

Rotary shaft seals

Axial gamma seals
and sealing end covers



Product catalogue

CARSTEN HOLM A/S
SEALING SOLUTIONS



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CARSTEN HOLM A/S

PROBABLY DENMARK'S LARGEST RANGE OF SEALS AND GASKETS

Carsten Holm A/S has manufactured, marketed and sold standard and special seals for hydraulic, pneumatic, static and rotary applications since 1979. Our products are suitable for use even in the most hostile environments. We market our products to a wide range of industries in Denmark and abroad.

Carsten Holm A/S is a leading player in the gasket and seals market. We strive consistently to add value and provide outstanding solutions for our customers.

We have Denmark's largest stock of rotary shaft seals and sealing end covers. We have a dedicated team of employees, documented processes and strong focus on quality. Our excellent service makes all the difference!. We offer versatile solutions adapted to meet our customers' specific requests. Carsten Holm A/S guarantees all of the following:

- Rapid and reliable delivery
- Competitive prices
- Competent advisory services
- High-quality products



OUR SOLID BACKGROUND AND EXPERTISE

MAKE ALL THE DIFFERENCE!

We have almost 40 years of sealing experience and Denmark's largest stock of rotary shaft seals. Our product range includes more than 100,000 articles:

- Hydraulic seals
- Pneumatic seals
- Static seals
- Rotary seals














This catalogue is about rotary shaft seals, axial gamma seals and sealing end covers. The catalogue includes relevant technical data about all of these products.

Carsten Holm A/S supplies DIN 3760-approved rotary shaft seals in outer diameters up to 1,000 mm and radial seals with outer diameters up to 2,400 mm. Moreover, we offer rotary shaft seals in custom sizes and compounds for use with aggressive media and under harsh operating conditions. The data in the catalogue is for guidance only. Carsten Holm A/S accepts no liability for it.



**ROTARY SHAFT
SEALS**

CARSTEN HOLM A/S
SEALING SOLUTIONS

Description	Material	Profiles	Pressure (bar)	Temperature °C	Sliding speed (max. m/sec)
Profiles list - Rotary shaft seals					
ROTARY SHAFT SEALS OA NBR-70 ROTARY SHAFT SEALS OA FP-75	NBR-70 FKM-75		0.5 0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OAS NBR-70 ROTARY SHAFT SEALS OAS FP-75	NBR-70 FKM-75		0.5 0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OAU NBR-70 ROTARY SHAFT SEALS OAU FP-75	NBR-70 FKM-75		0.5 0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS O AUS NBR-70 ROTARY SHAFT SEALS O AUS FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OAS-P NBR-70 ROTARY SHAFT SEALS OAS-P FP-75	NBR-70 FKM-75		8 8	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OAD NBR-70 ROTARY SHAFT SEALS OAD FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OB NBR-70 ROTARY SHAFT SEALS OB FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OBS NBR-70 ROTARY SHAFT SEALS OBS FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OC NBR-70 ROTARY SHAFT SEALS OC FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OCS NBR-70 ROTARY SHAFT SEALS OCS FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OBU NBR-70 ROTARY SHAFT SEALS OBU FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OBUS NBR-70 ROTARY SHAFT SEALS OBUS FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OAU R NBR-70 ROTARY SHAFT SEALS OAU R FP-75	NBR-70 FKM-75		0.5	-40/+100°C -30/+200°C	12 35
ROTARY SHAFT SEALS OAGE NBR-70 ROTARY SHAFT SEALS OAGE FP-75	NBR-70/FKM-75 FABRIC		0.5	-40/+100°C -30/+200°C	-
ROTARY SHAFT SEALS OC PT	STAINLESS STEEL / PTFE / RUBBER		25	-40/+260°C	30

Carsten Holm A/S rotary shaft seals conform to German standard DIN 3760.
The above data expresses maximum values that must not occur concurrently. Carsten Holm A/S accepts no liability for typographical errors.

