



THE PREMIUM SINE SEAL

WAVE GOODBYE **TO LEAKS**

The oil seal for synchronous and asynchronous gearmotors

up
to date

A WAVE THAT SEALS

↗ Service life extended by up to +
100%

Premium Sine Seal oil seal

↗ Increased protection against leaks

↘ No grooving on the shaft

↗ Greater system availability

↘ Wear reduced by up to

-50%

Oil seals have been around for a long time. They seal a rotating shaft against two environments. Oil seals are standardized to DIN 3760 and are state-of-the-art. So why have we designed a new oil seal – the Premium Sine Seal – and how does it differ from other oil seals?

Let's start by making it clear that our Premium Sine Seal oil seal is still circular. It is securely installed on the motor side and seals the motor to prevent gear unit oil from entering. The sealing lip runs over the surface of the rotor shaft, on which the pinion is located, which directly drives the gear unit.

But what is different about our Premium Sine Seal?

Adjustable speeds, continuous duty and varying ambient temperatures are conditions that today's drive systems are exposed to. The gear unit's internal pressure also varies depending on these conditions and the capacity utilization. If the pressure and temperature acting on the sealing lip are high, the wear of the oil seal and the risk of a leak increase. The new Premium Sine Seal sealing systems provide optimum protection against oil leaks for systems and mounted motors. In conjunction with the experts from Freudenberg Sealing Technologies, we have developed a sealing ring that has been specially optimized for the conditions in which gearmotors are used. What makes this sealing ring special is that the sealing

lip has been designed to suit the rotating shaft. It is in the shape of a sine wave. This special shape and dispensing with the otherwise usual lock washer increases the sealing system's service life by up to 100% compared to conventional oil seals. This sinusoidal sealing lip in combination with lubricants approved by SEW also prevents grooving on the shaft. This means that a new oil seal can be placed in the same location during servicing. The special shape makes the contact surface with the rotating shaft larger, which improves heat dissipation, increases the transfer of lubricant at the sealing surface and thus significantly reduces wear on the sealing lip and the aging of the material.

Which motors and applications is the Premium Sine Seal intended for?

The benefits of the new oil seal over conventional sealing systems are especially evident in use with extremely high dynamics. That is why we're making the new technology available for PxG® planetary servo gear units, gearmotors with synchronous servomotors from the CMP.. and CM3C.. series and the mechatronic drive systems from the MOVIGEAR® range. However, the new oil seal

is also available for DR.., DRN../DR2S.. and DAS.. asynchronous motors in combination with our helical gear units, parallel-shaft helical gear units, helical-bevel gear units, helical-worm gear units and SPIROPLAN® right-angle gear units.

The Premium Sine Seal can typically be used for machinery in the packaging, food and beverage industries, wood processing, baggage handling systems at airports, automobile production, transportation, logistics and many other applications.

PROPERTIES

Reliably protects the motor against oil leaks (input side)

Sinusoidal path of the sealing lip

Reduced heating at the sealing lip

Less wear compared to standard oil seals

Expected service life of approx. 20 000 hours

No grease required



EXPERT VOICE



3 QUESTIONS FOR ...

ALEXANDER HÜTTINGER,

head of the Tribology and Sealing Systems technology group

Why was the sealing ring developed?

The reliability of a system also depends heavily on the reliability of its drive technology. Yet the requirements placed on drive technology are becoming increasingly demanding. In the past, production ran primarily in single-shift operation. Nowadays, however, drives often operate on a three-shift basis, depending on the application. In general, this means 24 hours a day, six days a week, or up to 7000 operating hours a year. Under these conditions, the seal is often the weakest link in a gearmotor.

What is special about the oil seal?

With the Premium Sine Seal, the contact between the input shaft and sealing lip is not straight, but instead follows a sinusoidal path on the shaft. This triples the effective contact surface on the shaft, resulting in

significantly better distribution of the heat generated in the sealing gap and reducing thermal strain many times over, which in turn slows the aging of the elastomer.

How does a sealing ring age?

That depends entirely on the strains to which the gearmotor is exposed during operation. In addition to mechanical wear due to abrasion, the temperature also has a significant effect. If it increases, the material, that is to say the elastomer from which the sealing ring is made, ages more quickly, becomes hard and loses elasticity. The result is that the sealing ring leaks and oil comes out. This process also varies depending on the lubricant.

➤ **GOOD TO KNOW**

- Our Premium Sine Seal has won the industry award in the drive and fluid technology category.

- To also reliably protect the gear unit output side against oil leaks, SEW-EURODRIVE has for a number of years been offering the option of a sealing system consisting of two sealing lips. It comprises a conventional sealing lip and an equally optimized sealing lip in the shape of a sinus wave. This double oil seal is particularly recommended for adverse and dirty ambient conditions and when sensitive products need to be given reliable protection against lubricant leaks.

➤ **WANT TO GO STRAIGHT TO THE PRODUCT?** **CLICK HERE!**

www.sew-eurodrive.de/oil-seal/

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