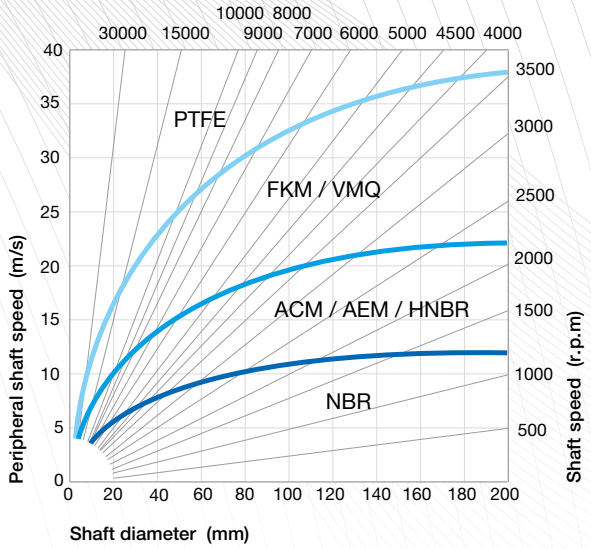
Steel - AISI 1010

Spring

Steel - AISI 1070 - 1090
Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	The shaft seals with an additional protective lip are limited to a speed of 8 m/sec.
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

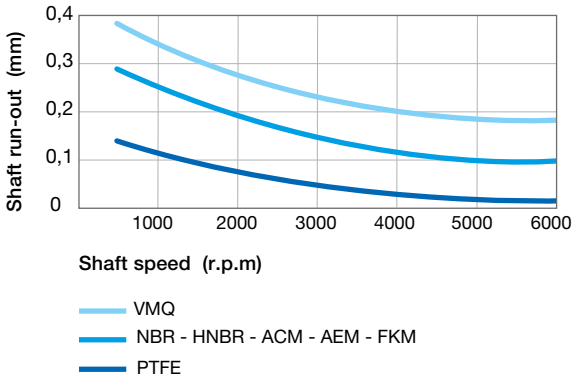
Shaft tolerance

Tolerance	ISO h11

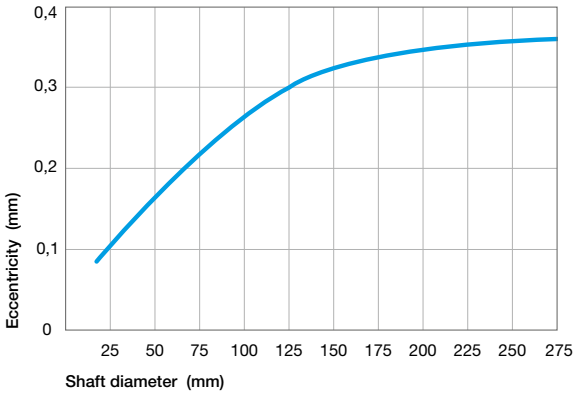
Shaft roundness

Roundness	IT 8

Shaft run out



Eccentricity



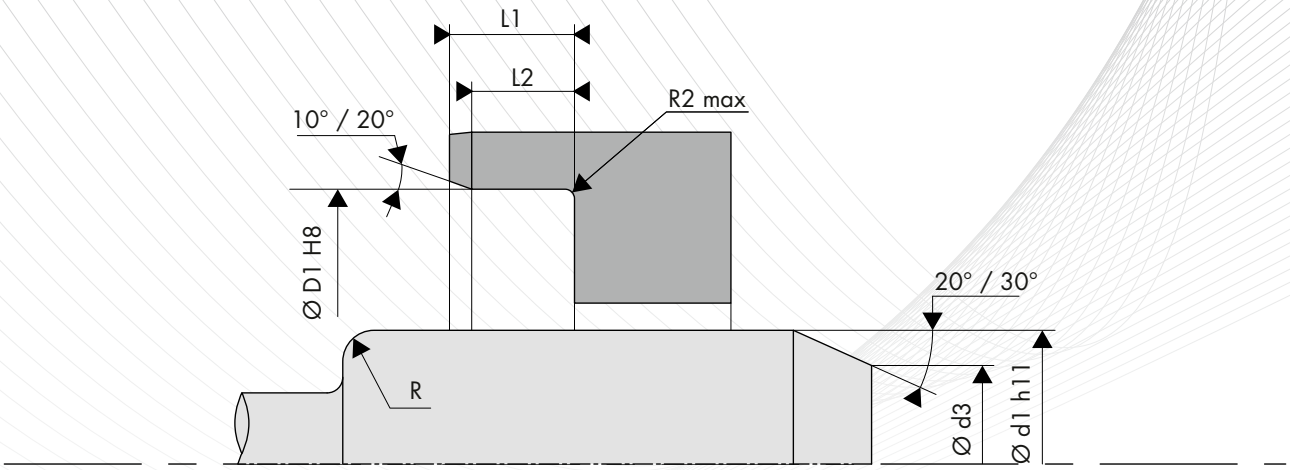
HOUSING DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8



DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
TA2 17x30x8	17.00	30.00	8.00	TA2
SA2 20x42x10	20.00	42.00	10.00	SA2
SA2 20x47x10	20.00	47.00	10.00	SA2
SA2 22x35x8	22.00	35.00	8.00	SA2
SA2 22x35x10	22.00	35.00	10.00	SA2
SA2 25x38x8	25.00	38.00	8.00	SA2
SA2 25x40x10	25.00	40.00	10.00	SA2
SA2 25x42x10	25.00	42.00	10.00	SA2
TA2 26x42x10	26.00	42.00	10.00	TA2
TA2 27x62x12	27.00	62.00	12.00	TA2
TA2 28x38x8	28.00	38.00	8.00	TA2
SA2 28x42x7	28.00	42.00	7.00	SA2
TA2 28x47x8	28.00	47.00	8.00	TA2
SA2 28x54x12	28.00	54.00	12.00	SA2
TA2 29x50x10	29.00	50.00	10.00	TA2
TA2 29x52x10	29.00	52.00	10.00	TA2
SA2 30x47x10	30.00	47.00	10.00	SA2
SA2 30x52x9	30.00	52.00	9.00	SA2
SA2 30x72x10	30.00	72.00	10.00	SA2
SA2 32x52x9	32.00	52.00	9.00	SA2
TA2 32x60x10	32.00	60.00	10.00	TA2
SA2 35x58x10	35.00	58.00	10.00	SA2
SA2 35x72x10	35.00	72.00	10.00	SA2
SA2 35x72x12	35.00	72.00	12.00	SA2
SA2 35x80x13	35.00	80.00	13.00	SA2
TA2 36x50x7	36.00	50.00	7.00	TA2
TA2 38x52x7	38.00	52.00	7.00	TA2
TA2 38x58x8	38.00	58.00	8.00	TA2
TA2 40x52x7	40.00	52.00	7.00	TA2
SA2 40x55x9	40.00	55.00	9.00	SA2
SA2 40x62x8	40.00	62.00	8.00	SA2
SA2 40x65x10	40.00	65.00	10.00	SA2
TA2 40x70x10	40.00	70.00	10.00	TA2
SA2 40x70x12	40.00	70.00	12.00	SA2
TA2 41x53x7	41.00	53.00	7.00	TA2
SA2 42x55x7	42.00	55.00	7.00	SA2
TA2 42x62x12	42.00	62.00	12.00	TA2
TA2 42x65x12	42.00	65.00	12.00	TA2
TA2 43x54x6	43.00	54.00	6.00	TA2
SA2 43x65x7	43.00	65.00	7.00	SA2
SA2 45x62x5	45.00	62.00	5.00	SA2
TA2 45x65x10	45.00	65.00	10.00	TA2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
TA2 45x70x13	45.00	70.00	13.00	TA2
TA2 47x65x12	47.00	65.00	12.00	TA2
TA2 48x62x7	48.00	62.00	7.00	TA2
TA2 48x62x8	48.00	62.00	8.00	TA2
TA2 48x65x12	48.00	65.00	12.00	TA2
TA2 50x65x8	50.00	65.00	8.00	TA2
SA2 50x65x10	50.00	65.00	10.00	SA2
TA2 50x68x8	50.00	68.00	8.00	TA2
TA2 50x68x9	50.00	68.00	9.00	TA2
TA2 50x70x7	50.00	70.00	7.00	TA2
SA2 50x70x8	50.00	70.00	8.00	SA2
TA2 50x72x8	50.00	72.00	8.00	TA2
TA2 50x73x9	50.00	73.00	9.00	TA2
TA2 50x75x9	50.00	75.00	9.00	TA2
TA2 50x76x13	50.00	76.00	13.00	TA2
SA2 50x80x13	50.00	80.00	13.00	SA2
TA2 50x90x13	50.00	90.00	13.00	TA2
SA2 52x72x12	52.00	72.00	12.00	SA2
SA2 53x75x12	53.00	75.00	12.00	SA2
SA2 54x92x13	54.00	92.00	13.00	SA2
SA2 55x78x12	55.00	78.00	12.00	SA2
TA2 55x80x10	55.00	80.00	10.00	TA2
SA2 55x80x12	55.00	80.00	12.00	SA2
TA2 58x75x12	58.00	75.00	12.00	TA2
TA2 60x74x10	60.00	74.00	10.00	TA2
TA2 60x80x10	60.00	80.00	10.00	TA2
TA2 60x85x16	60.00	85.00	16.00	TA2
SA2 60x100x10	60.00	100.00	10.00	SA2
TA2 60x110x13	60.00	110.00	13.00	TA2
TA2 62x80x10	62.00	80.00	10.00	TA2
TA2 62x90x12	62.00	90.00	12.00	TA2
SA2 62x90x13	62.00	90.00	13.00	SA2
TA2 65x88x12	65.00	88.00	12.00	TA2
TA2 65x90x13	65.00	90.00	13.00	TA2
TA2 66x85x8	66.00	85.00	8.00	TA2
TA2 68x88x9.5	68.00	88.00	9.50	TA2
TA2 68x90x10	68.00	90.00	10.00	TA2
TA2 68x92x10	68.00	92.00	10.00	TA2
TA2 70x90x10	70.00	90.00	10.00	TA2
TA2 70x90x12	70.00	90.00	12.00	TA2
SA2 70x90x13	70.00	90.00	13.00	SA2
TA2 70x92x12	70.00	92.00	12.00	TA2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
TA2 70x110x13	70.00	110.00	13.00	TA2
TA2 72x100x13	72.00	100.00	13.00	TA2
TA2 72x105x13	72.00	105.00	13.00	TA2
SA2 74x114x11	74.00	114.00	11.00	SA2
SA2 75x95x13	75.00	95.00	13.00	SA2
TA2 75x95x13	75.00	95.00	13.00	TA2
SA2 75x100x10	75.00	100.00	10.00	SA2
TA2 75x100x13	75.00	100.00	13.00	TA2
TA2 75x105x10	75.00	105.00	10.00	TA2
TA2 75x105x12	75.00	105.00	12.00	TA2
TA2 75x105x13	75.00	105.00	13.00	TA2
TA2 75x108x13	75.00	108.00	13.00	TA2
SA2 75x115x13	75.00	115.00	13.00	SA2
TA2 78x108x13	78.00	108.00	13.00	TA2
TA2 80x100x12	80.00	100.00	12.00	TA2
TA2 80x100x13	80.00	100.00	13.00	TA2
TA2 80x108x13	80.00	108.00	13.00	TA2
TA2 80x110x13	80.00	110.00	13.00	TA2
TA2 80x130x13	80.00	130.00	13.00	TA2
TA2 82x108x13	82.00	108.00	13.00	TA2
TA2 85x105x13	85.00	105.00	13.00	TA2
TA2 85x127x13	85.00	127.00	13.00	TA2
TA2 88x115x13	88.00	115.00	13.00	TA2
TA2 90x110x12	90.00	110.00	12.00	TA2
TA2 90x110x13	90.00	110.00	13.00	TA2
TA2 90x110x15	90.00	110.00	15.00	TA2
TA2 90x118x12	90.00	118.00	12.00	TA2
TA2 90x120x13	90.00	120.00	13.00	TA2
TA2 90x120x15	90.00	120.00	15.00	TA2
TA2 90x130x13	90.00	130.00	13.00	TA2
TA2 90x130x15	90.00	130.00	15.00	TA2
TA2 90x135x15	90.00	135.00	15.00	TA2
TA2 95x115x12	95.00	115.00	12.00	TA2
TA2 95x115x13	95.00	115.00	13.00	TA2
TA2 95x120x12	95.00	120.00	12.00	TA2
SA2 95x125x13	95.00	125.00	13.00	SA2
TA2 95x125x13	95.00	125.00	13.00	TA2
TA2 95x128x12.5	95.00	128.00	12.50	TA2
SA2 95x130x13	95.00	130.00	13.00	SA2
TA2 95x130x13	95.00	130.00	13.00	TA2
TA2 98x120x12	98.00	120.00	12.00	TA2
TA2 98x130x13	98.00	130.00	13.00	TA2
TA2 98x145x19	98.00	145.00	19.00	TA2
TA2 100x125x13	100.00	125.00	13.00	TA2
SA2 100x127x8	100.00	127.00	8.00	SA2
TA2 100x127x12	100.00	127.00	12.00	TA2
TA2 100x130x13	100.00	130.00	13.00	TA2
TA2 104x140x12	104.00	140.00	12.00	TA2
SA2 105x125x13	105.00	125.00	13.00	SA2
SA2 105x130x13	105.00	130.00	13.00	SA2
TA2 105x130x13	105.00	130.00	13.00	TA2
TA2 105x135x13	105.00	135.00	13.00	TA2
TA2 108x140x13	108.00	140.00	13.00	TA2
TA2 110x128x9	110.00	128.00	9.00	TA2
TA2 110x130x13	110.00	130.00	13.00	TA2
TA2 110x133x13	110.00	133.00	13.00	TA2
SA2 110x140x13	110.00	140.00	13.00	SA2
TA2 110x140x13	110.00	140.00	13.00	TA2
TA2 110x145x16	110.00	145.00	16.00	TA2
TA2 110x150x13	110.00	150.00	13.00	TA2
TA2 110x150x15	110.00	150.00	15.00	TA2
TA2 110x160x16	110.00	160.00	16.00	TA2

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
TA2 115x150x15	115.00	150.00	15.00	TA2
TA2 115x170x12	115.00	170.00	12.00	TA2
TA2 116x155x12	116.00	155.00	12.00	TA2
TA2 120x140x13	120.00	140.00	13.00	TA2
TA2 120x145x13	120.00	145.00	13.00	TA2
TA2 120x145x15	120.00	145.00	15.00	TA2
TA2 120x150x15	120.00	150.00	15.00	TA2
TA2 120x160x15	120.00	160.00	15.00	TA2
SA2 125x150x15	125.00	150.00	15.00	SA2
TA2 130x160x14	130.00	160.00	14.00	TA2
TA2 130x170x15	130.00	170.00	15.00	TA2
TA2 135x165x13	135.00	165.00	13.00	TA2
TA2 135x165x15	135.00	165.00	15.00	TA2
SA2 140x160x13	140.00	160.00	13.00	SA2
TA2 140x168x15	140.00	168.00	15.00	TA2
SA2 140x170x14	140.00	170.00	14.00	SA2
TA2 140x170x15	140.00	170.00	15.00	TA2
TA2 145x168x15	145.00	168.00	15.00	TA2
SA2 145x175x13	145.00	175.00	13.00	SA2
TA2 145x185x15	145.00	185.00	15.00	TA2
TA2 148x170x14.5	148.00	170.00	14.50	TA2
SA2 150x170x15	150.00	170.00	15.00	SA2
TA2 150x170x15	150.00	170.00	15.00	TA2
TA2 155x180x15	155.00	180.00	15.00	TA2
SA2 160x180x15	160.00	180.00	15.00	SA2
TA2 160x190x15	160.00	190.00	15.00	TA2
TA2 165x203x19	165.00	203.00	19.00	TA2
TA2 170x200x15	170.00	200.00	15.00	TA2
TA2 175x200x15	175.00	200.00	15.00	TA2
TA2 180x210x15	180.00	210.00	15.00	TA2
TA2 180x215x16	180.00	215.00	16.00	TA2
SA2 190x220x15	190.00	220.00	15.00	SA2
TA2 190x220x15	190.00	220.00	15.00	TA2
TA2 220x250x16	220.00	250.00	16.00	TA2
SA2 280x310x16	280.00	310.00	16.00	SA2

STANDARD SHAFT SEALS

KC / KCW / VC / VCW

KC profile image

11.6 KC / KCW / VC / VCW PROFILES

		Primary sealing lip without spring	Primary sealing lip without spring + anti-pollution sealing lip
		V	K
Single rubber covered metal casing	C	VC	KC
Single metal casing with rubber grooves covering the outside of the casing	CW	VCW	KCW

DESCRIPTION

Shaft seal composed of a single rubber covered metal casing and a primary sealing lip, without a spring. Available with or without an additional radial and/or axial anti-pollution sealing lip, and with or without grooves on the outside.

APPLICATIONS

All types of rotative applications
Machine tools
Agriculture
Construction
Transmission
Gear boxes
Motors
Pumps

ADVANTAGES

Very good static sealing
Very good thermal expansion compensation
Greater roughness is allowed in the housing
Reduced risk of corrosion
Very limited bounce-back effect where grooves are present
Sealing for high viscosity fluids
Primary sealing lip generating low levels of friction and heat
Standard, average or increased protection against undesirable air contaminants

MATERIALS

Rubber

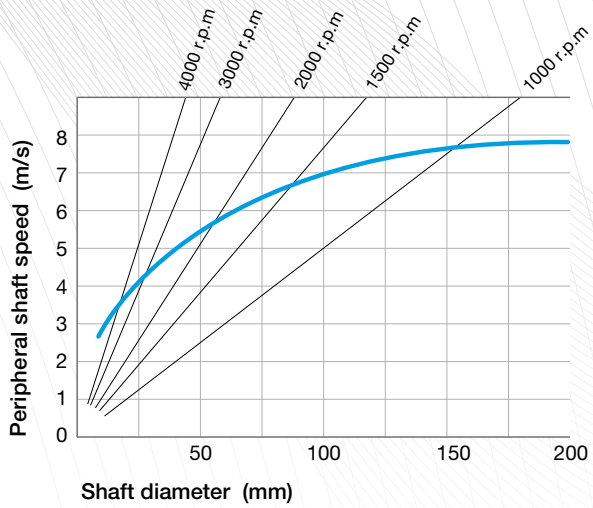
ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other high viscosity fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

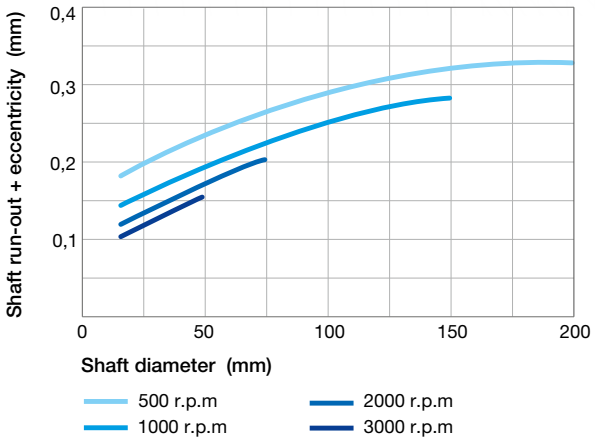
Shaft tolerance

Tolerance	ISO h11

Shaft roundness

Roundness	IT 8

Shaft run-out and concentricity deviation



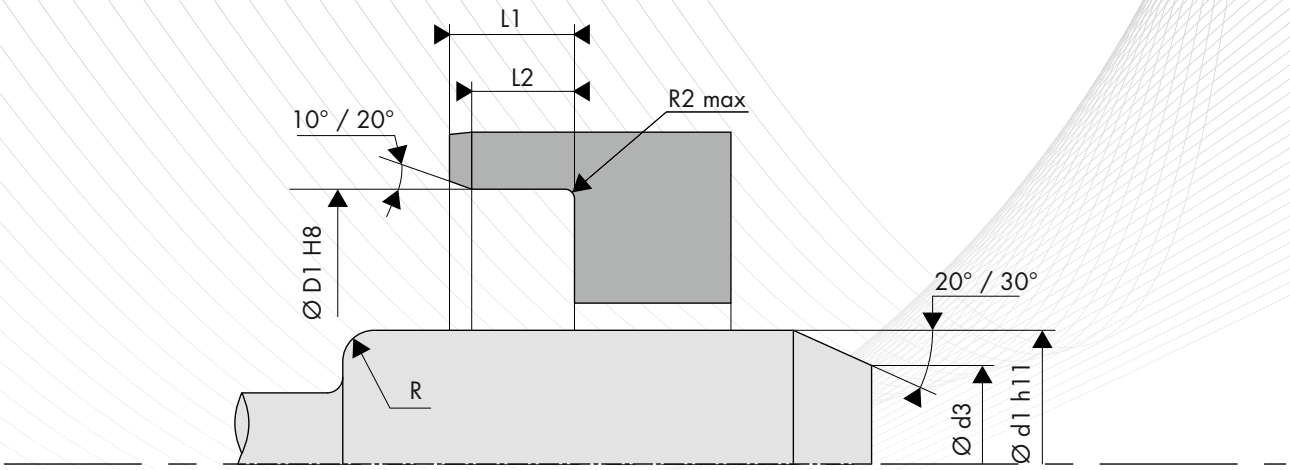
HOUSING DESIGN

Surface roughness

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Housing tolerance

Tolerance	ISO H8



DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
VC 4x9x3	4.00	9.00	3.00	VC
VC 4x18x4	4.00	18.00	4.00	VC
VC 5x10x4	5.00	10.00	4.00	VC
VC 5x11x3	5.00	11.00	3.00	VC
VC 5x14x4	5.00	14.00	4.00	VC
VC 5x15x6	5.00	15.00	6.00	VC
KC 5x16x8	5.00	16.00	8.00	KC
VC 6x10x2.5	6.00	10.00	2.50	VC
VC 6x10x4	6.00	10.00	4.00	VC
VC 6x11x4	6.00	11.00	4.00	VC
VC 6x11x4.5	6.00	11.00	4.50	VC
VC 6x12x5	6.00	12.00	5.00	VC
VC 6x14x4	6.00	14.00	4.00	VC
VCW 6x15x3.3	6.00	15.00	3.30	VCW
VC 6x18x4.5	6.00	18.00	4.50	VC
KC 6x18x5	6.00	18.00	5.00	KC
VC 6x19x5	6.00	19.00	5.00	VC
VC 6x19x7	6.00	19.00	7.00	VC
VC 6x22x7	6.00	22.00	7.00	VC
VC 7x13x4	7.00	13.00	4.00	VC
VC 7x14x4	7.00	14.00	4.00	VC
VCW 7x15x5	7.00	15.00	5.00	VCW
KC 7x15x7	7.00	15.00	7.00	KC
VC 7x20x5	7.00	20.00	5.00	VC
KC 7x26x5.5	7.00	26.00	5.50	KC
VC 8x12x3	8.00	12.00	3.00	VC
VCW 8x12x3	8.00	12.00	3.00	VCW
KC 8x12x4	8.00	12.00	4.00	KC
VC 8x12x4	8.00	12.00	4.00	VC
KC 8x14x4	8.00	14.00	4.00	KC
VC 8x14x4	8.00	14.00	4.00	VC
VCW 8x14x4	8.00	14.00	4.00	VCW
VCW 8x15x3	8.00	15.00	3.00	VCW
VC 8x15x5	8.00	15.00	5.00	VC
VC 8x16x4	8.00	16.00	4.00	VC
KC 8x16x5.5	8.00	16.00	5.50	KC
KC 8x16x6	8.00	16.00	6.00	KC
VC 8x18x3.5	8.00	18.00	3.50	VC
KC 8x18x4	8.00	18.00	4.00	KC
KC 8x18x5	8.00	18.00	5.00	KC
VCW 9x13x3	9.00	13.00	3.00	VCW
VCW 9x16x3	9.00	16.00	3.00	VCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
VC 9x18x5	9.00	18.00	5.00	VC
KC 9x19x5	9.00	19.00	5.00	KC
VCW 10x14x3	10.00	14.00	3.00	VCW
KC 10x14x4	10.00	14.00	4.00	KC
VC 10x15x3	10.00	15.00	3.00	VC
VC 10x15x4	10.00	15.00	4.00	VC
VCW 10x17x3	10.00	17.00	3.00	VCW
VC 10x17x3.5	10.00	17.00	3.50	VC
VC 10x17x5	10.00	17.00	5.00	VC
KC 10x18x5	10.00	18.00	5.00	KC
VC 10x19x4	10.00	19.00	4.00	VC
VC 10x20x5	10.00	20.00	5.00	VC
VC 10x22x3	10.00	22.00	3.00	VC
VC 10x24x4	10.00	24.00	4.00	VC
VC 11x17x3	11.00	17.00	3.00	VC
VC 11x17x6	11.00	17.00	6.00	VC
VC 12x16x2.5	12.00	16.00	2.50	VC
VCW 12x16x3	12.00	16.00	3.00	VCW
VC 12x17x2.5	12.00	17.00	2.50	VC
VC 12x17x5	12.00	17.00	5.00	VC
VC 12x17x6	12.00	17.00	6.00	VC
VC 12x18x3	12.00	18.00	3.00	VC
VCW 12x18x3	12.00	18.00	3.00	VCW
KC 12x18x4	12.00	18.00	4.00	KC
VC 12x18x4	12.00	18.00	4.00	VC
VC 12x18x5	12.00	18.00	5.00	VC
VC 12x19x3	12.00	19.00	3.00	VC
VCW 12x19x3	12.00	19.00	3.00	VCW
VC 12x20x4	12.00	20.00	4.00	VC
KC 12x21x4	12.00	21.00	4.00	KC
VC 12x22x3	12.00	22.00	3.00	VC
KC 12x22x3.6	12.00	22.00	3.60	KC
VC 12x22x4	12.00	22.00	4.00	VC
KC 12x22x7	12.00	22.00	7.00	KC
VC 12x24x4	12.00	24.00	4.00	VC
VC 12x25x4.5	12.00	25.00	4.50	VC
VC 13x19x3	13.00	19.00	3.00	VC
VCW 13x19x3	13.00	19.00	3.00	VCW
VC 13x26x4	13.00	26.00	4.00	VC
VC 13x31x8.5	13.00	31.00	8.50	VC
VC 13x32x9	13.00	32.00	9.00	VC
VCW 14x20x3	14.00	20.00	3.00	VCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
KC 14x20x3.2	14.00	20.00	3.20	KC
KC 14x20x4	14.00	20.00	4.00	KC
VC 14x20x4	14.00	20.00	4.00	VC
VCW 14x21x3	14.00	21.00	3.00	VCW
KC 14x21x6	14.00	21.00	6.00	KC
VCW 14x22x3	14.00	22.00	3.00	VCW
VC 14x22x4	14.00	22.00	4.00	VC
VCW 14x22x4	14.00	22.00	4.00	VCW
KC 14x24x4	14.00	24.00	4.00	KC
VC 14x24x4	14.00	24.00	4.00	VC
KC 14x24x6	14.00	24.00	6.00	KC
VC 14x25x5	14.00	25.00	5.00	VC
VCW 14x26x3	14.00	26.00	3.00	VCW
VC 14x31x8.5	14.00	31.00	8.50	VC
VC 15x19x6	15.00	19.00	6.00	VC
VC 15x21x3	15.00	21.00	3.00	VC
VCW 15x21x3	15.00	21.00	3.00	VCW
VC 15x21x5	15.00	21.00	5.00	VC
VC 15x22x5	15.00	22.00	5.00	VC
VC 15x23x3	15.00	23.00	3.00	VC
VC 15x23x4	15.00	23.00	4.00	VC
KC 15x24x5	15.00	24.00	5.00	KC
KC 15x25x3	15.00	25.00	3.00	KC
VC 15x25x4	15.00	25.00	4.00	VC
KC 15x25x6	15.00	25.00	6.00	KC
VC 15x26x3.5	15.00	26.00	3.50	VC
KC 15x26x6	15.00	26.00	6.00	KC
VC 15x30x5	15.00	30.00	5.00	VC
VC 16x20x2.5	16.00	20.00	2.50	VC
KC 16x21x4	16.00	21.00	4.00	KC
VC 16x22x3	16.00	22.00	3.00	VC
VCW 16x22x3	16.00	22.00	3.00	VCW
KC 16x23x3	16.00	23.00	3.00	KC
VC 16x23x3	16.00	23.00	3.00	VC
VC 16x23x5	16.00	23.00	5.00	VC
VCW 16x24x3	16.00	24.00	3.00	VCW
KC 16x24x4	16.00	24.00	4.00	KC
VC 16x24x4	16.00	24.00	4.00	VC
VCW 16x25x3	16.00	25.00	3.00	VCW
VC 16x25x5	16.00	25.00	5.00	VC
VC 16x26x3	16.00	26.00	3.00	VC
VC 16x30x3	16.00	30.00	3.00	VC
VC 16x30x5	16.00	30.00	5.00	VC
KC 16x30x8	16.00	30.00	8.00	KC
VC 17x21x3.2	17.00	21.00	3.20	VC
VC 17x22x5	17.00	22.00	5.00	VC
VC 17x22x6	17.00	22.00	6.00	VC
KC 17x23x3	17.00	23.00	3.00	KC
VC 17x23x3	17.00	23.00	3.00	VC
VCW 17x23x3	17.00	23.00	3.00	VCW
KC 17x23x4	17.00	23.00	4.00	KC
KC 17x24x2.5	17.00	24.00	2.50	KC
KC 17x24x3	17.00	24.00	3.00	KC
KC 17x24x4	17.00	24.00	4.00	KC
KC 17x24x5	17.00	24.00	5.00	KC
KC 17x24x6	17.00	24.00	6.00	KC
VCW 17x25x3	17.00	25.00	3.00	VCW
VC 17x26x2	17.00	26.00	2.00	VC
VC 17x26x3	17.00	26.00	3.00	VC
KC 17x28x6	17.00	28.00	6.00	KC
VC 17x30x5	17.00	30.00	5.00	VC
VC 17x35x4.8	17.00	35.00	4.80	VC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
VC 18x22x7	18.00	22.00	7.00	VC
KC 18x23x4	18.00	23.00	4.00	KC
VCW 18x24x3	18.00	24.00	3.00	VCW
KC 18x24x3.5	18.00	24.00	3.50	KC
VC 18x24x4	18.00	24.00	4.00	VC
VCW 18x24x4	18.00	24.00	4.00	VCW
KC 18x24x6	18.00	24.00	6.00	KC
KC 18x26x4	18.00	26.00	4.00	KC
VCW 18x26x4	18.00	26.00	4.00	VCW
KC 18x27x4	18.00	27.00	4.00	KC
KC 19x26x3	19.00	26.00	3.00	KC
VC 19x26x4	19.00	26.00	4.00	VC
KC 19x27x5	19.00	27.00	5.00	KC
VC 20x25x2.5	20.00	25.00	2.50	VC
VCW 20x26x3	20.00	26.00	3.00	VCW
VC 20x26x4	20.00	26.00	4.00	VC
VCW 20x26x4	20.00	26.00	4.00	VCW
KC 20x26x4.5	20.00	26.00	4.50	KC
KC 20x27x4	20.00	27.00	4.00	KC
VCW 20x28x4	20.00	28.00	4.00	VCW
VC 20x28x5	20.00	28.00	5.00	VC
VC 20x30x4	20.00	30.00	4.00	VC
KC 20x30x7	20.00	30.00	7.00	KC
VC 20x30x7	20.00	30.00	7.00	VC
VC 20x32x5	20.00	32.00	5.00	VC
VC 20x35x7	20.00	35.00	7.00	VC
KC 20x38x7	20.00	38.00	7.00	KC
VC 20x40x5	20.00	40.00	5.00	VC
VC 20x52x4	20.00	52.00	4.00	VC
KC 21x27x5	21.00	27.00	5.00	KC
KC 21x29x4	21.00	29.00	4.00	KC
VC 21x37x7	21.00	37.00	7.00	VC
VC 22x26x6	22.00	26.00	6.00	VC
KC 22x28x4	22.00	28.00	4.00	KC
VCW 22x28x4	22.00	28.00	4.00	VCW
KC 22x29x4	22.00	29.00	4.00	KC
VC 22x29x4	22.00	29.00	4.00	VC
KC 22x29x5	22.00	29.00	5.00	KC
VC 22x29x5	22.00	29.00	5.00	VC
KC 22x30x4	22.00	30.00	4.00	KC
VC 22x30x4	22.00	30.00	4.00	VC
VCW 22x30x4	22.00	30.00	4.00	VCW
VC 22x31x5	22.00	31.00	5.00	VC
KC 22x35x4	22.00	35.00	4.00	KC
VC 23x30x4	23.00	30.00	4.00	VC
KC 23x32x5	23.00	32.00	5.00	KC
VC 24x31x4	24.00	31.00	4.00	VC
KC 24x31x5	24.00	31.00	5.00	KC
VCW 24x32x4	24.00	32.00	4.00	VCW
VC 24x33x4	24.00	33.00	4.00	VC
VC 24x36x4	24.00	36.00	4.00	VC
KC 24x36x8	24.00	36.00	8.00	KC
VC 24x38x5	24.00	38.00	5.00	VC
KC 24x43x6	24.00	43.00	6.00	KC
VC 25x30x4	25.00	30.00	4.00	VC
VC 25x31x5	25.00	31.00	5.00	VC
KC 25x32x4	25.00	32.00	4.00	KC
VC 25x32x4	25.00	32.00	4.00	VC
VCW 25x32x4	25.00	32.00	4.00	VCW
VC 25x33x4	25.00	33.00	4.00	VC
VCW 25x34x4	25.00	34.00	4.00	VCW
VCW 25x35x4	25.00	35.00	4.00	VCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
KC 25x35x7	25.00	35.00	7.00	KC
VC 25x35x7	25.00	35.00	7.00	VC
KC 25x37x7	25.00	37.00	7.00	KC
VC 25x38x5	25.00	38.00	5.00	VC
VC 25x42x5	25.00	42.00	5.00	VC
KC 26x32x4	26.00	32.00	4.00	KC
KC 26x34x4	26.00	34.00	4.00	KC
KC 26x34x9	26.00	34.00	9.00	KC
VC 26x35x4	26.00	35.00	4.00	VC
VC 26x40x5	26.00	40.00	5.00	VC
KC 27x34x4	27.00	34.00	4.00	KC
VCW 27x35x4	27.00	35.00	4.00	VCW
KC 27x40x6	27.00	40.00	6.00	KC
VC 28x32x7	28.00	32.00	7.00	VC
KC 28x34x4	28.00	34.00	4.00	KC
KC 28x35x4	28.00	35.00	4.00	KC
VCW 28x35x4	28.00	35.00	4.00	VCW
VC 28x35x5	28.00	35.00	5.00	VC
VC 28x37x4	28.00	37.00	4.00	VC
VCW 28x37x4	28.00	37.00	4.00	VCW
VC 28x37x6	28.00	37.00	6.00	VC
VC 28x38x5	28.00	38.00	5.00	VC
VC 28x40x5	28.00	40.00	5.00	VC
VC 28x42x4	28.00	42.00	4.00	VC
VC 28x47x4	28.00	47.00	4.00	VC
KC 29x35x4.4	29.00	35.00	4.40	KC
KC 30x37x4	30.00	37.00	4.00	KC
VC 30x37x4	30.00	37.00	4.00	VC
VCW 30x37x4	30.00	37.00	4.00	VCW
KC 30x37x7	30.00	37.00	7.00	KC
VCW 30x38x4	30.00	38.00	4.00	VCW
VCW 30x40x4	30.00	40.00	4.00	VCW
VC 30x40x7	30.00	40.00	7.00	VC
VC 30x42x5	30.00	42.00	5.00	VC
VC 30x42x6.4	30.00	42.00	6.40	VC
KC 30x42x7	30.00	42.00	7.00	KC
VCW 30x42x9	30.00	42.00	9.00	VCW
VCW 30x50x5	30.00	50.00	5.00	VCW
VC 30x52x5	30.00	52.00	5.00	VC
VCW 30x55x5	30.00	55.00	5.00	VCW
VCW 30x56x5	30.00	56.00	5.00	VCW
VC 30x62x6	30.00	62.00	6.00	VC
VCW 31x38x4	31.00	38.00	4.00	VCW
VC 32x39x4	32.00	39.00	4.00	VC
VC 32x40x4	32.00	40.00	4.00	VC
VC 32x40x5	32.00	40.00	5.00	VC
VC 32x42x4	32.00	42.00	4.00	VC
VCW 32x42x4	32.00	42.00	4.00	VCW
KC 32x42x5	32.00	42.00	5.00	KC
VC 32x44x4	32.00	44.00	4.00	VC
VC 32x52x5	32.00	52.00	5.00	VC
KC 33x39x4	33.00	39.00	4.00	KC
VCW 33x40x3	33.00	40.00	3.00	VCW
KC 33x42x7	33.00	42.00	7.00	KC
VC 34x39x3	34.00	39.00	3.00	VC
KC 34x41x4	34.00	41.00	4.00	KC
VC 34x41x4	34.00	41.00	4.00	VC
KC 34x42x5	34.00	42.00	5.00	KC
KC 34x58x5	34.00	58.00	5.00	KC
VCW 35x40x10	35.00	40.00	10.00	VCW
KC 35x42x3	35.00	42.00	3.00	KC
VCW 35x42x4	35.00	42.00	4.00	VCW

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
VCW 35x45x4	35.00	45.00	4.00	VCW
VCW 35x45x5	35.00	45.00	5.00	VCW
KC 35x47x7	35.00	47.00	7.00	KC
VC 35x55x5	35.00	55.00	5.00	VC
VC 35x62x5	35.00	62.00	5.00	VC
VCW 37x47x4	37.00	47.00	4.00	VCW
VC 38x42x6.4	38.00	42.00	6.40	VC
VCW 38x45x4	38.00	45.00	4.00	VCW
VCW 38x48x4	38.00	48.00	4.00	VCW
KC 38x50x7	38.00	50.00	7.00	KC
KC 38x52x6	38.00	52.00	6.00	KC
KC 38x52x9.5	38.00	52.00	9.50	KC
VC 40x45x2	40.00	45.00	2.00	VC
VC 40x47x4	40.00	47.00	4.00	VC
VCW 40x47x4	40.00	47.00	4.00	VCW
VC 40x48x4	40.00	48.00	4.00	VC
VC 40x50x4	40.00	50.00	4.00	VC
VCW 40x50x4	40.00	50.00	4.00	VCW
KC 40x52x4	40.00	52.00	4.00	KC
VC 40x52x5	40.00	52.00	5.00	VC
VCW 40x52x5	40.00	52.00	5.00	VCW
VC 40x52x6	40.00	52.00	6.00	VC
KC 40x52x7	40.00	52.00	7.00	KC
VC 40x54x7	40.00	54.00	7.00	VC
KC 40x55x5	40.00	55.00	5.00	KC
VC 40x60x5	40.00	60.00	5.00	VC
VC 40x62x5	40.00	62.00	5.00	VC
KC 40x62x6.5	40.00	62.00	6.50	KC
KC 41x51x5	41.00	51.00	5.00	KC
VC 42x52x4	42.00	52.00	4.00	VC
VCW 42x52x4	42.00	52.00	4.00	VCW
VCW 42x55x6	42.00	55.00	6.00	VCW
KC 42x55x7	42.00	55.00	7.00	KC
KC 42x56x7	42.00	56.00	7.00	KC
KC 42x64x6	42.00	64.00	6.00	KC
KC 43x55x8	43.00	55.00	8.00	KC
VC 44x50x4	44.00	50.00	4.00	VC
VC 44x55x5	44.00	55.00	5.00	VC
VC 45x50x2	45.00	50.00	2.00	VC
VCW 45x50x4	45.00	50.00	4.00	VCW
VC 45x50x8	45.00	50.00	8.00	VC
VCW 45x52x4	45.00	52.00	4.00	VCW
VC 45x55x4	45.00	55.00	4.00	VC
VCW 45x55x4	45.00	55.00	4.00	VCW
KC 45x60x8	45.00	60.00	8.00	KC
VC 45x62x5	45.00	62.00	5.00	VC
VC 45x62x7	45.00	62.00	7.00	VC
VC 45x65x8	45.00	65.00	8.00	VC
VC 45x68x6	45.00	68.00	6.00	VC
VC 45x70x5	45.00	70.00	5.00	VC
VCW 45x71x5	45.00	71.00	5.00	VCW
VCW 46x54x4	46.00	54.00	4.00	VCW
VCW 46x58x5	46.00	58.00	5.00	VCW
KC 46x63x5.5	46.00	63.00	5.50	KC
VCW 47x57x3	47.00	57.00	3.00	VCW
VC 48x58x4	48.00	58.00	4.00	VC
KC 48x62x6	48.00	62.00	6.00	KC
VCW 50x58x4	50.00	58.00	4.00	VCW
KC 50x59x4	50.00	59.00	4.00	KC
KC 50x60x6	50.00	60.00	6.00	KC
VCW 50x62x5	50.00	62.00	5.00	VCW
KC 50x65x8	50.00	65.00	8.00	KC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
VC 50x68x7	50.00	68.00	7.00	VC
VC 50x72x5	50.00	72.00	5.00	VC
KC 52x90x8	52.00	90.00	8.00	KC
VCW 53x65x5	53.00	65.00	5.00	VCW
VC 55x72x8	55.00	72.00	8.00	VC
VC 60x72x6	60.00	72.00	6.00	VC
VC 60x75x6	60.00	75.00	6.00	VC
KC 60x82x7	60.00	82.00	7.00	KC
VCW 63x75x5	63.00	75.00	5.00	VCW
VCW 68x78x3	68.00	78.00	3.00	VCW
VCW 70x78x5	70.00	78.00	5.00	VCW
VC 70x92x7	70.00	92.00	7.00	VC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
VC 74x95x7	74.00	95.00	7.00	VC
KC 75x105x15	75.00	105.00	15.00	KC
VC 80x90x3.4	80.00	90.00	3.40	VC
VC 80x90x5	80.00	90.00	5.00	VC
VCW 80x95x5	80.00	95.00	5.00	VCW
VC 80x100x7	80.00	100.00	7.00	VC
KC 80x105x13	80.00	105.00	13.00	KC
VCW 90x105x5	90.00	105.00	5.00	VCW
VC 90x105x6	90.00	105.00	6.00	VC
VC 90x105x10	90.00	105.00	10.00	VC
VC 95x135x13	95.00	135.00	13.00	VC
KC 100x152x12	100.00	152.00	12.00	KC

STANDARD SHAFT SEALS

KB / KB2 / VB / VB2

KB profile image

11.7 KB / KB2 / VB / VB2 PROFILES

		Primary sealing lip without spring	Primary sealing lip without spring + anti-pollution sealing lip
		V	K
Single outer metal casing with rubber coating on the inside	B	VB	KB
Single outer metal casing	B2	VB2	KB2

DESCRIPTION

Shaft seal composed of a single outer metal casing and a primary sealing lip, without a spring. Available with or without an additional radial and/or axial anti-pollution sealing lip, and with or without a coating on the inside of the metal casing.