Operating conditions	NBR	FKM
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Material data NBR and FKM

PRESSURE (MAX) BAR	0.5	0.5
MAX. TEMPERATURE °C	100	200
MIN. TEMPERATURE °C	-40	-30
SLIDING SPEED (MAX.) M/S	12	35

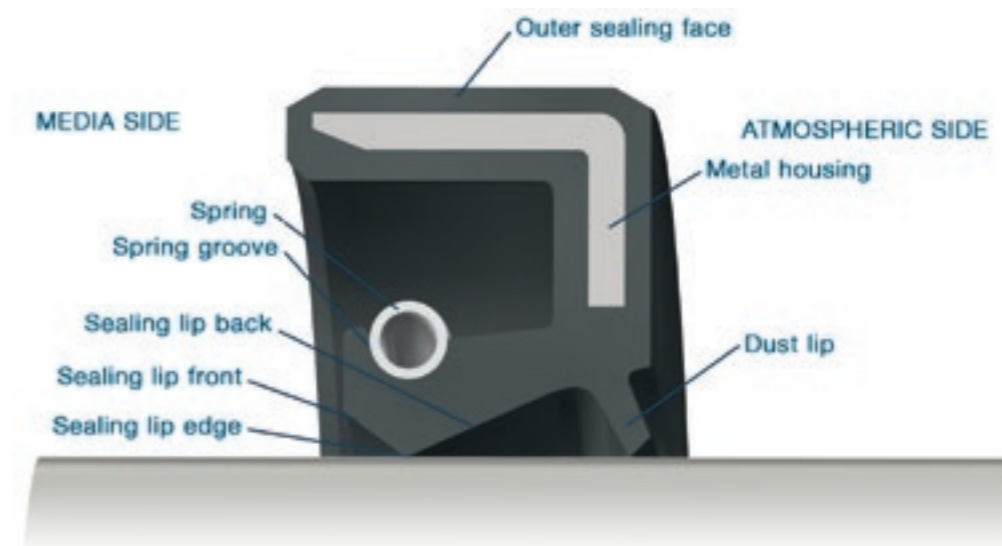
NB: The data is for guidance only. Values may vary depending on the type of medium, environment and application, to which the material is exposed.

ROTARY SHAFT SEAL FUNCTION

Rotary shaft seal, gland seal, shaft sealing ring. Same product, different names. The rotary shaft seal is one of the sealing solutions most often used in the market to resolve dynamic sealing issues. A rotary shaft seal is a spring-loaded, elastomer sealing element in a metal housing. The cylindrical housing provides static sealing and ensures that the rotary shaft seal is locked inside its housing. The metal housing ensures that the rotary shaft seal is stable.

The sealing lip ensures dynamic and static sealing. To amplify pressure on the shaft, the sealing lip is secured with a spring. Depending on the design, one or more dust lips prevent dust and other impurities from contaminating the area protected by the lips.

PROFILE



SEALING EFFECT

SHAFT CONDITION

The sealing effect is achieved via the sealing lip that exerts radial pressure on the surface of the shaft. Deformation of the elastomer sealing edge offsets minimal surface deviations on the shaft and closes the gaps. Sealing lip pressure is achieved by means of pre-stressing that is enhanced by the spring.

ROTARY SHAFT

Hydrodynamic effect ensures that the sealing lip “floats” on a film of the medium sealed off by the seal. This prevents premature wear-and-tear and thermal degeneration of the sealing lip.

Shortly after commissioning, an optimal structure is created on the contact surface, the effect of which is to create transfer from the atmospheric side to the media side. The reverse transfer effect is achieved via asymmetrical distribution of pressure in the contact zones that occurs due not only to variations in the pressure edge angle of the sealing lip in contact with the surface of the shaft, but also to displacement of the spring on the atmospheric side.

The medium sealed off by the seal must always be on the same side as the edge angle that produces most pressure. When installing the seal, always take into account the function of the rotary shaft seal. Do you intend the rotary shaft seal to prevent lubricant from leaking – or do you wish to protect the shaft from water ingress?

PRODUCT BENEFITS

- √ Easy to mount and dismount
- √ Suitable for static and rotary applications
- √ Wide range of dimensions
- √ Economical sealing solutions

OPERATING CONDITIONS

A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar.

At higher pressures, the sealing effect of the rotary shaft seal is in fact enhanced as the sealing lip exerts additional pressure on the shaft. At the same time, however, there is additional thermal load and wear on the sealing edge, which leads to premature degeneration and hardening of the elastomer material. When exposed to excessive pressure, the sealing lip may collapse on the atmospheric side. Our type OAS-P has a reinforced sealing lip that can withstand pressure of up to 8 bar (depending on rotational speed).

