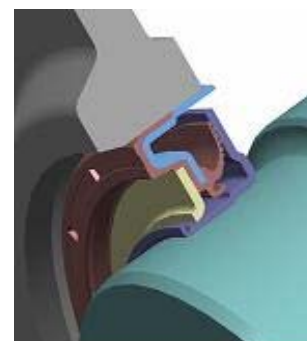


## CASCO Cassette Shaft Seals

Modern heavy duty engines place increasing demands on crankshaft seals for longer service life and increased reliability. Meeting and surpassing these customer needs often requires applying new technology for effective lubricant retention and exclusion of outside contamination.

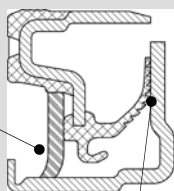


CASCO is a cassette or self-contained seal design. It integrates sealing elements and their contact surface in a single cartridge that press-fits into the bore with complimentary assembly tools. Unlike many seal concepts, the main lip is axially loaded. CASCO was developed specifically to extend seal life while solving difficult operating conditions including dynamic end play and radial run-out. In many cases it does this while reducing overall seal system costs. CASCO also lowers friction torque and power loss.

### How it works...

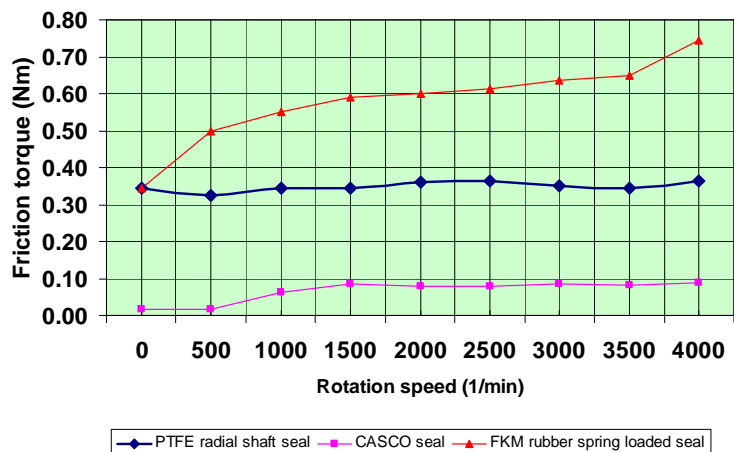
CASCO is a different approach to shaft sealing. The main lip of this design contacts a surface perpendicular to the shaft rather than radially on the shaft itself. It uses an axial or side located lip which incorporates a hydrodynamic pumping helix feature molded into the lip and running against a metal sleeve. This is augmented by the dynamic slinger effect of the rotating inner sleeve. An integral excluder dust lip of non-woven polyester allows positive contact to the shaft, preventing dirt ingress without high wear or heat build-up (see torque chart below). A rubber dust lip is used for some operating conditions. Simrit has over 13 years of experience with shaft seals designs using an axial main lip seal for crankshaft and other sealing applications.

fabric or  
rubber  
exclusion  
lip



double helix on main lip

### Friction Torque Comparison



### More Product Information

- Primary shaft range 70-180 mm (contact Simrit for other requirements).
- At least 30 mm of difference between the shaft and bore diameters is preferred.
- The shaft turning direction must be one way only (the main lip helix is not bi-directional)
- A specific assembly tool is recommended
- The outer (air) side of the seal should be dry. Consult with Simrit for application in wet clutches or where fluid contamination can be present

## Internal Validation:

56 tests performed for a total of more than 96,000 working hours

Duration	Total number of tests	Positive results (No.)	Negative results (No.)	Still running (No.)	Remarks
0-1000 hrs	30	30	0	2	Tested under extreme operating conditions beyond standard specification: axial end play and cocking in bore up to 1.0 mm, run-out to 1.0 mm, cold temperatures, carbonized oil, external course and fine dust.
1000-2000 hrs	15	15	0	2	
2000-5000 hrs	9	9	0	1	
>5000 hrs	2	2	0	1	Reached 25,000 hrs corresponding to 1 million miles
<b>TOTAL</b>	<b>56</b>	<b>56</b>	<b>0</b>	<b>6</b>	

### Material Expertise & Service

Simrit mixes rubber compounds in-house and tests to ensure product quality. We offer an assortment of rubber colors allowing for easy part differentiation. Our molding and assembly processes includes 100% visual inspection at the source. Products are matched with the production process that best meets goals for cost and performance. When new products are launched, prototype and production parts are manufactured using the same process ensuring a smooth launch from prototype to mass production.

Simrit is globally located to support you. We are ready to work with your team to understand your specific application requirements in order to offer a solution that optimizes valve durability, oil consumption and emissions.

### Benefits

- **Long service life potential** – in excess of 1,000,000 miles (1,609,300 km)
- **Extremely low torque drag** even at surface speeds up to 30 m/s
  - Very low heat generation
  - Greatly reduces risk of oil carbonization
  - Excellent wear resistance
- **Oil retention is enhanced** by centrifugal 'slinger' action of the wear sleeve
- **Proprietary FKM main lip compound** has very good compatibility with lubricating oils and additives
- **Sealing performance** is maintained even when contaminated oils are present
- **Accommodates end play**, high shaft eccentricities and vibration
- **Integrated wear sleeve** effectively lowers the complete system cost
  - No expensive shaft finish, hardening or special surface treatment is required
  - No need for shaft re-machining when seal is replaced
  - No risk of sealing lip damage during handling and assembly

### World-Class Manufacturing

- **Zero defect philosophy** – Our global commitment to Six Sigma quality levels is evident in every step of every process and guarantees each part, no matter where it is produced.
- **Production know how** – Simrit draws from more than 150 years experience in producing seals.
- **Global production flexibility** – With facilities world-wide we are capable of supporting production programs globally.
  - **Testing** – We use state of the art test and measurement equipment for design validation and development.
- **System responsible** – Our entire approach to effective sealing is based on the knowledge that consistency is the key to reliability. The complete value of our systems approach is a function of leveraging Simrit's quality and dependability in every component.