APPLICATIONS

All types of rotative applications
Machine tools
Agriculture
Construction
Transmission
Gear boxes
Motors
Pumps

ADVANTAGES

Good radial rigidity, particularly for large diameters
Good assembly stability
Sealing for high viscosity fluids
Reduced risk of internal corrosion (KB – VB only)
Primary sealing lip generating low levels of friction and heat
Standard, average or increased protection against undesirable air contaminants

MATERIALS

Rubber

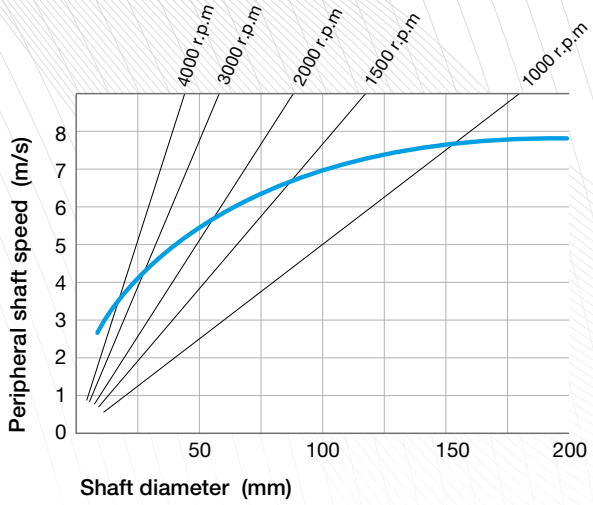
ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other high viscosity fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

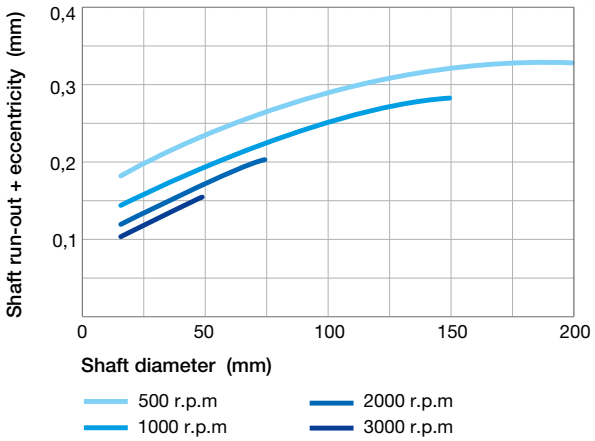
Shaft tolerance

Tolerance	ISO h11

Shaft roundness

Roundness	IT 8

Shaft run-out and concentricity deviation



HOUSING DESIGN

Surface roughness

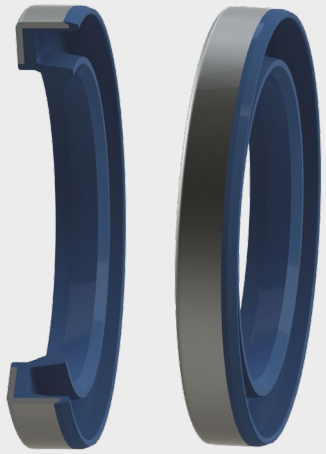
Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8

STANDARD SHAFT SEALS

KBC / KBCW / KBR / VBC / VBCW / VBR



VBR profile image

11.8 KBC / KBCW / KBR / VBC / VBCW / VBR PROFILES

		Primary sealing lip without spring	Primary sealing lip without spring + anti-pollution sealing lip
		V	K
Single outer metal casing with rubber coating over half of the outside of the casing	BC	VBC	KBC
Single outer metal casing with rubber grooves over half of the outside of the casing	BCW	VBCW	KBCW
Single outer metal casing with rubber coating on the inside and on the edge of the casing	BR	VBR	KBR

DESCRIPTION

Shaft seal composed of a single outer metal casing with a rubber coating covering half of the outside of the casing and a primary sealing lip, without a spring. Available with or without an additional radial and/or axial anti-pollution sealing lip, and with or without grooves on the outside.

APPLICATIONS

All types of rotative applications
Machine tools
Agriculture
Construction
Transmission
Gear boxes
Motors
Pumps

ADVANTAGES

Good radial rigidity, particularly for large diameters
Good assembly stability
Good static sealing
Good thermal expansion compensation
Good heat transfer
Easy to assemble with very limited bounce-back effect
Sealing for high viscosity fluids
Primary sealing lip generating low levels of friction and heat
Standard, average or increased protection against undesirable air contaminants

MATERIALS

Rubber

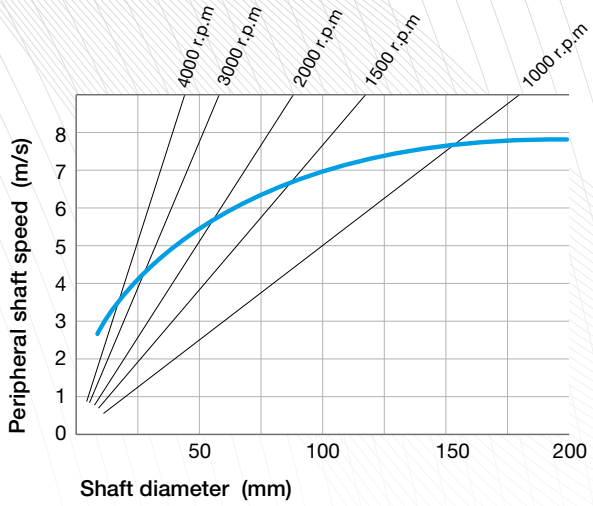
ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other high viscosity fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

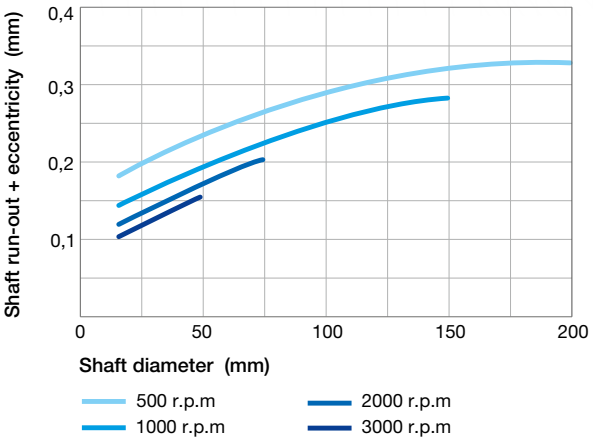
Shaft tolerance

Tolerance	ISO h11

Shaft roundness

Roundness	IT 8

Shaft run-out and concentricity deviation



HOUSING DESIGN

Surface roughness

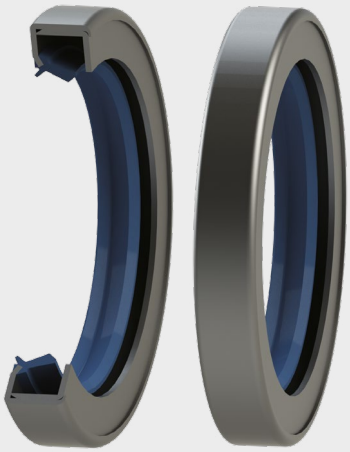
Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8

STANDARD SHAFT SEALS

KA2 / VA2



KA2 profile image

11.9 KA2 / VA2 PROFILES

		Primary sealing lip without spring	Primary sealing lip without spring + anti-pollution sealing lip
		V	K
Single outer metal casing with metal reinforcement	A2	VA2	KA2

DESCRIPTION

Shaft seal composed of a single outer metal casing with a metal reinforcement and a primary sealing lip without a spring. Available with or without an additional radial and/or axial anti-pollution sealing lip.

APPLICATIONS

All types of rotative applications
Machine tools
Agriculture
Construction
Transmission
Gear boxes
Motors
Pumps

ADVANTAGES

Excellent radial rigidity, particularly for large diameters

Very good stability when assembled, preventing the bounce-back effect

Good heat transfer

Sealing for high viscosity fluids

Primary sealing lip generating low levels of friction and heat

Standard, average or increased protection against undesirable air contaminants

MATERIALS

Rubber

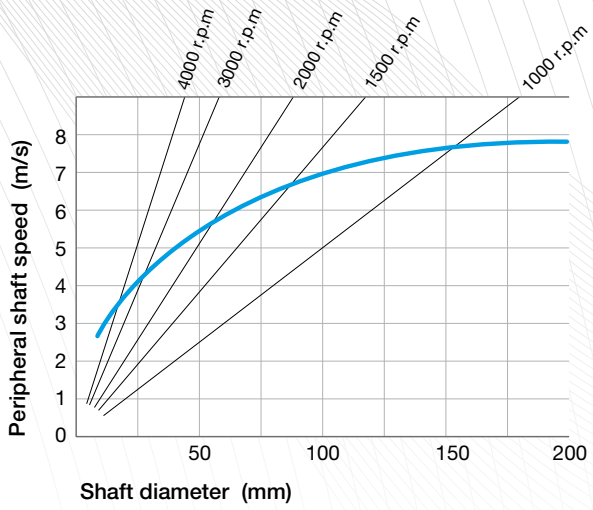
ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other high viscosity fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

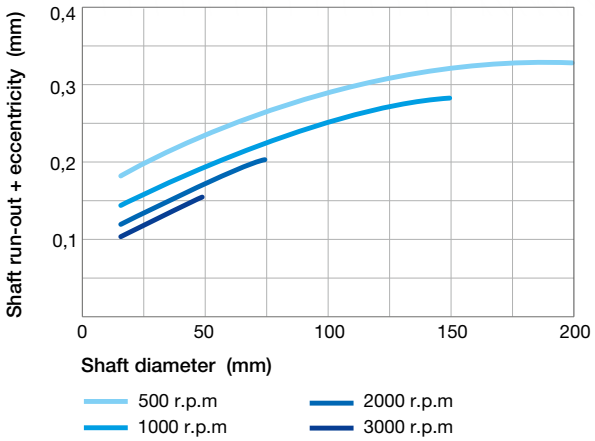
Shaft tolerance

Tolerance	ISO h11

Shaft roundness

Roundness	IT 8

Shaft run-out and concentricity deviation



HOUSING DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8

STANDARD SHAFT SEALS

DC / DCW / DB / DB2 / DBC / DBCW / DBR / DA2

DC profile image

11.10 DC / DCW / DB / DB2 / DBC / DBCW / DBR / DA2 PROFILES

		Double spring-loaded sealing lip to separate fluids
		D
Single rubber covered metal casing	C	DC
Single metal casing with rubber grooves covering the outside of the casing	CW	DCW
Single outer metal casing with rubber coating on the inside	B	DB
Single outer metal casing	B2	DB2
Single outer metal casing with rubber coating over half of the outside of the casing	BC	DBC
Single outer metal casing with rubber coating on the inside and on the edge of the casing	BR	DBR
Single outer metal casing with rubber grooves over half of the outside of the casing	BCW	DBCW
Single outer metal casing with metal reinforcement	A2	DA2

DESCRIPTION

Shaft seal composed of a single metal casing with a rubber coating and a double spring-loaded sealing lip to separate fluids. Available with outer metal casing or with coating over half of the casing, with or without grooves on the outside, and with or without an additional radial and/or axial anti-pollution sealing lip.

ADVANTAGES

DC - DCW

Very good static sealing
Very good thermal expansion compensation
Greater roughness is allowed in the housing
Very limited bounce-back effect where grooves are present (DCW only)
Reduced risk of corrosion
Sealing for low and high viscosity fluids
Modern double sealing lip with low radial forces

DB – DB2

Excellent radial rigidity, particularly for large diameters
Very good stability when assembled, preventing the bounce-back effect
Good heat transfer
Excellent resistance to corrosive fluids on the inside (DB only)
Sealing for high viscosity fluids
Modern double sealing lip with low radial forces

DBC – DBCW – DBR

Very good static sealing
Very good thermal expansion compensation
Excellent radial rigidity, particularly for large diameters
Good heat transfer
Very limited bounce-back effect where grooves are present (DBCW only)
Reduced risk of corrosion
Sealing for low and high viscosity fluids
Modern double sealing lip with low radial forces

DA2

Excellent radial rigidity, particularly for large diameters
Very good stability when assembled, preventing the bounce-back effect
Good heat transfer
Sealing for high viscosity fluids
Modern double sealing lip with low radial forces

APPLICATIONS

All types of rotative applications
Machine tools
Agriculture
Construction
Transmission
Gear boxes
Motors
Pumps

MATERIALS

Rubber

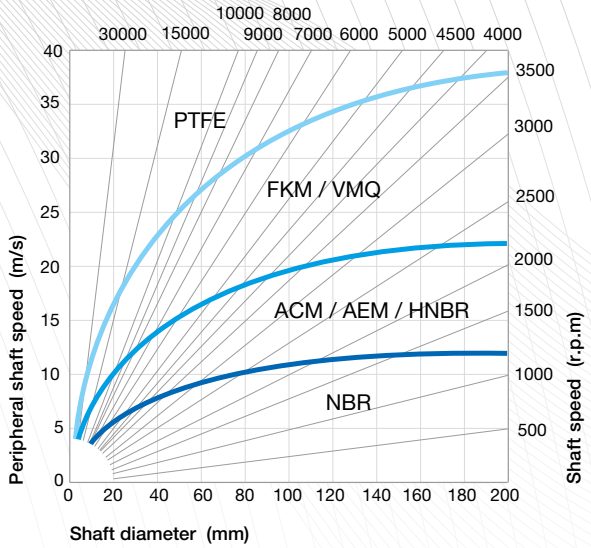
ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other high viscosity fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

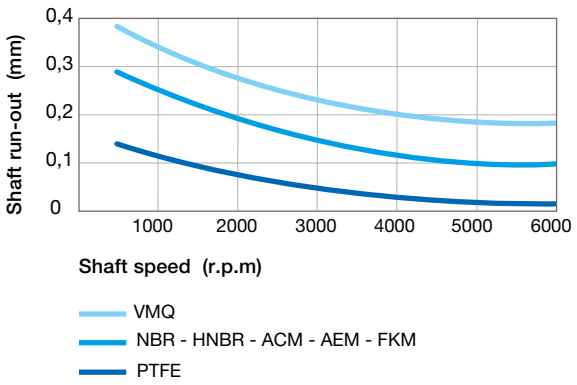
Shaft tolerance

Tolerance	ISO h11

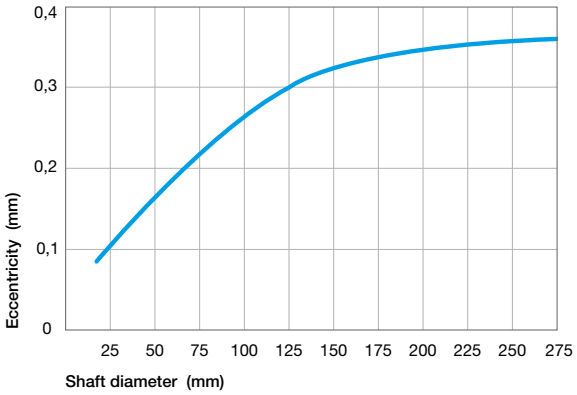
Shaft roundness

Roundness	IT 8

Shaft run out



Eccentricity



HOUSING DESIGN

Surface roughness for DC - DCW profiles

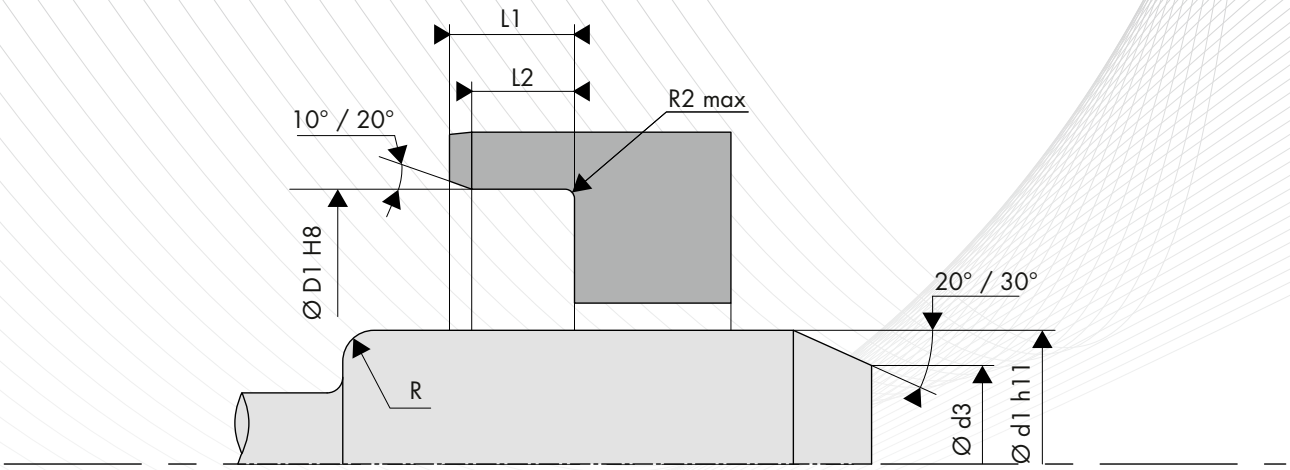
Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Surface roughness for DB – DB2 – DBC – DBCW – DBR – DA2 profiles

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8



DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
DC 8x16x10	8.00	16.00	10.00	DC
DC 10x20x8	10.00	20.00	8.00	DC
DC 10x21x9	10.00	21.00	9.00	DC
DC 10x22x8	10.00	22.00	8.00	DC
DC 10x24x8	10.00	24.00	8.00	DC
DC 10x26x9	10.00	26.00	9.00	DC
DC 11x21x8	11.00	21.00	8.00	DC
DC 12x20x7	12.00	20.00	7.00	DC
DC 12x22x8	12.00	22.00	8.00	DC
DC 12x24x8	12.00	24.00	8.00	DC
DC 12x28x8	12.00	28.00	8.00	DC
DC 13x26x10	13.00	26.00	10.00	DC
DB 14x24x8	14.00	24.00	8.00	DB
DC 14x26x9.5	14.00	26.00	9.50	DC
DC 14x32x7	14.00	32.00	7.00	DC
DB 15x24x7	15.00	24.00	7.00	DB
DC 15x24x7	15.00	24.00	7.00	DC
DC 15x28x10	15.00	28.00	10.00	DC
DB 15x30x7	15.00	30.00	7.00	DB
DC 15x30x7	15.00	30.00	7.00	DC
DC 15x32x7	15.00	32.00	7.00	DC
DCW 16x24x7	16.00	24.00	7.00	DCW
DC 16x30x7	16.00	30.00	7.00	DC
DB 17x28x6.5	17.00	28.00	6.50	DB
DB 17x28x7	17.00	28.00	7.00	DB
DC 17x28x7	17.00	28.00	7.00	DC
DB 17x28x8	17.00	28.00	8.00	DB
DC 17x28x8	17.00	28.00	8.00	DC
DC 17x30x7	17.00	30.00	7.00	DC
DC 17x30x9	17.00	30.00	9.00	DC
DC 17x32x8	17.00	32.00	8.00	DC
DB 17x33x7	17.00	33.00	7.00	DB
DC 17x40x7	17.00	40.00	7.00	DC
DC 18x30x7	18.00	30.00	7.00	DC
DC 18x32x7	18.00	32.00	7.00	DC
DC 19x32x7	19.00	32.00	7.00	DC
DB 20x30x8	20.00	30.00	8.00	DB
DC 20x30x10	20.00	30.00	10.00	DC
DB 20x35x7	20.00	35.00	7.00	DB
DC 20x35x7	20.00	35.00	7.00	DC
DC 20x35x8	20.00	35.00	8.00	DC
DC 20x35x10	20.00	35.00	10.00	DC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
DC 20x36x10	20.00	36.00	10.00	DC
DC 20x40x7	20.00	40.00	7.00	DC
DC 20x40x8	20.00	40.00	8.00	DC
DC 20x40x10	20.00	40.00	10.00	DC
DC 20x47x7	20.00	47.00	7.00	DC
DB 22x35x7	22.00	35.00	7.00	DB
DC 22x35x7	22.00	35.00	7.00	DC
DC 22x40x7	22.00	40.00	7.00	DC
DC 22x40x8.5	22.00	40.00	8.50	DC
DC 22x40x10	22.00	40.00	10.00	DC
DB 25x35x7	25.00	35.00	7.00	DB
DC 25x35x7	25.00	35.00	7.00	DC
DC 25x35x8	25.00	35.00	8.00	DC
DC 25x35x10	25.00	35.00	10.00	DC
DC 25x37x7	25.00	37.00	7.00	DC
DC 25x38x8	25.00	38.00	8.00	DC
DC 25x40x8	25.00	40.00	8.00	DC
DC 25x40x9	25.00	40.00	9.00	DC
DC 25x40x10	25.00	40.00	10.00	DC
DC 25x40x12	25.00	40.00	12.00	DC
DC 25x45x10	25.00	45.00	10.00	DC
DC 25x47x8	25.00	47.00	8.00	DC
DC 25x47x10	25.00	47.00	10.00	DC
DC 25x52x8	25.00	52.00	8.00	DC
DC 25x52x9	25.00	52.00	9.00	DC
DC 26x47x8	26.00	47.00	8.00	DC
DC 26x52x8	26.00	52.00	8.00	DC
DC 27x36x10	27.00	36.00	10.00	DC
DC 28x40x8	28.00	40.00	8.00	DC
DC 28x47x8	28.00	47.00	8.00	DC
DB 28x47x10	28.00	47.00	10.00	DB
DC 28x56x8	28.00	56.00	8.00	DC
DC 29x45x7	29.00	45.00	7.00	DC
DB 30x40x8	30.00	40.00	8.00	DB
DC 30x40x10	30.00	40.00	10.00	DC
DC 30x42x7	30.00	42.00	7.00	DC
DC 30x47x10	30.00	47.00	10.00	DC
DC 30x50x10	30.00	50.00	10.00	DC
DC 30x62x7	30.00	62.00	7.00	DC
DC 31x58x8	31.00	58.00	8.00	DC
DB 32x42x8	32.00	42.00	8.00	DB
DC 32x44x8	32.00	44.00	8.00	DC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
DC 32x45x8	32.00	45.00	8.00	DC
DC 32x47x12	32.00	47.00	12.00	DC
DC 32x48x8	32.00	48.00	8.00	DC
DC 32x52x7	32.00	52.00	7.00	DC
DC 33x45x8	33.00	45.00	8.00	DC
DB 34x52x10	34.00	52.00	10.00	DB
DC 34x70x11	34.00	70.00	11.00	DC
DC 35x44x7	35.00	44.00	7.00	DC
DB 35x47x8	35.00	47.00	8.00	DB
DC 35x50x11	35.00	50.00	11.00	DC
DC 35x52x12	35.00	52.00	12.00	DC
DC 35x60x10	35.00	60.00	10.00	DC
DC 36x48x11	36.00	48.00	11.00	DC
DC 38x64x11	38.00	64.00	11.00	DC
DC 39x70x11	39.00	70.00	11.00	DC
DC 40x55x7	40.00	55.00	7.00	DC
DCW 40x58x11.5	40.00	58.00	11.50	DCW
DC 40x60x10	40.00	60.00	10.00	DC
DC 40x62x10	40.00	62.00	10.00	DC
DC 42x58x12	42.00	58.00	12.00	DC
DC 42x62x11	42.00	62.00	11.00	DC
DCW 42x62x12	42.00	62.00	12.00	DCW
DC 42x64x12	42.00	64.00	12.00	DC
DC 42x65x11	42.00	65.00	11.00	DC
DCW 45x60x9	45.00	60.00	9.00	DCW
DC 45x62x8	45.00	62.00	8.00	DC
DC 45x62x11	45.00	62.00	11.00	DC
DCW 45x63x13	45.00	63.00	13.00	DCW
DC 45x65x8	45.00	65.00	8.00	DC
DCW 45x70x12	45.00	70.00	12.00	DCW
DB2 45x72x11	45.00	72.00	11.00	DB2
DC 48x72x10	48.00	72.00	10.00	DC
DC 48x72x11	48.00	72.00	11.00	DC
DC 48x72x15	48.00	72.00	15.00	DC
DB 50x65x8	50.00	65.00	8.00	DB
DC 50x65x8	50.00	65.00	8.00	DC
DC 50x68x8	50.00	68.00	8.00	DC
DCW 50x68x13	50.00	68.00	13.00	DCW
DC 50x72x12	50.00	72.00	12.00	DC
DC 52x75x12	52.00	75.00	12.00	DC
DC 54x76x14	54.00	76.00	14.00	DC
DC 55x68x12	55.00	68.00	12.00	DC
DC 55x70x15	55.00	70.00	15.00	DC
DC 55x78x12	55.00	78.00	12.00	DC
DB 55x78x18	55.00	78.00	18.00	DB
DC 55x80x10	55.00	80.00	10.00	DC
DC 55x90x10	55.00	90.00	10.00	DC
DC 60x80x10	60.00	80.00	10.00	DC
DB2 60x82x18	60.00	82.00	18.00	DB2
DB2 62x85x12	62.00	85.00	12.00	DB2
DB 62x85x18	62.00	85.00	18.00	DB
DC 65x80x8	65.00	80.00	8.00	DC
DB 65x90x20	65.00	90.00	20.00	DB
DC 67x84x9	67.00	84.00	9.00	DC
DC 67x100x10	67.00	100.00	10.00	DC
DC 68x90x13	68.00	90.00	13.00	DC
DCW 70x88x10	70.00	88.00	10.00	DCW
DC 70x90x10	70.00	90.00	10.00	DC
DC 70x95x10	70.00	95.00	10.00	DC
DC 75x95x10	75.00	95.00	10.00	DC
DC 75x105x12	75.00	105.00	12.00	DC
DC 80x100x10	80.00	100.00	10.00	DC

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
DC 80x100x12	80.00	100.00	12.00	DC
DC 80x105x12	80.00	105.00	12.00	DC
DB2 80x105x20	80.00	105.00	20.00	DB2
DB2 90x115x20	90.00	115.00	20.00	DB2
DC 95x120x12	95.00	120.00	12.00	DC
DC 95x125x13	95.00	125.00	13.00	DC
DC 100x127x12.7	100.00	127.00	12.70	DC
DC 100x130x13	100.00	130.00	13.00	DC
DC 105x130x12	105.00	130.00	12.00	DC
DB2 110x140x22	110.00	140.00	22.00	DB2
DB2 120x150x22	120.00	150.00	22.00	DB2
DB2 122x152x21	122.00	152.00	21.00	DB2
DC 125x150x13	125.00	150.00	13.00	DC
DB 125x155x22	125.00	155.00	22.00	DB
DB2 160x195x21	160.00	195.00	21.00	DB2
DC 170x200x15	170.00	200.00	15.00	DC
DB2 200x240x15	200.00	240.00	15.00	DB2
DB 232x267x21	232.00	267.00	21.00	DB

12. High-pressure shaft seals

Shaft seals are generally designed for pressure-free operation. For applications using higher pressures, we recommend using high-pressure shaft seals. With optimised sealing lip geometries (short but flexible sealing lip, thicker rubber membrane, metal casing closer to the shaft), our high-pressure shaft seals can resist pressures of up to 1.5 MPa.

12.1 COMPARATIVE TABLE FOR HIGH-PRESSURE SHAFT SEAL PROFILES

		Single rubber covered metal casing	Single metal casing with rubber grooves covering the outside of the casing			
		C	**CW**			
High-pressure spring-loaded sealing lip	**SHP**	**SCHP P. 116**	**SCWHP P. 116**	Sealing for low and high viscosity fluids	Primary sealing lip designed for higher pressures up to 1 MPa	
High-pressure spring-loaded sealing lip + anti-pollution sealing lip	**THP**	**TCHP P. 116**	**TCWHP P. 116**	Sealing for low and high viscosity fluids	Primary sealing lip designed for higher pressures up to 1 MPa	Standard protection against undesirable air contaminants
Double high-pressure spring-loaded sealing lip to separate fluids	**DHP**	**DCHP P. 116**	**DCWHP P. 116**	Sealing for low and high viscosity fluids	Double primary sealing lip designed for higher pressures up to 1 MPa	Fluid separation system
		Very good static sealing	Very good static sealing			
		Very good thermal expansion compensation	Very good thermal expansion compensation			
		Greater roughness is allowed in the housing	Greater roughness is allowed in the housing			
		Reduced risk of corrosion	Reduced risk of corrosion			
			Easy to assemble with very limited bounce-back effect			

HIGH-PRESSURE SHAFT SEALS

SCHP / SCWHP / TCHP / TCWHP / DCHP / DCWHP

TCHP profile image

12.2 SCHP / SCWHP / TCHP / TCWHP / DCHP / DCWHP PROFILES

		High-pressure spring-loaded sealing lip	High-pressure spring-loaded sealing lip + anti-pollution sealing lip	Double high-pressure spring-loaded sealing lip to separate fluids
		SHP	**THP**	**DHP**
Single rubber covered metal casing	**C**	**SCHP**	**TCHP**	**DCHP**
Single metal casing with rubber grooves covering the outside of the casing	**CW**	**SCWHP**	**TCWHP**	**DCWHP**

DESCRIPTION

High-pressure shaft seal composed of a single rubber covered metal casing and a spring-loaded sealing lip. Available with or without an additional radial anti-pollution sealing lip, and with or without grooves on the outside.

APPLICATIONS

All types of rotative applications

2-stroke engines

Hydrostatic commands (motors and pumps)

ADVANTAGES

Very good static sealing

Very good thermal expansion compensation

Greater roughness is allowed in the housing

Easy to assemble with very limited bounce-back effect (SCWHP – TCWHP – DCWHP only)

Reduced risk of corrosion

Sealing for low and high viscosity fluids

Primary sealing lip designed for higher pressures up to 1 MPa

Standard protection against undesirable air contaminants

Fluid separation system (DCHP – DCWHP only)

MATERIALS

Rubber

FKM 75 - 80 - 85 - 90 Shore A

HNBR 75 - 80 - 85 - 90 Shore A

NBR 75 - 80 - 85 - 90 Shore A

Metal cage

Steel - AISI 1010

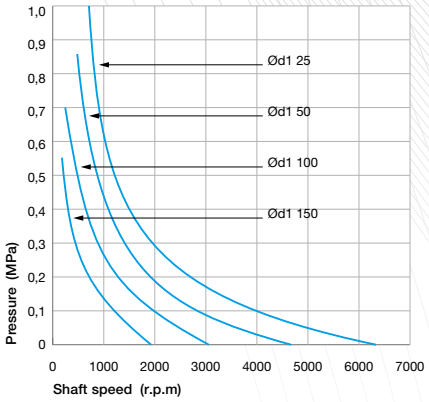
Spring

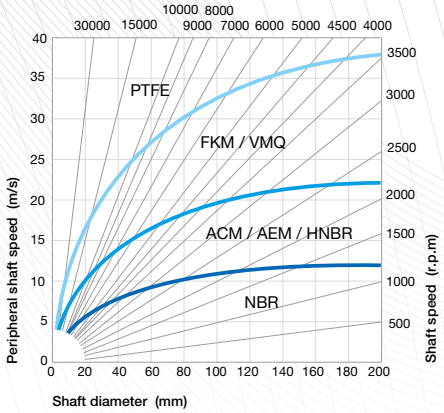
Steel - AISI 1070 - 1090

Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	See adjacent table
Speed	The shaft seals with an additional protective sealing lip are limited to a speed of 8 m/sec (see adjacent table)
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide





SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	Ra = 0.2 to 0.4 µm and 0.1 for demanding applications
Rz	1.0 to 3.0 µm
Rmax	≤6.3 µm

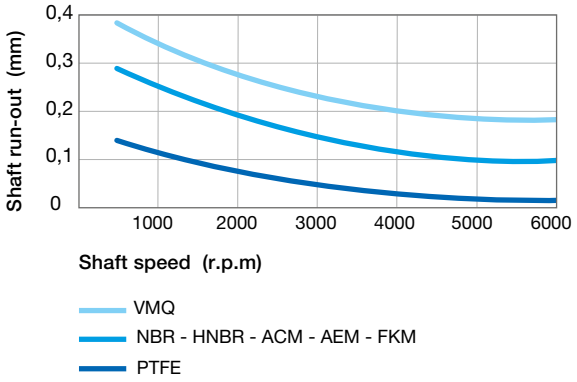
Shaft tolerance

Tolerance	ISO h11

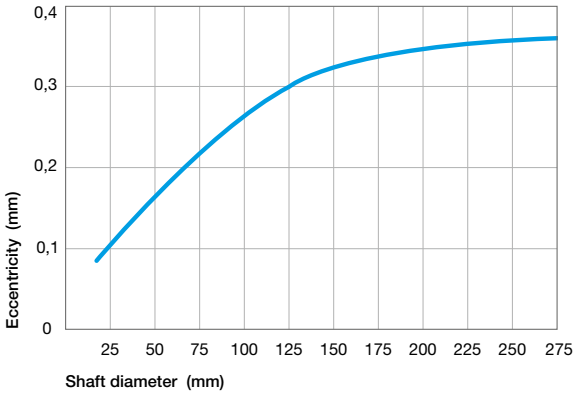
Shaft roundness

Roundness	IT 8

Shaft run out



Eccentricity



HOUSING DESIGN

Surface roughness

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Housing tolerance

Tolerance	ISO H8

13. Triple-lip shaft seals

Triple-lip shaft seals are specifically designed to effectively contain the grease in the system and prevent the entry of external pollution (water and mud splashes). We also offer an extensive range of inverted triple-lip shaft seals that are press-fitted onto the fixed shaft and where dynamic sealing is through contact between the lips and the rotary housing.

13.1 COMPARATIVE TABLE FOR TRIPLE LIP SHAFT SEAL PROFILES

		Triple sealing lip	Inverted system - Triple lip					
		L3	0L3					
Single rubber covered metal casing	KC	KCL3 P. 120	OKCL3 P. 122	Very good static sealing	Very good thermal expansion compensation	Greater roughness is allowed in the static sealing area	Reduced risk of corrosion	
Single rubber covered metal casing and grooves	KCW	KCWL3 P. 120	OKCWL3 P. 122	Very good static sealing	Very good thermal expansion compensation	Greater roughness is allowed in the static sealing area	Reduced risk of corrosion	Easy to assemble with very limited bounce-back effect
Single metal casing with rubber coating on the inside	KB	KBL3 P. 120	OKBL3 P. 122	Good radial rigidity, particularly for large diameters	Good stability when assembled, preventing the bounce-back effect	Excellent resistance to corrosive fluids on the inside		
Single metal casing	KB2	KB2L3 P. 120	OKB2L3 P. 122	Good radial rigidity, particularly for large diameters	Good stability when assembled, preventing the bounce-back effect			
Single metal casing with rubber coating over half of the casing	KBC	KBCL3 P. 120	OKBCL3 P. 122	Good radial rigidity, particularly for large diameters	Good stability when assembled, with limited bounce-back effect	Good static sealing	Good thermal expansion compensation	Good heat transfer
Single metal casing with rubber coating and grooves over half of the casing	KBCW	KBCWL3 P. 120	OKBCWL3 P. 122	Good radial rigidity, particularly for large diameters	Good stability when assembled, preventing the bounce-back effect	Good static sealing	Good thermal expansion compensation	Good heat transfer
Single metal casing with metal reinforcement	KA2	KA2L3 P. 120	OKA2L3 P. 122	Excellent radial rigidity, particularly for large diameters	Very good stability when assembled, preventing the bounce-back effect			
		Grease retention	Grease retention					
		Retention of external contaminants such as mud and water	Retention of external contaminants such as mud and water					
		Standard protection against undesirable air contaminants	Fluid separation system					

TRIPLE-LIP SHAFT SEALS

KCL3 / KCWL3 / KBL3 / KB2L3 / KBCL3 / KBCWL3 / KA2L3

KCL3 profile image

13.2 KCL3 / KCWL3 / KBL3 / KB2L3 / KBCL3 / KBCWL3 / KA2L3 PROFILES

		Single rubber covered metal casing	Single rubber covered metal casing and grooves	Single metal casing with rubber coating on the inside	Single metal casing	Single metal casing with rubber coating over half of the casing	Single metal casing with rubber coating and grooves over half of the casing	Single metal casing with metal reinforcement
		KC	**KCW**	**KB**	**KB2**	**KBC**	**KBCW**	**KA2**
Triple sealing lip	**L3**	**KCL3**	**KCWL3**	**KBL3**	**KB2L3**	**KBCL3**	**KBCWL3**	**KA2L3**

DESCRIPTION

Shaft seal composed of a single metal casing with rubber coating and a triple sealing lip. Available with outer metal casing or with coating over half of the casing, with or without grooves on the outside.

APPLICATIONS

All types of rotative applications
Agriculture
Construction
Transmission

MATERIALS

Rubber

FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010
Stainless steel - AISI 304
Stainless steel - AISI 316

ADVANTAGES

KCL3 - KCWL3

Very good static sealing
Very good thermal expansion compensation
Greater roughness is allowed in the housing
Very limited bounce-back effect where grooves are present (KCWL3 only)
Reduced risk of corrosion
Grease retention
External contaminant retention (mud and water), environments with heavy-duty applications

KBL3 – KB2L3

Excellent radial rigidity, particularly for large diameters
Very good stability when assembled, preventing the bounce-back effect
Good heat transfer
Excellent resistance to corrosive fluids on the inside (KBL3 only)
Grease retention
External contaminant retention (mud and water), environments with heavy-duty applications

KBCL3 – KBCWL3

Very good static sealing
Very good thermal expansion compensation
Excellent radial rigidity, particularly for large diameters
Good heat transfer
Very limited bounce-back effect where grooves are present (KBCWL3 only)
Reduced risk of corrosion
Grease retention
External contaminant retention (mud and water), environments with heavy-duty applications

KA2L3

Excellent radial rigidity, particularly for large diameters
Very good stability when assembled, preventing the bounce-back effect
Good heat transfer
Grease retention
External contaminant retention (mud and water), environments with heavy-duty applications

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	2.5 m/s
Fluids	Grease and other very high viscosity fluids

SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

Shaft tolerance

Tolerance	ISO h11

Shaft roundness

Roundness	IT 8

Shaft run-out and concentricity deviation

Shaft diameter Ød1 (mm)	Overall eccentricity (mm)
Ød1 ≤ 40.00	0.15
40.00 < Ød1 ≤ 80.00	0.20
80.00 < Ød1 ≤ 120.00	0.30

HOUSING DESIGN

Surface roughness for KCL3 / KCWL3 profiles

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Surface roughness for KBL3 / KB2L3 / KBCL3 / KBCWL3 / KA2L3 profiles

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8

TRIPLE-LIP SHAFT SEALS

OKCL3 / OKCWL3 / OKBL3 / OKB2L3 / OKBCL3 / OKBCWL3 / OKA2L3

OKCL3 profile image

13.3 OKCL3 / OKCWL3 / OKBL3 / OKB2L3 / OKBCL3 / OKBCWL3 / OKA2L3 PROFILES

		Single rubber covered metal casing	Single rubber covered metal casing and grooves	Single metal casing with rubber coating on the inside	Single metal casing	Single metal casing with rubber coating over half of the casing	Single metal casing with rubber coating and grooves over half of the casing	Single metal casing with metal reinforcement
		KC	KCW	KB	KB2	KBC	KBCW	KA2
Inverted system - Triple lip	0L3	OKCL3	OKCWL3	OKBL3	OKB2L3	OKBCL3	OKBCWL3	OKA2L3

DESCRIPTION

Inverted shaft seal composed of a single metal casing with rubber coating and a triple sealing lip. Available with inner metal casing or with coating over half of the casing, with or without grooves on the inside.