SPEED

To avoid dysfunction due to overheating that can lead to hardening of the elastomers or the formation of oil slag, the sliding speed must be limited. Under optimal operating conditions (i.e. atmospheric operation, adequate lubrication with mineral oil and effective heat deflection in the pressure zone), the rotary shaft seals can be used at sliding speeds of up to 25 m/s.

ALWAYS IN STOCK

We stock rotary shaft seals in many different sizes and compounds. Special sizes are available on request.

APPLICATIONS

Rotary shaft seals are most often used to prevent and seal against oil leakage in rotary applications. In some housings, these seals can be used to prevent leakage of other liquids, gases, powders or granulates.

FITTING

Fitting according to DIN 3760. It is important that fitting tools are made in a malleable material and have no sharp edges. Lubricate the seal with system oil before fitting.

THE DIFFERENT TYPES OF ROTARY SHAFT SEALS

Rotary shaft seals are used in almost all branches of industry, as they are strong and durable seals for use with shafts, and in power tools and gearboxes. There are many different types of rotary shaft seals available on the market. Each has specific characteristics. The characteristics of a seal determine whether it is suitable for use in a given application. Learn more about the different types of rotary shaft seals here:

ROTARY SHAFT SEAL – OA

Type OA is a standard rotary shaft seal comprised of a rubber-covered metal housing and a spring-loaded sealing lip. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. OA is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Strong heat resistance. FKM material is suitable for use at high temperatures, high speeds and in more aggressive media (compared to NBR material).

ROTARY SHAFT SEAL – OAS

Type OAS is a standard rotary shaft seal comprising a rubber-covered metal housing and a spring-loaded sealing lip. Type OAS has an additional protective dust lip that protects the primary sealing lip from external contamination. The spring is made of regular non-alloy spring steel. In FKM seals, the spring is made of stainless steel (SAE 304). This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. OAS is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Good resistance to heat. Suitable for use in dust-polluted environments. FKM material is suitable for use at high temperatures, high speeds and with more aggressive media (compared to NBR material). NB: The additional sealing lip can cause high temperatures due to friction.



ROTARY SHAFT SEAL – OAU

Rotary shaft seal type OAU is a single-acting standard rotary shaft seal that consists of a rubber-coated metal housing and a sealing lip without a spring, which produces less friction and heat. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. OAU is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Good heat resistance. Compact – ideal for use in small spaces. FKM material is suitable for use at high temperatures, high speeds and with more aggressive media (compared to NBR material). NB: OAU is not suitable for use in a dust-polluted environment.



ROTARY SHAFT SEAL – OAUS

Type OAUS is a standard rotary shaft seal comprising a rubber-covered metal housing and a sealing lip without a spring. Type OAUS has an additional protective dust lip that protects the primary sealing lip from external contamination. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. OAUS is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Compact – ideal for use in small spaces. FKM material is suitable for use at high temperatures, high speeds and with more aggressive media (compared to NBR material). NB: The additional sealing lip can cause high temperatures due to friction.

ROTARY SHAFT SEAL – OAS-P

Type OAS-P rotary shaft seal is a special seal comprising a rubber-coated metal housing, a spring-loaded sealing lip and an additional dust lip that protects the primary sealing lip from external contamination. Type OAS-P has a reinforced sealing lip that withstands medium pressure, i.e. it can be used at pressures of up to 8 bar (see OAS-P pressure chart on page 16). The spring is made of regular non-alloy spring steel. In FKM seals, the spring is made of stainless steel (SAE 304).

This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. OAS-P is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Good heat resistance. Suitable for use in dust-polluted environments. Also works well at low pressure. FKM material is suitable for use at high temperatures, high speeds and with more aggressive media (compared to NBR material). NB: The additional sealing lip can cause high temperatures due to friction.

ROTARY SHAFT SEAL – OAD

Type OAD is a special double-action rotary shaft seal comprising a rubber-coated metal housing and two spring-loaded sealing lips that either protect the primary sealing lip from external contamination or separate two media. The springs are made of regular non-alloy spring steel. In FKM seals, the spring is made of stainless steel (SAE 304).

This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. OAD is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Good heat resistance. Suitable for use in dust-polluted environments. Compact – good for small housings. Good to separate two media. FKM material is suitable for use at high temperatures, high speeds and with more aggressive media (compared to NBR material). NB: The additional sealing lip can cause high temperatures due to friction.

