

# From two-sided expertise to top performance

Many high end cars are equipped with Sonceboz actuators. Their mecha-  
tronic drive systems and electric motors operate extremely and reliably well,  
even in harsh environments. Sonceboz, in turn, needs suppliers who are  
highly reliable when it comes to engineering, quality and logistics. One of  
Angst+Pfister's radial shaft seals travels the world with Sonceboz.

Radial shaft seals are vital for the actuators used on the air flaps on the radiator grille of a car. Powered air flaps are active and can improve aerodynamics by reducing air resistance. They reduce fuel consumption and lower CO<sub>2</sub> emissions. Sonceboz has designed actuators that are dustproof and can even withstand high-pressure water. Continuous engine vibration cannot damage them, and you could even say they are 'immune' to aggressive media such as brake fluid, engine oil, salt water and detergent.

Sonceboz's performance goes much further. With a design based on patented rotor-stator technology, the drives are remarkable for their high torque, so that even at high travelling speeds the flaps can still be controlled. At the same time, they are comparatively light and thin. Electronics and control intelligence are compactly bundled. There is always enough space for these drives, even if everything is very tightly packed in the front section of a car.

## **Farsighted engineering, ...**

Even the radial shaft seal, which protects the drive shaft, includes attention to detail: When Angst+Pfister developed the radial

shaft seal, our engineers not only worked on its design, but also on replacing FKM, which had been the choice for such seals in the past, with the high-performance and yet cost-effective HNBR. The temperature and automotive universally resistant compound underwent extensive testing to prove its full suitability. The series production tool was already available when the prototypes were made.

## **... above and beyond**

The engineers of Angst+Pfister took it one step further, looking beyond the actual seal: aiming to enhance performance and longevity even further, they optimised the surface of the shaft that comes into direct contact with the radial shaft sealing ring together with their counterparts at Sonceboz. As a result the radial shaft is now smoother and friction is further reduced.

## **Spurring each other on**

When two parties spur each other on with innovation and awareness of quality, and both are willing to go the extra mile, the result can only be a win-win situation. Rotary shaft seals affect the overall performance and service life of the actuators, and because these are produced in large numbers for the

world market, Sonceboz stipulates at least two production sources: Thanks to its extensive production platform, Angst+Pfister can guarantee in-house dual sourcing at all times. Production quality is always high regardless of location. Both production partners are certified to the demanding ISO TS 16949 standard, on which the automotive industry places significant importance. By applying EDM and innovative fine tuning, Angst+Pfister and its production partners have also been able to simplify mass production. Processes are continually enhanced to always stay one step ahead.

The requirements of the customer extend to logistics: Angst+Pfister has fully aligned its production of rotary shaft seals to the rolling planning of Sonceboz; and the principle of "first in, first out" is strictly adhered to: The Sonceboz assembly robots use the seals according to date of manufacture. The manufacturing process can be traced back as far as the elastomer suppliers.



Sonceboz: This is where innovation begins.

Cooperation between Sonceboz and Angst + Pfister has been so successful over the years that the two companies often work together on innovative development projects. "We like a challenge – in engineering, quality and logistics," says Philippe Oetiker account manager for Sonceboz at Angst + Pfister. "Both parties contribute with their expertise and ensure we both grow our businesses."