APPLICATIONS

All types of rotative applications
Agriculture
Construction
Transmission

MATERIALS

Rubber

FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010
Stainless steel - AISI 304
Stainless steel - AISI 316

ADVANTAGES

OKCL3 – OKCWL3

Very good static sealing
Very good thermal expansion compensation
Greater roughness is allowed in the fixed shaft
Very limited bounce-back effect where grooves are present (OKCWL3 only)
Reduced risk of corrosion
Grease retention
External contaminant retention (mud and water), environments with heavy-duty applications
Suitable for rotating hubs with a fixed shaft

OKBL3 – OKB2L3

Excellent radial rigidity, particularly for large diameters
Very good stability when assembled, preventing the bounce-back effect
Good heat transfer
Excellent resistance to corrosive fluids on the inside (OKBL3 only)
Grease retention
External contaminant retention (mud and water), environments with heavy-duty applications
Suitable for rotating hubs with a fixed shaft

OKBCL3 – OKBCWL3

Very good static sealing
Very good thermal expansion compensation
Excellent radial rigidity, particularly for large diameters
Good heat transfer
Very limited bounce-back effect where grooves are present (OKBCWL3 only)
Reduced risk of corrosion
Grease retention
External contaminant retention (mud and water), environments with heavy-duty applications
Suitable for rotating hubs with a fixed shaft

OKA2L3

Excellent radial rigidity, particularly for large diameters
Very good stability when assembled, preventing the bounce-back effect
Good heat transfer
Grease retention
External contaminant retention (mud and water), environments with heavy-duty applications
Suitable for rotating hubs with a fixed shaft

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	2.5 m/s
Fluids	Grease and other very high viscosity fluids

FIXED SHAFT DESIGN

Surface roughness for OKCL3 / OKCWL3 profiles

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Surface roughness for OKBL3 / OKB2L3 / OKBCL3 / OKBCWL3 / OKA2L3 profiles

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

Rotating hub tolerance

Tolerance	ISO H11

Rotating hub roundness

Roundness	IT 8

Hub run-out and concentricity deviation

Hub diameter ØD1 (mm)	Overall eccentricity (mm)
ØD1 ≤ 40.00	0.15
40.00 < ØD1 ≤ 80.00	0.20
80.00 < ØD1 ≤ 120.00	0.30

14. Rotary hub seals

Rotary hub seals are rotary seals designed to be press-fitted onto a fixed shaft and where the dynamic seal is formed through contact between the primary sealing lip and the rotary housing. The profiles are inverted, as for the standard shaft seals.

14.1 COMPARATIVE TABLE FOR INVERTED SHAFT SEAL PROFILES

		Single rubber covered metal casing	Single metal casing with rubber grooves covering the inside of the casing	Single inner metal casing with rubber coating on the inside	Single inner metal casing			
		C	**CW**	**B**	**B2**			
Inverted system - Spring-loaded sealing lip	**OS**	**OSC P. 127**	**OSCW P. 127**	**OSB P. 130**	**OSB2 P. 130**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	
Inverted system - Spring-loaded sealing lip + anti-pollution sealing lip	**OT**	**OTC P. 127**	**OTCW P. 127**	**OTB P. 130**	**OTB2 P. 130**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Standard protection against undesirable air contaminants
Inverted system - Primary sealing lip without spring	**OV**	**OVC P. 136**	**OVCW P. 136**	**OVB P. 138**	**OVB2 P. 138**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	
Inverted system - Primary sealing lip without spring + anti-pollution sealing lip	**OK**	**OKC P. 136**	**OKCW P. 136**	**OKB P. 138**	**OKB2 P. 138**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	Standard protection against undesirable air contaminants
Inverted system - Double spring-loaded sealing lip to separate fluids	**OD**	**ODC P. 144**	**ODCW P. 144**	**ODB P. 144**	**ODB2 P. 144**	Sealing for low and high viscosity fluids	Modern sealing lips with low radial forces	Fluid separation system
		Very good static sealing	Very good static sealing	Good radial rigidity, particularly for large diameters	Good radial rigidity, particularly for large diameters			
		Very good thermal expansion compensation	Very good thermal expansion compensation	Good stability when assembled, preventing the bounce-back effect	Good stability when assembled, preventing the bounce-back effect			
		Greater roughness is allowed in the housing	Greater roughness is allowed in the housing	Excellent resistance to corrosive fluids on the inside				
		Reduced risk of corrosion	Reduced risk of corrosion					
			Easy to assemble with very limited bounce-back effect					

		Single inner metal casing with rubber coating over half of the outside of the casing	Single inner metal casing with rubber coating on the inside and on the edge of the casing	Single inner metal casing with rubber grooves over half of the outside of the casing	Single inner metal casing with metal reinforcement			
		BC	**BR**	**BCW**	**A2**			
Inverted system - Spring-loaded sealing lip	**OS**	**OSBC P. 132**	**OSBR P. 132**	**OSBCW P. 132**	**OSA2 P. 134**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	
Inverted system - Spring-loaded sealing lip + anti-pollution sealing lip	**OT**	**OTBC P. 132**	**OTBR P. 132**	**OTBCW P. 132**	**OTA2 P. 134**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Standard protection against undesirable air contaminants
Inverted system - Primary sealing lip without spring	**OV**	**OVBC P. 140**	**OVBR P. 140**	**OVBCW P. 140**	**OVA2 P. 142**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	
Inverted system - Primary sealing lip without spring + anti-pollution sealing lip	**OK**	**OKBC P. 140**	**OKBR P. 140**	**OKBCW P. 140**	**OKA2 P. 142**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	Standard protection against undesirable air contaminants
Inverted system - Double spring-loaded sealing lip to separate fluids	**OD**	**ODBC P. 144**	**ODBR P. 144**	**ODBCW P. 144**	**ODA2 P. 144**	Sealing for low and high viscosity fluids	Modern sealing lips with low radial forces	Fluid separation system
		Good radial rigidity, particularly for large diameters	Good radial rigidity, particularly for large diameters	Good radial rigidity, particularly for large diameters	Excellent radial rigidity, particularly for large diameters			
		Good stability when assembled, with limited bounce-back effect	Good stability when assembled, preventing the bounce-back effect	Good stability when assembled, preventing the bounce-back effect	Very good stability when assembled, preventing the bounce-back effect			
		Good static sealing	Excellent resistance to corrosive fluids on the inside	Good static sealing				
		Good thermal expansion compensation	Improved static sealing	Good thermal expansion compensation				
		Good heat transfer	Good thermal expansion compensation	Good heat transfer				
			Good heat transfer					

ROTARY HUB SEALS

OSC / OSCW / OTC / OTCW

OSC profile image

14.2 OSC / OSCW / OTC / OTCW PROFILES

		Single rubber covered metal casing	Single metal casing with rubber grooves covering the inside of the casing
		C	CW
Inverted system - Spring-loaded sealing lip	OS	OSC	OSCW
Inverted system - Spring-loaded sealing lip + anti-pollution sealing lip	OT	OTC	OTCW

DESCRIPTION

Inverted shaft seal composed of a single rubber covered metal casing and a spring-loaded sealing lip. Available with or without an additional radial and/or axial anti-pollution sealing lip, and with or without grooves on the inside.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

ADVANTAGES

Very good static sealing

Very good thermal expansion compensation

Greater roughness is allowed in the fixed shaft

Very limited bounce-back effect where grooves are present

Reduced risk of corrosion

Sealing for low and high viscosity fluids

Modern primary sealing lip with low radial forces

Standard, average or increased protection against undesirable air contaminants

Suitable for rotating hubs with a fixed shaft

MATERIALS

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

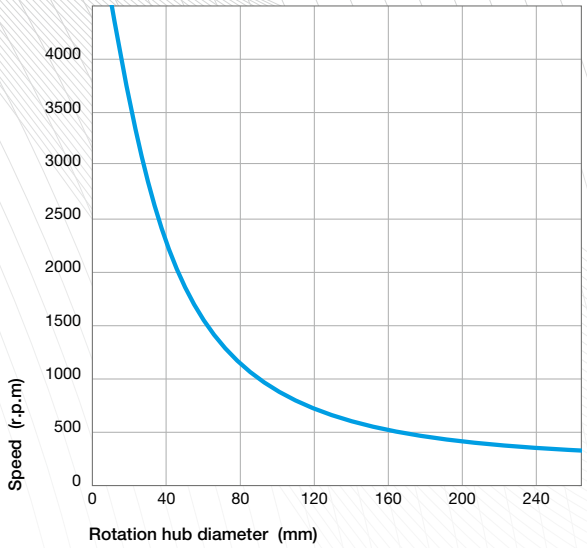
Spring

Steel - AISI 1070 - 1090

Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



FIXED SHAFT DESIGN

Surface roughness

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	Ra = 0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

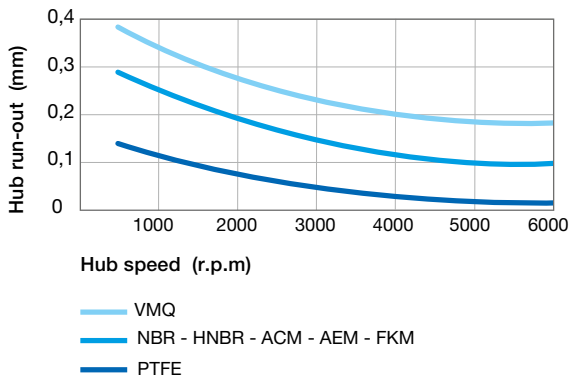
Rotating hub tolerance

Tolerance	ISO H11

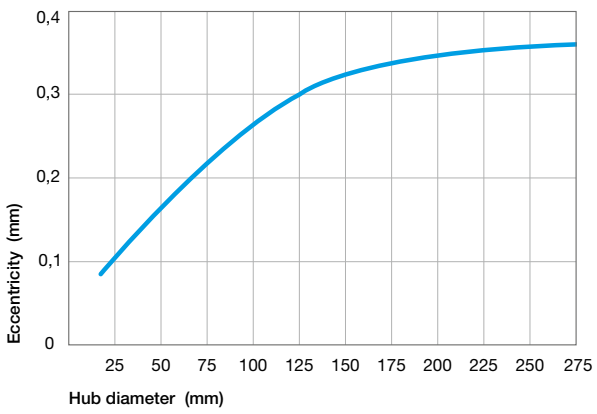
Rotating hub roundness

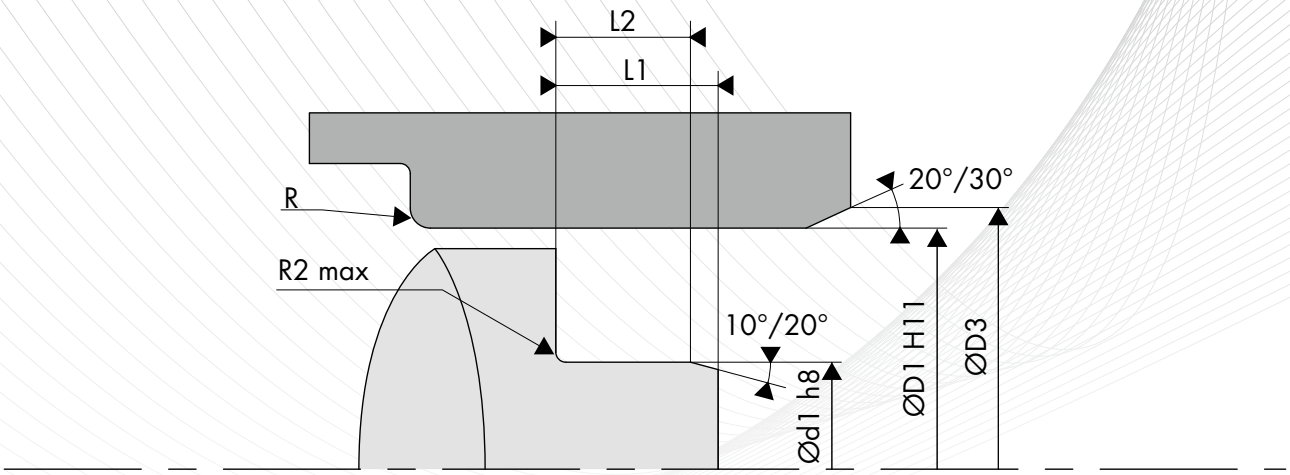
Roundness	IT 8

Rotating hub run out



Eccentricity





DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
OSC 25x35x7	25.00	35.00	7.00	OSC
OSC 35x50x7	35.00	50.00	7.00	OSC
OSC 42x56x8	42.00	56.00	8.00	OSC
OSC 52x80x13	52.00	80.00	13.00	OSC
OSC 55x67x8	55.00	67.00	8.00	OSC
OSC 57x73x7	57.00	73.00	7.00	OSC
OSC 60x78x8	60.00	78.00	8.00	OSC
OSC 65x78x8	65.00	78.00	8.00	OSC
OSC 65x85x11	65.00	85.00	11.00	OSC
OSC 65x88x12	65.00	88.00	12.00	OSC
OSC 76x122x11	76.00	122.00	11.00	OSC
OSC 95x115x13	95.00	115.00	13.00	OSC
OSC 95x120x13	95.00	120.00	13.00	OSC
OSC 108x145x12.5	108.00	145.00	12.50	OSC
OSC 108x160x7	108.00	160.00	7.00	OSC
OSC 114x165x13	114.00	165.00	13.00	OSC
OSC 115x140x13	115.00	140.00	13.00	OSC
OSC 120x150x14	120.00	150.00	14.00	OSC
OSC 124x170x14.5	124.00	170.00	14.50	OSC
OSC 130x160x13	130.00	160.00	13.00	OSC
OSC 130x160x14	130.00	160.00	14.00	OSC
OSC 130x162x15	130.00	162.00	15.00	OSC
OSC 130x172x11	130.00	172.00	11.00	OSC
OSC 145x174x14	145.00	174.00	14.00	OSC
OSC 150x180x14	150.00	180.00	14.00	OSC

ROTARY HUB SEALS

OSB / OSB2 / OTB / OTB2

OTB2 profile image

14.3 OSB / OSB2 / OTB / OTB2 PROFILES

		Single inner metal casing with rubber coating on the inside	Single inner metal casing
		B	**B2**
Inverted system - Spring-loaded sealing lip	**OS**	**OSB**	**OSB2**
Inverted system - Spring-loaded sealing lip + anti-pollution sealing lip	**OT**	**OTB**	**OTB2**

DESCRIPTION

Inverted shaft seal composed of a single inner metal casing and a spring-loaded sealing lip. Available with or without an additional radial and/or axial anti-pollution sealing lip, and with or without a coating on the inside of the metal casing.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

ADVANTAGES

Good radial rigidity, particularly for large diameters

Good stability when assembled, preventing the bounce-back effect

Sealing for low and high viscosity fluids

Reduced risk of internal corrosion (OSB – OTB only)

Modern primary sealing lip with low radial forces

Standard, average or increased protection against undesirable air contaminants

Suitable for rotating hubs with a fixed shaft

MATERIALS

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

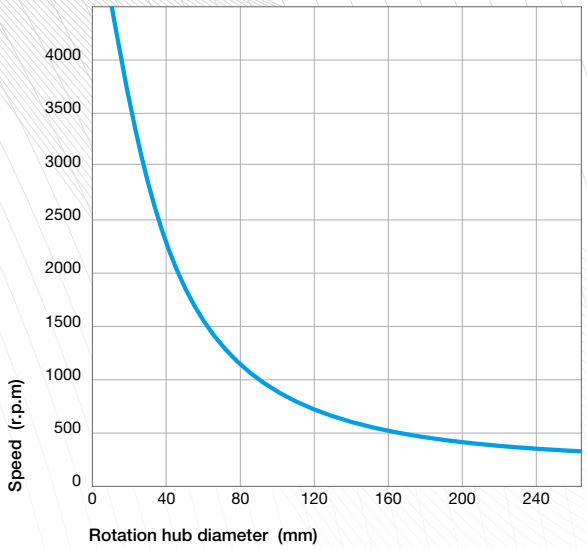
Spring

Steel - AISI 1070 - 1090

Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



FIXED SHAFT DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

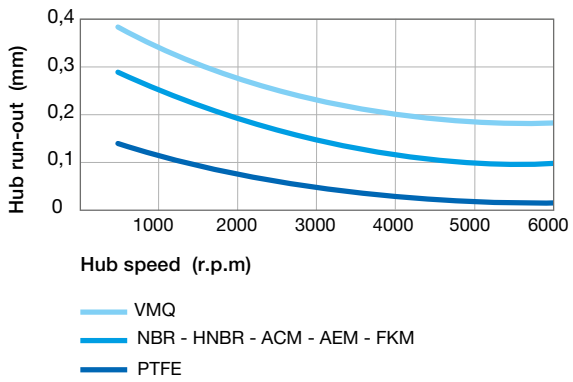
Rotating hub tolerance

Tolerance	ISO H11

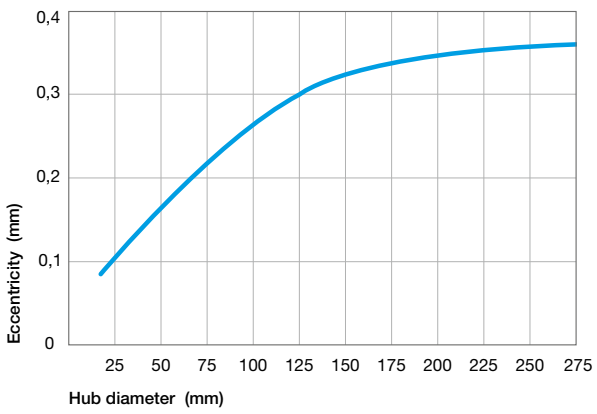
Rotating hub roundness

Roundness	IT 8

Rotating hub run out

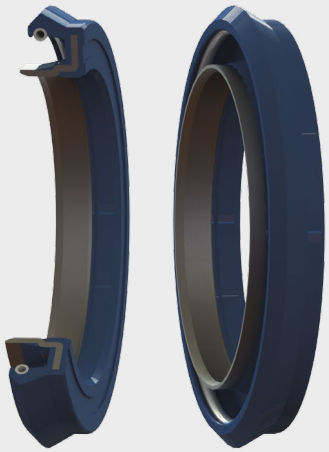


Eccentricity



ROTARY HUB SEALS

OSBC / OSBCW / OSBR / OTBC / OTBCW / OTBR



OSBC profile image

14.4 OSBC / OSBCW / OSBR / OTBC / OTBCW / OTBR PROFILES

		Single inner metal casing with rubber coating over half of the outside of the casing	Single inner metal casing with rubber coating on the inside and on the edge of the casing	Single inner metal casing with rubber grooves over half of the outside of the casing
		BC	**BR**	**BCW**
Inverted system - Spring-loaded sealing lip	**OS**	**OSBC**	**OSBR**	**OSBCW**
Inverted system - Spring-loaded sealing lip + anti-pollution sealing lip	**OT**	**OTBC**	**OTBR**	**OTBCW**

DESCRIPTION

Inverted shaft seal composed of a single inner metal casing with a rubber coating covering half of the inside of the casing and a spring-loaded sealing lip. Available with or without an additional radial anti-pollution sealing lip, and with or without grooves on the inside.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

ADVANTAGES

Good radial rigidity, particularly for large diameters

Good assembly stability

Good static sealing

Very limited bounce-back effect where grooves are present

Good thermal expansion compensation

Good heat transfer

Excellent resistance to corrosive fluids on the inside

Sealing for low and high viscosity fluids

Modern primary sealing lip with low radial forces

Standard, average or increased protection against undesirable air contaminants

Suitable for rotating hubs with a fixed shaft

MATERIALS

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

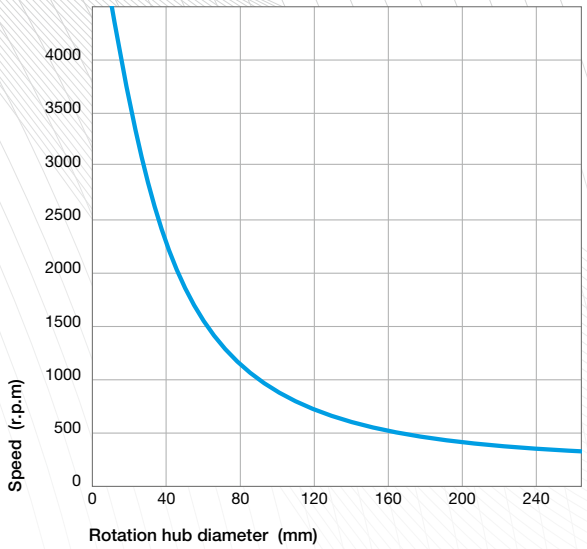
Spring

Steel - AISI 1070 - 1090

Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



FIXED SHAFT DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

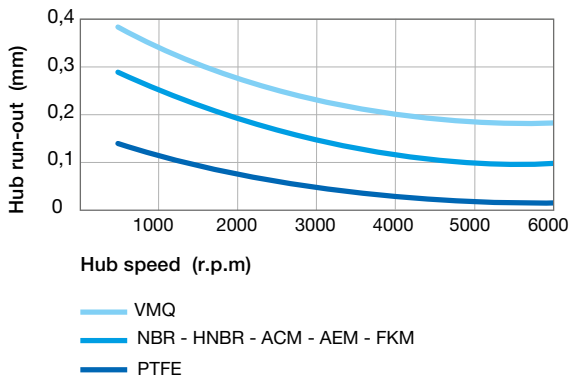
Rotating hub tolerance

Tolerance	ISO H11

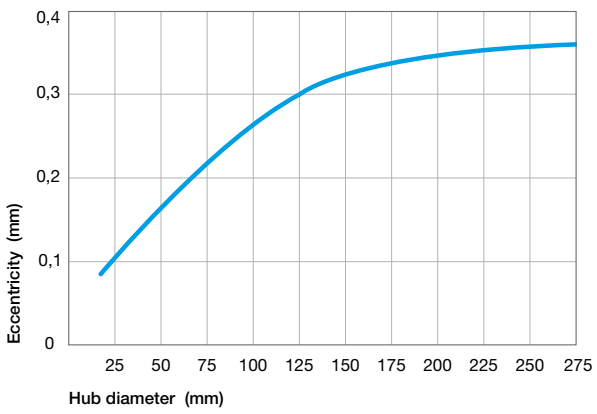
Rotating hub roundness

Roundness	IT 8

Rotating hub run out



Eccentricity



ROTARY HUB SEALS

OSA2 / OTA2

OTA2 profile image

14.5 OSA2 / OTA2 PROFILES

		Single inner metal casing with metal reinforcement
		A2
Inverted system - Spring-loaded sealing lip	OS	OSA2
Inverted system - Spring-loaded sealing lip + anti-pollution sealing lip	OT	OTA2

DESCRIPTION

Inverted shaft seal composed of a single inner metal casing with a metal reinforcement and a spring-loaded sealing lip. Available with or without an additional radial anti-pollution sealing lip.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

ADVANTAGES

Good radial rigidity, particularly for large diameters

Good assembly stability

Good heat transfer

Sealing for low and high viscosity fluids

Modern primary sealing lip with low radial forces

Standard, average or increased protection against undesirable air contaminants

Suitable for rotating hubs with a fixed shaft

MATERIALS

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

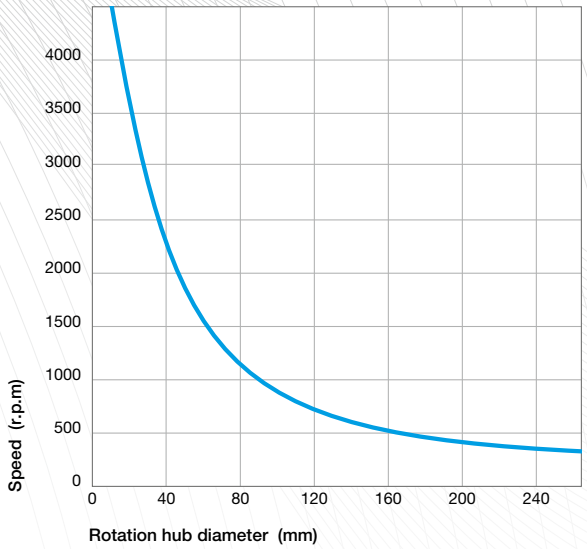
Spring

Steel - AISI 1070 - 1090

Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



FIXED SHAFT DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

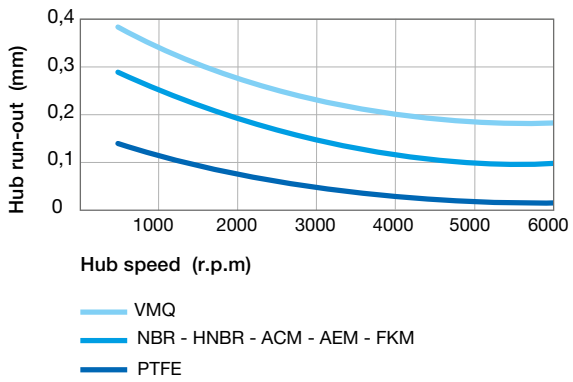
Rotating hub tolerance

Tolerance	ISO H11

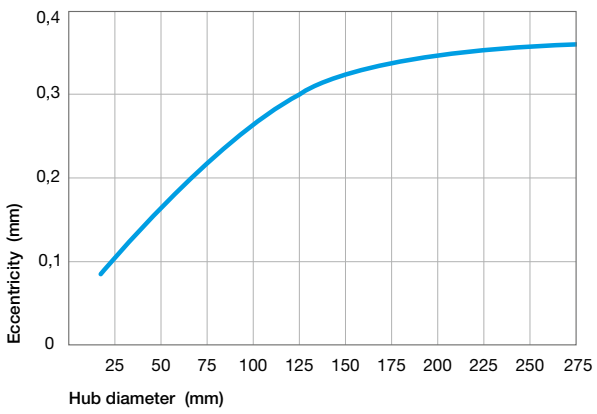
Rotating hub roundness

Roundness	IT 8

Rotating hub run out



Eccentricity



ROTARY HUB SEALS

OVC / OVCW / OKC / OKCW

OKCW profile image

14.6 OVC / OVCW / OKC / OKCW PROFILES

		Single rubber covered metal casing	Single metal casing with rubber grooves covering the inside of the casing
		C	CW
Inverted system - Primary sealing lip without spring	OV	OVC	OVCW
Inverted system - Primary sealing lip without spring + anti-pollution sealing lip	OK	OKC	OKCW

DESCRIPTION

Inverted shaft seal composed of a single rubber covered metal casing and a primary sealing lip, without a spring. Available with or without an additional radial anti-pollution sealing lip, and with or without grooves on the inside.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

ADVANTAGES

Very good static sealing

Very good thermal expansion compensation

Greater roughness is allowed in the fixed shaft

Very limited bounce-back effect where grooves are present

Reduced risk of corrosion

Sealing for high viscosity fluids

Primary sealing lip generating low levels of friction and heat

Suitable for rotating hubs with a fixed shaft

MATERIALS

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

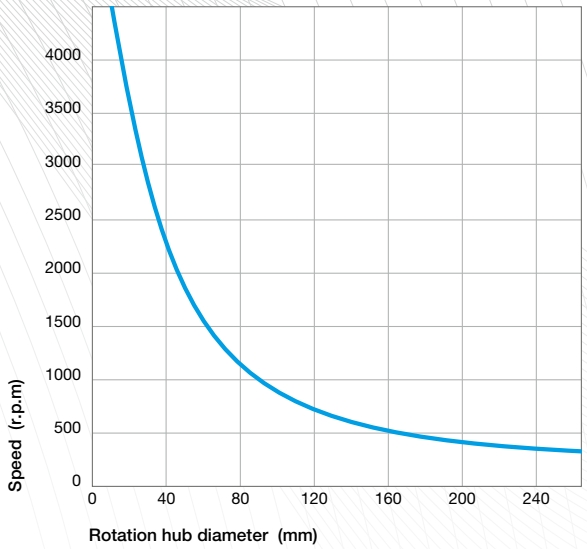
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other very high viscosity fluids



FIXED SHAFT DESIGN

Surface roughness

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

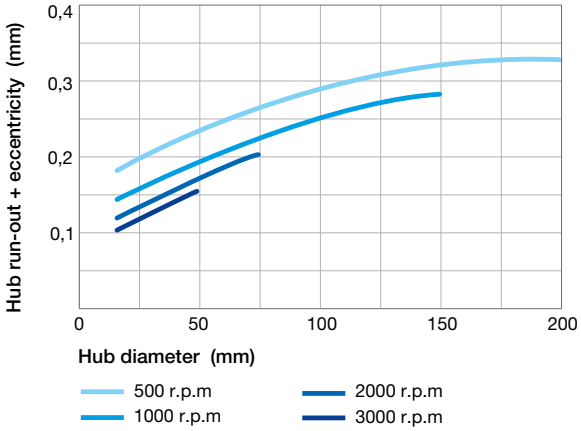
Rotating hub tolerance

Tolerance	ISO H11

Rotating hub roundness

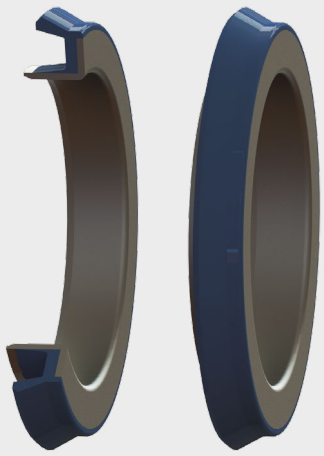
Roundness	IT 8

Hub run-out and concentricity deviation



ROTARY HUB SEALS

OVB / OVB2 / OKB / OKB2



OVB profile image

14.7 OVB / OVB2 / OKB / OKB2 PROFILES

		Single inner metal casing with rubber coating on the inside	Single inner metal casing
		B	**B2**
Inverted system - Primary sealing lip without spring	**OV**	**OVB**	**OVB2**
Inverted system - Primary sealing lip without spring + anti-pollution sealing lip	**OK**	**OKB**	**OKB2**

DESCRIPTION

Inverted shaft seal composed of a single inner metal casing and a primary sealing lip, without a spring. Available with or without an additional radial anti-pollution sealing lip, and with or without a coating on the inside of the metal casing.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

ADVANTAGES

Good radial rigidity, particularly for large diameters

Good assembly stability

Sealing for high viscosity fluids

Reduced risk of internal corrosion (OVB – OKB only)

Primary sealing lip generating low levels of friction and heat

Standard, average or increased protection against undesirable air contaminants

Suitable for rotating hubs with a fixed shaft

MATERIALS

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

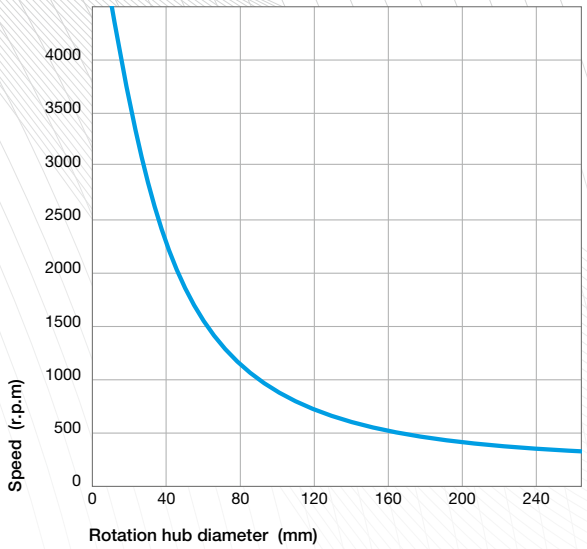
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other very high viscosity fluids



FIXED SHAFT DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

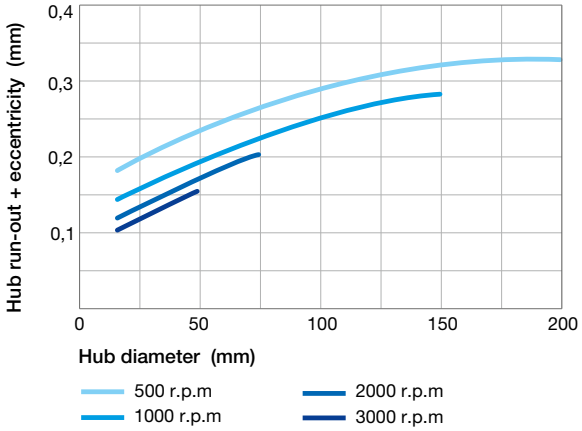
Rotating hub tolerance

Tolerance	ISO H11

Rotating hub roundness

Roundness	IT 8

Hub run-out and concentricity deviation



ROTARY HUB SEALS

OVBC / OVBCW / OVBR / OKBC / OKBCW / OKBR

OKBC profile image

14.8 OVBC / OVBCW / OVBR / OKBC / OKBCW / OKBR PROFILES

		Single inner metal casing with rubber coating over half of the outside of the casing	Single inner metal casing with rubber coating on the inside and on the edge of the casing	Single inner metal casing with rubber grooves over half of the outside of the casing
		BC	**BR**	**BCW**
Inverted system - Primary sealing lip without spring	**OV**	**OVBC**	**OVBR**	**OVBCW**
Inverted system - Primary sealing lip without spring + anti-pollution sealing lip	**OK**	**OKBC**	**OKBR**	**OKBCW**

DESCRIPTION

Inverted shaft seal composed of a single inner metal casing with a rubber coating covering half of the inside of the casing and a primary sealing lip, without a spring. Available with or without an additional radial anti-pollution sealing lip, and with or without grooves on the inside.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

ADVANTAGES

Good radial rigidity, particularly for large diameters

Good assembly stability

Good static sealing

Good thermal expansion compensation

Good heat transfer

Easy to assemble with very limited bounce-back effect

Sealing for high viscosity fluids

Primary sealing lip generating low levels of friction and heat

Standard, average or increased protection against undesirable air contaminants

Suitable for rotating hubs with a fixed shaft

MATERIALS

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

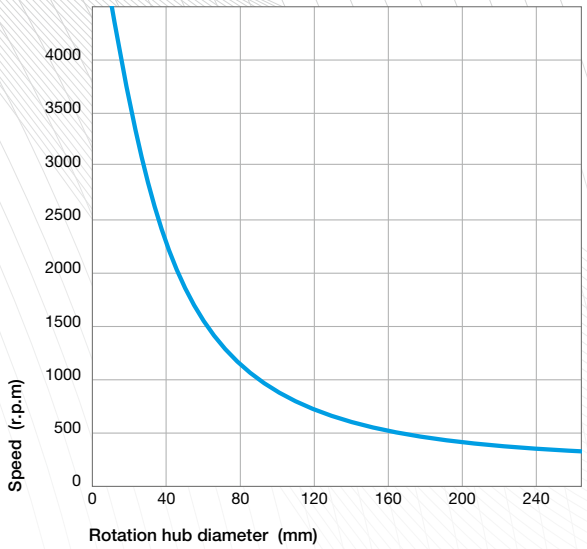
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other very high viscosity fluids



FIXED SHAFT DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

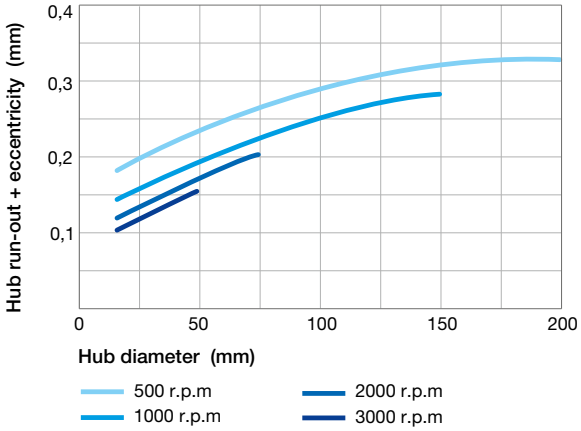
Rotating hub tolerance

Tolerance	ISO H11

Rotating hub roundness

Roundness	IT 8

Hub run-out and concentricity deviation



ROTARY HUB SEALS

OKA2 / OVA2

OKA2 profile image

14.9 OKA2 / OVA2 PROFILES

		Single inner metal casing with metal reinforcement
		A2
Inverted system - Primary sealing lip without spring	OV	OVA2
Inverted system - Primary sealing lip without spring + anti-pollution sealing lip	OK	OKA2

DESCRIPTION

Inverted shaft seal composed of a single outer metal casing with a metal reinforcement and a primary sealing lip without a spring. Available with or without an additional radial anti-pollution sealing lip.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

ADVANTAGES

Excellent radial rigidity, particularly for large diameters

Very good stability when assembled, preventing the bounce-back effect

Good heat transfer

Sealing for high viscosity fluids

Primary sealing lip generating low levels of friction and heat

Standard, average or increased protection against undesirable air contaminants

Suitable for rotating hubs with a fixed shaft

MATERIALS

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

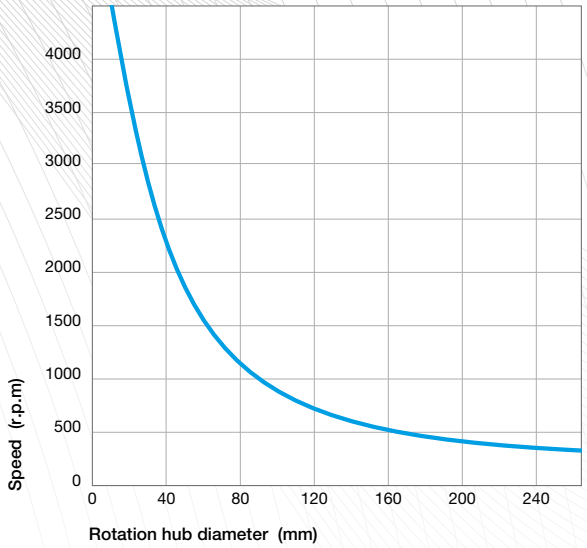
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Grease and other very high viscosity fluids



FIXED SHAFT DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

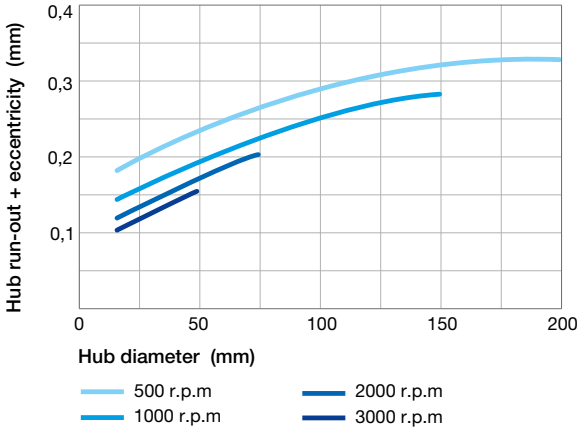
Rotating hub tolerance

Tolerance	ISO H11

Rotating hub roundness

Roundness	IT 8

Hub run-out and concentricity deviation



ROTARY HUB SEALS

ODC / ODCW / ODB / ODB2 / ODBC / ODBCW / ODBR / ODA2

ODC profile image

14.10 ODC / ODCW / ODB / ODB2 / ODBC / ODBCW / ODBR / ODA2 PROFILES

		Single rubber covered metal casing	Single metal casing with rubber grooves covering the inside of the casing	Single inner metal casing with rubber coating on the inside	Single inner metal casing	Single inner metal casing with rubber coating over half of the outside of the casing	Single inner metal casing with rubber coating on the inside and on the edge of the casing	Single inner metal casing with rubber grooves over half of the outside of the casing	Single inner metal casing with metal reinforcement
		C	CW	B	B2	BC	BR	BCW	A2
Inverted system - Double spring-loaded sealing lip to separate fluids	OD	ODC	ODCW	ODB	ODB2	ODBC	ODBR	ODBCW	ODA2

DESCRIPTION

Inverted shaft seal composed of a single metal casing with a rubber coating and a double spring-loaded sealing lip to separate fluids. Available with inner metal casing or with coating over half of the casing, with or without grooves on the inside, and with or without an additional radial and/or axial anti-pollution sealing lip.