ROTARY SHAFT SEAL – OB

Type OB is a standard rotary shaft seal, comprised of bare metal housing (without rubber coating) and a spring. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. The spring is made of regular non-alloy spring steel. In FKM seals, the spring is made of stainless steel (SAE 304). OB is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Compact, precision fitting. FKM material is suitable for use at high temperatures, high speeds and with more aggressive media (compared to NBR material).

NB: OB provides only limited sealing of low-viscosity fluids and should not be used in very dusty environments.

ROTARY SHAFT SEAL – OBS

Type OBS is a standard rotary shaft seal comprising a bare metal housing (without rubber coating) and a single spring. Type OBS has an additional protective dust lip that protects the primary sealing lip from external contamination. The spring is made of regular non-alloy spring steel. In FKM seals, the spring is made of stainless steel (SAE 304). This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water.

A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. OBS is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Good heat resistance. Suitable for use in dust-polluted environments. Compact, precision fitting. FKM material is suitable for use at high temperatures, high speeds and with more aggressive media (compared to NBR material). NB: The additional sealing lip can cause high temperatures due to friction.

ROTARY SHAFT SEAL – OC

Type OC is a standard rotary shaft seal comprising an enclosed metal housing with a metal insert and a spring-loaded sealing lip. The reinforced and enclosed metal housing makes this seal more rigid for compact and precise fitting. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. The spring is made of regular non-alloy spring steel. In FKM seals, the spring is made of stainless steel (SAE 304). OC is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Good heat resistance. FKM material is suitable for use at high temperatures and high speeds and with more aggressive media (compared to NBR material).

NB: OC provides only limited sealing of low-viscosity fluids and should not be used in very dusty environments.

ROTARY SHAFT SEAL – OCS

Type OCS is a standard rotary shaft seal comprising an enclosed metal housing with a metal insert and a spring-loaded sealing lip. Type OCS has an additional protective dust lip that protects the primary sealing lip from external contamination. The reinforced metal housing makes this seal more rigid for compact and precise fitting. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. The spring is made of regular non-alloy spring steel. In FKM seals, the spring is made of stainless steel (SAE 304). OCS is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. FKM material is suitable for use at high temperatures and high speeds and with more aggressive media (compared to NBR material).

NB: The additional sealing lip can cause high temperatures due to friction.

ROTARY SHAFT SEAL – OBU

Type OBU is a standard rotary shaft seal comprising a bare metal case (not rubber-coated) with no spring – to minimise friction and heat. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure 0.5 bar. OBU is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Compact, precision fitting. FKM material is suitable for use at high temperatures and high speeds and with more aggressive media (compared to NBR material).

NB: OBU provides only limited sealing of low-viscosity fluids and should not be used in very dusty environments.

ROTARY SHAFT SEAL – OBUS

Type OBUS is a standard rotary shaft seal comprising a bare metal housing (without rubber coating) without a spring. Type OBUS has an additional protective dust lip that protects the primary sealing lip from external contamination. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. In FKM seals, the spring is made of stainless steel (SAE 304). OBUS is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Good heat resistance. Suitable for use in dust-polluted environments. Compact, precision fitting. FKM material is suitable for use at high temperatures and high speeds and with more aggressive media (compared to NBR material).

NB: The additional sealing lip can cause high temperatures due to friction.

ROTARY SHAFT SEAL – OAUR

Type OAUR is a standard rotary shaft seal comprising a rubber-coated metal housing with a sealing lip but no spring – to minimise friction and heat. Furthermore, the outer surface is grooved to improve the sealing effect. This type of rotary shaft seal is designed to protect rotary parts from grease, oil and water. A standard rotary shaft seal is designed to run at max. pressure of 0.5 bar. OAUR is suitable for use with static and rotary parts. Easy to mount and dismount. Good resistance to many types of mineral oils and grease. Good heat resistance. Compact – ideal for use in small spaces. FKM material is suitable for use at high temperatures and high speeds and with more aggressive media (compared to NBR material).

NB: OAUR is not suitable for use in a dust-polluted environment.



ROTARY SHAFT SEAL – OAGE

A type OAGE rotary shaft seal is made of vulcanised NBR/FKM and Fabric. It is designed to protect against grease, oil and water at max. pressure of 0.5 bar. Easy to mount and dismount. Suitable for use in static and rotary applications. Good resistance to many types of mineral oils and grease. Good heat resistance.

ROTARY SHAFT SEAL – OC PT

Type OC PT is a standard rotary shaft seal comprising a stainless steel housing and a PTFE lip with a static, rubber sealing element. This seal is suitable for use in many different applications and available in innumerable variants. Low friction, long lifetime. Sliding speed of up to 30 m/s. Good resistance to chemicals. Withstands pressures up to 25 bar. Easy to mount and dismount. NB: If you have particularly stringent sealing requirements, this seal is available with Teflon® and other fillers, and with two or more sealing lips on request.

MATERIALS

A standard rotary shaft seal comprises a steel housing and one sealing lip. The steel housing is made of regular carbon steel or stainless steel. The sealing lip is made of elastomer.



WHICH MATERIAL SHOULD I CHOOSE?

Your choice of material depends on temperature, sliding speed, medium and environment. We supply rotary shaft seals in a wide range of elastomers. You should choose rotary shaft seal to meet your specific requirements, e.g. temperature conditions, resistance and application. The most commonly used rotary shaft seal materials are listed in the table below:

Description	Material	Temperature °C	Resistance	Application
Materials				
NITRILE BUTADIENE RUBBER	NBR	-30/+100°C	Motor oil Gearbox oil Mineral oil and grease Petrol Water and lye	NBR is used in almost every branch of industry. Choose NBR if there are no specific material requirements.
FLUOROCARBON ELASTOMER	FKM	-30/+200°C	Mineral oil Aliphatic, aromatic and chlorinated hydrocarbons Concentrated and diluted acids Certain chemicals	FKM is resistant to ageing, ozone and weathering. For use in fuel and solvent sealing applications.
ETHYLENE PROPYLENE RUBBER	EPDM	-45/+130°C (Sulphur-cured) -50/+150°C (Peroxide-cured)	Hot water Steam Organic fluids Brake fluids (dot4 and dot5) Ozone and UV light Acids (dilute) Lye	EPDM has excellent resistance to ozone, hot water and glycol-based brake fluids.
SILICON	SI	-50/+150°C	Mineral oil Motor oil Gearbox oil	SI can be used at high and low temperatures. Low subsidence is characteristic for SI. Resistant to sunlight, oxygen, UV light and dry heat.
POLYTETRAFLUORETHYLENE	PTFE	-200/+260°C	Motor oil Gear oil Hypoid oil ATF oil Petrol Water and lye	PTFE has excellent properties. It can be used in a broad temperature range, creates very little friction and can withstand more or less all known fluids. PTFE is an excellent choice of material for use in complex applications.

SPRINGS

Rotary shaft seals made in NBR are normally supplied with regular spring steel springs. For sealing against water or aggressive fluids, we can supply springs made of stainless steel AISI 304 or acid-resistant steel AISI 316. At Carsten Holm A/S, the standard grade of steel used in FKM rotary shaft seals is AISI 304.

TECHNICAL DOCUMENTATION

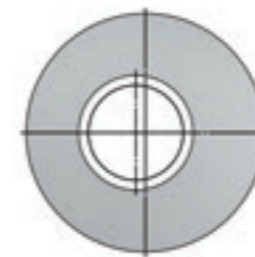
Tolerances	Shaft ISO h11	Housing/bore ISO h8
Tolerances groove dimensions/housing – Installation		
RUNOUT	IT 8	-
ROUGHNESS	Ra = 0,2 – 0,8 µm	-
ROUGHNESS	Rz = 1,0 – 5,0 µm	Rz = 10 - 25,0 µm
ROUGHNESS	Rmax = <6,3 µm	-
HARDNESS	45-60 HRC	-
SURFACE	Polished mainly in sealing zone, no spiral track	-

ECCENTRICITY

Under optimal conditions, i.e. a perfect seal, the shaft runs precisely and is concentric with the housing. Even when every effort has been made to achieve ideal working conditions, the engineer has to accept that a certain degree of eccentricity is unavoidable.

Rotary shaft seals are designed with a flexible lip that – to a certain extent – “conforms” to the shaft.

An eccentric housing is less critical than an eccentric shaft (runout) as the latter causes variable displacement of the lip at a frequency corresponding to the speed of the shaft. There is a limit to the speed at which the lip can conform to the shaft. The faster the rotation, the lower the tolerance threshold for eccentricity and the greater the risk of leaks.