APPLICATIONS

All types of rotative applications

Rotating hubs

Fixed shafts

MATERIALS

Rubber

Rubber

ACM 70 - 75 Shore A

EPDM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

ADVANTAGES

ODC - ODCW

Very good static sealing

Very good thermal expansion compensation

Greater roughness is allowed in the fixed shaft

Very limited bounce-back effect where grooves are present (ODCW only)

Reduced risk of corrosion

Sealing for low and high viscosity fluids

Modern double sealing lip with low radial forces

Suitable for rotating hubs with a fixed shaft

ODB – ODB2

Excellent radial rigidity, particularly for large diameters

Very good stability when assembled, preventing the bounce-back effect

Good heat transfer

Excellent resistance to corrosive fluids on the inside (ODB only)

Sealing for high viscosity fluids

Modern double sealing lip with low radial forces

Suitable for rotating hubs with a fixed shaft

ODBC – ODBCW – ODBR

Very good static sealing

Very good thermal expansion compensation

Excellent radial rigidity, particularly for large diameters

Good heat transfer

Very limited bounce-back effect where grooves are present (ODBCW only)

Reduced risk of corrosion

Sealing for low and high viscosity fluids

Modern double sealing lip with low radial forces

Suitable for rotating hubs with a fixed shaft

ODA2

Excellent radial rigidity, particularly for large diameters

Very good stability when assembled, preventing the bounce-back effect

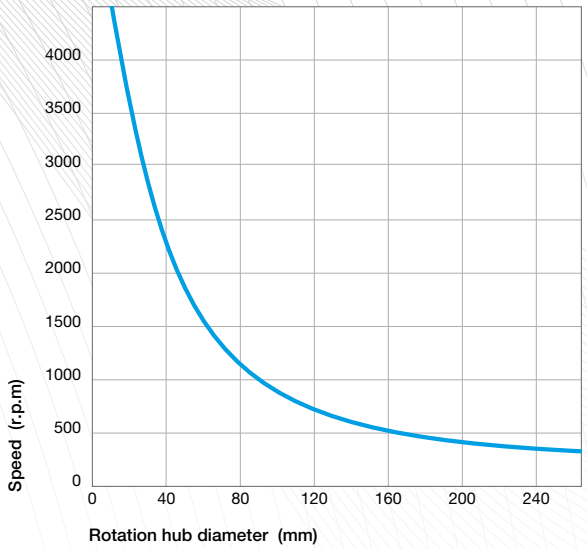
Good heat transfer

Sealing for high viscosity fluids

Modern double sealing lip with low radial forces

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	See adjacent table
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



FIXED SHAFT DESIGN

Surface roughness for ODC - ODCW profiles

Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Surface roughness of profiles ODB - ODB2 - ODBC - ODBCW - ODBR - ODA2

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Fixed shaft tolerance

Tolerance	ISO h8

ROTATING HUB DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

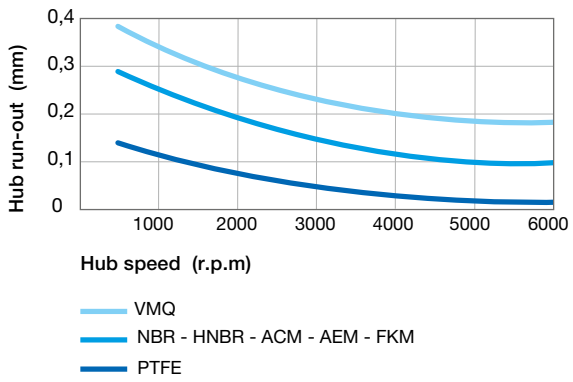
Rotating hub tolerance

Tolerance	ISO H11

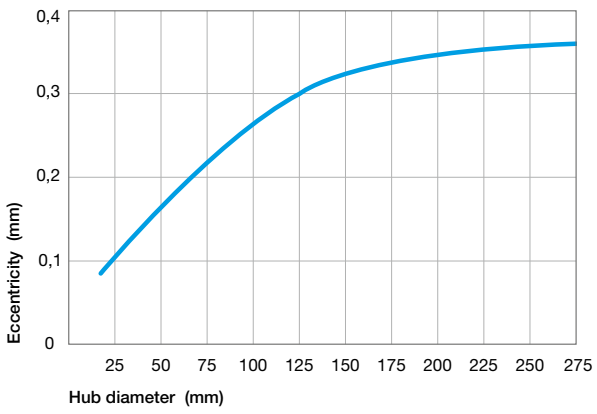
Rotating hub roundness

Roundness	IT 8

Rotating hub run out



Eccentricity



15. Shaft seals for linear motion

Shaft seals for linear motion are shaft seals in which the primary sealing lip has a specific design, enabling it to support linear motion. We also offer custom-made shaft seals that are subject to certain constraints, such as those for shock absorbers or steering racks.

15.1 COMPARATIVE TABLE FOR PROFILES OF SHAFT SEALS FOR LINEAR MOTION

		Single rubber covered metal casing	Single rubber covered metal casing and grooves	Rubber covered metal insert				
		C	**CW**	**CP**				
Spring-loaded sealing lip + anti-pollution sealing lip - suitable for linear motion	**T4**	**TC4** **P. 148**	**TCW4** **P. 148**	**TC4P** **P. 148**	Sealing for low and high viscosity fluids	Modern sealing lips with low radial forces	Sealing lips designed for linear movements	
Double spring-loaded sealing lip to separate fluids - suitable for linear motion	**D4**	**DC4** **P. 148**	**DCW4** **P. 148**	**DC4P** **P. 148**	Sealing for low and high viscosity fluids	Modern sealing lips with low radial forces	Sealing lips designed for linear movements	Fluid separation system
		Very good static sealing	Very good static sealing	Very good static sealing				
		Very good thermal expansion compensation	Very good thermal expansion compensation	Very good thermal expansion compensation				
		Greater roughness is allowed in the static sealing area	Greater roughness is allowed in the static sealing area	Greater roughness is allowed in the static sealing area				
		Reduced risk of corrosion	Reduced risk of corrosion	Reduced risk of corrosion				
			Easy to assemble with very limited bounce-back effect					

SHAFT SEALS FOR LINEAR MOTION

TC4 / TCW4 / TC4P / DC4 / DCW4 / DC4P

DCW4 profile image

15.2 TC4 / TCW4 / TC4P / DC4 / DCW4 / DC4P PROFILES

		Single rubber covered metal casing	Single rubber covered metal casing and grooves	Rubber covered metal insert
		C	CW	CP
Spring-loaded sealing lip + anti-pollution sealing lip - suitable for linear motion	T4	TC4	TCW4	TC4P
Double spring-loaded sealing lip to separate fluids - suitable for linear motion	D4	DC4	DCW4	DC4P

DESCRIPTION

Shaft seal composed of a single rubber covered metal casing and a double spring-loaded sealing lip, suitable for linear motion. Available with or without dual springs.

APPLICATIONS

All types of linear applications

Shock absorbers

Power-assisted steering

ADVANTAGES

Very good static sealing

Very good thermal expansion compensation

Greater roughness is allowed in the housing

Easy to assemble with very limited bounce-back effect (TCW4 – DCW4 only)

Reduced risk of corrosion

Sealing for low and high viscosity fluids

Modern primary sealing lip with low radial forces, designed for linear motion

Standard protection against undesirable air contaminants

Fluid separation system (DC4 – DC4W – DC4P only)

MATERIALS

Rubber

FKM 75 - 80 Shore A

HNBR 75 - 80 Shore A

NBR 75 - 80 Shore A

Metal cage

Steel - AISI 1010

Steel - DC01 C490

Steel - DC01 C590

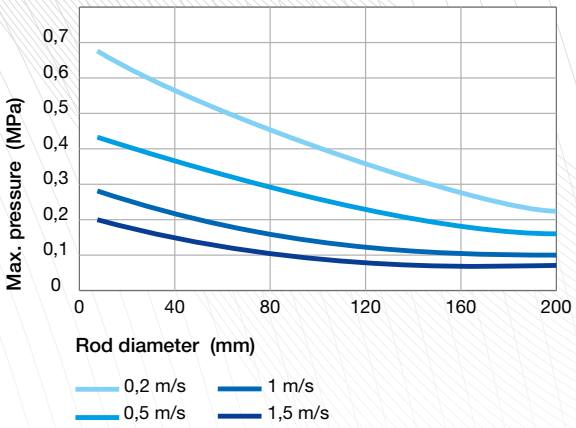
Spring

Steel - AISI 1070 - 1090

Stainless steel - AISI 316

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure	0.65 MPa
Speed	1.5 m/s
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



DIMENSIONS

Part number	Rod diameter Ød1	Bore diameter ØD1	Seal height H1	Seal height H2	Profile type
TC4 5x13x5	5.00	13.00	5.00		TC4
TC4 6x16x6.5	6.00	16.00	6.50		TC4
TC4 7x14x4	7.00	14.00	4.00		TC4
TC4 7x16x7	7.00	16.00	7.00		TC4
TC4 8x14x4	8.00	14.00	4.00		TC4
TC4 8x16x7.5	8.00	16.00	7.50		TC4
TC4 8x16x9	8.00	16.00	9.00		TC4
TC4 8x17x10	8.00	17.00	10.00		TC4
TC4 8x18x7	8.00	18.00	7.00		TC4
TC4 8x20x10	8.00	20.00	10.00		TC4
TC4 8x22x10	8.00	22.00	10.00		TC4
TC4 8x22x11	8.00	22.00	11.00		TC4
TC4P 8x27x4x8.5	8.00	27.00	4.00	8.50	TC4P
TC4 8x28x11	8.00	28.00	11.00		TC4
TC4 9x21x10	9.00	21.00	10.00		TC4
TC4 10x20x8	10.00	20.00	8.00		TC4
TC4 10x20x9.5	10.00	20.00	9.50		TC4
TC4 10x20x10.5	10.00	20.00	10.50		TC4
TC4 10x21x7.5	10.00	21.00	7.50		TC4
TC4 10x21x10	10.00	21.00	10.00		TC4
TC4 10x22x7	10.00	22.00	7.00		TC4
TC4 10x22x10	10.00	22.00	10.00		TC4
TC4 10x22x11	10.00	22.00	11.00		TC4
TC4 10x24x8	10.00	24.00	8.00		TC4
TC4 10x28x13.4	10.00	28.00	13.40		TC4
TC4 10x30x12	10.00	30.00	12.00		TC4
TC4 10x32x12	10.00	32.00	12.00		TC4
TC4 10x32x13.4	10.00	32.00	13.40		TC4
TC4 10x37x12	10.00	37.00	12.00		TC4
TC4P 11x23x4x8.7	11.00	23.00	4.00	8.70	TC4P
TC4P 11x27x4x8.5	11.00	27.00	4.00	8.50	TC4P
TC4 11x28x13.4	11.00	28.00	13.40		TC4
TC4P 11x30x3.5x7.8	11.00	30.00	3.50	7.80	TC4P
TC4P 11x30x3.5x8.7	11.00	30.00	3.50	8.70	TC4P
TC4P 11x31x3.5x10	11.00	31.00	3.50	10.00	TC4P
TC4P 11x31x4x10	11.00	31.00	4.00	10.00	TC4P
TC4P 11x32x3.7x10	11.00	32.00	3.70	10.00	TC4P
TC4P 11x33x3.5x8.5	11.00	33.00	3.50	8.50	TC4P
TC4P 11x33x4x7	11.00	33.00	4.00	7.00	TC4P
TC4P 12x24x2x7	12.00	24.00	2.00	7.00	TC4P
TC4 12x25x7	12.00	25.00	7.00		TC4
TC4 12x28x7	12.00	28.00	7.00		TC4
TC4 12x30x7	12.00	30.00	7.00		TC4

Part number	Rod diameter Ød1	Bore diameter ØD1	Seal height H1	Seal height H2	Profile type
TC4 12x32x10	12.00	32.00	10.00		TC4
TC4 12x33x10	12.00	33.00	10.00		TC4
TC4 12x34x12	12.00	34.00	12.00		TC4
TC4P 12x35x5x10	12.00	35.00	5.00	10.00	TC4P
TC4 12x37x12	12.00	37.00	12.00		TC4
TC4 12x40x12	12.00	40.00	12.00		TC4
TC4 13x22x7	13.00	22.00	7.00		TC4
TC4 14x24x7	14.00	24.00	7.00		TC4
TC4 14x28x7	14.00	28.00	7.00		TC4
TC4 14x28x13.4	14.00	28.00	13.40		TC4
TC4P 14x30x4x8.7	14.00	30.00	4.00	8.70	TC4P
TC4 15x24x5.5	15.00	24.00	5.50		TC4
TC4P 15x27x2x6.7	15.00	27.00	2.00	6.70	TC4P
TC4P 15x39x3.5x10.5	15.00	39.00	3.50	10.50	TC4P
TC4P 16x35x3.2x10	16.00	35.00	3.20	10.00	TC4P
TC4 16x36x12	16.00	36.00	12.00		TC4
TC4P 16x57x3x10	16.00	57.00	3.00	10.00	TC4P
TC4 18x30x6	18.00	30.00	6.00		TC4
TC4 19x32x8	19.00	32.00	8.00		TC4
TC4P 19x35x2.2x7	19.00	35.00	2.20	7.00	TC4P
TC4 20x30x5.5	20.00	30.00	5.50		TC4
DC4 20x30x10	20.00	30.00	10.00		DC4
TC4P 20x32x2x7	20.00	32.00	2.00	7.00	TC4P
TC4 20x35x7	20.00	35.00	7.00		TC4
TC4P 20x37x4.1x10	20.00	37.00	4.10	10.00	TC4P
TC4P 20x40x3.5x10.2	20.00	40.00	3.50	10.20	TC4P
TC4 20x40x10	20.00	40.00	10.00		TC4
TC4P 20x41x3x10.5	20.00	41.00	3.00	10.50	TC4P
TC4P 20x45x3.5x10.5	20.00	45.00	3.50	10.50	TC4P
TC4P 20x45x4.5x10	20.00	45.00	4.50	10.00	TC4P
TC4 20x45x10	20.00	45.00	10.00		TC4
TC4P 22x35x7x9	22.00	35.00	7.00	9.00	TC4P
DC4 22x36x10	22.00	36.00	10.00		DC4
TC4P 22x38x4x10	22.00	38.00	4.00	10.00	TC4P
TC4 22x40x10	22.00	40.00	10.00		TC4
TC4 22x42x11	22.00	42.00	11.00		TC4
TC4P 22x45x5.4x10	22.00	45.00	5.40	10.00	TC4P
TC4 22x47x8	22.00	47.00	8.00		TC4
TC4P 22x48x6x11	22.00	48.00	6.00	11.00	TC4P
TC4P 22x48x7x10.5	22.00	48.00	7.00	10.50	TC4P
TC4 24x35x10.5	24.00	35.00	10.50		TC4
TC4 25x36x5	25.00	36.00	5.00		TC4
TC4P 25x37x2x7	25.00	37.00	2.00	7.00	TC4P

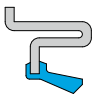
Part number	Rod diameter Ød1	Bore diameter ØD1	Seal height H1	Seal height H2	Profile type
TC4P 25x42x4x10	25.00	42.00	4.00	10.00	TC4P
TC4 25x42x6.5	25.00	42.00	6.50		TC4
TC4P 25x50x7x11	25.00	50.00	7.00	11.00	TC4P
TC4 25x50x15	25.00	50.00	15.00		TC4
DC4 26x37x10.5	26.00	37.00	10.50		DC4
TC4 26x37x10.5	26.00	37.00	10.50		TC4
TC4 26x40x8	26.00	40.00	8.00		TC4
TC4P 26x42x4x10	26.00	42.00	4.00	10.00	TC4P
DC4 27x37x10.5	27.00	37.00	10.50		DC4
DC4 27x39x10.5	27.00	39.00	10.50		DC4
TC4 27x39x10.5	27.00	39.00	10.50		TC4
DC4 27x40x10.5	27.00	40.00	10.50		DC4
TC4 27x40x10.5	27.00	40.00	10.50		TC4
TC4 28x38x6.2	28.00	38.00	6.20		TC4
DC4 28x40x11	28.00	40.00	11.00		DC4
TC4P 28x53x7x11	28.00	53.00	7.00	11.00	TC4P
TC4 30x40x7	30.00	40.00	7.00		TC4
DC4 30x41x10	30.00	41.00	10.00		DC4
TC4 30x42x7	30.00	42.00	7.00		TC4
TC4 30x42x10.5	30.00	42.00	10.50		TC4
DC4 30x42x11	30.00	42.00	11.00		DC4
TC4 30x42x11	30.00	42.00	11.00		TC4
TC4 30x43x8.5	30.00	43.00	8.50		TC4
TC4 31x41x9.1	31.00	41.00	9.10		TC4
TC4 31x43x10	31.00	43.00	10.00		TC4
DC4 31x43x10.3	31.00	43.00	10.30		DC4
TC4 32x42x7	32.00	42.00	7.00		TC4
DC4 32x43x10.5	32.00	43.00	10.50		DC4
TC4 32x43x10.5	32.00	43.00	10.50		TC4
TC4 32x43x12.5	32.00	43.00	12.50		TC4
TC4 32x44x6.7	32.00	44.00	6.70		TC4
DC4 32x44x10.5	32.00	44.00	10.50		DC4
TC4 32x44x10.5	32.00	44.00	10.50		TC4
TC4 32x45x7	32.00	45.00	7.00		TC4
DC4 32x46x11	32.00	46.00	11.00		DC4
TC4 32x46x11	32.00	46.00	11.00		TC4
TC4 32x52x9	32.00	52.00	9.00		TC4
TC4 33x45x10	33.00	45.00	10.00		TC4
DC4 33x45x11	33.00	45.00	11.00		DC4
TC4 33x45x11	33.00	45.00	11.00		TC4
DC4 33x46x10.5	33.00	46.00	10.50		DC4
TC4 33x46x10.5	33.00	46.00	10.50		TC4
DC4 33x46x11	33.00	46.00	11.00		DC4
TC4 34x46x10.5	34.00	46.00	10.50		TC4
DC4 35x46x11	35.00	46.00	11.00		DC4
DC4 35x47x10	35.00	47.00	10.00		DC4
TC4 35x47x10	35.00	47.00	10.00		TC4

Part number	Rod diameter Ød1	Bore diameter ØD1	Seal height H1	Seal height H2	Profile type
TC4 35x48x8	35.00	48.00	8.00		TC4
TC4 35x48x10.5	35.00	48.00	10.50		TC4
DC4 35x48x11	35.00	48.00	11.00		DC4
TC4 35x48x11	35.00	48.00	11.00		TC4
TC4 36x48x10.5	36.00	48.00	10.50		TC4
DC4 36x50x11	36.00	50.00	11.00		DC4
DC4 37x50x11	37.00	50.00	11.00		DC4
TC4 37x50x11	37.00	50.00	11.00		TC4
TC4 38x48x10	38.00	48.00	10.00		TC4
DC4 38x50x8	38.00	50.00	8.00		DC4
DC4 38x50x10.5	38.00	50.00	10.50		DC4
TC4 38x50x10.5	38.00	50.00	10.50		TC4
DC4 39x52x11	39.00	52.00	11.00		DC4
DC4 40x52x10.5	40.00	52.00	10.50		DC4
TC4 40x54x10	40.00	54.00	10.00		TC4
DC4 41x53x8	41.00	53.00	8.00		DC4
TC4 41x53x10	41.00	53.00	10.00		TC4
TC4 41x53x10.5	41.00	53.00	10.50		TC4
TC4 41x53x11	41.00	53.00	11.00		TC4
DC4 41x54x11	41.00	54.00	11.00		DC4
TC4 41x54x11	41.00	54.00	11.00		TC4
TC4 42x55x8.5	42.00	55.00	8.50		TC4
DC4 42x55x11	42.00	55.00	11.00		DC4
TC4 43x54x9.5	43.00	54.00	9.50		TC4
DC4 43x54x11	43.00	54.00	11.00		DC4
TC4 43x54x11	43.00	54.00	11.00		TC4
TC4 43x55x9	43.00	55.00	9.00		TC4
DC4 43x55x9.5	43.00	55.00	9.50		DC4
DC4 43x55x10.5	43.00	55.00	10.50		DC4
TC4 43x55x10.5	43.00	55.00	10.50		TC4
DC4 45x57x11	45.00	57.00	11.00		DC4
DC4 45x58x11	45.00	58.00	11.00		DC4
DC4 46x58x9.5	46.00	58.00	9.50		DC4
DC4 46x58x10.5	46.00	58.00	10.50		DC4
DC4 47x58x10	47.00	58.00	10.00		DC4
TC4 47x58x10	47.00	58.00	10.00		TC4
DC4 48x58x8.5	48.00	58.00	8.50		DC4
DC4 48x58x9.5	48.00	58.00	9.50		DC4
TC4 48x59x10	48.00	59.00	10.00		TC4
TC4 48x60x10	48.00	60.00	10.00		TC4
TC4 48x61x11	48.00	61.00	11.00		TC4
TC4 49x60x10	49.00	60.00	10.00		TC4
TC4 50x57x5	50.00	57.00	5.00		TC4
DC4 50x60x7	50.00	60.00	7.00		DC4
DC4 50x63x11	50.00	63.00	11.00		DC4
TC4 85x100x18	85.00	100.00	18.00		TC4

16. Flanged shaft seals - Type 5

Flanged shaft seals - Type 5 are designed to enable precise positioning on the flange relative to the housing and also to make maintenance easier through faster replacement.

16.1 COMPARATIVE TABLE FOR FLANGED SHAFT SEALS - TYPE 5 PROFILES

		Rubber covered metal casing and type 5 outer flange	Outer metal casing and type 5 outer flange			
		C5	**B5**			
Spring-loaded sealing lip	**S**	**SC5** **P. 153**	**SB5** **P. 153**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	
Spring-loaded sealing lip + anti-pollution sealing lip	**T**	**TC5** **P. 153**	**TB5** **P. 153**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Standard protection against undesirable air contaminants
Primary sealing lip without spring	**V**	**VC5** **P. 153**	 **VB5** **P. 153**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	
Primary sealing lip without spring + anti-pollution sealing lip	**K**	**KC5** **P. 153**	**KB5** **P. 153**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	Standard protection against undesirable air contaminants
Double spring-loaded sealing lip to separate fluids	**D**	**DC5** **P. 153**	**DB5** **P. 153**	Sealing for low and high viscosity fluids	Modern sealing lips with low radial forces	Fluid separation system
		Very good static sealing	Good radial rigidity, particularly for large diameters			
		Very good thermal expansion compensation	Good stability when assembled, preventing the bounce-back effect			
		Greater roughness is allowed in the housing	Precise assembly in the housing with a stop			
		Reduced risk of corrosion				
		Precise assembly in the housing with a stop				

FLANGED SHAFT SEALS - TYPE 5

SC5 / SB5 / TC5 / TB5 / KC5 / KB5 / VC5 / BV5 / DC5 / DB5

TC5 profile image

16.2 SC5 / SB5 / TC5 / TB5 / KC5 / KB5 / VC5 / BV5 / DC5 / DB5 PROFILES

DESCRIPTION

Shaft seal composed of a staggered rubber covered metal casing, an outer flange and a spring-loaded sealing lip. Available with outer metal casing, with or without metal reinforcement, with primary sealing lip without spring, with or without additional radial anti-pollution sealing lip.

		Spring-loaded sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip	Primary sealing lip without spring	Primary sealing lip without spring + anti-pollution sealing lip	Double spring-loaded sealing lip to separate fluids
		S	T	V	K	D
Rubber covered metal casing and type 5 outer flange	C5	SC5	TC5	VC5	KC5	DC5
Outer metal casing and type 5 outer flange	B5	SB5	TB5	VB5	KB5	DB5

APPLICATIONS

All types of rotative applications
Machine tools
Agriculture
Construction
Transmissions
Gear boxes
Motors
Pumps

MATERIALS

Rubber

ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

Spring

Steel - AISI 1070 - 1090
Stainless steel - AISI 316

ADVANTAGES

TC5 / DC5

Very good static sealing
Very good thermal expansion compensation
Greater roughness is allowed in the housing
Precise positioning when stopped
Reduced risk of corrosion
Sealing for low and high viscosity fluids
Modern primary sealing lip with low radial forces
Standard, average or increased protection against undesirable air contaminants (TC5)
Fluid separation system (DC5 only)

SB5 / TB5 / DB5

Excellent radial rigidity, particularly for large diameters
Very good stability when assembled, preventing the bounce-back effect
Good heat transfer
Precise positioning when stopped
Sealing for high viscosity fluids
Modern primary sealing lip with low radial forces
Standard, average or increased protection against undesirable air contaminants (TB5)
Fluid separation system (DB5 only)

KC5 / VC5

Very good static sealing
Very good thermal expansion compensation
Precise positioning when stopped
Greater roughness is allowed in the housing
Precise positioning when stopped
Reduced risk of corrosion
Sealing for high viscosity fluids
Primary sealing lip generating low levels of friction and heat
Protection against undesirable air contaminants (KC5 only)

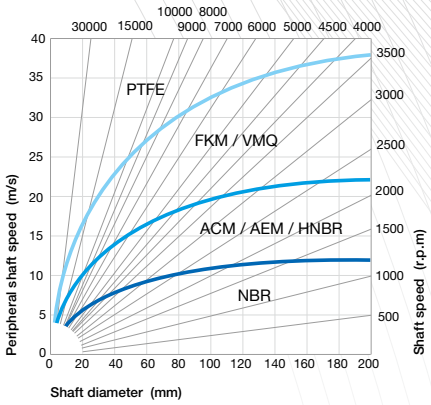
KB5 / VB5

Good radial rigidity, particularly for large diameters
Good stability when assembled, preventing the bounce-back effect
Precise positioning when stopped
Sealing for high viscosity fluids
Primary sealing lip generating low levels of friction and heat
Protection against undesirable air contaminants (KB5 only)

CONDITIONS FOR USE

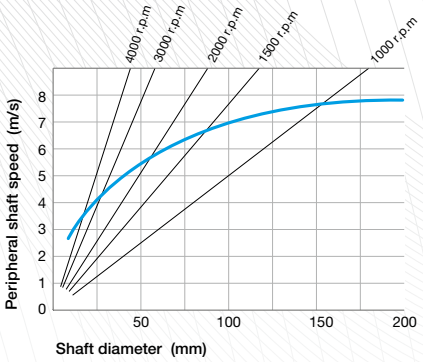
Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	Adjacent tables
Fluids	Grease, mineral oils, synthetic oils*, other fluids* * depending on the type of profile selected

Spring-loaded shaft seals



The shaft seals with an additional protective lip are limited to a speed of 8 m/sec

Shaft seals without spring



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

Shaft tolerance

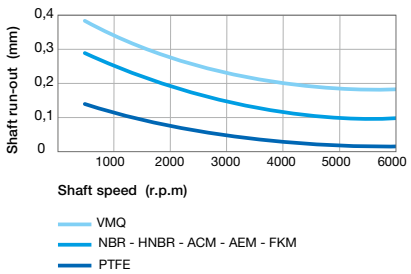
Tolerance	ISO h11

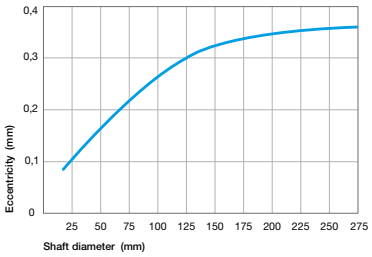
Shaft roundness

Roundness	IT 8

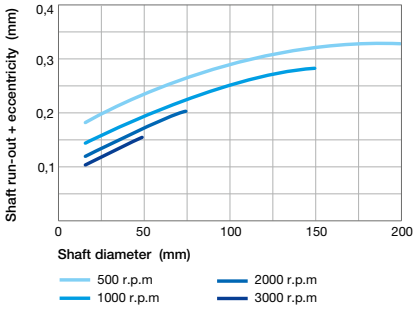
Overall eccentricity

Spring-loaded shaft seals





Shaft seals without spring



HOUSING DESIGN

Surface roughness for SC5 – TC5 – KC5 – VC5 – DC5 profiles

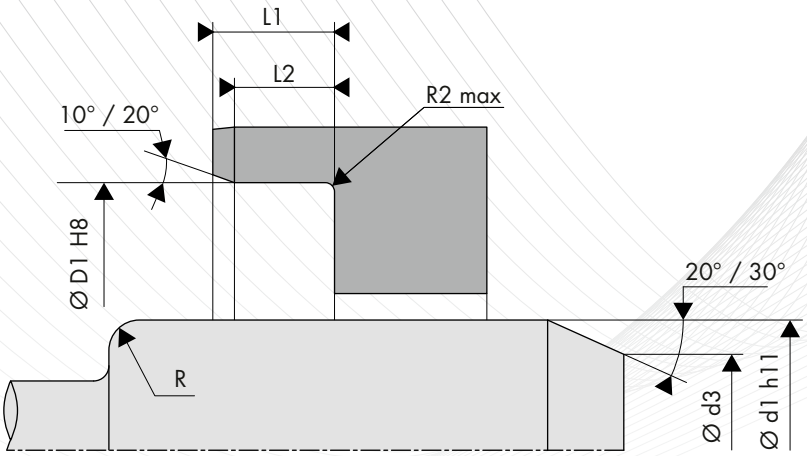
Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Surface roughness for SB5 – TB5 – KB5 – VB5 – DB5 profiles

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Housing tolerance

Tolerance	ISO H8



DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
KC5 10x15x18x3	10.00	15.00	18.00	3.00	KC5
TC5 12x28x30x5	12.00	28.00	30.00	5.00	TC5
SB5 13x26x31x12	13.00	26.00	31.00	12.00	SB5
SB5 14x26x31x12	14.00	26.00	31.00	12.00	SB5
TC5 15x25x29x6.5	15.00	25.00	29.00	6.50	TC5
TC5 15x28x31x8	15.00	28.00	31.00	8.00	TC5
KC5 16x22x28x4.5	16.00	22.00	28.00	4.50	KC5
KC5 17x20x26x4	17.00	20.00	26.00	4.00	KC5
KC5 17x22x28.5x3.2	17.00	22.00	28.50	3.20	KC5
KC5 17x24x30x3.5	17.00	24.00	30.00	3.50	KC5
KC5 17x24x30x5.7	17.00	24.00	30.00	5.70	KC5
TC5 17x28x32x5.5	17.00	28.00	32.00	5.50	TC5
TC5 17x30x37x8	17.00	30.00	37.00	8.00	TC5
TC5 17x32x38x8	17.00	32.00	38.00	8.00	TC5
TC5 17x35x43x7	17.00	35.00	43.00	7.00	TC5
KC5 18x24x30x5.7	18.00	24.00	30.00	5.70	KC5
KC5 20x26x32x4.6	20.00	26.00	32.00	4.60	KC5
KC5 20x27x34x4.4	20.00	27.00	34.00	4.40	KC5
KC5 20x28x36x5	20.00	28.00	36.00	5.00	KC5
TC5 20x30x34x8.5	20.00	30.00	34.00	8.50	TC5
TC5 20x32x36x7.5	20.00	32.00	36.00	7.50	TC5
SB5 20x40x60x7	20.00	40.00	60.00	7.00	SB5
KC5 22x28x34x4.5	22.00	28.00	34.00	4.50	KC5
KC5 22x30x38x5	22.00	30.00	38.00	5.00	KC5
KC5 25x32x41.7x4.5	25.00	32.00	41.70	4.50	KC5
TC5 25x52x55x10	25.00	52.00	55.00	10.00	TC5
TC5 30x50x57x10	30.00	50.00	57.00	10.00	TC5
TC5 30x72x76x7	30.00	72.00	76.00	7.00	TC5
TC5 32x54x68x10	32.00	54.00	68.00	10.00	TC5
TC5 35x48x54x8	35.00	48.00	54.00	8.00	TC5
TC5 35x75x79x8	35.00	75.00	79.00	8.00	TC5
DC5 35x80x84x7	35.00	80.00	84.00	7.00	DC5
TC5 35x80x84x9	35.00	80.00	84.00	9.00	TC5
DC5 36x72x76x6.7	36.00	72.00	76.00	6.70	DC5
TC5 36x80x83.5x8	36.00	80.00	83.50	8.00	TC5
DC5 37x80x87x8.4	37.00	80.00	87.00	8.40	DC5
TC5 40x53x60x10	40.00	53.00	60.00	10.00	TC5
SB5 42x56x63x7	42.00	56.00	63.00	7.00	SB5
DC5 42x62x70x11	42.00	62.00	70.00	11.00	DC5
SB5 42x67x73x7.2	42.00	67.00	73.00	7.20	SB5
DC5 44x72x76x6.7	44.00	72.00	76.00	6.70	DC5
TC5 44x72x76x8	44.00	72.00	76.00	8.00	TC5

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Seal height H2	Profile type
SB5 45x62x66x10	45.00	62.00	66.00	10.00	SB5
SB5 45x62x66x10	45.00	62.00	66.00	10.00	SB5
TC5 47x72x75x6	47.00	72.00	75.00	6.00	TC5
TC5 52x100x108x15	52.00	100.00	108.00	15.00	TC5
TC5 58x80x88x12	58.00	80.00	88.00	12.00	TC5
TC5 60x78x82x7.5	60.00	78.00	82.00	7.50	TC5
DC5 65x90x96.5x9	65.00	90.00	96.50	9.00	DC5
TC5 68x88x93x10	68.00	88.00	93.00	10.00	TC5
TC5 68x90x98x13	68.00	90.00	98.00	13.00	TC5
TC5 80x100x106x10	80.00	100.00	106.00	10.00	TC5
TC5 82x105x110x10	82.00	105.00	110.00	10.00	TC5
TC5 82x105x110x13	82.00	105.00	110.00	13.00	TC5
TC5 82x125x137x10	82.00	125.00	137.00	10.00	TC5
TC5 100x135x140x15	100.00	135.00	140.00	15.00	TC5
TC5 120x140x146x13	120.00	140.00	146.00	13.00	TC5
DC5 126x150x156x12	126.00	150.00	156.00	12.00	DC5
TC5 126x150x156x14	126.00	150.00	156.00	14.00	TC5
DC5 130x160x165x16	130.00	160.00	165.00	16.00	DC5
TC5 132x150x156x14	132.00	150.00	156.00	14.00	TC5

17. Flanged shaft seals - Type 6

Flanged shaft seals - Type 6 are designed to enable precise positioning on the flange relative to the housing and also to make maintenance easier through faster replacement.

17.1 COMPARATIVE TABLE FOR FLANGED SHAFT SEALS - TYPE 6 PROFILES

		Outer metal casing and type 6 outer flange	Outer metal casing with metal reinforcement and type 6 outer flange			
		B6	**A6**			
Spring-loaded sealing lip	**S**	**SB6** **P. 159**	**SA6** **P. 159**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	
Spring-loaded sealing lip + anti-pollution sealing lip	**T**	**TB6** **P. 159**	**TA6** **P. 159**	Sealing for low and high viscosity fluids	Modern primary sealing lip with low radial forces	Standard protection against undesirable air contaminants
Primary sealing lip without spring	**V**	**VB6** **P. 159**	**VA6** **P. 159**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	
Primary sealing lip without spring + anti-pollution sealing lip	**K**	**KB6** **P. 159**	**KA6** **P. 159**	Sealing for high viscosity fluids	Primary sealing lip generating low levels of friction and heat	Standard protection against undesirable air contaminants
Double spring-loaded sealing lip to separate fluids	**D**	**DB6** **P. 159**	**DA6** **P. 159**	Sealing for low and high viscosity fluids	Modern sealing lips with low radial forces	Fluid separation system
		Good radial rigidity, particularly for large diameters	Excellent radial rigidity, particularly for large diameters			
		Good stability when assembled, preventing the bounce-back effect	Very good stability when assembled, preventing the bounce-back effect			
		Precise assembly in the housing with a stop	Precise assembly in the housing with a stop			

FLANGED SHAFT SEALS - TYPE 6

SA6 / SB6 / TA6 / TB6 / VA6 / VB6 / KA6 / KB6 / DA6 / DB6

TA6 profile image

17.2 SA6 / SB6 / TA6 / TB6 / VA6 / VB6 / KA6 / KB6 / DA6 / DB6 PROFILES

DESCRIPTION

Shaft seal composed of a single outer metal casing with a metal reinforcement, metal flange and a spring-loaded sealing lip. Available with or without metal reinforcement, with primary sealing lip without spring, with or without additional radial anti-pollution sealing lip, with or without the double primary sealing lip to separate the fluids.

		Spring-loaded sealing lip	Spring-loaded sealing lip + anti-pollution sealing lip	Primary sealing lip without spring	Primary sealing lip without spring + anti-pollution sealing lip	Double spring-loaded sealing lip to separate fluids
		S	T	V	K	D
Outer metal casing and type 6 outer flange	B6	SB6	TB6	VB6	KB6	DB6
Outer metal casing with metal reinforcement and type 6 outer flange	A6	SA6	TA6	VA6	KA6	DA6

APPLICATIONS

All types of rotative applications
Machine tools
Agriculture
Construction
Transmissions
Gear boxes
Motors
Pumps

MATERIALS

Rubber

ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

Spring

Steel - AISI 1070 - 1090
Stainless steel - AISI 316

ADVANTAGES

SA6 / SB6 / TA6 / TB6 / DA6 / DB6

Very good static sealing
Very good thermal expansion compensation
Greater roughness is allowed in the housing
Precise positioning when stopped
Reduced risk of corrosion
Sealing for low and high viscosity fluids
Modern primary sealing lip with low radial forces
Protection against undesirable air contaminants (TC5)
Fluid separation system (DA6 – DB6 only)

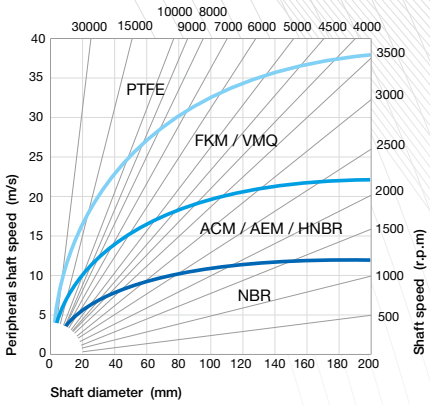
VA6 / VB6 / KA6 / KB6

Excellent radial rigidity, particularly for large diameters
Very good stability when assembled, preventing the bounce-back effect
Good heat transfer
Precise positioning when stopped
Sealing for high viscosity fluids
Primary sealing lip generating low levels of friction and heat
Protection against undesirable air contaminants (KA6 – KB6 only)

CONDITIONS FOR USE

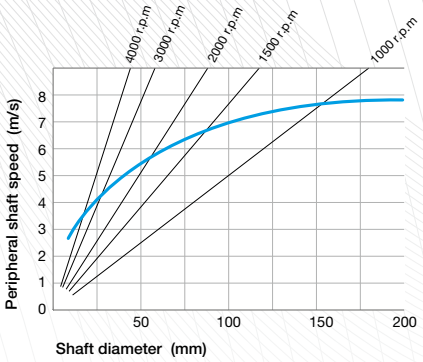
Temperature	-40°C / +200°C
Pressure	0.02 and 0.05 MPa max.
Speed	Adjacent tables
Fluids	Grease, mineral oils, synthetic oils*, other fluids* * depending on the type of profile selected

Spring-loaded shaft seals



The shaft seals with an additional protective lip are limited to a speed of 8 m/sec

Shaft seals without spring



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

Shaft tolerance

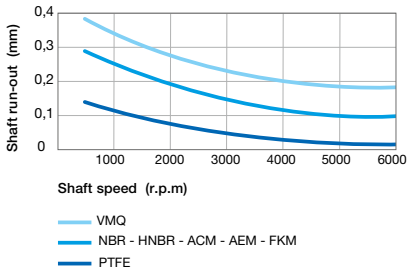
Tolerance	ISO h11

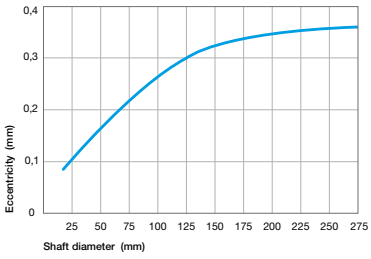
Shaft roundness

Roundness	IT 8

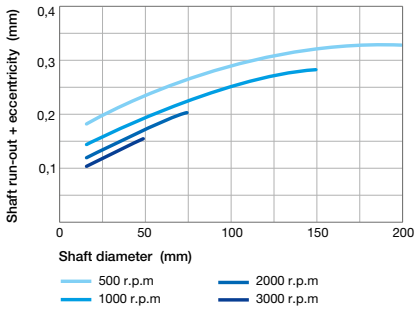
Overall eccentricity

Spring-loaded shaft seals





Shaft seals without spring



HOUSING DESIGN

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	16.0 µm

Housing tolerance

Tolerance	ISO H8

18. Shaft seals with PTFE coating

Shaft seals with PTFE coating are generally used in dry environments or those with little lubrication. The PTFE strip has a very low friction coefficient, giving the shaft seal a longer life.

18.1 COMPARATIVE TABLE FOR PROFILES OF SHAFT SEALS WITH PTFE COATING

		Single rubber covered metal casing	Single outer metal casing with rubber coating on the inside				
		C	B				
Spring-loaded sealing lip with PTFE coating	SJ	SCJ P. 163	SBJ P. 163	Waterproofing for low and high viscosity fluids, and for environments with little lubrication	Modern primary sealing lip with low radial forces	Bonded PTFE tape for a low friction coefficient that tolerates greater speeds	
Spring-loaded sealing lip with PTFE coating + anti-pollution sealing lip	TJ	TCJ P. 163	TBJ P. 163	Waterproofing for low and high viscosity fluids, and for environments with little lubrication	Modern primary sealing lip with low radial forces	Bonded PTFE tape for a low friction coefficient that tolerates greater speeds	Standard protection against undesirable air contaminants
Double spring-loaded sealing lip with PTFE coating, to separate fluids	DJ	DCJ P. 163	DBJ P. 163	Waterproofing for low and high viscosity fluids, and for environments with little lubrication	Modern sealing lips with low radial forces	Bonded PTFE tape for a low friction coefficient that tolerates greater speeds	Fluid separation system
		Very good static sealing	Good radial rigidity, particularly for large diameters				
		Very good thermal expansion compensation	Good stability when assembled, preventing the bounce-back effect				
		Greater roughness is allowed in the housing	Excellent resistance to corrosive fluids on the inside				
		Reduced risk of corrosion					

SHAFT SEALS WITH PTFE COATING

SCJ / SBJ / TCJ / TBJ / DCJ / DBJ

TCJ profile image

18.2 SCJ / SBJ / TCJ / TBJ / DCJ / DBJ PROFILES

DESCRIPTION

Shaft seal composed of a single rubber covered metal casing and a single spring-loaded sealing lip with a PTFE coating. Available with metal casing, with or without additional radial anti-pollution sealing lip, with double primary sealing lip to separate the fluids.