An eccentric housing results in severe wear on one side of the rotary shaft seal.



An eccentric shaft results in leakages at high speeds.



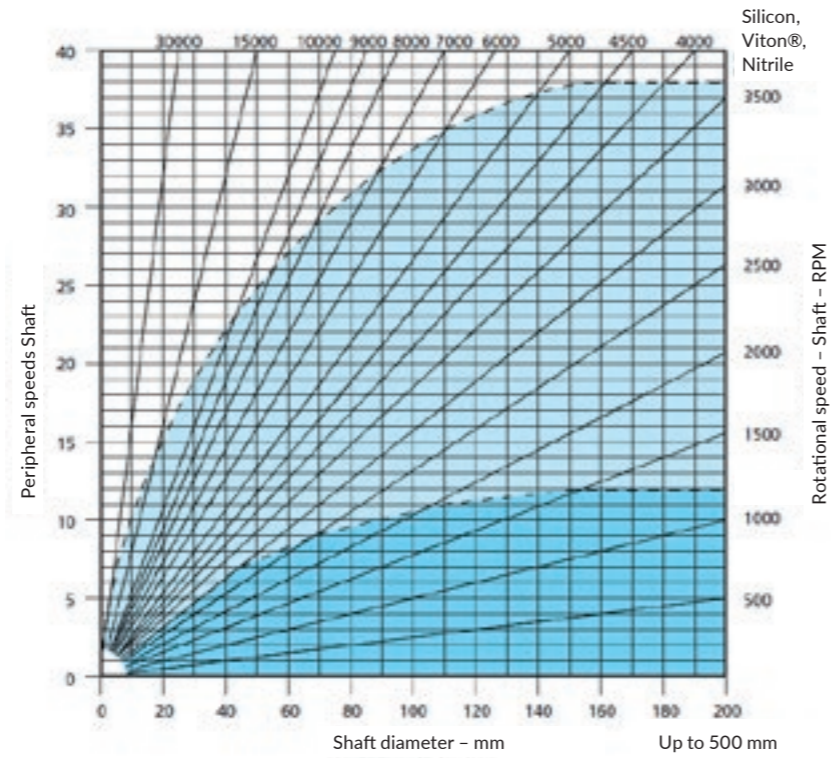
Worst case is if both the housing and the shaft are eccentric.

HOW TO SELECT SEAL MATERIAL BASED ON SHAFT DIAMETER AND ROTATIONAL SPEED

This graph shows permitted sliding speeds under atmospheric conditions for standard DIN 3760-approved rotary seals in NBR (Nitrile), FKM (Viton®) and VMQ (Silicon), respectively.

How to read the graph:

In an Ø100 mm shaft, peripheral speed at 3,000 RPM is 15.5 m/s.



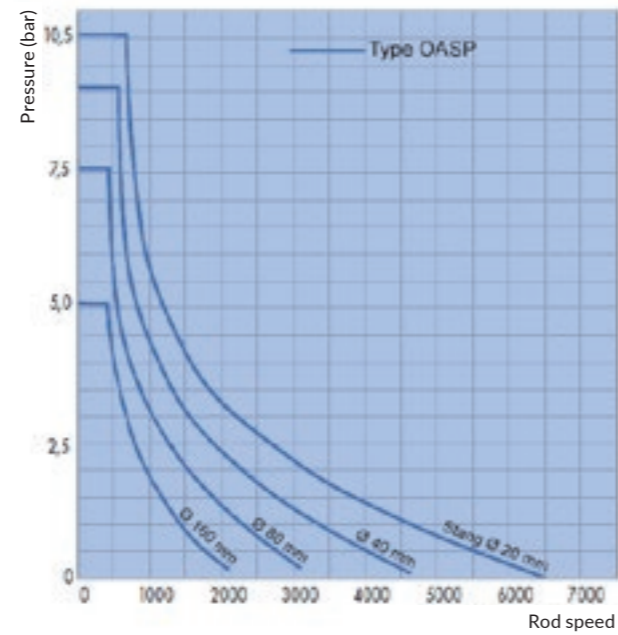
AXIAL GAMMA SEALS

PRESSURE TABLE FOR OAS-P

This graph shows max. permitted pressure for rotary shaft seals type OAS-P.

In addition to shaft diameter, the pressure is also determined by the speed at which the shaft rotates.

Example: Shaft diameter 80 mm and speed at 1,500 RPM = 2 Bar



Operating conditions

NBR

FKM

Axial gamma seals – gamma 01 - 02

SLIDING SPEED	12	35
MAX. TEMPERATURE °C	100	200
MIN. TEMPERATURE °C	-40	-30

DESCRIPTION

Axial gamma seals are axial seals comprised of two parts: a coated metal ring and a sealing element made of moulded vulcanised elastomer. Because the axial gamma seal rotates, it acts as both a seal and a flinger, deflecting foreign liquid or materials from the sealing face.

PROFILE



PRODUCT BENEFITS

- √ Protection from grease, impurities, dust and water
- √ No costly mechanical breakdowns as repair time is reduced to a minimum
- √ Inexpensive repairs
- √ Works well in combination with rotary shaft seal
- √ Easy to fit
- √ The metal ring protects the elastomer sealing element from damage

APPLICATIONS

Axial gamma seals have numerous applications. They are eminently suitable for use in critical applications, e.g. to protect maritime and construction equipment from water and other impurities. Axial gamma seals are often used in combination with rotary shaft seals.

- Industrial gearboxes
- Pumps
- Transmissions
- Construction equipment
- Electric motors
- Prop shafts

OPERATING CONDITIONS

Axial gamma seals provide a centrifugal effect that enhances a good seal. More or less all dust, impurities and water are deflected away. A number of technical requirements have to be met in order to ensure good sealing effect and long lifetime.

ALWAYS IN STOCK

Carsten Holm A/S supplies seals in many different sizes. Get in touch with us. We will find the most economical solution for you.

FITTING

Axial gamma seals are easy to fit. To improve the dynamic friction coefficient and ensure a longer life, lubricate the elastomer sealing element before fitting. Good lubrication also prevents adhesion after prolonged standstill.



SEALING END COVERS

Operating conditions

NBR

FKM

Sealing end cover NBEC

PRESSURE (MAX) BAR	0.5	0.5
MAX. TEMPERATURE °C	110	200
MIN. TEMPERATURE °C	-20	-30

DESCRIPTION

Sealing end covers (also known as end cover seal).

Sealing end covers are used to cover holes or as an alternative to bearing seals.

The NBEC NBR-70 (black) end cap is a standard sealing end cover made of rubber-coated metal.

This type of sealing end cover is designed to protect rotary parts from grease, oil and water. A standard sealing end cover is designed for use at max. pressure of 0.5 bar.

PROFILE**PRODUCT BENEFITS**

- √ Suitable for static applications
- √ Good resistance to many types of mineral oils and grease
- √ Average resistance to ageing
- √ Wide range of dimensions
- √ Easy to mount and dismount
- √ Economical sealing solutions

APPLICATIONS

Used in more or less all branches of industry as a good and lasting solution to seal holes in machinery, etc. Sealing end covers can also be used to seal service ports.

FITTING

Fitting according to DIN 3760. It is important that tools are made in a malleable material and have no sharp edges.

Use a hydraulic or mechanical fitting tool. Ease the sealing end cover into the hole drilled in the housing. Alternatively, carefully tap the cover into place using a rubber hammer. It is important to distribute pressure evenly. Tap evenly over the surface of the sealing end cover.

NB

If working under special conditions, e.g. at high temperatures or high pressure, other materials and models may have to be used. At high pressure, the sealing end cover must be secured with a circlip.



GENERAL INFORMATION

CARSTEN HOLM A/S
SEALING SOLUTIONS

Approvals	Countries	Food	Pharma	Drinking Water	Gas	Sanitation
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Material approvals