		Spring-loaded sealing lip with PTFE coating	Spring-loaded sealing lip with PTFE coating + anti-pollution sealing lip	Double spring-loaded sealing lip with PTFE coating, to separate fluids
		SJ	TJ	DJ
Single rubber covered metal casing	C	SCJ	TCJ	DCJ
Single outer metal casing with rubber coating on the inside	B	SBJ	TBJ	DBJ

APPLICATIONS

All types of rotative applications
Machine tools
Agriculture
Construction
Transmissions
Automotive
Military

MATERIALS

Rubber

ACM 70 - 75 Shore A
EPDM 70 - 75 Shore A
FKM 70 - 75 Shore A
HNBR 70 - 75 Shore A
NBR 70 - 75 Shore A

Lip adhesion

PTFE

Metal cage

Steel - AISI 1010
Stainless steel - AISI 304
Stainless steel - AISI 316

Spring

Steel - AISI 1070 - 1090
Stainless steel - AISI 316

ADVANTAGES

SCJ – TCJ - DCJ

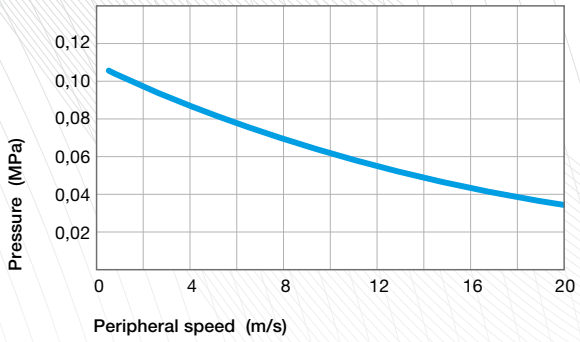
Very good static sealing
Very good thermal expansion compensation
Greater roughness is allowed in the housing
Reduced risk of corrosion
Waterproofing for low and high viscosity fluids, and for environments with little lubrication
Modern primary sealing lip with low radial forces
Protection against undesirable air contaminants
Bonded PTFE tape for a low friction coefficient that tolerates greater speeds

SBJ – TBJ – DBJ

Good radial rigidity, particularly for large diameters
Good stability when assembled, preventing the bounce-back effect
Waterproofing for low and high viscosity fluids, and for environments with little lubrication
Reduced risk of internal corrosion
Modern primary sealing lip with low radial forces
Protection against undesirable air contaminants
Bonded PTFE tape for a low friction coefficient that tolerates greater speeds

CONDITIONS FOR USE

Temperature	-40°C / +200°C
Pressure / Speed	Adjacent tables
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	standard mechanical steels stainless steels sprayed carbide coatings Graphite malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.1 to 0.4 µm
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

Shaft tolerance

Tolerance	ISO h11

Shaft roundness

Roundness	IT 8

Overall eccentricity

Shaft diameter Ød1 (mm)	Overall eccentricity (mm)
Ød1 ≤ 40.00	0.20
40.00 < Ød1 ≤ 80.00	0.30
80.00 < Ød1 ≤ 120.00	0.40

HOUSING DESIGN

Surface roughness for SCJ / TCJ / DCJ profiles

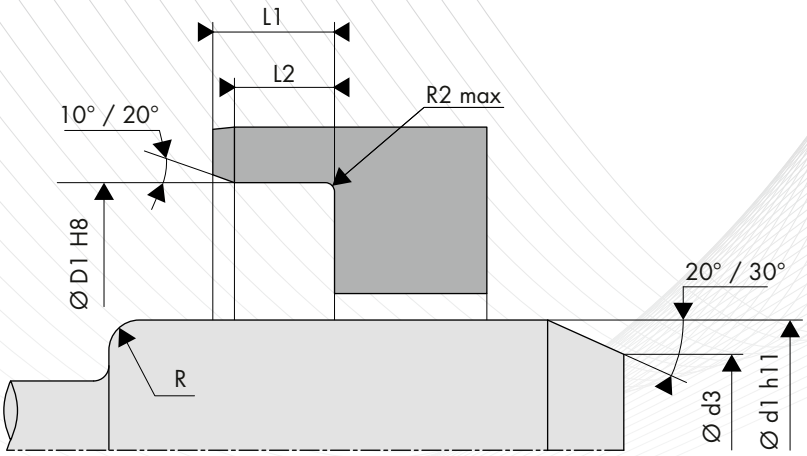
Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Surface roughness for SBJ / TBJ / DBJ profiles

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Shaft tolerance

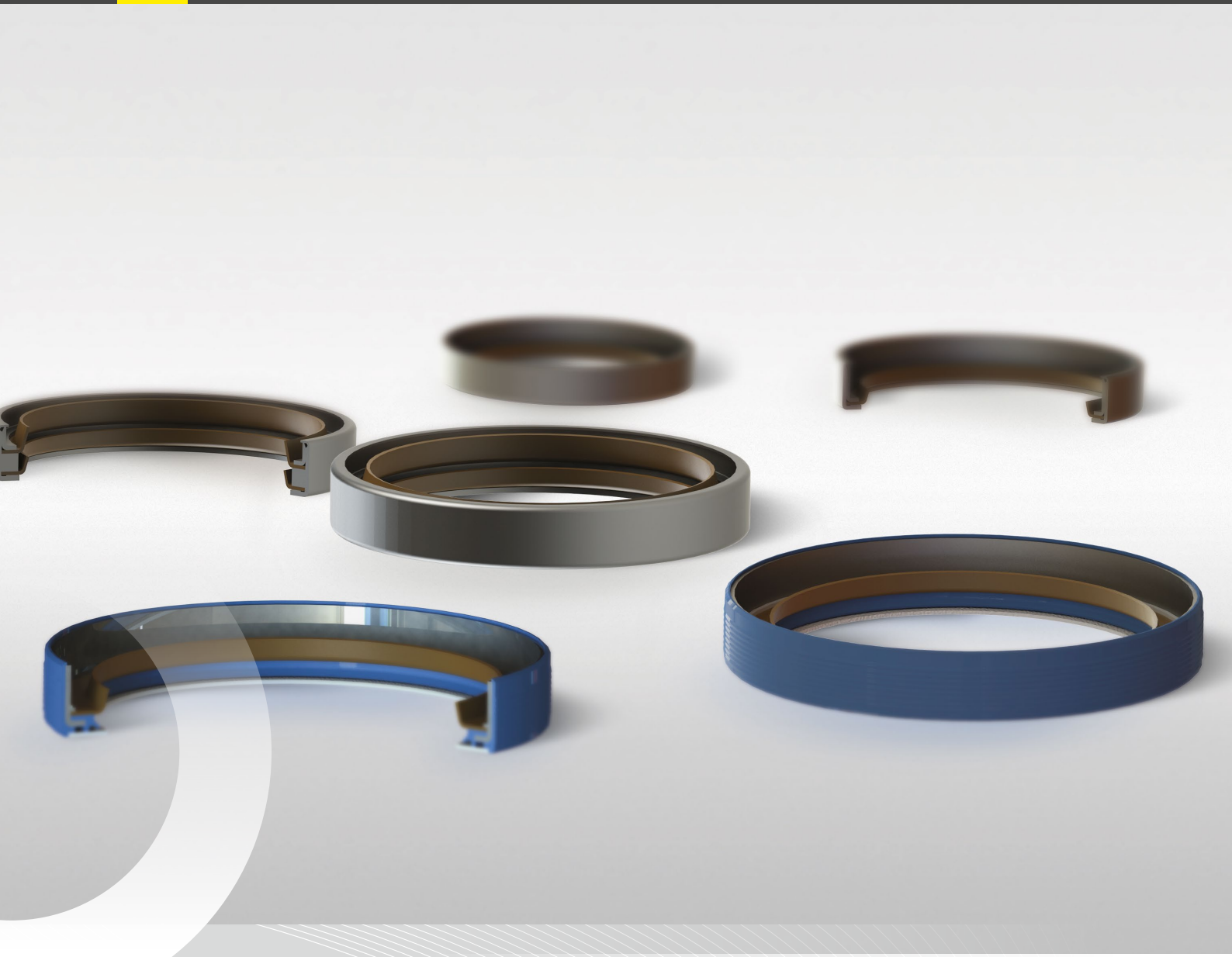
Tolerance	ISO H8



DIMENSIONS

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
SCJ 8x18x5	8.00	18.00	5.00	SCJ
SCJ 16x35x7	16.00	35.00	7.00	SCJ
TCJ 17x27x6	17.00	27.00	6.00	TCJ
SCJ 17x28x7	17.00	28.00	7.00	SCJ
TCJ 17x35x7	17.00	35.00	7.00	TCJ
TCJ 18x30x6	18.00	30.00	6.00	TCJ
TCJ 18x32x7	18.00	32.00	7.00	TCJ
SCJ 18x32x8	18.00	32.00	8.00	SCJ
SCJ 19x42x7	19.00	42.00	7.00	SCJ
SCJ 20x32x7	20.00	32.00	7.00	SCJ
TCJ 20x32x7	20.00	32.00	7.00	TCJ
SCJ 20x35x7	20.00	35.00	7.00	SCJ
SCJ 20x35x8	20.00	35.00	8.00	SCJ
TCJ 20x36x7	20.00	36.00	7.00	TCJ
TCJ 20x37x6	20.00	37.00	6.00	TCJ
TCJ 20x37x7	20.00	37.00	7.00	TCJ
TCJ 20x40x7	20.00	40.00	7.00	TCJ
TCJ 20x40x8	20.00	40.00	8.00	TCJ
TCJ 20x40x9	20.00	40.00	9.00	TCJ
TCJ 22x33x7	22.00	33.00	7.00	TCJ
TCJ 22x35x7	22.00	35.00	7.00	TCJ
TCJ 22x38x7	22.00	38.00	7.00	TCJ
TCJ 22x40x7	22.00	40.00	7.00	TCJ
TCJ 22x40x8	22.00	40.00	8.00	TCJ
TCJ 23x38x7	23.00	38.00	7.00	TCJ
SCJ 25x35x5	25.00	35.00	5.00	SCJ
SCJ 25x35x7	25.00	35.00	7.00	SCJ
TCJ 25x37x6	25.00	37.00	6.00	TCJ
TCJ 25x38x7	25.00	38.00	7.00	TCJ
TCJ 25x40x7	25.00	40.00	7.00	TCJ
SCJ 25x40x10	25.00	40.00	10.00	SCJ
SCJ 25x42x9.5	25.00	42.00	9.50	SCJ
TCJ 25x44x8	25.00	44.00	8.00	TCJ
SCJ 25x45x7	25.00	45.00	7.00	SCJ
TCJ 25x45x7	25.00	45.00	7.00	TCJ
SCJ 25x47x6	25.00	47.00	6.00	SCJ
TCJ 25x48x8	25.00	48.00	8.00	TCJ
DCJ 26x47x10	26.00	47.00	10.00	DCJ
TCJ 28x38x7	28.00	38.00	7.00	TCJ
TCJ 28x40x8	28.00	40.00	8.00	TCJ
SCJ 28x47x7	28.00	47.00	7.00	SCJ

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
SCJ 28x49x7	28.00	49.00	7.00	SCJ
TCJ 28x50x8	28.00	50.00	8.00	TCJ
TCJ 30x40x7	30.00	40.00	7.00	TCJ
TCJ 30x44x8	30.00	44.00	8.00	TCJ
TCJ 30x45x8	30.00	45.00	8.00	TCJ
SCJ 30x47x6	30.00	47.00	6.00	SCJ
SCJ 30x50x7	30.00	50.00	7.00	SCJ
TCJ 30x50x8	30.00	50.00	8.00	TCJ
TCJ 30x72x7	30.00	72.00	7.00	TCJ
DCJ 31x58x8	31.00	58.00	8.00	DCJ
TCJ 32x40x5	32.00	40.00	5.00	TCJ
SCJ 32x40x6	32.00	40.00	6.00	SCJ
DCJ 32x44x8	32.00	44.00	8.00	DCJ
SCJ 32x44x8	32.00	44.00	8.00	SCJ
SCJ 32x44x9	32.00	44.00	9.00	SCJ
TCJ 35x70x8	35.00	70.00	8.00	TCJ
TCJ 36x52x8	36.00	52.00	8.00	TCJ
DCJ 36x55x10	36.00	55.00	10.00	DCJ
SCJ 38x52x7	38.00	52.00	7.00	SCJ
TCJ 38x58x11	38.00	58.00	11.00	TCJ
DCJ 39x78x10.5	39.00	78.00	10.50	DCJ
SCJ 40x52x7	40.00	52.00	7.00	SCJ
TCJ 40x55x8	40.00	55.00	8.00	TCJ
DCJ 40x58x9	40.00	58.00	9.00	DCJ
TCJ 40x72x10	40.00	72.00	10.00	TCJ
SCJ 45x62x9	45.00	62.00	9.00	SCJ
TCJ 45x65x6	45.00	65.00	6.00	TCJ
TCJ 45x67x8	45.00	67.00	8.00	TCJ
DCJ 50x65x8	50.00	65.00	8.00	DCJ
TCJ 50x72x10	50.00	72.00	10.00	TCJ
TCJ 50x90x10	50.00	90.00	10.00	TCJ
TCJ 54x70x9.5	54.00	70.00	9.50	TCJ
TCJ 55x72x6	55.00	72.00	6.00	TCJ
TCJ 60x80x6	60.00	80.00	6.00	TCJ
TCJ 60x110x10	60.00	110.00	10.00	TCJ
TCJ 60x125x12	60.00	125.00	12.00	TCJ
TCJ 100x140x12	100.00	140.00	12.00	TCJ
TCJ 110x140x12	110.00	140.00	12.00	TCJ
TCJ 110x165x12	110.00	165.00	12.00	TCJ
TCJ 150x180x15	150.00	180.00	15.00	TCJ



19. Shaft seals with PTFE sealing lips

Shaft seals with PTFE sealing lips, which are widely used in "new generation" engines, particularly for crankshaft seals, have numerous advantages.

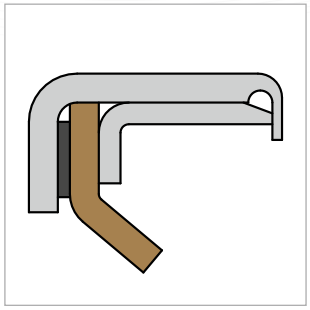
They are used in the event of insufficient lubrication and dry operation, and have an excellent friction coefficient (no stick-slip effect).

SHAFT SEALS WITH PTFE SEALING LIP

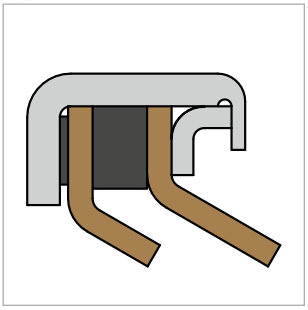
BECA **804** / BECA **805** / BECA **806**

BECA 805 profile image

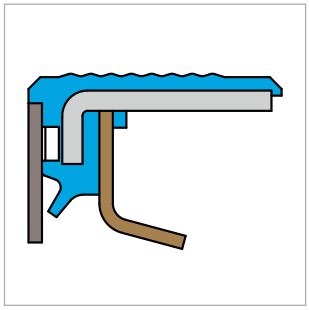
19.1 BECA 804 / BECA 805 / BECA 806 PROFILES



BECA 804



BECA 805



BECA 806

DESCRIPTION

BECA 804

The BECA 804 is a shaft seal composed of a filled PTFE primary lip, a rubber counter-seal and a metal cage.

BECA 805

The BECA 805 is a shaft seal composed of a filled PTFE primary double lip, a rubber counter-seal and a metal cage.

BECA 806

The BECA 806 profile is a shaft seal composed of a primary lip with filled PTFE pumping leads; one section can be made of felt, preventing depression in the area, and a coating with rubber grooves.

APPLICATIONS

Engines

Crankshafts

ADVANTAGES

Excellent chemical inertia

May be used in the food industry

Very good friction coefficient; no stick-slip effect

Machined outside diameter for precise mounting in the housing (BECA 804 – BECA 805)

Optimised static sealing (BECA 806)

MATERIALS

Rubber

ACM 70 - 75 Shore A

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

NBR 70 - 75 Shore A

Sealing lip

Glass-filled PTFE

Carbon-filled PTFE

Metal cage

Steel - AISI 1010

Stainless steel - AISI 304

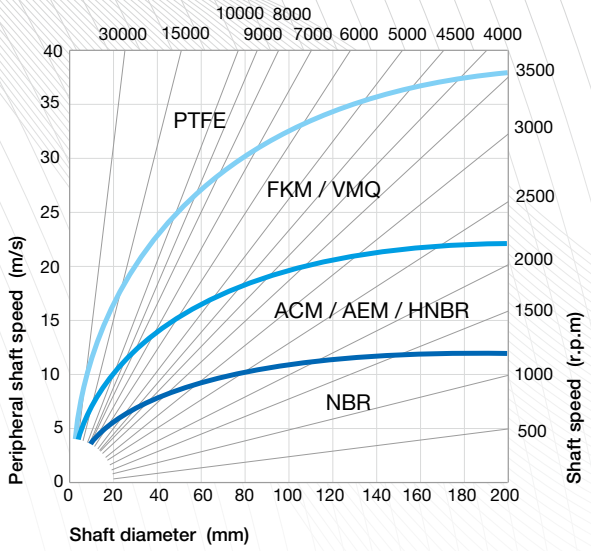
Stainless steel - AISI 316

Deflector

Felt (optional)

CONDITIONS FOR USE

Temperature	-60°C / +200°C
Pressure	50 MPa
Speed	30 m/s
Fluids	Mineral oils, synthetic oils*, other fluids* * see the Chemical Compatibility Guide



SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.1 to 0.4 µm
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

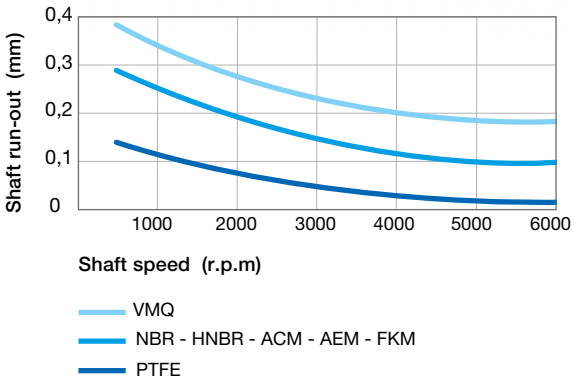
Tolerance

Tolerance	ISO h11

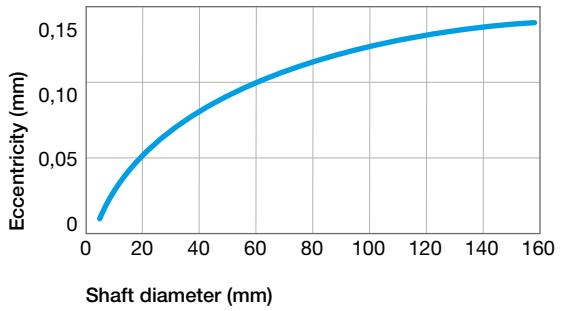
Roundness

Roundness	IT 8

Shaft run out



Eccentricity



HOUSING DESIGN

Surface roughness for BECA 804 – BECA 805

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm

Surface roughness for BECA 806

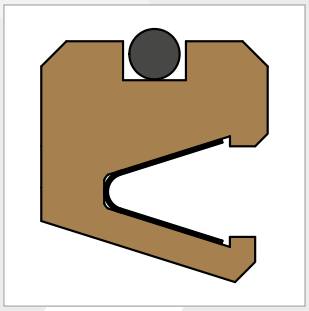
Ra	1.6 to 6.3 µm
Rz	10.0 to 25.0 µm
Rmax	≤25.0 µm

Shaft tolerance

Tolerance	ISO H8

20. PTFE shaft seals

PTFE shaft seals are machined rotary seals that are most often used when the media is very aggressive, when an increased rotation speed is required or when the amount of lubrication is insufficient.



PTFE SHAFT SEALS

BECA 860-869

DESCRIPTION

The BECA 860 profile is a filled or virgin PTFE machined shaft seal and is composed of a primary lip pre-stressed by a stainless steel V-spring for dynamic sealing and an O'Ring for static sealing.

The BECA 869 profile is specially designed for applications where the seal is in contact with food products. It is characterised by a silicone overmoulding on the inside of the seal, which completely hides the V-spring, thus preventing impurities from accumulating in this hard-to-clean area.

ADVANTAGES

Low friction coefficient; no stick-slip effect on start up

Excellent abrasion and extrusion resistance

Suitable for a wide temperature range

Excellent chemical inertia

APPLICATIONS

Food & Beverage
Medical
Pharmaceutical
General industry

MATERIALS

Profiled seal
Virgin PTFE
Carbon-filled PTFE
Metal insert
Stainless steel - AISI 316
O'Ring
NBR 70 Shore A

Other grades of materials are available. Please refer to the materials table on the next page.

TECHNICAL DATA

Temperature	-30°C / +200°C
Pressure	In dynamic applications: 15 MPa In static applications: 25 MPa
Speed	2 m/s
Media	Practically all types of fluids, and chemical and gas products

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

SURFACE ROUGHNESS

Roughness	Dynamic surface area	Static surface area	Groove flanks
Ra	0.05 - 0.2 µm	≤1.6 µm	≤3.2 µm
Rz	0.4 - 1.6 µm	≤6.3 µm	≤10.0 µm
Rmax	0.63 - 2.5 µm	≤10.0 µm	≤16.0 µm

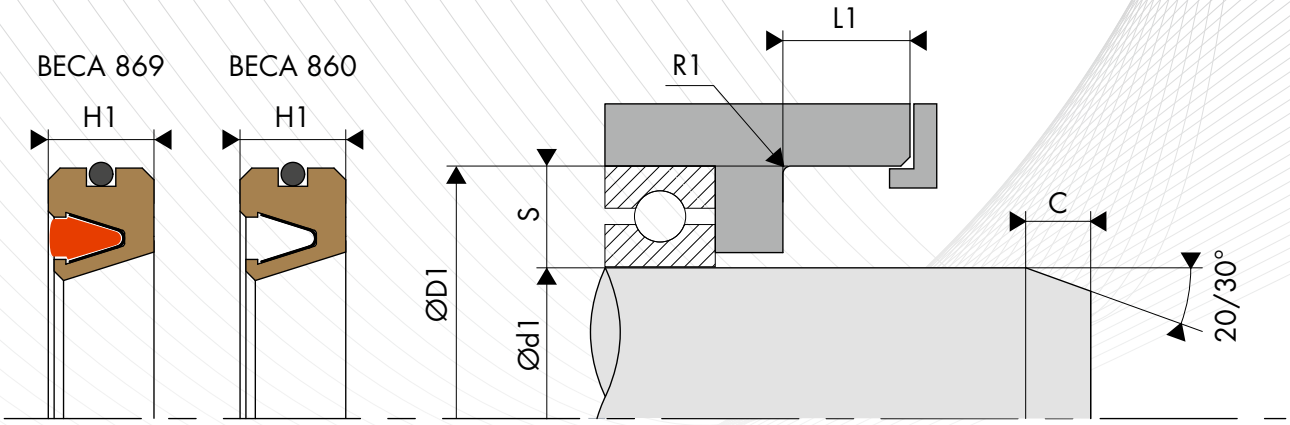
CHAMFERS AND RADIUS

Radial section S	Radius R1	Chamfer C
2.50 to 5.00	0.10	2.00
4.00 to 7.00	0.20	3.00
5.00 to 7.40	0.20	3.00
7.50 to 10.90	0.30	4.00
≥ 11.00	0.30	5.00

TABLE MATERIALS

Profiled seal					V-spring		O'Ring			Mating surface material
Standard code	ISO code	Material	Colour	Characteristics	Code	Type of material	Code	Type of material	Service temperature	
DP	P	Virgin PTFE	White	Resistance to chemical products Impermeability Dielectric Non-stick Low friction coefficient Food industry	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
							F6	VMQ 70 Shore A	-60°C/+200°C	
DC	C	PTFE + 25% Carbon	Grey	**Improvements** **• Wear properties** **• Compression set** Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
CG	C	PTFE + 23% Carbon + 2% Graphite	Black		I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
DV	V	PTFE + 25 % Glass	Blue	**Improvements** **• Wear properties** **• Mechanical strength** Slightly more abrasive, however, this is corrected by adding MOS2 Maintains its chemical and dielectric properties Well-suited to applications with rotational and simultaneous alternating movements	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
							G6	FKM 70 Shore A	-20°C/+200°C	
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey		I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
DX	X	PTFE GL Blue + Glass + Metal oxides	Turquoise blue	Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
DG	G	PTFE + 15% Graphite	Black	**Improvements** **• Wear properties** Reduced wear on metal parts Self-lubricating Thermal and electrical conductivity Low permeability Good friction coefficient Anti-static High performing in dynamic self-lubricating applications	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
K1	K	PTFE + 10% Ekonol	Light brown	**Improvements** **• Better abrasion resistance** **• Better dimensional stability at high temperatures** Use up to +300°C Good friction coefficient and low permeability	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
K2	K	PTFE + 20% Ekonol	Light brown		I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
DB	B	PTFE + 60% Bronze	Dark brown	**Improvements** **• Wear properties** **• Warping resistance and creep strength** **• Compression resistance** Self-lubricating Electrical and thermal conductivity Does not alter the metal parts Reduced hold with certain chemical products Used for high-compression dynamic seals and has a low level of wear	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
							G6	FKM 70 Shore A	-20°C/+200°C	
B4	B	PTFE + 40% Bronze	Dark brown		I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	

Other grades of materials are available depending on your specificities.



INSTALLATION DIMENSIONS

Series	Shaft diameter Ød1 f8/h9	Bore diameter ØD1 H9	Groove width L1	Radial section S
BECA 860.0	≤ 3.0	≤ 10.0	≥ 2.50	2.50 to 5.00
BECA 860.1	≤ 6.0	≤ 16.0	≥ 4.00	4.00 to 7.00
BECA 860.2	≤ 10.0	≤ 20.0	≥ 5.50	5.00 to 7.40
BECA 860.3	≤ 25.0	≤ 40.0	≥ 7.50	7.50 to 10.90
BECA 860.4	≤ 40.0	≤ 52.0	≥ 7.50	≥ 11.00

EXAMPLE OF CODIFICATION

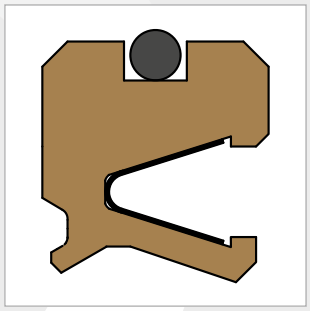
STANDARD CODIFICATION

Materials _____ : PTFE + 25% Carbon profiled seal - Code DC
_____ : NBR 70 Shore A O'Ring - Code K6
_____ **:** Stainless steel V-Shaped spring - Code I
Shaft diameter ____ : Ød1 = 26.00 mm
Housing diameter__ : ØD1 = 36.00 mm
Part number_____ : 860.3026DCI

Part number - 860.3 026 DC I

Family
Shaft diameter
Profiled seal material*
V-Shaped spring material*

* The codes that define the materials are set out in the materials table on the previous page.



PTFE SHAFT SEALS

BECA 862-869

DESCRIPTION

The BECA 862 profile is a filled or virgin PTFE machined shaft seal and is composed of a primary lip pre-stressed by a stainless steel V-spring for dynamic sealing, an anti-pollution lip and an O'Ring for static sealing.

The BECA 869 profile is specially designed for applications where the seal is in contact with food products. It is characterised by a silicone overmoulding on the inside of the seal, which completely hides the V-spring, thus preventing impurities from accumulating in this hard-to-clean area.

ADVANTAGES

Low friction coefficient; no stick-slip effect on start up

Excellent abrasion and extrusion resistance

Suitable for a wide temperature range

Excellent chemical inertia

APPLICATIONS

Food & Beverage

Medical

Pharmaceutical

General industry

MATERIALS

Profiled seal

Virgin PTFE

Carbon-filled PTFE

Metal insert

Stainless steel - AISI 316

O'Ring

NBR 70 Shore A

TECHNICAL DATA

Temperature	-30°C / +200°C
Pressure	In dynamic applications: 15 MPa In static applications: 25 MPa
Speed	2 m/s
Media	Practically all types of fluids, and chemical and gas products

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

SURFACE ROUGHNESS

Roughness	Dynamic surface area	Static surface area	Groove flanks
Ra	0.05 - 0.2 µm	≤1.6 µm	≤3.2 µm
Rz	0.4 - 1.6 µm	≤6.3 µm	≤10.0 µm
Rmax	0.63 - 2.5 µm	≤10.0 µm	≤16.0 µm

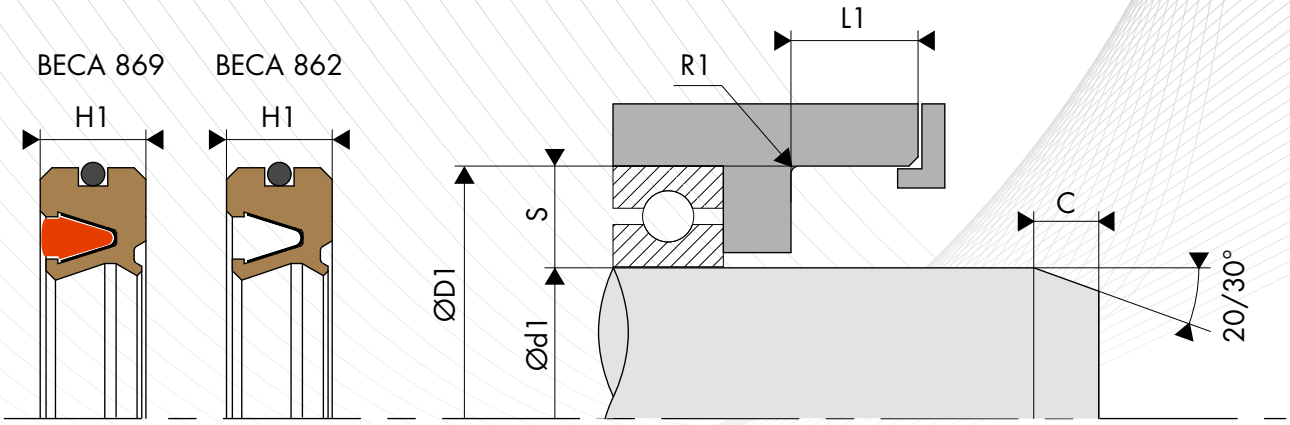
CHAMFERS AND RADIUS

Radial section S	Radius R1	Chamfer C
2.50 to 5.00	0.10	2.00
4.00 to 7.00	0.20	3.00
5.00 to 7.40	0.20	3.00
7.50 to 10.90	0.30	4.00
≥ 11.00	0.30	5.00

TABLE MATERIALS

Profiled seal					V-spring		O'Ring			Mating surface material
Standard code	ISO code	Material	Colour	Characteristics	Code	Type of material	Code	Type of material	Service temperature	
DP	P	Virgin PTFE	White	Resistance to chemical products Impermeability Dielectric Non-stick Low friction coefficient Food industry	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
							F6	VMQ 70 Shore A	-60°C/+200°C	
DC	C	PTFE + 25% Carbon	Grey	**Improvements** **• Wear properties** **• Compression set** Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
CG	C	PTFE + 23% Carbon + 2% Graphite	Black		I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
DV	V	PTFE + 25 % Glass	Blue	**Improvements** **• Wear properties** **• Mechanical strength** Slightly more abrasive, however, this is corrected by adding MOS2 Maintains its chemical and dielectric properties Well-suited to applications with rotational and simultaneous alternating movements	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
							G6	FKM 70 Shore A	-20°C/+200°C	
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey		I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
DX	X	PTFE GL Blue + Glass + Metal oxides	Turquoise blue	Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
DG	G	PTFE + 15% Graphite	Black	**Improvements** **• Wear properties** Reduced wear on metal parts Self-lubricating Thermal and electrical conductivity Low permeability Good friction coefficient Anti-static High performing in dynamic self-lubricating applications	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
K1	K	PTFE + 10% Ekonol	Light brown	**Improvements** **• Better abrasion resistance** **• Better dimensional stability at high temperatures** Use up to +300°C Good friction coefficient and low permeability	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
K2	K	PTFE + 20% Ekonol	Light brown		I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	
							C6	EPDM 70 Shore A	-45°C/+150°C	
DB	B	PTFE + 60% Bronze	Dark brown	**Improvements** **• Wear properties** **• Warping resistance and creep strength** **• Compression resistance** Self-lubricating Electrical and thermal conductivity Does not alter the metal parts Reduced hold with certain chemical products Used for high-compression dynamic seals and has a low level of wear	I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
							G6	FKM 70 Shore A	-20°C/+200°C	
B4	B	PTFE + 40% Bronze	Dark brown		I	X10 Cr Ni 18-8	K6	NBR 70 Shore A	-30°C/+100°C	
							G6	FKM 70 Shore A	-20°C/+200°C	

Other grades of materials are available depending on your specificities.



INSTALLATION DIMENSIONS

Series	Shaft diameter Ød1 f8/h9	Bore diameter ØD1 H9	Groove width L1	Radial section S
BECA 862.0	≤ 3.0	≤ 10.0	≥ 2.50	2.50 to 5.00
BECA 862.1	≤ 6.0	≤ 16.0	≥ 4.00	4.00 to 7.00
BECA 862.2	≤ 10.0	≤ 20.0	≥ 6.00	5.00 to 7.40
BECA 862.3	≤ 25.0	≤ 40.0	≥ 9.00	7.50 to 10.90
BECA 862.4	≤ 40.0	≤ 52.0	≥ 11.00	≥ 11.00

EXAMPLE OF CODIFICATION

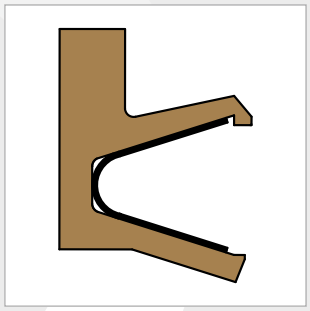
STANDARD CODIFICATION

Materials _____ : PTFE + 25% Carbon profiled seal - Code DC
_____ : NBR 70 Shore A O'Ring - Code K6
_____ : Stainless steel V-Shaped spring - Code I
Shaft diameter ____ : Ød1 = 26.00 mm
Housing diameter__ : ØD1 = 36.00 mm
Part number_____ : 862.3026DCI

Part number - 862.3 026 DC I

Family
Shaft diameter
Profiled seal material*
V-Shaped spring material*

* The codes that define the materials are set out in the materials table on the previous page.



PTFE SHAFT SEALS

BECA 880-889

DESCRIPTION

The BECA 880 profile is a machined, U-ring type filled or virgin PTFE shaft seal, pre-stressed by a stainless steel V-spring. It is generally used for helical applications.

Derived from the BECA 880 profile, the BECA 889 profile is made specially for food industry applications. It is distinguished by a silicone cord, which completely hides the V-spring, thus preventing food products from accumulating in this hard-to-clean area.

ADVANTAGES

It is suitable for static, rotating and oscillatory systems

Protects against the effects of mechanical twisting

Low friction coefficient

Excellent abrasion resistance

Suitable for a wide temperature range

Special profiles for the medical, food industry and pharmaceutical sectors

APPLICATIONS

Food & Beverage

Medical

Pharmaceutical

General industry

MATERIALS

Profiled seal

Virgin PTFE

Carbon-filled PTFE

Metal insert

Stainless steel - AISI 316

TECHNICAL DATA

Temperature	-100°C / +260°C
Pressure	In dynamic applications: 15 MPa In static applications: 25 MPa
Speed	2 m/s
Media	The majority of fluids Gaseous fluids Chemical products

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

SHAFT HARDNESS

We recommend achieving a minimum hardness of 55 HRC for the correct operation of the BECA 880 seal while rotating.

EXTRUSION GAPS

Groove width L1 min	Radial extrusion gap F/2		
	2 MPa	10 MPa	20 MPa
3.60	0.25	0.15	0.10
4.80	0.35	0.20	0.15
7.10	0.50	0.25	0.20
9.50	0.60	0.30	0.25

SURFACE ROUGHNESS

Fluids	Dynamic surface area	Static surface area	Groove flanks
High and low viscosity fluids	Ra = 0.2 µm	Ra = 0.8 µm	Ra = 0.8 µm
	Rz = 1.6 µm	Rz = 5.0 µm	Rz = 5.0 µm
	Rmax = 2.5 µm	Rmax = 6.5 µm	Rmax = 6.5 µm
Gaseous fluids	Ra = 0.1 µm	Ra = 0.3 µm	Ra = 0.3 µm
	Rz = 0.63 µm	Rz = 2.2 µm	Rz = 2.2 µm
	Rmax = 1.0 µm	Rmax = 3.5 µm	Rmax = 3.5 µm

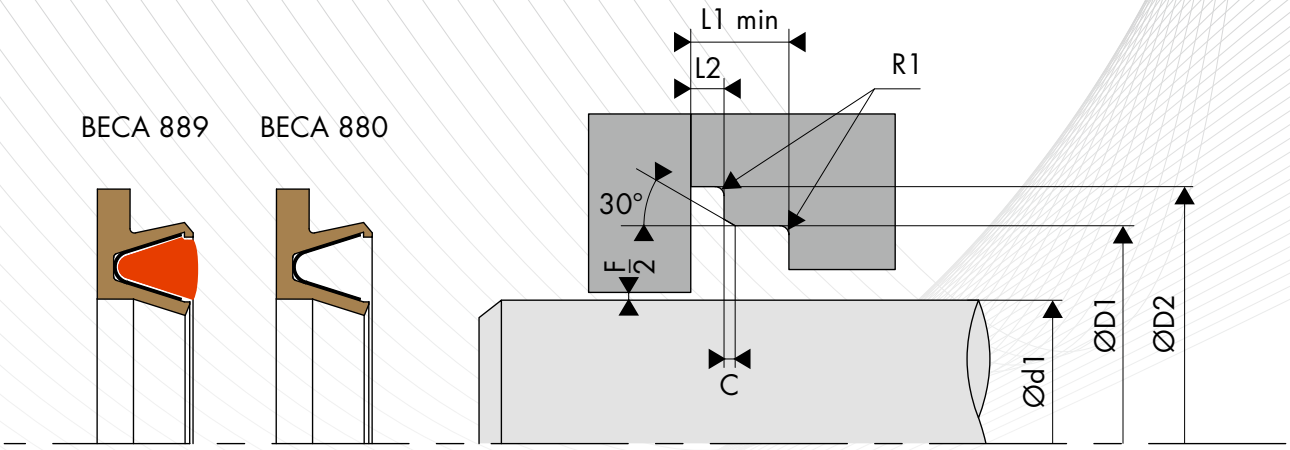
CHAMFERS AND RADIUS

Series	Chamfer C
880.1	4.50
880.2	5.00
880.3	8.00
880.4	12.00

TABLE MATERIALS

Profiled seal					V-spring			Mating surface material
Standard code	ISO code	Material	Colour	Characteristics	Code	Type of material	Service temperature	
DP	P	Virgin PTFE	White	Resistance to chemical products Impermeability Dielectric Non-stick Low friction coefficient Food industry	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
DC	C	PTFE + 25% Carbon	Grey	**Improvements** **• Wear properties** **• Compression set** Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	I	X10 Cr Ni 18-8	-200°C/+260°C	
CG	C	PTFE + 23% Carbon + 2% Graphite	Black		I	X10 Cr Ni 18-8	-200°C/+260°C	
DV	V	PTFE + 25 % Glass	Blue	**Improvements** **• Wear properties** **• Mechanical strength** Slightly more abrasive, however, this is corrected by adding MOS2 Maintains its chemical and dielectric properties Well-suited to applications with rotational and simultaneous alternating movements	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Chrome steel Cast iron
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey		I	X10 Cr Ni 18-8	-200°C/+260°C	
DX	X	PTFE GL Blue + Glass + Metal oxides	Turquoise blue	Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity	I	X10 Cr Ni 18-8	-200°C/+260°C	
DG	G	PTFE + 15% Graphite	Black	**Improvements** **• Wear properties** Reduced wear on metal parts Self-lubricating Thermal and electrical conductivity Low permeability Good friction coefficient Anti-static High performing in dynamic self-lubricating applications	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
K1	K	PTFE + 10% Ekonol	Light brown	**Improvements** **• Better abrasion resistance** **• Better dimensional stability at high temperatures** Use up to +300°C Good friction coefficient and low permeability	I	X10 Cr Ni 18-8	-200°C/+260°C	
K2	K	PTFE + 20% Ekonol	Light brown		I	X10 Cr Ni 18-8	-200°C/+260°C	
DB	B	PTFE + 60% Bronze	Dark brown	**Improvements** **• Wear properties** **• Warping resistance and creep strength** **• Compression resistance** Self-lubricating Electrical and thermal conductivity Does not alter the metal parts Reduced hold with certain chemical products Used for high-compression dynamic seals and has a low level of wear	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Chrome steel Cast iron
B4	B	PTFE + 40% Bronze	Dark brown		I	X10 Cr Ni 18-8	-200°C/+260°C	

Other grades of materials are available depending on your specificities.



INSTALLATION DIMENSIONS

Series	Rod diameter Ød1 f8/h9		Groove diameter		Groove width		Chamfer	Radius
	BECA 880 Standard range	BECA 880 Extended range	ØD1 H9	ØD2 H10	L1 min	L2	C	R
880.1	5.0 - 19.9	20.0 - 200.0	d1 + 5.00	d1 + 9.00	3.60	0.85 0/-0.10	0.80	0.30
880.2	20.0 - 39.9	20.0 - 400.0	d1 + 7.00	d1 + 12.50	4.80	1.35 0/-0.15	1.10	0.40
880.3	40.0 - 399.9	320.0 - 700.0	d1 + 10.50	d1 + 17.50	7.10	1.80 0/-0.20	1.40	0.50
880.4	400.0 - 999.9	35.0 - 999.9	d1 + 14.00	d1 + 22.00	9.50	2.80 0/-0.20	1.60	0.60

EXAMPLE OF CODIFICATION

STANDARD CODIFICATION

Materials _____ : PTFE + 25% Carbon profiled seal - Code DC
_____ : Stainless steel V-Shaped spring - Code I
Shaft diameter ____ : Ød1 + 20.00 mm
Groove diameter __ : ØD1 = 27.00 mm
Groove diameter __ : ØD2 = 32.50 mm
Part number_____ : 880.2020DCI

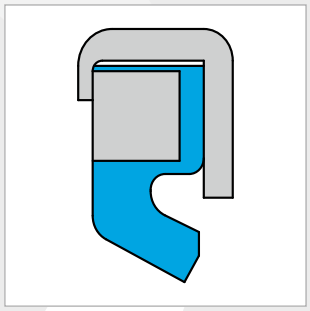
Part number - 880.2 020 DC I

Family
Shaft diameter
Profiled seal material*
V-Shaped spring material*

* The codes that define the materials are set out in the materials table on the previous page.

21. Pin dust seals

Pin dust seals are generally used as dust catchers in bucket pins in the construction industry.



PIN DUST SEALS
VAY

DESCRIPTION

The VAY profile is a pin dust seal or dust cap composed of a rubber sealing lip and a metal cage.

ADVANTAGES

It is suitable for rotating and oscillatory movements

Efficient barrier against external pollution

Easy installation with solid foundation

MATERIALS

Rubber

FKM 70 - 75 Shore A

HNBR 70 - 75 Shore A

NBR 70 - 75 Shore A

Metal cage

Steel - AISI 1010

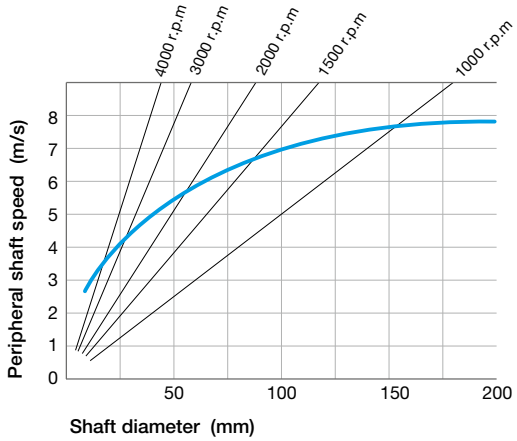
Stainless steel - AISI 304

Stainless steel - AISI 316

APPLICATIONS

Excavators

Linkage systems



CONDITIONS FOR USE

Temperature	-30°C / +200°C
Speed	8 m/s
Fluids	Grease and other high viscosity fluids* * see the Chemical Compatibility Guide

SHAFT DESIGN

Material

Recommended	Standard mechanical steels Stainless steels Sprayed carbide coatings Graphite Malleable cast iron
Not suitable	Solidified chrome coatings Plastic materials

Hardness

Rotation speed	Hardness in HRC
s ≤ 4.0 m/sec	45 HRC
4.0 < s ≤ 10.0 m/s	55 HRC
s > 10.0 m/sec	60 HRC

Surface roughness

Ra	0.2 to 0.8 µm and 0.1 for demanding applications
Rz	1.0 to 4.0 µm
Rmax	≤6.3 µm

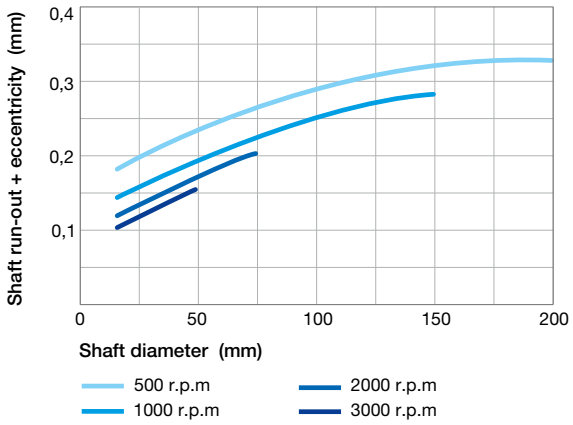
Tolerance

Tolerance	ISO h11

Roundness

Roundness	IT 8

Shaft run out and eccentricity



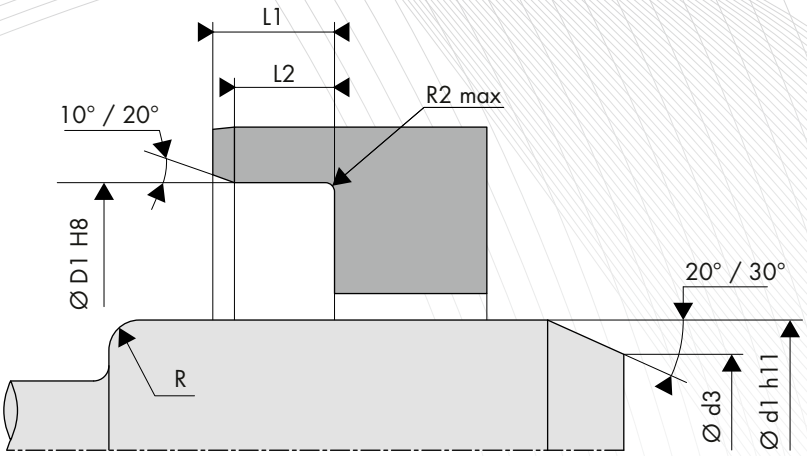
HOUSING DESIGN

Shaft tolerance

Tolerance	ISO H8

Surface roughness

Ra	0.8 to 3.2 µm
Rz	6.3 to 16.0 µm
Rmax	≤16.0 µm



DIMENSIONS

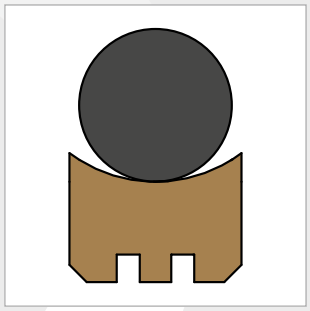
Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
VAY 30x40x4	30.00	40.00	4.00	VAY
VAY 35x45x4	35.00	45.00	4.00	VAY
VAY 38x48x4	38.00	48.00	4.00	VAY
VAY 40x50x4	40.00	50.00	4.00	VAY
VAY 45x55x4	45.00	55.00	4.00	VAY
VAY 45x56x4	45.00	56.00	4.00	VAY
VAY 50x60x4	50.00	60.00	4.00	VAY
VAY 55x68x4	55.00	68.00	4.00	VAY
VAY 60x75x4	60.00	75.00	4.00	VAY
VAY 65x80x4	65.00	80.00	4.00	VAY
VAY 68x90x4	68.00	90.00	4.00	VAY

Part number	Shaft diameter Ød1 h11	Bore diameter ØD1 H8	Seal height H1	Profile type
VAY 70x85x4	70.00	85.00	4.00	VAY
VAY 75x90x4	75.00	90.00	4.00	VAY
VAY 80x95x4	80.00	95.00	4.00	VAY
VAY 85x100x4	85.00	100.00	4.00	VAY
VAY 90x105x4	90.00	105.00	4.00	VAY
VAY 100x115x4	100.00	115.00	4.00	VAY
VAY 100x120x4	100.00	120.00	4.00	VAY
VAY 110x125x4	110.00	125.00	4.00	VAY
VAY 110x130x4	110.00	130.00	4.00	VAY
VAY 120x135x4	120.00	135.00	4.00	VAY

22. Roto-seals

Composed of a filled PTFE friction ring and an O'Ring, which guarantees pre-tightening, "roto-seals" provide reliable and long-lasting radial sealing. These radial seals have a very low friction coefficient, which ensures long-term optimal sealing.

Furthermore, "roto seals" can resist very high pressures (approximately 30 MPa), withstand sharp increases in temperature, and are completely protected from the "stick-slip" effect.



ROTO SEALS

BECA 741-743

DESCRIPTION

The BECA 741 - 743 roto seals are single or double acting rod rotary seals composed of a filled PTFE grooved friction ring and a rubber O'Ring.

ADVANTAGES

Low friction coefficient; no stick-slip effect on start up

Excellent abrasion and extrusion resistance

The grooves provide an integrated lubrication system

Excellent dimensional stability

APPLICATIONS

Rotary distributors

Handlers

Hydraulic motors

MATERIALS

Friction ring

Bronze-filled PTFE

Carbon-filled PTFE

Virgin PTFE

O'Ring

NBR 70 Shore A

FKM 70 Shore A

TECHNICAL DATA

Temperature	-30°C / +200°C
Pressure	30 MPa
Speed	2 m/s
Media	Mineral hydraulic oils Fire-resistant liquids Biocompatible fluids Water Others (contact our experts)

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

EXTRUSION GAPS

Radial section S	Radial gap F/2	
	10 MPa	20 MPa
2.45	0.15	0.10
3.75	0.20	0.15
5.50	0.25	0.20
7.75	0.30	0.25
10.50	0.30	0.25
14.00	0.45	0.30

SURFACE ROUGHNESS

Roughness	Dynamic surface area	Static surface area
Ra	0.05 - 0.2 µm	≤1.6 µm
Rz	0.4 - 1.6 µm	≤10.0 µm
Rmax	0.63 - 2.5 µm	≤16.0 µm

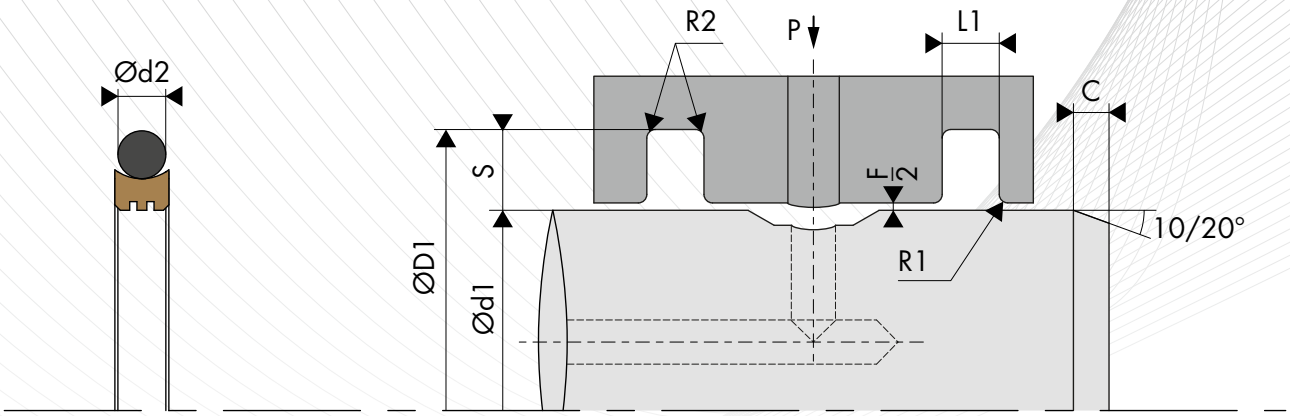
CHAMFERS AND RADIUS

Radial section S	Radius R1	Radius R2	Chamfer C
2.45	0.20	0.40	2.00
3.75	0.20	0.60	2.50
5.50	0.20	1.00	3.50
7.75	0.20	1.30	5.00
10.50	0.20	1.80	6.50
14.00	0.20	2.50	17.50

TABLE MATERIALS

Friction ring					O'Ring			Mating surface material
Standard code	ISO code	Material	Colour	Characteristics	Code	Type of material	Service temperature	
DP	P	Virgin PTFE	White	Resistance to chemical products Impermeability Dielectric Non-stick Low friction coefficient Food industry	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
					F6	VMQ 70 Shore A	-60°C/+200°C	
DC	C	PTFE + 25% Carbon	Grey	**Improvements** **• Wear properties** **• Compression set** Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
CG	C	PTFE + 23% Carbon + 2% Graphite	Black		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
DV	V	PTFE + 25 % Glass	Blue	**Improvements** **• Wear properties** **• Mechanical strength** Slightly more abrasive, however, this is corrected by adding MOS2 Maintains its chemical and dielectric properties Well-suited to applications with rotational and simultaneous alternating movements	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
					G6	FKM 70 Shore A	-20°C/+200°C	
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
DX	X	PTFE GL Blue + Glass + Metal oxides	Turquoise blue	Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
DG	G	PTFE + 15% Graphite	Black	**Improvements** **• Wear properties** Reduced wear on metal parts Self-lubricating Thermal and electrical conductivity Low permeability Good friction coefficient Anti-static High performing in dynamic self-lubricating applications	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
K1	K	PTFE + 10% Ekonol	Light brown	**Improvements** **• Better abrasion resistance** **• Better dimensional stability at high temperatures** Use up to +300°C Good friction coefficient and low permeability	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
K2	K	PTFE + 20% Ekonol	Light brown		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
DB	B	PTFE + 60% Bronze	Dark brown	**Improvements** **• Wear properties** **• Warping resistance and creep strength** **• Compression resistance** Self-lubricating Electrical and thermal conductivity Does not alter the metal parts Reduced hold with certain chemical products Used for high-compression dynamic seals and has a low level of wear	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
					G6	FKM 70 Shore A	-20°C/+200°C	
B4	B	PTFE + 40% Bronze	Dark brown		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	

Other grades of materials are available depending on your specificities.



INSTALLATION DIMENSIONS

Rod diameter Ød1 f8/h9		Groove diameter	Groove width	Radial section	O'Ring cross-section	Number of grooves
BECA 743 Standard range	BECA 741 Heavy-duty range	ØD1 H9	L1 0/+0.20	S	Ød2	
6.0 - 18.9	---	d1 + 4.90	2.20	2.45	1.78	1
19.0 - 37.9	6.0 - 18.9	d1 + 7.50	3.20	3.75	2.62	1
38.0 - 199.9	19.0 - 37.9	d1 + 11.00	4.20	5.50	3.53	2
200.0 - 255.9	38.0 - 199.9	d1 + 15.50	6.30	7.75	5.33	2
256.0 - 649.9	200.0 - 255.9	d1 + 21.00	8.10	10.50	6.99	2
650.0 - 999.9	256.0 - 649.9	d1 + 28.00	9.50	14.00	8.40	2

For special applications > 30 MPa, we recommend using an H8/f8 tolerance (groove/rod) or selecting other, more suitable materials. Please contact our experts.

EXAMPLE OF CODIFICATION

STANDARD CODIFICATION

Materials _____ : Friction ring, PTFE + 60% Bronze - Code DB
_____ : NBR 70 Shore A O'Ring - Code K6
Rod diameter _____ : Ød1 + 50.00 mm
Groove diameter __ : ØD1 = 65.50 mm
Part number _____ : 741. 050DBK6

Part number 741. 050 DB K6

Family
Rod diameter
Friction ring material*
O'Ring material*

* The codes that define the materials are set out in the materials table on the previous page.

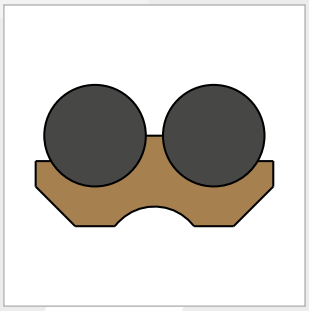
DIMENSIONS

Part number	Shaft diameter Ød1 f8/h9	Bore diameter ØD1 H9	Groove width L1 0/+0.20
743.006	**6.00**	**10.90**	**2.20**
741.006	**6.00**	**13.50**	**3.20**
743.008	**8.00**	**12.90**	**2.20**
741.008	**8.00**	**15.50**	**3.20**
743.010	**10.00**	**14.90**	**2.20**
741.010	**10.00**	**17.50**	**3.20**
743.012	**12.00**	**16.90**	**2.20**
741.012	**12.00**	**19.50**	**3.20**
743.014	**14.00**	**18.90**	**2.20**
741.014	**14.00**	**21.50**	**3.20**
743.015	15.00	19.90	2.20
741.015	15.00	22.50	3.20
743.016	**16.00**	**20.90**	**2.20**
741.016	**16.00**	**23.50**	**3.20**
743.018	**18.00**	**22.90**	**2.20**
741.018	**18.00**	**25.50**	**3.20**
743.020	**20.00**	**27.50**	**3.20**
741.020	**20.00**	**31.00**	**4.20**
743.022	**22.00**	**29.50**	**3.20**
741.022	**22.00**	**33.00**	**4.20**
743.025	**25.00**	**32.50**	**3.20**
741.025	**25.00**	**36.00**	**4.20**
743.028	**28.00**	**35.50**	**3.20**
741.028	**28.00**	**39.00**	**4.20**
743.030	30.00	37.50	3.20
741.030	30.00	41.00	4.20
743.032	**32.00**	**39.50**	**3.20**
741.032	**32.00**	**43.00**	**4.20**
743.035	35.00	42.50	3.20
741.035	35.00	46.00	4.20
743.036	**36.00**	**43.50**	**3.20**
741.036	**36.00**	**47.00**	**4.20**
743.038	38.00	49.00	4.20
741.038	38.00	53.50	6.30
743.040	**40.00**	**51.00**	**4.20**
741.040	**40.00**	**55.50**	**6.30**
743.042	42.00	53.00	4.20
741.042	42.00	57.50	6.30
743.045	**45.00**	**56.00**	**4.20**
741.045	**45.00**	**60.50**	**6.30**
743.048	48.00	59.00	4.20
741.048	48.00	63.50	6.30
743.050	**50.00**	**61.00**	**4.20**
741.050	**50.00**	**65.50**	**6.30**
743.052	52.00	63.00	4.20
741.052	52.00	67.50	6.30
743.055	55.00	66.00	4.20
741.055	55.00	70.50	6.30
743.056	**56.00**	**67.00**	**4.20**
741.056	**56.00**	**71.50**	**6.30**
743.058	58.00	69.00	4.20
741.058	58.00	73.50	6.30
743.060	60.00	71.00	4.20
741.060	60.00	75.50	6.30
743.062	62.00	73.00	4.20
741.062	62.00	77.50	6.30
743.063	**63.00**	**74.00**	**4.20**
741.063	**63.00**	**78.50**	**6.30**
743.065	65.00	76.00	4.20
741.065	65.00	80.50	6.30
743.068	68.00	79.00	4.20
741.068	68.00	83.50	6.30
743.070	**70.00**	**81.00**	**4.20**
741.070	**70.00**	**85.50**	**6.30**
743.075	75.00	86.00	4.20
741.075	75.00	90.50	6.30
743.080	**80.00**	**91.00**	**4.20**
741.080	**80.00**	**95.50**	**6.30**
743.085	85.00	96.00	4.20
741.085	85.00	100.50	6.30
743.090	**90.00**	**101.00**	**4.20**
741.090	**90.00**	**105.50**	**6.30**
743.095	95.00	106.00	4.20
741.095	95.00	110.50	6.30
743.100	**100.00**	**111.00**	**4.20**
741.100	**100.00**	**115.50**	**6.30**
743.105	105.00	116.00	4.20
741.105	105.00	120.50	6.30
743.110	**110.00**	**121.00**	**4.20**
741.110	**110.00**	**125.50**	**6.30**
743.115	115.00	126.00	4.20
741.115	115.00	130.50	6.30
743.120	120.00	131.00	4.20
741.120	120.00	135.50	6.30
743.125	**125.00**	**136.00**	**4.20**
741.125	**125.00**	**140.50**	**6.30**
743.130	130.00	141.00	4.20
741.130	130.00	145.50	6.30
743.135	135.00	146.00	4.20
741.135	135.00	150.50	6.30
743.140	**140.00**	**151.00**	**4.20**
741.140	**140.00**	**155.50**	**6.30**
743.145	145.00	156.00	4.20
741.145	145.00	160.50	6.30
743.150	150.00	161.00	4.20
741.150	150.00	165.50	6.30
743.155	155.00	166.00	4.20
741.155	155.00	170.50	6.30
743.160	**160.00**	**171.00**	**4.20**
741.160	**160.00**	**175.50**	**6.30**
743.165	165.00	176.00	4.20
741.165	165.00	180.50	6.30
743.170	**170.00**	**181.00**	**4.20**
741.170	**170.00**	**185.50**	**6.30**
743.175	175.00	186.00	4.20
741.175	175.00	190.50	6.30
743.180	**180.00**	**191.00**	**4.20**
741.180	**180.00**	**195.50**	**6.30**
743.185	185.00	196.00	4.20
741.185	185.00	200.50	6.30
743.190	190.00	201.00	4.20
741.190	190.00	205.50	6.30
743.195	195.00	206.00	4.20
741.195	195.00	210.50	6.30
743.200	**200.00**	**215.50**	**6.30**
741.200	**200.00**	**221.00**	**8.10**
743.205	205.00	220.50	6.30
741.205	205.00	226.00	8.10
743.210	210.00	225.50	6.30
741.210	210.00	231.00	8.10
743.215	215.00	230.50	6.30
741.215	215.00	236.00	8.10
743.220	**220.00**	**235.50**	**6.30**
741.220	**220.00**	**241.00**	**8.10**
743.230	230.00	245.50	6.30
741.230	230.00	251.00	8.10

Part number	Shaft diameter Ød1 f8/h9	Bore diameter ØD1 H9	Groove width L1 0/+0.20
743.240	240.00	255.50	6.30
741.240	240.00	261.00	8.10
743.250	**250.00**	**265.50**	**6.30**
741.250	**250.00**	**271.00**	**8.10**
743.260	260.00	281.00	8.10
741.260	260.00	288.00	9.50
743.270	270.00	291.00	8.10
741.270	270.00	298.00	9.50
743.280	**280.00**	**301.00**	**8.10**
741.280	**280.00**	**308.00**	**9.50**
743.290	290.00	311.00	8.10
741.290	290.00	318.00	9.50
743.300	300.00	321.00	8.10
741.300	300.00	328.00	9.50
743.310	310.00	331.00	8.10
741.310	310.00	338.00	9.50
743.320	**320.00**	**341.00**	**8.10**
741.320	**320.00**	**348.00**	**9.50**
743.330	330.00	351.00	8.10
741.330	330.00	358.00	9.50
743.340	340.00	361.00	8.10
741.340	340.00	368.00	9.50
743.350	350.00	371.00	8.10
741.350	350.00	378.00	9.50
743.360	**360.00**	**381.00**	**8.10**
741.360	**360.00**	**388.00**	**9.50**
743.370	370.00	391.00	8.10
741.370	370.00	398.00	9.50

Part number	Shaft diameter Ød1 f8/h9	Bore diameter ØD1 H9	Groove width L1 0/+0.20
743.380	380.00	401.00	8.10
741.380	380.00	408.00	9.50
743.390	390.00	411.00	8.10
741.390	390.00	418.00	9.50
743.400	400.00	421.00	8.10
741.400	400.00	428.00	9.50
743.450	450.00	471.00	8.10
741.450	450.00	478.00	9.50
743.500	500.00	521.00	8.10
741.500	500.00	528.00	9.50
743.550	550.00	571.00	8.10
741.550	550.00	578.00	9.50
743.600	600.00	621.00	8.10
741.600	600.00	628.00	9.50
743.650	650.00	678.00	9.50
741.650	650.00	678.00	9.50
743.700	700.00	728.00	9.50
741.700	700.00	728.00	9.50
743.750	750.00	778.00	9.50
741.750	750.00	778.00	9.50
743.800	800.00	828.00	9.50
741.800	800.00	828.00	9.50
743.850	850.00	878.00	9.50
741.850	850.00	878.00	9.50
743.900	900.00	928.00	9.50
741.900	900.00	928.00	9.50
743.950	950.00	978.00	9.50
741.950	950.00	978.00	9.50

The figures highlighted in bold correspond to the rod diameters that are recommended by standard ISO 3320. Other intermediate sizes can be provided.



ROTO SEALS

BECA 745-747

DESCRIPTION

The BECA 745 - 747 roto seals are single or double acting rod rotary seals composed of a filled PTFE grooved friction ring and two rubber O'Rings.

ADVANTAGES

Low friction coefficient; no stick-slip effect on start up

Excellent abrasion and extrusion resistance

The grooves provide an integrated lubrication system

Excellent dimensional stability

APPLICATIONS

Rotary distributors

Handlers

Hydraulic motors

MATERIALS

Friction ring

Bronze-filled PTFE

Carbon-filled PTFE

Virgin PTFE

O'Rings

NBR 70 Shore A

FKM 70 Shore A

TECHNICAL DATA

Temperature	-30°C / +200°C
Pressure	30 MPa
Speed	2 m/s
Media	Mineral hydraulic oils Fire-resistant liquids Biocompatible fluids Water Others (contact our experts)

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

EXTRUSION GAPS

Radial section S	Radial gap F/2	
	10 MPa	20 MPa
2.45	0.15	0.10
3.75	0.20	0.15
5.50	0.25	0.20
7.75	0.30	0.25
10.50	0.30	0.25
14.00	0.45	0.30

SURFACE ROUGHNESS

Roughness	Dynamic surface area	Static surface area
Ra	0.05 - 0.2 µm	≤1.6 µm
Rz	0.4 - 1.6 µm	≤10.0 µm
Rmax	0.63 - 2.5 µm	≤16.0 µm

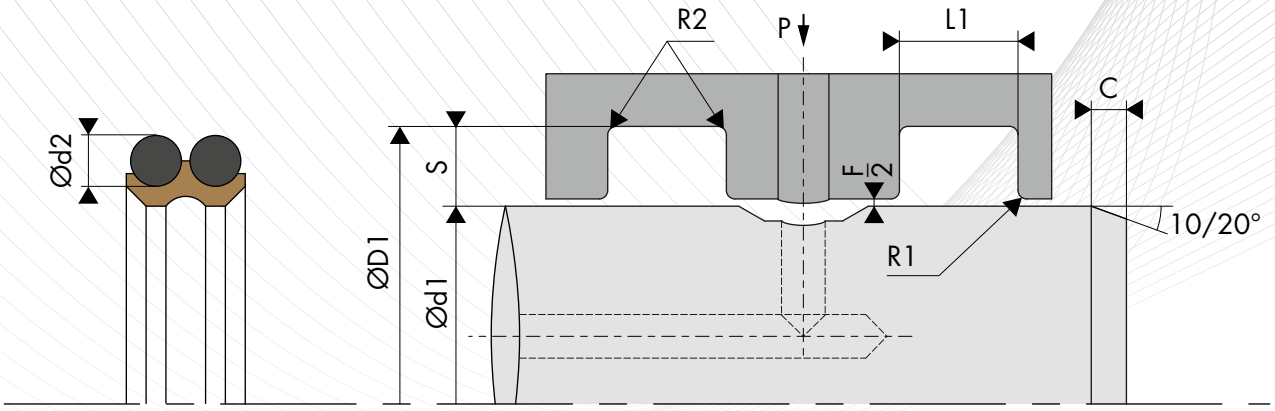
CHAMFERS AND RADIUS

Radial section S	Radius R1	Radius R2	Chamfer C
2.45	0.20	0.40	2.00
3.75	0.20	0.60	2.50
5.50	0.20	1.00	3.50
7.75	0.20	1.30	5.00
10.50	0.20	1.80	6.50
14.00	0.20	2.50	17.50

TABLE MATERIALS

Friction ring					O'Rings			Mating surface material
Standard code	ISO code	Material	Colour	Characteristics	Code	Type of material	Service temperature	
DP	P	Virgin PTFE	White	Resistance to chemical products Impermeability Dielectric Non-stick Low friction coefficient Food industry	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
					F6	VMQ 70 Shore A	-60°C/+200°C	
DC	C	PTFE + 25% Carbon	Grey	**Improvements** **• Wear properties** **• Compression set** Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
CG	C	PTFE + 23% Carbon + 2% Graphite	Black		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
DV	V	PTFE + 25 % Glass	Blue	**Improvements** **• Wear properties** **• Mechanical strength** Slightly more abrasive, however, this is corrected by adding MOS2 Maintains its chemical and dielectric properties Well-suited to applications with rotational and simultaneous alternating movements	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
					G6	FKM 70 Shore A	-20°C/+200°C	
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
DX	X	PTFE GL Blue + Glass + Metal oxides	Turquoise blue	Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
DG	G	PTFE + 15% Graphite	Black	**Improvements** **• Wear properties** Reduced wear on metal parts Self-lubricating Thermal and electrical conductivity Low permeability Good friction coefficient Anti-static High performing in dynamic self-lubricating applications	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
K1	K	PTFE + 10% Ekonol	Light brown	**Improvements** **• Better abrasion resistance** **• Better dimensional stability at high temperatures** Use up to +300°C Good friction coefficient and low permeability	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
K2	K	PTFE + 20% Ekonol	Light brown		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
DB	B	PTFE + 60% Bronze	Dark brown	**Improvements** **• Wear properties** **• Warping resistance and creep strength** **• Compression resistance** Self-lubricating Electrical and thermal conductivity Does not alter the metal parts Reduced hold with certain chemical products Used for high-compression dynamic seals and has a low level of wear	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
					G6	FKM 70 Shore A	-20°C/+200°C	
B4	B	PTFE + 40% Bronze	Dark brown		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	

Other grades of materials are available depending on your specificities.



INSTALLATION DIMENSIONS

Rod diameter Ød1 f8/h9		Groove diameter ØD1 H9					Groove width	O'Rings cross-section
BECA 745 Standard range	BECA 747 Heavy-duty range	v < 0.2 p < 2.5	0.2 < v < 0.5 2.5 < p < 5.0	0.5 < v < 1.0 5.0 < p < 25.0	1.0 < v < 2.0 25.0 < p < 40.0	2.0 < v < 5.0 40.0 < p < 50.0	L1 0/+0.20	Ød2
6.0 - 18.9	---	d1 + 4.20	d1 + 4.40	d1 + 4.50	d1 + 4.60	d1 + 4.70	4.30	1.78
19.0 - 37.9	6.0 - 18.9	d1 + 6.20	d1 + 6.40	d1 + 6.60	d1 + 6.80	d1 + 6.90	6.30	2.62
38.0 - 199.9	19.0 - 37.9	d1 + 8.40	d1 + 8.60	d1 + 8.90	d1 + 9.10	d1 + 9.30	8.50	3.53
200.0 - 255.9	38.0 - 199.9	d1 + 12.70	d1 + 13.00	d1 + 13.40	d1 + 13.80	d1 + 14.00	12.90	5.33
256.0 - 649.9	200.0 - 255.9	d1 + 16.60	d1 + 17.00	d1 + 17.50	d1 + 18.00	d1 + 18.30	16.90	6.99

The speed "v" is expressed in m/s
The pressure "p" is expressed in MPa
For special applications > 40 MPa, we recommend using an H8/f8 tolerance (bore/groove) or selecting other, more suitable materials. Please contact our experts.

EXAMPLE OF CODIFICATION

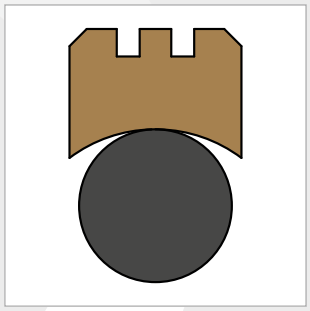
STANDARD CODIFICATION

Materials _____ : Friction ring, PTFE + 60% Bronze - Code DB
_____ : NBR 70 Shore A O'Rings - Code K6
Rod diameter _____ : Ød1 = 50.00 mm
Groove diameter __ : ØD1 = 58.40 mm
Part number_____ : 745. 050DBK6

Part number - 745. 050 DB K6

- 745. — Family
- 050 — Rod diameter
- DB — Friction ring material*
- K6 — O'Ring materials*

* The codes that define the materials are set out in the materials table on the previous page.



ROTO SEALS

BECA 841-843

DESCRIPTION

The BECA 841 - 843 roto seals are single or double acting piston rotary seals composed of a filled PTFE grooved friction ring and a rubber O'Ring.

ADVANTAGES

Low friction coefficient; no stick-slip effect on start up

Excellent abrasion and extrusion resistance

The grooves provide an integrated lubrication system

Excellent dimensional stability

APPLICATIONS

Rotary distributors

Handlers

Hydraulic motors

MATERIALS

Friction ring

Bronze-filled PTFE

Carbon-filled PTFE

Virgin PTFE

O'Ring

NBR 70 Shore A

FKM 70 Shore A

TECHNICAL DATA

Temperature	-30°C / +200°C
Pressure	30 MPa
Speed	2 m/s
Media	Mineral hydraulic oils Fire-resistant liquids Biocompatible fluids Water Others (contact our experts)

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

EXTRUSION GAPS

Radial section S	Radial gap F/2	
	10 MPa	20 MPa
2.45	0.15	0.10
3.75	0.20	0.15
5.50	0.25	0.20
7.75	0.30	0.25
10.50	0.30	0.25
14.00	0.45	0.30

SURFACE ROUGHNESS

Roughness	Dynamic surface area	Static surface area
Ra	0.05 - 0.2 µm	≤1.6 µm
Rz	0.4 - 1.6 µm	≤10.0 µm
Rmax	0.63 - 2.5 µm	≤16.0 µm

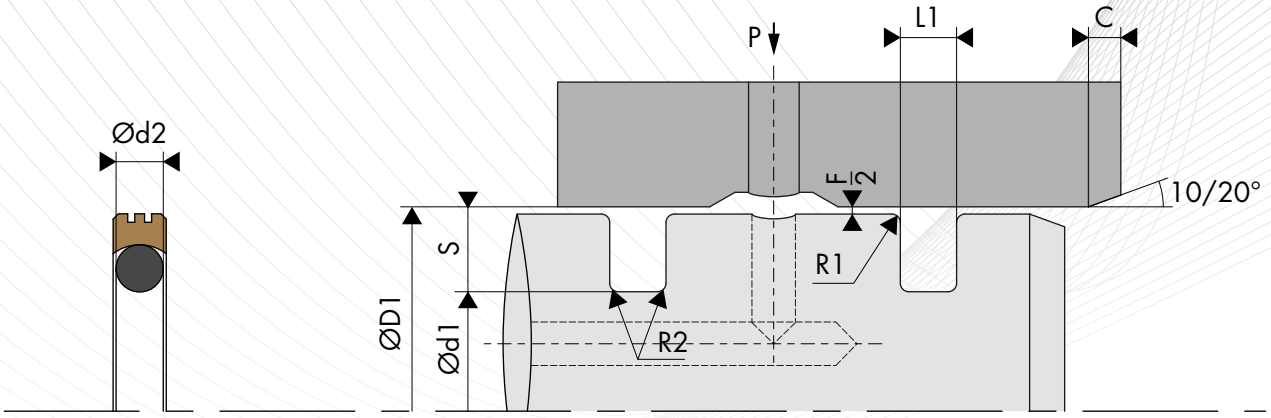
CHAMFERS AND RADIUS

Radial section S	Radius R1	Radius R2	Chamfer C
2.45	0.20	0.40	2.00
3.75	0.20	0.60	2.50
5.50	0.20	1.00	3.50
7.75	0.20	1.30	5.00
10.50	0.20	1.80	6.50
14.00	0.20	2.50	17.50

TABLE MATERIALS

Friction ring					O'Ring			Mating surface material
Standard code	ISO code	Material	Colour	Characteristics	Code	Type of material	Service temperature	
DP	P	Virgin PTFE	White	Resistance to chemical products Impermeability Dielectric Non-stick Low friction coefficient Food industry	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
					F6	VMQ 70 Shore A	-60°C/+200°C	
DC	C	PTFE + 25% Carbon	Grey	**Improvements** **• Wear properties** **• Compression set** Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
CG	C	PTFE + 23% Carbon + 2% Graphite	Black		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
DV	V	PTFE + 25 % Glass	Blue	**Improvements** **• Wear properties** **• Mechanical strength** Slightly more abrasive, however, this is corrected by adding MOS2 Maintains its chemical and dielectric properties Well-suited to applications with rotational and simultaneous alternating movements	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
					G6	FKM 70 Shore A	-20°C/+200°C	
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
DX	X	PTFE GL Blue + Glass + Metal oxides	Turquoise blue	Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
DG	G	PTFE + 15% Graphite	Black	**Improvements** **• Wear properties** Reduced wear on metal parts Self-lubricating Thermal and electrical conductivity Low permeability Good friction coefficient Anti-static High performing in dynamic self-lubricating applications	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
K1	K	PTFE + 10% Ekonol	Light brown	**Improvements** **• Better abrasion resistance** **• Better dimensional stability at high temperatures** Use up to +300°C Good friction coefficient and low permeability	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
K2	K	PTFE + 20% Ekonol	Light brown		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
DB	B	PTFE + 60% Bronze	Dark brown	**Improvements** **• Wear properties** **• Warping resistance and creep strength** **• Compression resistance** Self-lubricating Electrical and thermal conductivity Does not alter the metal parts Reduced hold with certain chemical products Used for high-compression dynamic seals and has a low level of wear	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
					G6	FKM 70 Shore A	-20°C/+200°C	
B4	B	PTFE + 40% Bronze	Dark brown		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
HG	HG	PE-UHMW	White or off-white	Excellent wear resistance on contact with water and air	K6	NBR 70 Shore A	-30°C/+80°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
PU	U	Polyurethane	Blue	Strong mechanical resistance Good resistance to wear and abrasion High elasticity modulus Good flexibility Very good resistance to ozone and oxidation	K6	NBR 70 Shore A	-30°C/+90°C	
PUHT	U	High-temperature polyurethane	White or off-white		K6	NBR 70 Shore A	-30°C/+100°C	

Other grades of materials are available depending on your specificities.



INSTALLATION DIMENSIONS

Bore diameter ØD1 H9		Groove diameter	Groove width	Radial section	O'Ring cross-section	Number of grooves
BECA 843 Standard range	BECA 841 Heavy-duty range	Ød1 h9	L1 0/+0.20	S	Ød2	
8.0 - 39.9	---	D1 - 4.90	2.20	2.45	1.78	1
40.0 - 79.9	14.0 - 39.9	D1 - 7.50	3.20	3.75	2.62	1
80.0 - 132.9	40.0 - 79.9	D1 - 11.00	4.20	5.50	3.53	2
133.0 - 329.9	80.0 - 132.9	D1 - 15.50	6.30	7.75	5.33	2
330.0 - 669.9	133.0 - 329.9	D1 - 21.00	8.10	10.50	6.99	2
670.0 - 999.9	330.0 - 669.9	D1 - 28.00	9.50	14.00	8.40	2

For special applications > 30 MPa, we recommend using an H8/f8 tolerance (bore/groove) or selecting other, more suitable materials. Please contact our experts.

EXAMPLE OF CODIFICATION

STANDARD CODIFICATION

Materials _____ : Friction ring, PTFE + 60% Bronze - Code DB
_____ : NBR 70 Shore A O'Ring - Code K6
Bore diameter ____ : ØD1 = 50.00 mm
Groove diameter __ : Ød1 = 42.50 mm
Part number_____ : 843. 050DBK6

Part number - 843. 050 DB K6

Family
Rod diameter
Friction ring material*
O'Ring material*

* The codes that define the materials are set out in the materials table on the previous page.