REGULATION EC1935/2004 EUROPEAN ALIMENTARY (ELASTOMER)	EU	X	X	X		
REGULATION EC2023/2006 EUROPEAN ALIMENTARY (GMP)	EU	X	X	X		
REGULATION 10/2011 EUROPEAN ALIMENTARY (PLASTIC)	EU	X	X	X		
FDA - FOOD AND DRUG ADMINISTRATION. FDA 21. CFR 177.2600 (ELASTOMER) FDA 21. CFR 177.2400 (PERFLUOROELASTOMERS) FDA 21. CFR. 177.1500 (PLASTICS)	US	X	X	X		X
USP CLASS VI - UNITED STATES PHARMACOPEIA	US		X			
3-A - SANITARY STANDARD INC.	US	X				X
BFR - BUNDESANSTALT FÜR RISIKOBEWERTUNG	DE	X				
UBA-ELL (ELASTOMERLEITLINIE)	DE			X		
DVGW - W270 E - DEUTSCHE VEREINIGUNG DES GAS- UND WASSERFACHES	DE			X		
DVGW - EN 681-1 - DEUTSCHE VEREINIGUNG DES GAS- UND WASSERFACHES	DE				X	
DVGW - W534 - DEUTSCHE VEREINIGUNG DES GAS- UND WASSERFACHES	DE			X		
DVGW GAS EN549 OG EN682 - DEUTSCHE VEREINIGUNG DES GAS- UND WASSERFACHES	DE				X	
BAM - BUNDEANSTALT FÜR MATERIAL-FORSCHUNG UND PRÜFUNG. (GAS/OXYGEN)	DE				X	
WRC-WATER RESEARCH CENTRE	UK			X		
WRAS - WATER REGULATIONS ADVISORY SCHEME	UK			X		

SPECIAL PROFILES MADE OF MATERIALS APPROVED FOR USE IN THE FOOD INDUSTRY

We offer a comprehensive range of rotary shaft seals in materials approved for use in the food industry, i.e. which meet a range of applicable regulations and are approved in accordance with the relevant international norms and standards.

Description	Material	Profiles	Pressure (max) bar	Temperature °C
Rotary shaft seals in materials approved for use in the food industry				
OS01	PU/PTFE		0.5	-30/+125°C
	PU/PTEK		0.5	-30/+125°C
	PU/POM		0.5	-30/+125°C
OS02	PU/PTFE		0.5	-30/+125°C
	PU/PTEK		0.5	-30/+125°C
	PU/POM		0.5	-30/+125°C
OS03	PU		0.5	-30/+125°C
	PTFE		0.5	-200/+260°C
	PTEK		0.5	-200/+260°C
	PEEK		0.5	-60/+260°C
	EPDM		0.5	-50/+100°C
OS08	PU		-	-30/+125°C
	PTFE		-	-200/+260°C
	PTEK		-	-200/+260°C
	PEEK		-	-60/+260°C
	EPDM		-	-50/+100°C
OS08A	PU		-	-30/+125°C
	PTFE		-	-200/+260°C
	PTEK		-	-200/+260°C
	PEEK		-	-60/+260°C
	EPDM		-	-50/+100°C

We supply rotary shaft seals in materials approved for use in the food industry in FKM, NBR and SILICON on request.

CONVERSION TABLE

The rotary shaft seals you currently use may have other designations than those we use at Carsten Holm A/S. The tables below compare our profiles with other rotary shaft seals, axial gamma seals and sealing end covers on the market.

Description	Profiles	Simrit	Trelleborg	Eriks	Taiwan China Japan
Rotary shaft seals					
ROTARY SHAFT SEALS OA		BA	TRA	R	SC
ROTARY SHAFT SEALS OAS		BA SL	TRE	RST	TC
ROTARY SHAFT SEALS OAS-P		BABSL	"TRU"	"RST-D"	
ROTARY SHAFT SEALS OB		B1	TRC	M	SB
ROTARY SHAFT SEALS OBS		B1 SL	TRD	MST	TB
ROTARY SHAFT SEALS OC		B2	TRB	GV	SA
ROTARY SHAFT SEALS OCS		B2 SL	TRF	GVST	TA
Axial gamma rings					
AXIAL GAMMA RINGS - GAMMA 01		MSC 01	TBP	-	RE
AXIAL GAMMA RINGS - GAMMA 02		MSC 02	TBR	-	RE1
Sealing end cover					
SEALING END COVER		GA	YJ38	END-CAP	EC

OUR TRACK RECORD

Global references

Over the years, Carsten Holm A/S has developed and manufactured standard and customised seals for demanding industrial applications across the globe. We know our market well and strive constantly to improve so that we can continue to meet changing customer needs. We have a solid background of experience with sealing applications in the following industries:



- Metals
- Wind Energy
- Marine & Offshore
- Transport
- Food & Beverages and Pharmaceuticals
- Oil & Gas
- Chemicals
- Agriculture
- Mining

Carsten Holm A/S accepts no liability for typographical errors and reserves the right to make changes to technical specifications.



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