DIMENSIONS

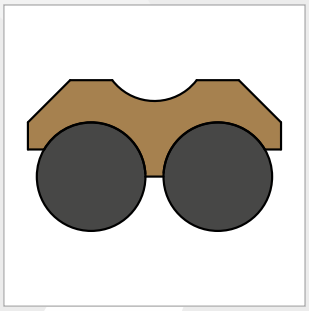
Part number	Bore diameter Ød1 H9	Groove diameter Ød1 h9	Groove width L1 0/+0.20
843.008	**8.00**	**3.10**	**2.20**
843.009	9.00	4.10	2.20
843.010	**10.00**	**5.10**	**2.20**
843.012	**12.00**	**7.10**	**2.20**
841.014	14.00	6.50	3.20
843.014	14.00	9.10	2.20
841.015	15.00	7.50	3.20
843.015	15.00	10.10	2.20
841.016	**16.00**	**8.50**	**3.20**
843.016	**16.00**	**11.10**	**2.20**
841.018	18.00	10.50	3.20
843.018	18.00	13.10	2.20
841.020	**20.00**	**12.50**	**3.20**
843.020	**20.00**	**15.10**	**2.20**
841.022	22.00	14.50	3.20
843.022	22.00	17.10	2.20
841.025	**25.00**	**17.50**	**3.20**
843.025	**25.00**	**20.10**	**2.20**
841.028	28.00	20.50	3.20
843.028	28.00	23.10	2.20
841.030	**30.00**	**22.50**	**3.20**
843.030	**30.00**	**25.10**	**2.20**
841.032	32.00	24.50	3.20
843.032	32.00	27.10	2.20
841.035	35.00	27.50	3.20
843.035	35.00	30.10	2.20
841.038	38.00	30.50	3.20
843.038	38.00	33.10	2.20
841.040	**40.00**	**29.00**	**4.20**
843.040	**40.00**	**32.50**	**3.20**
841.042	42.00	31.00	4.20
843.042	42.00	34.50	3.20
841.045	45.00	34.00	4.20
843.045	45.00	37.50	3.20
841.048	48.00	37.00	4.20
843.048	48.00	40.50	3.20
841.050	**50.00**	**39.00**	**4.20**
843.050	**50.00**	**42.50**	**3.20**
841.052	52.00	41.00	4.20
843.052	52.00	44.50	3.20
841.055	55.00	44.00	4.20
843.055	55.00	47.50	3.20
841.058	58.00	47.00	4.20
843.058	58.00	50.50	3.20
841.060	60.00	49.00	4.20
843.060	60.00	52.50	3.20
841.062	62.00	51.00	4.20
843.062	62.00	54.50	3.20
841.063	**63.00**	**52.00**	**4.20**
843.063	**63.00**	**55.50**	**3.20**
841.065	65.00	54.00	4.20
843.065	65.00	57.50	3.20
841.070	70.00	59.00	4.20
843.070	70.00	62.50	3.20
841.072	72.00	61.00	4.20
843.072	72.00	64.50	3.20
841.075	75.00	64.00	4.20
843.075	75.00	67.50	3.20
841.078	78.00	67.00	4.20
843.078	78.00	70.50	3.20
841.080	**80.00**	**64.50**	**6.30**
843.080	**80.00**	**69.00**	**4.20**

Part number	Bore diameter Ød1 H9	Groove diameter Ød1 h9	Groove width L1 0/+0.20
841.082	82.00	66.50	6.30
843.082	82.00	71.00	4.20
841.085	85.00	69.50	6.30
843.085	85.00	74.00	4.20
841.090	**90.00**	**74.50**	**6.30**
843.090	**90.00**	**79.00**	**4.20**
841.095	95.00	79.50	6.30
843.095	95.00	84.00	4.20
841.100	**100.00**	**84.50**	**6.30**
843.100	**100.00**	**89.00**	**4.20**
841.105	105.00	89.50	6.30
843.105	105.00	94.00	4.20
841.110	**110.00**	**94.50**	**6.30**
843.110	**110.00**	**99.00**	**4.20**
841.115	115.00	99.50	6.30
843.115	115.00	104.00	4.20
841.120	120.00	104.50	6.30
843.120	120.00	109.00	4.20
841.125	**125.00**	**109.50**	**6.30**
843.125	**125.00**	**114.00**	**4.20**
841.130	130.00	114.50	6.30
843.130	130.00	119.00	4.20
841.135	135.00	114.00	8.10
843.135	135.00	119.50	6.30
841.140	**140.00**	**119.00**	**8.10**
843.140	**140.00**	**124.50**	**6.30**
841.145	145.00	124.00	8.10
843.145	145.00	129.50	6.30
841.150	150.00	129.00	8.10
843.150	150.00	134.50	6.30
841.155	155.00	134.00	8.10
843.155	155.00	139.50	6.30
841.160	**160.00**	**139.00**	**8.10**
843.160	**160.00**	**144.50**	**6.30**
841.165	165.00	144.00	8.10
843.165	165.00	149.50	6.30
841.170	170.00	149.00	8.10
843.170	170.00	154.50	6.30
841.175	175.00	154.00	8.10
843.175	175.00	159.50	6.30
841.180	**180.00**	**159.00**	**8.10**
843.180	**180.00**	**164.50**	**6.30**
841.190	190.00	169.00	8.10
843.190	190.00	174.50	6.30
841.200	**200.00**	**179.00**	**8.10**
843.200	**200.00**	**184.50**	**6.30**
841.210	210.00	189.00	8.10
843.210	210.00	194.50	6.30
841.220	**220.00**	**199.00**	**8.10**
843.220	**220.00**	**204.50**	**6.30**
841.230	230.00	209.00	8.10
843.230	230.00	214.50	6.30
841.240	240.00	219.00	8.10
843.240	240.00	224.50	6.30
841.250	**250.00**	**229.00**	**8.10**
843.250	**250.00**	**234.50**	**6.30**
841.260	260.00	239.00	8.10
843.260	260.00	244.50	6.30
841.270	270.00	249.00	8.10
843.270	270.00	254.50	6.30
841.280	**280.00**	**259.00**	**8.10**
843.280	**280.00**	**264.50**	**6.30**

Part number	Bore diameter Ød1 H9	Groove diameter Ød1 h9	Groove width L1 0/+0.20
841.290	290.00	269.00	8.10
843.290	290.00	274.50	6.30
841.300	300.00	279.00	8.10
843.300	300.00	284.50	6.30
841.310	310.00	289.00	8.10
843.310	310.00	294.50	6.30
841.320	**320.00**	**299.00**	**8.10**
843.320	**320.00**	**304.50**	**6.30**
841.330	330.00	302.00	9.50
843.330	330.00	309.00	8.10
841.340	340.00	312.00	9.50
843.340	340.00	319.00	8.10
841.350	350.00	322.00	9.50
843.350	350.00	329.00	8.10
841.360	**360.00**	**332.00**	**9.50**
843.360	**360.00**	**339.00**	**8.10**
841.370	370.00	342.00	9.50
843.370	370.00	349.00	8.10
841.380	380.00	352.00	9.50
843.380	380.00	359.00	8.10
841.390	390.00	362.00	9.50
843.390	390.00	369.00	8.10
841.400	**400.00**	**372.00**	**9.50**
843.400	**400.00**	**379.00**	**8.10**
841.410	410.00	382.00	9.50
843.410	410.00	389.00	8.10
841.420	420.00	392.00	9.50
843.420	420.00	399.00	8.10

Part number	Bore diameter Ød1 H9	Groove diameter Ød1 h9	Groove width L1 0/+0.20
841.430	430.00	402.00	9.50
843.430	430.00	409.00	8.10
841.440	440.00	412.00	9.50
843.440	440.00	419.00	8.10
841.450	**450.00**	**422.00**	**9.50**
843.450	**450.00**	**429.00**	**8.10**
841.460	460.00	432.00	9.50
843.460	460.00	439.00	8.10
841.470	470.00	442.00	9.50
843.470	470.00	449.00	8.10
841.480	480.00	452.00	9.50
843.480	480.00	459.00	8.10
841.490	490.00	462.00	9.50
843.490	490.00	469.00	8.10
841.500	**500.00**	**472.00**	**9.50**
843.500	**500.00**	**479.00**	**8.10**
841.550	550.00	522.00	9.50
843.550	550.00	529.00	8.10
841.600	600.00	572.00	9.50
843.600	600.00	579.00	8.10
841.650	650.00	622.00	9.50
843.650	650.00	629.00	8.10
843.700	700.00	672.00	9.50
843.750	750.00	722.00	9.50
843.800	800.00	772.00	9.50
843.850	850.00	822.00	9.50
843.900	900.00	872.00	9.50
843.950	950.00	922.00	9.50

The figures highlighted in bold correspond to the bore diameters that are recommended by standard ISO 3320. Other intermediate sizes can be provided.



ROTO SEALS

BECA 845-847

DESCRIPTION

The BECA 845 - 847 roto seals are single or double acting piston rotary seals composed of a filled PTFE grooved friction ring and two rubber O'Rings.

ADVANTAGES

Low friction coefficient; no stick-slip effect on start up

Excellent abrasion and extrusion resistance

The grooves provide an integrated lubrication system

Excellent dimensional stability

APPLICATIONS

Rotary distributors

Handlers

Hydraulic motors

MATERIALS

Friction ring

Bronze-filled PTFE

Carbon-filled PTFE

Virgin PTFE

O'Rings

NBR 70 Shore A

FKM 70 Shore A

TECHNICAL DATA

Temperature	-30°C / +200°C
Pressure	30 MPa
Speed	2 m/s
Media	Mineral hydraulic oils Fire-resistant liquids Biocompatible fluids Water Others (contact our experts)

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

EXTRUSION GAPS

Radial section S	Radial gap F/2	
	10 MPa	20 MPa
2.45	0.15	0.10
3.75	0.20	0.15
5.50	0.25	0.20
7.75	0.30	0.25
10.50	0.30	0.25
14.00	0.45	0.30

SURFACE ROUGHNESS

Roughness	Dynamic surface area	Static surface area
Ra	0.05 - 0.2 µm	≤1.6 µm
Rz	0.4 - 1.6 µm	≤10.0 µm
Rmax	0.63 - 2.5 µm	≤16.0 µm

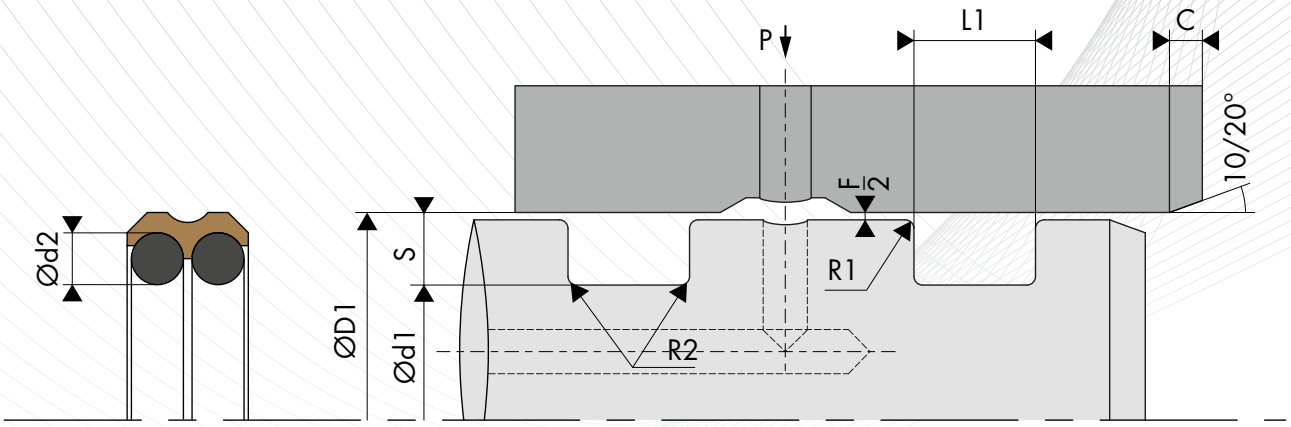
CHAMFERS AND RADIUS

Radial section S	Radius R1	Radius R2	Chamfer C
2.45	0.20	0.40	2.00
3.75	0.20	0.60	2.50
5.50	0.20	1.00	3.50
7.75	0.20	1.30	5.00
10.50	0.20	1.80	6.50
14.00	0.20	2.50	17.50

TABLE MATERIALS

Friction ring					O'Rings			Mating surface material
Standard code	ISO code	Material	Colour	Characteristics	Code	Type of material	Service temperature	
DP	P	Virgin PTFE	White	Resistance to chemical products Impermeability Dielectric Non-stick Low friction coefficient Food industry	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
					F6	VMQ 70 Shore A	-60°C/+200°C	
DC	C	PTFE + 25% Carbon	Grey	**Improvements** **• Wear properties** **• Compression set** Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
CG	C	PTFE + 23% Carbon + 2% Graphite	Black		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
DV	V	PTFE + 25 % Glass	Blue	**Improvements** **• Wear properties** **• Mechanical strength** Slightly more abrasive, however, this is corrected by adding MOS2 Maintains its chemical and dielectric properties Well-suited to applications with rotational and simultaneous alternating movements	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
					G6	FKM 70 Shore A	-20°C/+200°C	
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
DX	X	PTFE GL Blue + Glass + Metal oxides	Turquoise blue	Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
DG	G	PTFE + 15% Graphite	Black	**Improvements** **• Wear properties** Reduced wear on metal parts Self-lubricating Thermal and electrical conductivity Low permeability Good friction coefficient Anti-static High performing in dynamic self-lubricating applications	K6	NBR 70 Shore A	-30°C/+100°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
K1	K	PTFE + 10% Ekonol	Light brown	**Improvements** **• Better abrasion resistance** **• Better dimensional stability at high temperatures** Use up to +300°C Good friction coefficient and low permeability	K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
K2	K	PTFE + 20% Ekonol	Light brown		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	
					C6	EPDM 70 Shore A	-45°C/+150°C	
DB	B	PTFE + 60% Bronze	Dark brown	**Improvements** **• Wear properties** **• Warping resistance and creep strength** **• Compression resistance** Self-lubricating Electrical and thermal conductivity Does not alter the metal parts Reduced hold with certain chemical products Used for high-compression dynamic seals and has a low level of wear	K6	NBR 70 Shore A	-30°C/+100°C	Steel Chrome steel Cast iron
					G6	FKM 70 Shore A	-20°C/+200°C	
B4	B	PTFE + 40% Bronze	Dark brown		K6	NBR 70 Shore A	-30°C/+100°C	
					G6	FKM 70 Shore A	-20°C/+200°C	

Other grades of materials are available depending on your specificities.



INSTALLATION DIMENSIONS

Bore diameter ØD1 H9		Groove diameter Ød1 h9					Groove width	O'Rings cross-section
BECA 845 Standard range	BECA 847 Heavy-duty range	v < 0.2 p < 2.5	0.2 < v < 0.5 2.5 < p < 5.0	0.5 < v < 1.0 5.0 < p < 25.0	1.0 < v < 2.0 25.0 < p < 40.0	2.0 < v < 5.0 40.0 < p < 50.0	L1 0/+0.20	Ød2
8.0 - 39.9	---	D1 - 4.20	D1 - 4.40	D1 - 4.50	D1 - 4.60	D1 - 4.70	4.30	1.78
40.0 - 79.9	14.0 - 39.9	D1 - 6.20	D1 - 6.40	D1 - 6.60	D1 - 6.80	D1 - 6.90	6.30	2.62
80.0 - 132.9	40.0 - 79.9	D1 - 8.40	D1 - 8.60	D1 - 8.90	D1 - 9.10	D1 - 9.30	8.50	3.53
133.0 - 329.9	80.0 - 132.9	D1 - 12.70	D1 - 13.00	D1 - 13.40	D1 - 13.80	D1 - 14.00	12.90	5.33
330.0 - 669.9	133.0 - 329.9	D1 - 16.60	D1 - 17.00	D1 - 17.50	D1 - 18.00	D1 - 18.30	16.90	6.99

The speed "v" is expressed in m/s
The pressure "p" is expressed in MPa
For special applications > 40 MPa, we recommend using an H8/f8 tolerance (bore/rod) or selecting other, more suitable materials. Please contact our experts.

EXAMPLE OF CODIFICATION

STANDARD CODIFICATION

Materials _____ : Friction ring, PTFE + 60% Bronze - Code DB
_____ : NBR 70 Shore A O'Rings - Code K6
Bore diameter ____ : ØD1 = 50.00 mm
Groove diameter __ : Ød1 = 43.80 mm
Part number_____ : 845. 050DBK6

Part number - 845. 050 DB K6

- 845. — Family
- 050 — Rod diameter
- DB — Friction ring material*
- K6 — O'Ring materials*

* The codes that define the materials are set out in the materials table on the previous page.

23. V'Rings

V'Rings offer optimal, pressure-free axial sealing on all types of rotating shafts. V'Rings can be used for static applications in certain operations and can also be used to protect a mechanical assembly from impurities, greases, oil or dust.

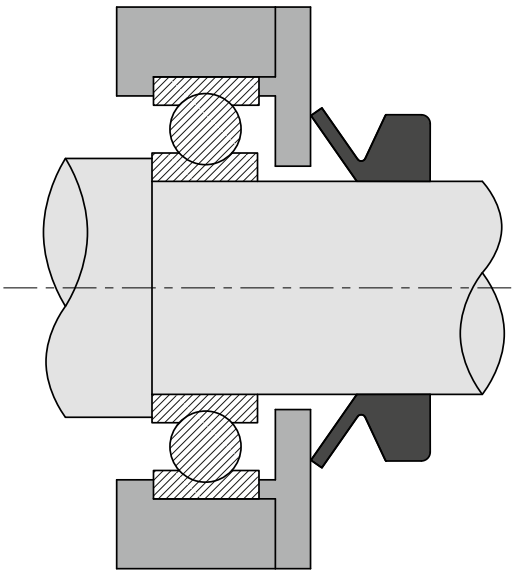
DESCRIPTION

V'Rings are seal parts that are very often combined with other types of seals such as radial shaft seals. They are also used as the primary seal in other cases. As they offer optimal axial sealing, V'Rings are used to protect the metal parts against dirt, grease, oil and dust. They are frequently used in mechanical transmissions, rolling-mills, machine tools, etc.

As a technical component made completely of rubber, V'Rings have three parts:

- the body: the thickest part of the seal, which is clamped in place on the rotating axle and permits rotation.
- the hinge: the part connecting the sealing lip to the body of the seal, which provides a certain amount of flexibility, thus preventing significant position stresses.
- the sealing lip: the part that compensates for radial runout (angle deviations in the rotating axle) as well as significant tolerance gaps other than those recommended by its flexibility. It therefore ensures sealing on the opposing metal surface.

Stretched on the shaft, the V'Ring must be positioned at a precise distance in relation to the opposing metal friction surface (or back) to guarantee optimal sealing under axial pre-stressing of the sealing lip. The V'Ring turns with the rotating shaft and depending on the circumferential speed, the centrifugal force acting on the sealing lip repels it on the outside, which reduces compression. Beyond a certain speed, the sealing lip must not come into constant contact with the opposing metal wall, as sealing is not guaranteed.

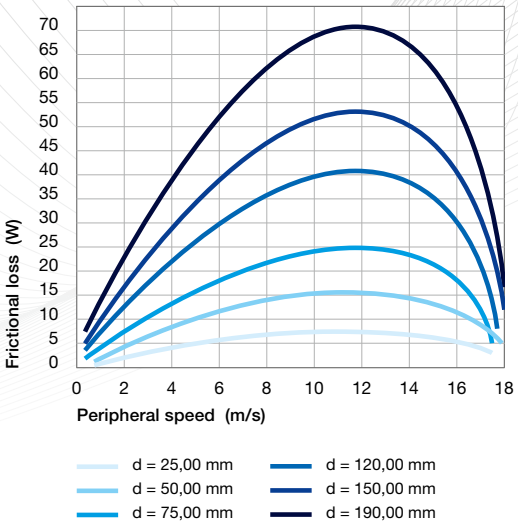


TECHNICAL DATA

LOSS OF POWER

The sealing lip of a V'Ring exerts such a low pressure on the contact surface area that the loss of power resulting from it is also low. The variations in power loss depend on the circumferential speed as well as the diameter of the axis in rotation, as shown in the graph below.

At speeds greater than 11 m/sec, the sealing lip has a tendency to detach itself, as the centrifugal force is greater.



SHAFT DESIGN

Considering that the V'Ring is stretched and tightened on the shaft, it is driven into rotation with the shaft. The tolerance and surface roughness requirements (Ra ≤ 3.2 µm) are relatively moderate. We recommend carefully selecting the size using the dimensional chart for applications in which power loss and V'Ring lifespan are important criteria. If the diameter of the shaft Ød1 overlaps two potential V'Ring choices, we recommend selecting the larger V'Ring. The tightness on the shaft will in fact reduce, like the contact pressure of the lip on the back.

DESIGN OF THE BACK

a. Surface roughness

The quality of the back side considerably influences the lifespan of the V'Ring in contact. The surface roughness on the back side is determined according to the fluid to be slaked and the circumferential speed of the shaft.

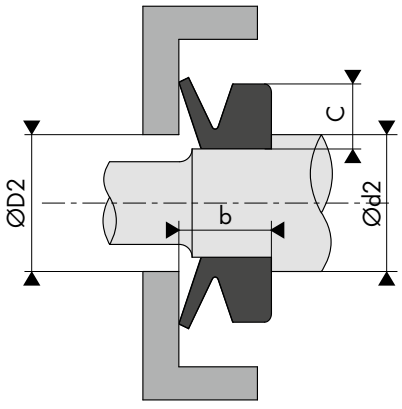
Roughness Ra	Circumferential speed v	Media
0.40 µm - 0.80 µm	> 10.0 m/sec	Oil, water
0.80 µm - 1.60 µm	5.0 m/sec - 10.0 m/sec	Oil splashes, grease, water splashes
1.60 µm - 2.00 µm	1.0 m/sec - 5.0 m/sec	Grease, dirt, water splashes
2.00 µm - 2.50 µm	< 1.0 m/s	Grease, dirt

The surface roughness on the back side must not exceed Ra 0.05 µm.

b. Flatness

The flatness of the back is essential, even more so when rotation speeds are high. The maximum acceptable deviation is 0.40 mm for 100.00 mm.

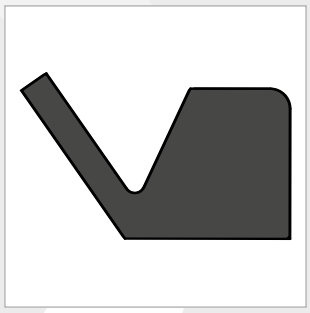
AXIAL SUPPORT



Installing the V'Ring is recommended when the axial support is at full stop. This is also recommended for applications where tightening between the V'Ring and the shaft is relatively weak and where the circumferential speed will exceed 6.0 - 8.0 m/sec.

The table below sets out the calculation method for the diameter of the support Ød2.

V'Ring profiles	Diameter Ød2
BECA 120VA	Ød1 + 0.50 x C
BECA 120VE	Ød1 + 9.00 mm
BECA 120VL	Ød1 + 3.00 mm
BECA 120VS	Ød1 + 0.50 x C



V'RINGS

BECA 120VA

DESCRIPTION

The BECA 120VA profile is a standard rubber facial effect V'Ring composed of a flat rear face.

ADVANTAGES

Excellent chemical compatibility and wide temperature range, depending on the type of material chosen

Low friction

Good elasticity

APPLICATIONS

Electric motors

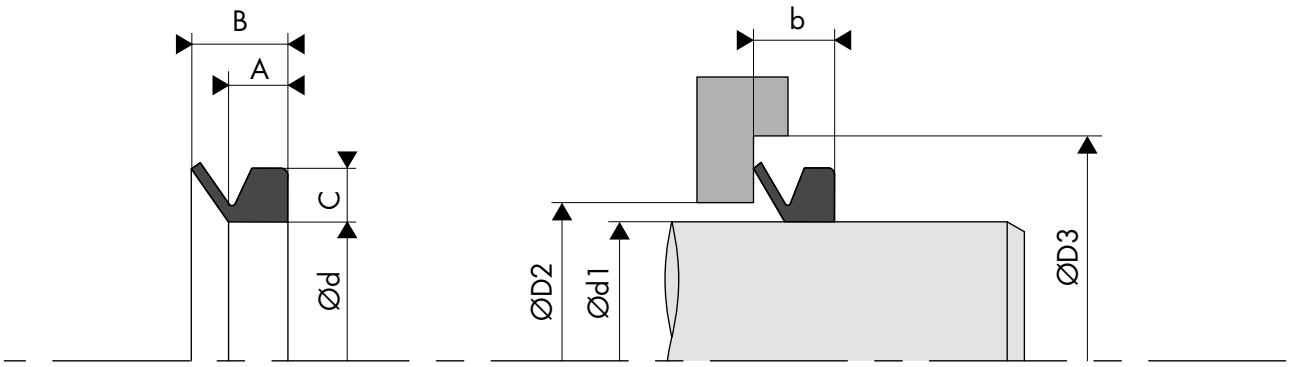
Power transmissions

Bearing protections

MATERIALS

FKM 60 and 70 Shore A

NBR 60 and 70 Shore A



DIMENSIONS

Part number	Shaft diameter Ød1	Inside diameter Ød	Width before fitting B	Height of the body C	Width of the body A	Width after fitting b	ØD2 Max	ØD3 Min
120.VA003	2.7 - 3.4	2.50	3.00	1.50	2.10	2.5 ± 0.3	d1 + 1.0	d1 + 4.0
120.VA004	3.5 - 4.4	3.20	3.70	2.00	2.40	3.0 ± 0.4	d1 + 1.0	d1 + 6.0
120.VA005	4.5 - 5.4	4.00	3.70	2.00	2.40	3.0 ± 0.4	d1 + 1.0	d1 + 6.0
120.VA006	5.5 - 6.4	5.00	3.70	2.00	2.40	3.0 ± 0.4	d1 + 1.0	d1 + 6.0
120.VA007	6.5 - 8.0	6.00	3.70	2.00	2.40	3.0 ± 0.4	d1 + 1.0	d1 + 6.0
120.VA008	8.0 - 9.5	7.00	3.70	2.00	2.40	3.0 ± 0.4	d1 + 1.0	d1 + 6.0
120.VA010	9.5 - 11.5	9.00	5.50	3.00	3.40	4.5 ± 0.6	d1 + 2.0	d1 + 9.0
120.VA012	11.5 - 12.5	10.50	5.50	3.00	3.40	4.5 ± 0.6	d1 + 2.0	d1 + 9.0
120.VA014	13.5 - 15.5	10.50	5.50	3.00	3.40	4.5 ± 0.6	d1 + 2.0	d1 + 9.0
120.VA016	15.5 - 17.5	14.00	5.50	3.00	3.40	4.5 ± 0.6	d1 + 2.0	d1 + 9.0
120.VA018	17.5 - 19.0	16.00	5.50	3.00	3.40	4.5 ± 0.6	d1 + 2.0	d1 + 9.0
120.VA020	19.0 - 21.0	18.00	7.50	4.00	4.70	6.0 ± 0.8	d1 + 2.0	d1 + 12.0
120.VA022	21.0 - 24.0	20.00	7.50	4.00	4.70	6.0 ± 0.8	d1 + 2.0	d1 + 12.0
120.VA025	24.0 - 27.0	22.00	7.50	4.00	4.70	6.0 ± 0.8	d1 + 2.0	d1 + 12.0
120.VA028	27.0 - 29.0	25.00	7.50	4.00	4.70	6.0 ± 0.8	d1 + 2.0	d1 + 12.0
120.VA030	29.0 - 31.0	27.00	7.50	4.00	4.70	6.0 ± 0.8	d1 + 3.0	d1 + 12.0
120.VA032	31.0 - 33.0	29.00	7.50	4.00	4.70	6.0 ± 0.8	d1 + 3.0	d1 + 12.0
120.VA035	33.0 - 36.0	31.00	7.50	4.00	4.70	6.0 ± 0.8	d1 + 3.0	d1 + 12.0
120.VA038	36.0 - 38.0	34.00	7.50	4.00	4.70	6.0 ± 0.8	d1 + 3.0	d1 + 12.0

Part number	Shaft diameter Ød1	Inside diameter Ød	Width before fitting B	Height of the body C	Width of the body A	Width after fitting b	ØD2 Max	ØD3 Min
120.VA040	38.0 - 43.0	36.00	9.00	5.00	5.50	7.0 ± 1.0	d1 + 3.0	d1 + 15.0
120.VA045	43.0 - 48.0	40.00	9.00	5.00	5.50	7.0 ± 1.0	d1 + 3.0	d1 + 15.0
120.VA050	48.0 - 53.0	45.00	9.00	5.00	5.50	7.0 ± 1.0	d1 + 3.0	d1 + 15.0
120.VA055	53.0 - 58.0	49.00	9.00	5.00	5.50	7.0 ± 1.0	d1 + 3.0	d1 + 15.0
120.VA060	58.0 - 63.0	54.00	9.00	5.00	5.50	7.0 ± 1.0	d1 + 3.0	d1 + 15.0
120.VA065	63.0 - 68.0	58.00	9.00	5.00	5.50	7.0 ± 1.0	d1 + 3.0	d1 + 15.0
120.VA070	68.0 - 73.0	63.00	11.00	6.00	6.80	9.0 ± 1.2	d1 + 4.0	d1 + 18.0
120.VA075	63.0 - 78.0	67.00	11.00	6.00	6.80	9.0 ± 1.2	d1 + 4.0	d1 + 18.0
120.VA080	78.0 - 83.0	72.00	11.00	6.00	6.80	9.0 ± 1.2	d1 + 4.0	d1 + 18.0
120.VA085	83.0 - 88.0	76.00	11.00	6.00	6.80	9.0 ± 1.2	d1 + 4.0	d1 + 18.0
120.VA090	88.0 - 93.0	81.00	11.00	6.00	6.80	9.0 ± 1.2	d1 + 4.0	d1 + 18.0
120.VA095	93.0 - 98.0	85.00	11.00	6.00	6.80	9.0 ± 1.2	d1 + 4.0	d1 + 18.0
120.VA100	98.0 - 105.0	90.00	11.00	6.00	6.80	9.0 ± 1.2	d1 + 4.0	d1 + 18.0
120.VA110	105.0 - 115.0	99.00	12.80	7.00	7.90	10.5 ± 1.5	d1 + 4.0	d1 + 21.0
120.VA120	115.0 - 125.0	108.00	12.80	7.00	7.90	10.5 ± 1.5	d1 + 4.0	d1 + 21.0
120.VA130	125.0 - 135.0	117.00	12.80	7.00	7.90	10.5 ± 1.5	d1 + 4.0	d1 + 21.0
120.VA140	135.0 - 145.0	126.00	12.80	7.00	7.90	10.5 ± 1.5	d1 + 4.0	d1 + 21.0
120.VA150	145.0 - 155.0	135.00	12.80	7.00	7.90	10.5 ± 1.5	d1 + 4.0	d1 + 21 .0
120.VA160	155.0 - 165.0	144.00	14.50	8.00	9.00	12.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VA170	165.0 - 175.0	153.00	14.50	8.00	9.00	12.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VA180	175.0 - 185.0	162.00	14.50	8.00	9.00	12.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VA190	185.0 - 195.0	171.00	14.50	8.00	9.00	12.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VA199	195.0 - 205.0	180.00	14.50	8.00	9.00	12.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VA200	190.0 - 210.0	180.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA220	210.0 - 235.0	198.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA250	235.0 - 265.0	225.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA275	265.0 - 290.0	247.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA300	290.0 - 310.0	270.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA325	310.0 - 335.0	292.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA350	335.0 - 365.0	315.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA375	365.0 - 390.0	337.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA400	390.0 - 430.0	360.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA450	430.0 - 480.0	405.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45 .0
120.VA500	480.0 - 530.0	450.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA550	530.0 - 580.0	495.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA600	580.0 - 630.0	540.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA650	630.0 - 665.0	600.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA700	665.0 - 705.0	630.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA725	705.0 - 745.0	670.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA750	745.0 - 785.0	705.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA800	785.0 - 830.0	745.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA850	830.0 - 875.0	785.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA900	875.0 - 920.0	825.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.VA950	920.0 - 965.0	865.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1000	965.0 - 1015.0	910.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1050	1015.0 - 1065.0	955.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1100	1065.0 - 1115.0	1000.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1150	1115.0 - 1165.0	1045.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1200	1165.0 - 1215.0	1090.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1250	1215.0 - 1270.0	1135.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1300	1270.0 - 1320.0	1180.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1350	1320.0 - 1370.0	1225.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1400	1370.0 - 1420.0	1270.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1450	1420.0 - 1470.0	1315.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1500	1470.0 - 1520.0	1360.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1550	1520.0 - 1570.0	1405.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1600	1570.0 - 1620.0	1450.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1650	1620.0 - 1670.0	1495.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1700	1670.0 - 1720.0	1540.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1750	1720.0 - 1770.0	1585.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1800	1770.0 - 1820.0	1630.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1850	1820.0 - 1870.0	1675.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1900	1870.0 - 1920.0	1720.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A1950	1920.0 - 1970.0	1765.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0
120.A2000	1970.0 - 2020.0	1810.00	25.00	15.00	14.30	20.0 ± 4.0	d1 + 10.0	d1 + 45.0

V'RINGS

BECA 120VE

DESCRIPTION

The BECA 120VE profile is a facial effect V'Ring with a large radial section and is used for large dimensions.

ADVANTAGES

Excellent chemical compatibility and wide temperature range, depending on the type of material chosen

Low friction

Good elasticity

Used as a secondary seal for heavy-duty applications

Greater axial movement is possible

APPLICATIONS

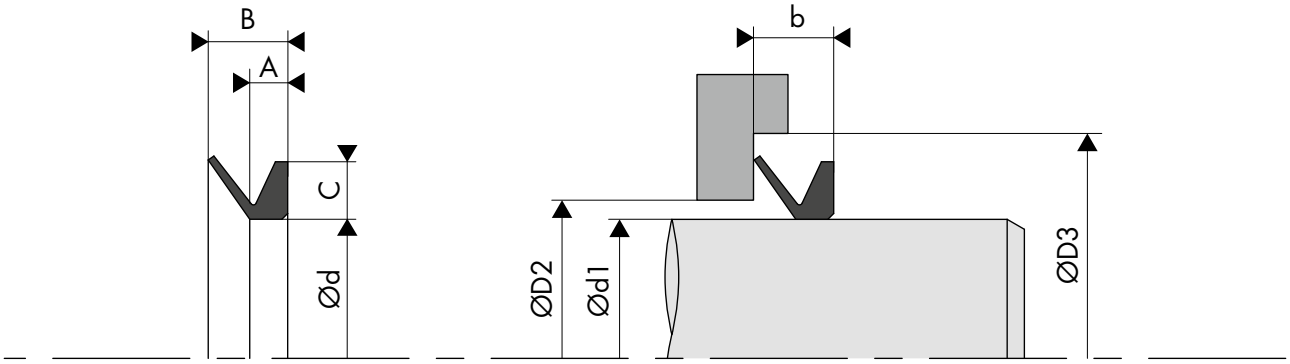
Mobile hydraulics

Axles

MATERIALS

FKM 60 and 70 Shore A

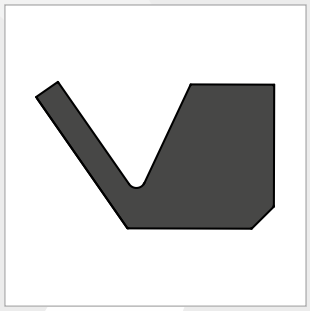
NBR 60 and 70 Shore A



DIMENSIONS

Part number	Shaft diameter Ød1	Inside diameter Ød	Width before fitting B	Height of the body C	Width of the body A	Width after fitting b	ØD2 Max	ØD3 Min
120.VE300	300.0 - 305.0	294.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE305	305.0 - 310.0	299.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE310	310.0 - 215.0	304.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE315	315.0 - 320.0	309.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE320	320.0 - 325.0	314.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE325	325.0 - 330.0	319.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE330	330.0 - 335.0	323.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE335	335.0 - 340.0	328.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE340	340.0 - 345.0	333.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE345	345.0 - 350.0	338.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE350	350.0 - 355.0	343.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE355	355.0 - 360.0	347.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0

Part number	Shaft diameter Ød1	Inside diameter Ød	Width before fitting B	Height of the body C	Width of the body A	Width after fitting b	ØD2 Max	ØD3 Min
120.VE360	360.0 - 365.0	352.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE365	365.0 - 370.0	357.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE370	370.0 - 375.0	362.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE375	375.0 - 380.0	367.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE380	380.0 - 385.0	371.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE385	385.0 - 390.0	376.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE390	390.0 - 395.0	381.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE395	395.0 - 400.0	386.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE400	400.0 - 405.0	391.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE405	405.0 - 410.0	396.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE410	410.0 - 415.0	401.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE415	415.0 - 420.0	405.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE420	420.0 - 425.0	410.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE425	425.0 - 430.0	415.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE430	430.0 - 435.0	420.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE435	435.0 - 440.0	425.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE440	440.0 - 445.0	429.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE445	445.0 - 450.0	434.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE450	450.0 - 455.0	439.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE455	455.0 - 460.0	444.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE460	460.0 - 465.0	448.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE465	465.0 - 470.0	453.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE470	470.0 - 475.0	458.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE475	475.0 - 480.0	463.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE480	480.0 - 485.0	468.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE485	485.0 - 490.0	473.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE490	490.0 - 495.0	478.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE495	495.0 - 500.0	483.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0
120.VE500	500.0 - 505.0	488.00	65.00	30.00	32.50	50.0 ± 12.0	d1 + 24.0	d1 + 115.0



V'RINGS

BECA 120VL

DESCRIPTION

The BECA 120VL profile is a rubber facial effect V'Ring.

ADVANTAGES

Excellent chemical compatibility and wide temperature range, depending on the type of material chosen

Low friction

Good elasticity

Suitable for confined spaces, substituting labyrinth seals

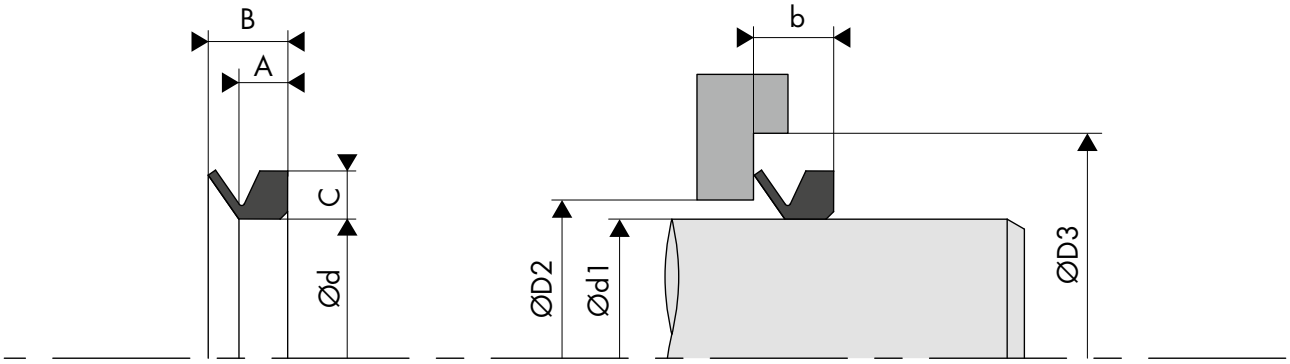
APPLICATIONS

General industry

MATERIALS

FKM 60 and 70 Shore A

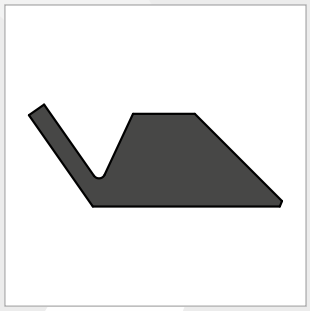
NBR 60 and 70 Shore A



DIMENSIONS

Part number	Shaft diameter Ød1	Inside diameter Ød	Width before fitting B	Height of the body C	Width of the body A	Width after fitting b	ØD2 Max	ØD3 Min
120.VL130	125.0 - 135.0	117.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL140	135.0 - 145.0	126.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL150	145.0 - 155.0	135.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL160	155.0 - 165.0	144.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL170	165.0 - 175.0	153.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL180	175.0 - 185.0	162.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL200	195.0 - 210.0	182.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL220	210.0 - 233.0	198.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL250	233.0 - 260.0	225.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL275	260.0 - 285.0	247.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL300	285.0 - 310.0	270.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL325	310.0 - 335.0	292.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL350	335.0 - 365.0	315.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL375	365.0 - 385.0	337.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL400	385.0 - 410.0	360.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0

Part number	Shaft diameter Ød1	Inside diameter Ød	Width before fitting B	Height of the body C	Width of the body A	Width after fitting b	ØD2 Max	ØD3 Min
120.VL425	410.0 - 440.0	382.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL450	440.0 - 475.0	405.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL500	475.0 - 510.0	450.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL525	510.0 - 540.0	472.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL550	540.0 - 575.0	495.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL600	575.0 - 625.0	540.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL650	625.0 - 675.0	600.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL700	675.0 - 710.0	630.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL725	710.0 - 740.0	670.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL750	740.0 - 775.0	705.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL800	775.0 - 825.0	745.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL850	825.0 - 875.0	785.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL900	875.0 - 925.0	825.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL950	952.0 - 975.0	865.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL110	105.0 - 115.0	99.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL120	115.0 - 125.0	108.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.VL190	185.0 - 195.0	171.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.L1000	975.0 - 1025.0	910.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0
120.L1050	1025.0 - 1075.0	955.00	10.50	6.50	6.00	8.0 ± 1.5	d1 + 5.0	d1 + 20.0



V'RINGS

BECA 120VS

DESCRIPTION

The BECA 120VS profile is a rubber facial effect V'Ring composed of a conical rear face with a large body with a low radial section.

ADVANTAGES

Excellent chemical compatibility and wide temperature range, depending on the type of material chosen

Low friction

Good elasticity

Firm grip on the shaft

APPLICATIONS

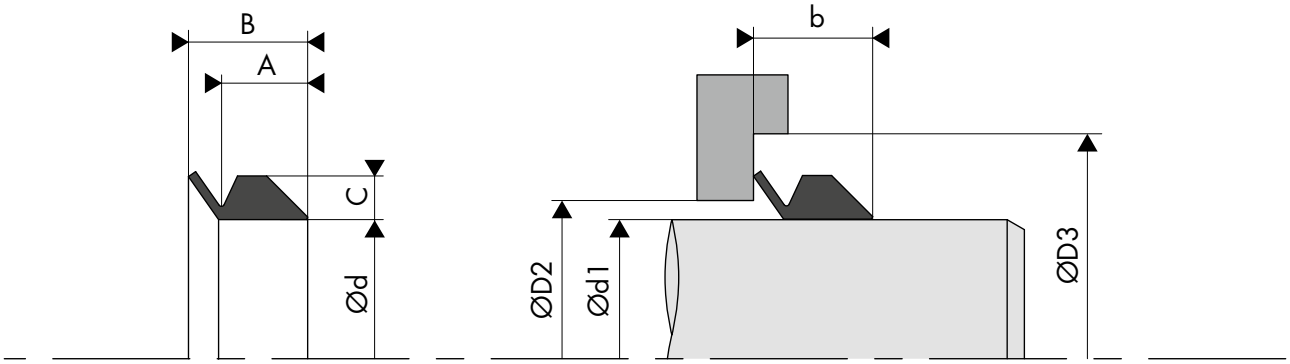
Agriculture

Automotive

MATERIALS

FKM 60 and 70 Shore A

NBR 60 and 70 Shore A



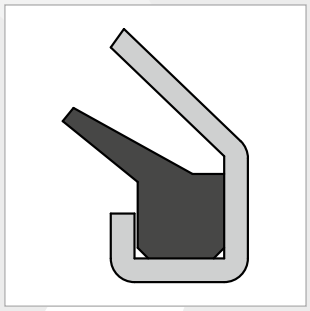
DIMENSIONS

Part number	Shaft diameter Ød1	Inside diameter Ød	Width before fitting B	Height of the body C	Width of the body A	Width after fitting b	ØD2 Max	ØD3 Min
120.VS005	4.5 - 5.5	4.00	5.20	2.00	3.90	4.5 ± 0.4	d1 + 1.0	d1 + 6.0
120.VS006	5.5 - 6.5	5.00	5.20	2.00	3.90	4.5 ± 0.4	d1 + 1.0	d1 + 6.0
120.VS007	6.5 - 8.0	6.00	5.20	2.00	3.90	4.5 ± 0.4	d1 + 1.0	d1 + 6.0
120.VS008	8.0 - 9.5	7.00	5.20	2.00	3.90	4.5 ± 0.4	d1 + 1.0	d1 + 6.0
120.VS010	9.5 - 11.5	9.00	5.20	2.00	3.90	4.5 ± 0.4	d1 + 1.0	d1 + 6.0
120.VS012	11.5 - 13.5	10.50	5.20	2.00	3.90	4.5 ± 0.4	d1 + 1.0	d1 + 6.0
120.VS014	13.5 - 15.5	12.50	7.70	3.00	5.60	6.7 ± 0.6	d1 + 2.0	d1 + 9.0
120.VS016	15.5 - 17.5	14.00	7.70	3.00	5.60	6.7 ± 0.6	d1 + 2.0	d1 + 9.0
120.VS018	17.5 - 19.0	16.00	7.70	3.00	5.60	6.7 ± 0.6	d1 + 2.0	d1 + 9.0
120.VS020	19.0 - 21.0	18.00	10.50	4.00	7.90	9.0 ± 0.8	d1 + 2.0	d1 + 12.0
120.VS022	21.0 - 24.0	20.00	10.50	4.00	7.90	9.0 ± 0.8	d1 + 2.0	d1 + 12.0
120.VS025	24.0 - 27.0	22.00	10.50	4.00	7.90	9.0 ± 0.8	d1 + 2.0	d1 + 12.0
120.VS028	27.0 - 29.0	25.00	10.50	4.00	7.90	9.0 ± 0.8	d1 + 3.0	d1 + 12.0
120.VS030	29.0 - 31.0	27.00	10.50	4.00	7.90	9.0 ± 0.8	d1 + 3.0	d1 + 12.0
120.VS032	31.0 - 33.0	19.00	10.50	4.00	7.90	9.0 ± 0.8	d1 + 3.0	d1 + 12.0

Part number	Shaft diameter Ød1	Inside diameter Ød	Width before fitting B	Height of the body C	Width of the body A	Width after fitting b	ØD2 Max	ØD3 Min
120.VS035	33.0 - 36.0	31.00	10.50	4.00	7.90	9.0 ± 0.8	d1 + 3.0	d1 + 12.0
120.VS038	36.0 - 38.0	34.00	10.50	4.00	7.90	9.0 ± 0.8	d1 + 3.0	d1 + 12.0
120.VS040	38.0 - 43.0	36.00	13.00	5.00	9.50	11.0 ± 1.0	d1 + 3.0	d1 + 15 .0
120.VS045	43.0 - 48.0	40.00	13.00	5.00	9.50	11.0 ± 1.0	d1 + 3.0	d1 + 15 .0
120.VS050	48.0 - 53.0	45.00	13.00	5.00	9.50	11.0 ± 1.0	d1 + 3.0	d1 + 15 .0
120.VS055	53.0 - 58.0	49.00	13.00	5.00	9.50	11.0 ± 1.0	d1 + 3.0	d1 + 15 .0
120.VS060	58.0 - 63.0	54.00	13.00	5.00	9.50	11.0 ± 1.0	d1 + 3.0	d1 + 15 .0
120.VS065	63.0 - 68.0	58.00	13.00	5.00	9.50	11.0 ± 1.0	d1 + 3.0	d1 + 15 .0
120.VS070	68.0 - 73.0	63.00	15.50	6.00	11.30	13.5 ± 1.2	d1 + 4.0	d1 + 18 .0
120.VS075	73.0 - 78.0	67.00	15.50	6.00	11.30	13.5 ± 1.2	d1 + 4.0	d1 + 18 .0
120.VS080	78.0 - 83.0	72.00	15.50	6.00	11.30	13.5 ± 1.2	d1 + 4.0	d1 + 18 .0
120.VS085	83.0 - 88.0	76.00	15.50	6.00	11.30	13.5 ± 1.2	d1 + 4.0	d1 + 18 .0
120.VS090	88.0 - 93.0	81.00	15.50	6.00	11.30	13.5 ± 1.2	d1 + 4.0	d1 + 18 .0
120.VS095	93.0 - 98.0	85.00	15.50	6.00	11.30	13.5 ± 1.2	d1 + 4.0	d1 + 18 .0
120.VS100	98.0 - 105.0	90.00	15.50	6.00	11.30	13.5 ± 1.2	d1 + 4.0	d1 + 18 .0
120.VS120	115.0 - 125.0	108.00	18.00	7.00	13.10	15.5 ± 1.5	d1 + 4.0	d1 + 21 .0
120.VS130	125.0 - 135.0	117.00	18.00	7.00	13.10	15.5 ± 1.5	d1 + 4.0	d1 + 21 .0
120.VS140	135.0 - 145.0	126.00	18.00	7.00	13.10	15.5 ± 1.5	d1 + 4.0	d1 + 21 .0
120.VS150	145.0 - 155.0	135.00	18.00	7.00	13.10	15.5 ± 1.5	d1 + 4.0	d1 + 21 .0
120.VS160	155.0 - 165.0	144.00	20.50	8.00	15.00	18.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VS170	165.0 - 175.0	153.00	20.50	8.00	15.00	18.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VS180	175.0 - 185.0	162.00	20.50	8.00	15.00	18.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VS190	185.0 - 195.0	171.00	20.50	8.00	15.00	18.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VS199	195.0 - 210.0	180.00	20.50	8.00	15.00	18.0 ± 1.8	d1 + 5.0	d1 + 24 .0
120.VS110	105.0 - 115.0	99.00	18.00	7.00	13.10	15.5 ± 1.5	d1 + 4.0	d1 + 21 .0

24. Gamma seals

Gamma seals mainly ensure axial sealing and represent a good protection against external pollutants.



GAMMA SEALS

BECA 130

DESCRIPTION

The BECA 130 profile is a gamma seal. Sealing happens when the axial force of the lip comes into contact with the housing. The metal part protects the rubber axial lip from external pollution.

ADVANTAGES

Good dynamic sealing

Very good protection against external solid particles

Modern axial sealing lip with a low radial load

Low power loss

Installation in a reduced size

No additional retention system necessary

APPLICATIONS

Axles

Machine tools

Electric motors

Pumps

Transmissions

MATERIALS

Rubber

NBR 70 - 75 Shore A

FKM 70 - 75 Shore A

Metal cage

Steel - AISI 1010

TECHNICAL DATA

Temperature	-30°C / +200°C
Speed	20 m/s
Media	Mineral hydraulic oils Synthetic lubricants

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

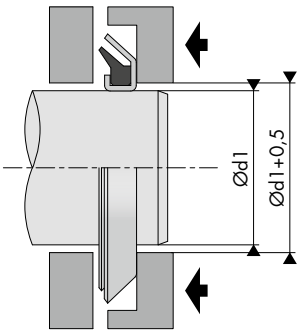
SURFACE ROUGHNESS

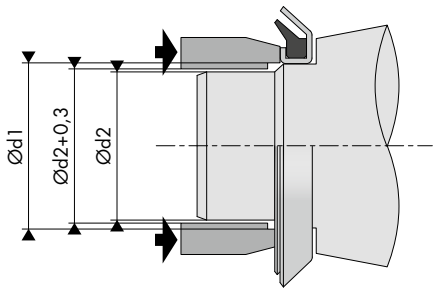
The recommended surface roughness for the shaft must not exceed 4 µm Ra. There must be no burrs or defects on the shaft.

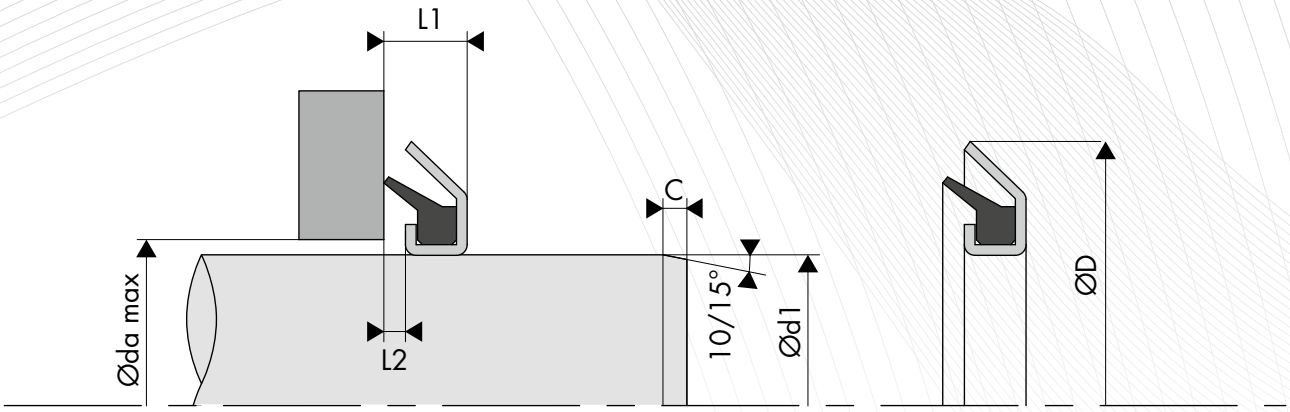
CHAMFERS AND ANGLES

Shaft diameter Ød1 h9	Angle	Chamfer C (+/-)
0.00 - 35.00	10° / 15°	2.00 (-0.25/-0.15)
36.00 - 50.00	10° / 15°	2.00 (-0.28/-0.18)
51.00 - 135.00	10° / 15°	2.00 (-0.30/-0.20)
136.00 - 200.00	10° / 15°	2.00 (-0.35/-0.25)

ASSEMBLY RECOMMENDATIONS

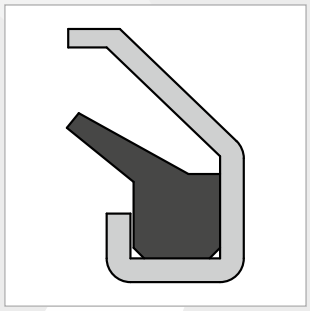






DIMENSIONS

Part number	Shaft diameter Ød1 h9	Outside diameter ØD	Width L1	Width of positioning L2	Bore diameter Øda max
130.010035	10.00	24.00	3.50	1.00	15.00
130.011035	11.00	26.00	3.50	1.00	17.00
130.012035	12.00	26.00	3.50	1.00	17.00
130.014040	14.00	30.00	4.00	1.00	21.00
130.015040	15.00	30.00	4.00	1.00	21.00
130.016040	16.00	32.00	4.00	1.00	23.00
130.017040	17.00	32.00	4.00	1.00	23.00
130.018040	18.00	33.00	4.00	1.00	24.00
130.020040	20.00	35.00	4.00	1.00	26.00
130.022040	22.00	40.00	4.00	1.00	28.00
130.024040	24.00	40.00	4.00	1.00	30.00
130.025040	25.00	40.00	4.00	1.00	31.00
130.026040	26.00	40.00	4.00	1.00	31.00
130.028040	28.00	43.00	4.00	1.00	32.00
130.030045	30.00	47.00	4.50	1.00	34.00
130.032045	32.00	49.00	4.50	1.00	37.00
130.035045	35.00	52.00	4.50	1.00	39.00
130.038045	38.00	55.00	4.50	1.00	42.00
130.040045	40.00	57.00	4.50	1.00	47.00
130.041045	41.00	57.00	4.50	1.00	48.00
130.042045	42.00	59.00	4.50	1.00	49.00
130.045045	45.00	62.00	4.50	1.00	52.00
130.048045	48.00	65.00	4.50	1.00	55.00
130.050055	50.00	70.00	5.50	1.00	58.00
130.052055	52.00	72.00	5.50	1.00	60.00
130.055055	55.00	75.00	5.50	1.00	63.00
130.058055	58.00	78.00	5.50	1.00	66.00
130.060055	60.00	80.00	5.50	1.00	68.00
130.062055	62.00	82.00	5.50	1.00	70.00
130.065055	65.00	85.00	5.50	1.00	73.00
130.068055	68.00	88.00	5.50	1.00	76.00
130.070055	70.00	90.00	5.50	1.00	78.00
130.072055	72.00	92.00	5.50	1.00	80.00
130.075055	75.00	95.00	5.50	1.00	83.00
130.078055	78.00	98.00	5.50	1.00	86.00
130.080055	80.00	100.00	5.50	1.00	88.00
130.085055	85.00	105.00	5.50	1.00	93.00
130.090055	90.00	110.00	5.50	1.00	98.00
130.095055	95.00	115.00	5.50	1.00	103.00
130.100055	100.00	120.00	5.50	1.00	108.00
130.105055	105.00	125.00	5.50	1.00	113.00
130.135065	135.00	159.00	6.50	1.00	145.00
130.225075	225.00	250.00	7.50	1.00	235.00



GAMMA SEALS

BECA 131

DESCRIPTION

The BECA 131 profile is a gamma seal. The design of the metal part offers additional protection in the form of a labyrinth in the housing, should there be a higher pollution level compared to the BECA 130 profile.

ADVANTAGES

Good dynamic sealing

Very good protection against external solid particles

Modern axial sealing lip with a low radial load

Low power loss

Installation in a reduced size

No additional retention system necessary

APPLICATIONS

Axles

Machine tools

Electric motors

Pumps

Transmissions

MATERIALS

Rubber

NBR 70 - 75 Shore A

FKM 70 - 75 Shore A

Metal cage

Steel - AISI 1010

TECHNICAL DATA

Temperature	-30°C / +200°C
Speed	20 m/s
Media	Mineral hydraulic oils Synthetic lubricants

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

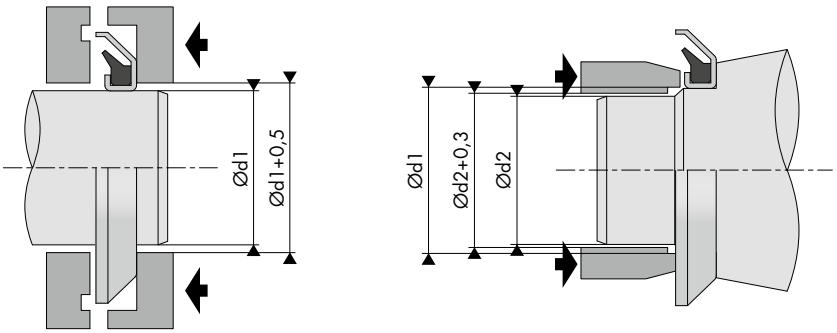
SURFACE ROUGHNESS

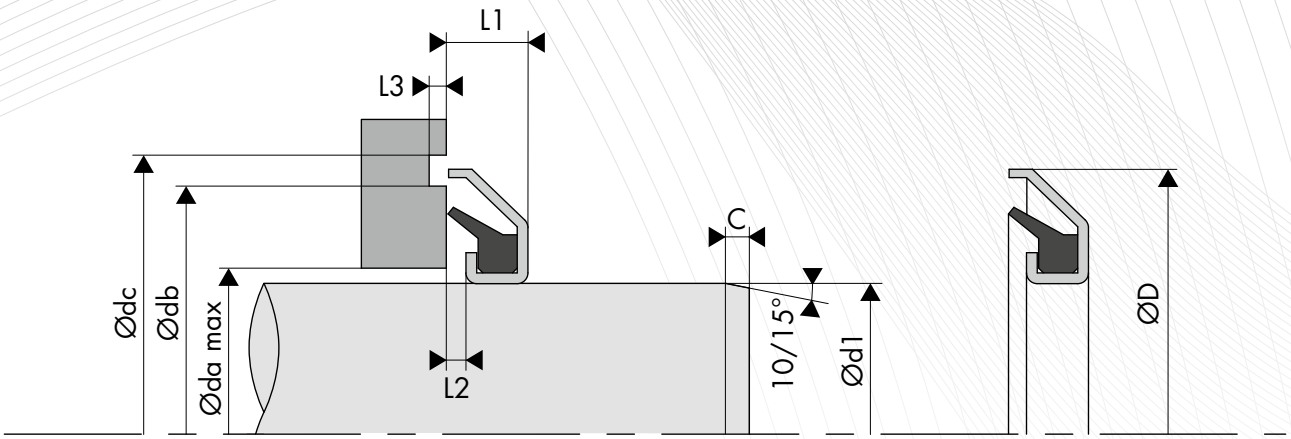
The recommended surface roughness for the shaft must not exceed 4 µm Ra. There must be no burrs or defects on the shaft.

CHAMFERS AND ANGLES

Shaft diameter Ød1 h9	Angle	Chamfer C (+/-)
0.00 - 35.00	10° / 15°	2.00 (-0.25/-0.15)
36.00 - 50.00	10° / 15°	2.00 (-0.28/-0.18)
51.00 - 135.00	10° / 15°	2.00 (-0.30/-0.20)
136.00 - 200.00	10° / 15°	2.00 (-0.35/-0.25)

ASSEMBLY RECOMMENDATIONS





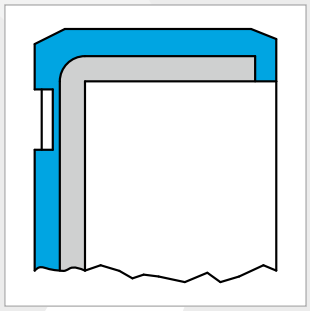
DIMENSIONS

Part number	Shaft diameter Ød1 h9	Outside diameter ØD	Width L1	Width L3	Bore diameter Øda max	Bore diameter Ødb	Bore diameter Ødc
131.015040	15.00	32.00	4.00	3.00	21.00	29.00	34.00
131.017040	17.00	34.00	4.00	3.00	23.00	31.00	36.00
131.020040	20.00	37.00	4.00	3.00	26.00	34.00	39.00
131.025040	25.00	42.00	4.00	3.00	31.00	39.00	44.00
131.028040	28.00	45.00	4.00	3.00	33.00	42.00	47.00
131.029040	29.00	39.00	4.00	3.00	34.00	43.00	48.00
131.030045	30.00	48.00	4.50	3.00	37.00	45.00	50.00
131.035045	35.00	53.00	4.50	3.00	42.00	50.00	55.00
131.040045	40.00	58.00	4.50	3.00	47.00	55.00	60.00
131.045045	45.00	63.00	4.50	3.00	52.00	60.00	65.00
131.050055	50.00	72.00	5.50	3.00	58.00	68.50	74.00
131.055055	55.00	77.00	5.50	3.00	63.00	73.50	79.00
131.060055	60.00	82.00	5.50	3.00	68.00	78.50	84.00
131.065055	65.00	87.00	5.50	3.00	73.00	83.50	89.00
131.070055	70.00	92.00	5.50	3.00	78.00	88.50	94.00
131.075055	75.00	97.00	5.50	3.00	83.00	93.50	99.00
131.080055	80.00	102.00	5.50	3.00	88.00	98.50	104.00
131.085055	85.00	107.00	5.50	3.00	93.00	103.50	109.00
131.090055	90.00	112.00	5.50	3.00	98.00	108.50	114.00
131.095055	95.00	117.00	5.50	3.00	103.00	113.50	119.00
131.100055	100.00	122.00	5.50	3.00	108.00	118.50	124.00

25. Cover seals

FRANCE JOINT offers cover seals with metal inserts bonded on a rubber coating.

Following application, these cover seals can be used as masks and made in various materials (NBR, FKM, etc.) with grooves on the outside.



COVER SEALS
EC

DESCRIPTION

The EC profile is a cover seal composed of a single external metal cage with a rubber coating.

ADVANTAGES

Very good static sealing

Very good thermal expansion compensation

Greater roughness is allowed in the housing

Reduced risk of corrosion

APPLICATIONS

Transmissions

Gear motor

Pumps

Motors

MATERIALS

Rubber

NBR 70 - 75 Shore A

FKM 70 - 75 Shore A

Metal cage

Steel - AISI 1010

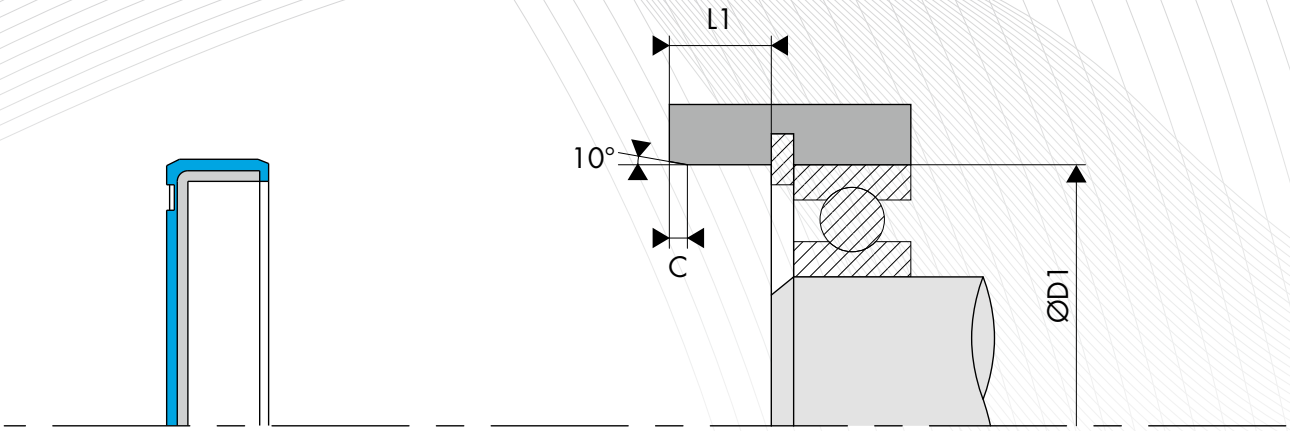
TECHNICAL DATA

Temperature	-40°C / +200°C
Pressure	0.50 MPa

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

CHAMFERS

Groove width L1	Chamfer C
4.00 - 5.00	1.00
6.00 - 7.00	1.30
8.00 - 9.50	1.50
10.00 - 11.00	1.80
12.00 - 15.00	2.00



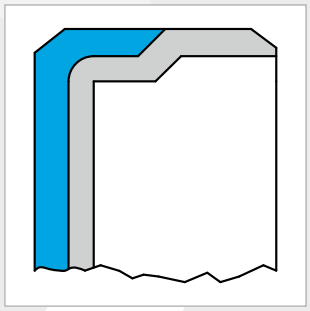
DIMENSIONS

Part number	Bore diameter ØD1 H8	Groove width L1 0/+0.50
800.SC01005	10.00	5.00
800.SC01205	12.00	5.00
800.SC01304	13.00	4.00
800.SC01404	14.00	4.00
800.SC01604	16.00	4.00
800.SC01704	17.00	4.00
800.SC01804	18.00	4.00
800.SC01907	19.00	7.00
800.SC02004	20.00	4.00
800.SC02007	20.00	7.00
800.SC02204	22.00	4.00
800.SC02205	22.00	5.00
800.SC02207	22.00	7.00
800.SC02407	24.00	7.00
800.SC02505	25.00	5.00
800.SC02506	25.00	6.00
800.SC02507	25.00	7.00
800.SC02604	26.00	4.00
800.SC02804	28.00	4.00
800.SC02805	28.00	5.00
800.SC02807	28.00	7.00
800.SC02907	29.00	7.00
800.SC03004	30.00	4.00
800.SC03005	30.00	5.00
800.SC03006	30.00	6.00
800.SC03008	30.00	8.00
800.SC03205	32.00	5.00
800.SC03207	32.00	7.00
800.SC03208	32.00	8.00
800.SC03408	34.00	8.00
800.SC03505	35.00	5.00
800.SC03507	35.00	7.00
800.SC03508	35.00	8.00
800.SC03606	36.00	6.00
800.SC03705	37.00	5.00
800.SC03707	37.00	7.00
800.SC03710	37.00	10.00
800.SC03807	38.00	7.00
800.SC03810	38.00	10.00
800.SC04005	40.00	5.00
800.SC04007	40.00	7.00
800.SC04008	40.00	8.00
800.SC04207	42.00	7.00
800.SC04208	42.00	8.00
800.SC04407	44.00	7.00
800.SC04505	45.00	5.00

Part number	Bore diameter ØD1 H8	Groove width L1 0/+0.50
800.SC04704	47.00	4.00
800.SC04705	47.00	5.00
800.SC04707	47.00	7.00
800.SC04708	47.00	8.00
800.SC04710	47.00	10.00
800.SC05007	50.00	7.00
800.SC05009	50.00	9.00
800.SC05010	50.00	10.00
800.SC05016	50.00	16.00
800.SC05206	52.00	6.00
800.SC05207	52.00	7.00
800.SC05208	52.00	8.00
800.SC05210	52.00	10.00
800.SC05504	55.00	4.00
800.SC05506	55.00	6.00
800.SC05507	55.00	7.00
800.SC05510	55.00	10.00
800.SC05610	56.00	10.00
800.SC05708	57.00	8.00
800.SC05806	58.00	6.00
800.SC05807	58.00	7.00
800.SC06007	60.00	7.00
800.SC06008	60.00	8.00
800.SC06016	60.00	16.00
800.SC06207	62.00	7.00
800.SC06208	62.00	8.00
800.SC06210	62.00	10.00
800.SC06212	62.00	12.00
800.SC06508	65.00	8.00
800.SC06510	65.00	10.00
800.SC06808	68.00	8.00
800.SC06910	69.00	10.00
800.SC07010	70.00	10.00
800.SC07016	70.00	16.00
800.SC07207	72.00	7.00
800.SC07209	72.00	9.00
800.SC07210	72.00	10.00
800.SC07507	75.00	7.00
800.SC07510	75.00	10.00
800.SC07512	75.00	12.00
800.SC08008	80.00	8.00
800.SC08010	80.00	10.00
800.SC08012	80.00	12.00
800.SC08016	80.00	16.00
800.SC08112	81.00	12.00
800.SC08307	83.00	7.00

Part number	Bore diameter ØD1 H8	Groove width L1 0/+0.50
800.SC08510	85.00	10.00
800.SC08512	85.00	12.00
800.SC08520	85.00	20.00
800.SC08712	87.00	12.00
800.SC09007	90.00	7.00
800.SC09008	90.00	8.00
800.SC09010	90.00	10.00
800.SC09012	90.00	12.00
800.SC09510	95.00	10.00
800.SC10010	100.00	10.00
800.SC10012	100.00	12.00
800.SC10025	100.00	25.00
800.SC10031	100.00	31.00
800.SC11010	110.00	10.00
800.SC11012	110.00	12.00
800.SC11021	110.00	21.00
800.SC12008	120.00	8.00
800.SC12012	120.00	12.00
800.SC12027	120.00	27.00
800.SC12033	120.00	33.00
800.SC12512	125.00	12.00
800.SC13008	130.00	8.00
800.SC13012	130.00	12.00
800.SC13027	130.00	27.00
800.SC14012	140.00	12.00
800.SC14015	140.00	15.00

Part number	Bore diameter ØD1 H8	Groove width L1 0/+0.50
800.SC14037	140.00	37.00
800.SC14515	145.00	15.00
800.SC15015	150.00	15.00
800.SC15027	150.00	27.00
800.SC16015	160.00	15.00
800.SC16512	165.00	12.00
800.SC16715	167.00	15.00
800.SC16815	168.00	15.00
800.SC17015	170.00	15.00
800.SC17043	170.00	43.00
800.SC18012	180.00	12.00
800.SC18015	180.00	15.00
800.SC18030	180.00	30.00
800.SC18515	185.00	15.00
800.SC19012	190.00	12.00
800.SC20013	200.00	13.00
800.SC21015	210.00	15.00
800.SC21027	210.00	27.00
800.SC22514	225.00	14.00
800.SC23014	230.00	14.00
800.SC23515	235.00	15.00
800.SC24015	240.00	15.00
800.SC26015	260.00	15.00
800.SC27015	270.00	15.00
800.SC29015	290.00	15.00



COVER SEALS
EBC

DESCRIPTION

The EBC profile is a cover seal composed of a single external metal cage with a rubber coating covering half of the outside of the cage.

ADVANTAGES

Good radial rigidity, particularly for large diameters

Good stability when assembled, preventing the bounce-back effect

Good static sealing

Good thermal expansion compensation

Good heat transfer

APPLICATIONS

Transmissions

Gear motor

Pumps

Motors

MATERIALS

Rubber

NBR 70 - 75 Shore A

FKM 70 - 75 Shore A

Metal cage

Steel - AISI 1010

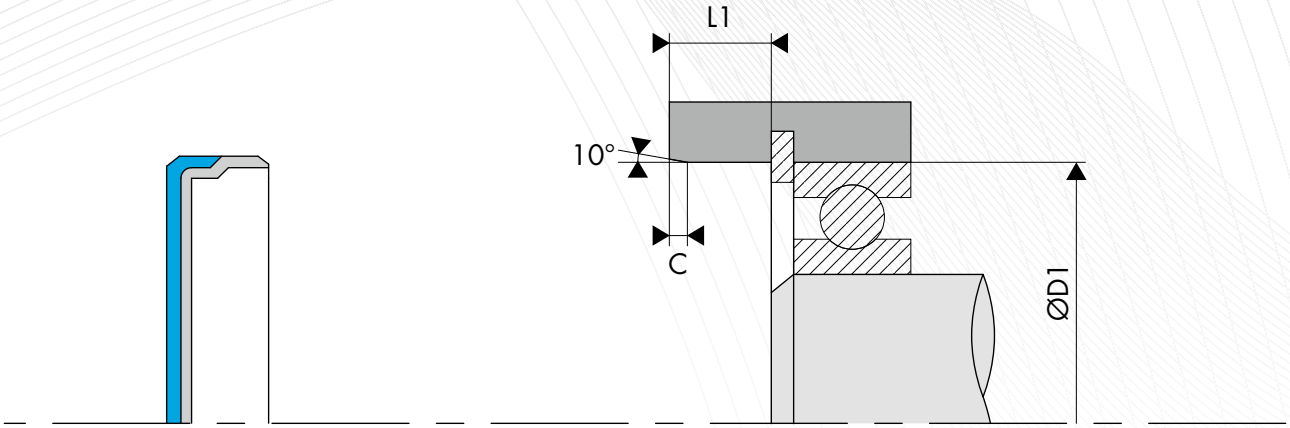
TECHNICAL DATA

Temperature	-40°C / +200°C
Pressure	0.50 MPa

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

CHAMFERS

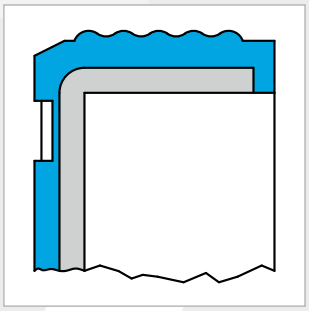
Groove width L1	Chamfer C
4.00 - 5.00	1.00
6.00 - 7.00	1.30
8.00 - 9.50	1.50
10.00 - 11.00	1.80
12.00 - 15.00	2.00



DIMENSIONS

Part number	Bore diameter ØD1 H8	Groove width L1 0/+0.50
800.BC01005	10.00	5.00
800.BC02205	22.00	5.00
800.BC02207	22.00	7.00
800.BC02407	24.00	7.00
800.BC02807	28.00	7.00
800.BC03006	30.00	6.00
800.BC03007	30.00	7.00
800.BC03008	30.00	8.00
800.BC03208	32.00	8.00
800.BC03508	35.00	8.00
800.BC03707	37.00	7.00
800.BC03710	37.00	10.00
800.BC04005	40.00	5.00
800.BC04007	40.00	7.00
800.BC04207	42.00	7.00
800.BC04707	47.00	7.00
800.BC04710	47.00	10.00
800.BC05207	52.00	7.00
800.BC05210	52.00	10.00
800.BC05507	55.00	7.00
800.BC05508	55.00	8.00
800.BC05501	55.00	10.00
800.BC06208	62.00	8.00
800.BC06510	65.00	10.00
800.BC06808	68.00	8.00

Part number	Bore diameter ØD1 H8	Groove width L1 0/+0.50
800.BC07008	70.00	8.00
800.BC07209	72.00	9.00
800.BC07507	75.00	7.00
800.BC08008	80.00	8.00
800.BC08012	80.00	12.00
800.BC08510	85.00	10.00
800.BC08512	85.00	12.00
800.BC09012	90.00	12.00
800.BC09512	95.00	12.00
800.BC10012	100.00	12.00
800.BC11012	110.00	12.00
800.BC11512	115.00	12.00
800.BC12012	120.00	12.00
800.BC12512	125.00	12.00
800.BC13012	130.00	12.00
800.BC14015	140.00	15.00
800.BC14512	145.00	12.00
800.BC15015	150.00	15.00
800.BC16015	160.00	15.00
800.BC17015	170.00	15.00
800.BC20013	200.00	13.00
800.BC21015	210.00	15.00
800.BC22514	225.00	14.00
800.BC23014	230.00	14.00
800.BC24015	240.00	15.00



COVER SEALS
ECW

DESCRIPTION

The ECW profile is a cover seal composed of a single external metal cage with rubber grooves covering half of the outside of the cage.

ADVANTAGES

Very good static sealing

Very good thermal expansion compensation

Greater roughness is allowed in the housing

Reduced risk of corrosion

Easy to assemble with very limited bounce-back effect

APPLICATIONS

Transmissions

Gear motor

Pumps

Motors

MATERIALS

Rubber

NBR 70 - 75 Shore A

FKM 70 - 75 Shore A

Metal cage

Steel - AISI 1010

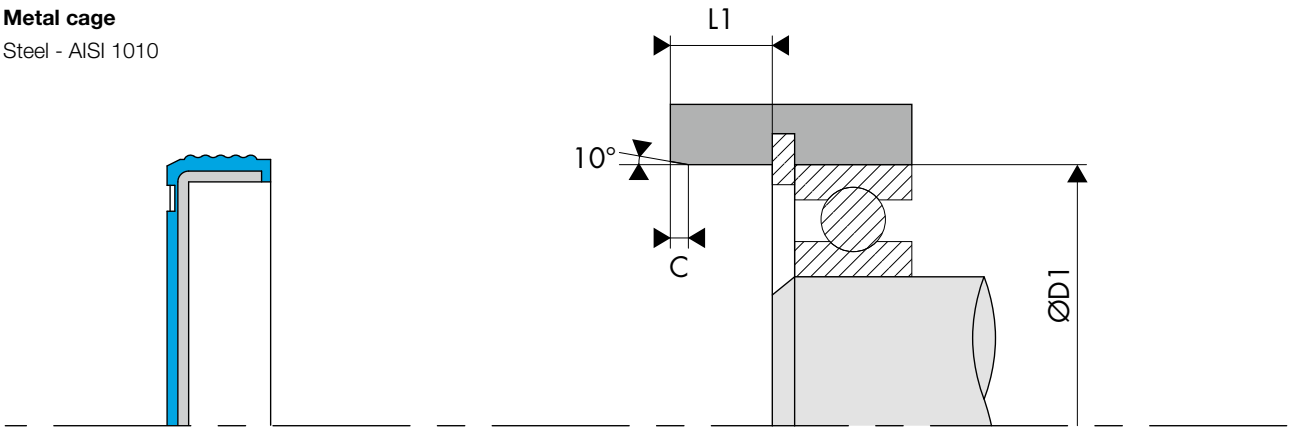
TECHNICAL DATA

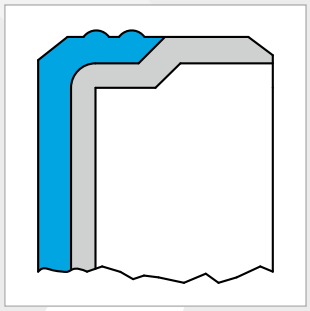
Temperature	-40°C / +200°C
Pressure	0.50 MPa

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

CHAMFERS

Groove width L1	Chamfer C
4.00 - 5.00	1.00
6.00 - 7.00	1.30
8.00 - 9.50	1.50
10.00 - 11.00	1.80
12.00 - 15.00	2.00





COVER SEALS
EBCW

DESCRIPTION

The EBCW profile is a cover seal composed of a single external metal cage with rubber grooves covering half of the outside of the cage.

ADVANTAGES

Good radial rigidity, particularly for large diameters

Good stability when assembled, preventing the bounce-back effect

Good static sealing

Good thermal expansion compensation

Good heat transfer

Easy to assemble with very limited bounce-back effect

APPLICATIONS

Transmissions

Gear motor

Pumps

Motors

MATERIALS

Rubber

NBR 70 - 75 Shore A

FKM 70 - 75 Shore A

Metal cage

Steel - AISI 1010

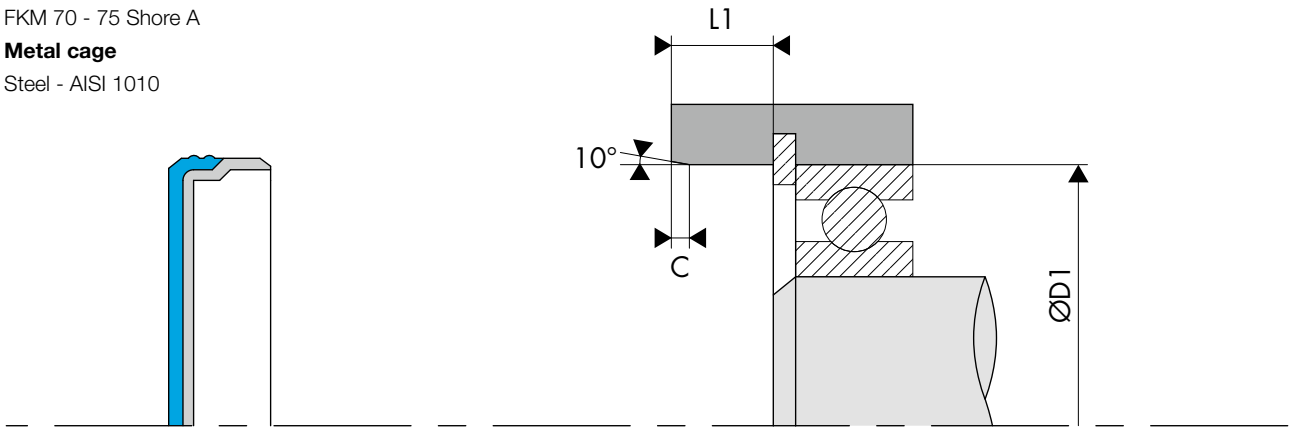
TECHNICAL DATA

Temperature	-40°C / +200°C
Pressure	0.50 MPa

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

CHAMFERS

Groove width L1	Chamfer C
4.00 - 5.00	1.00
6.00 - 7.00	1.30
8.00 - 9.50	1.50
10.00 - 11.00	1.80
12.00 - 15.00	2.00



www.francejoint.com

www.francejoint.com

QUALITY & EXPERTISE
FOR YOUR SEALING NEEDS

FRANCEJOINT
L'ETANCHEITE PRESTIGE

FRANCE JOINT SAS
Zone Artisanale Le Mortier - B.P. 50009 - Cugand - 85613 Montaigu Cedex - France
Ph. **+33 (0)2 51 42 13 76** - Fax **+33 (0)2 51 43 61 14**
Email: contact@francejoint.fr - Website: **www.francejoint.com**

SAS CAPITAL 1,000,000 Euro - RCS 450 136 809 - VAT No. FR 10 450 136 809 - SIRET 450 136 809 00016 - FIN 2219 Z

planete-communication.fr Document printed on PEFC or FSC certified paper with vegetable inks