

Engine Seals Product Information

Engine Seals



- > **Low friction**
- > **Excellent vacuum retention**
- > **PTFE lip**
- > **Extremely responsive to shaft dynamics**

Race-Tec Sealing specialises in the design and manufacture of low friction, high performance seals that have been developed for use in both wet sumps and high vacuum scavenged dry sump race engines. Our seals are used on the crank and cam shafts, plus ancillaries i.e. KERS, oil, and water pump drives.

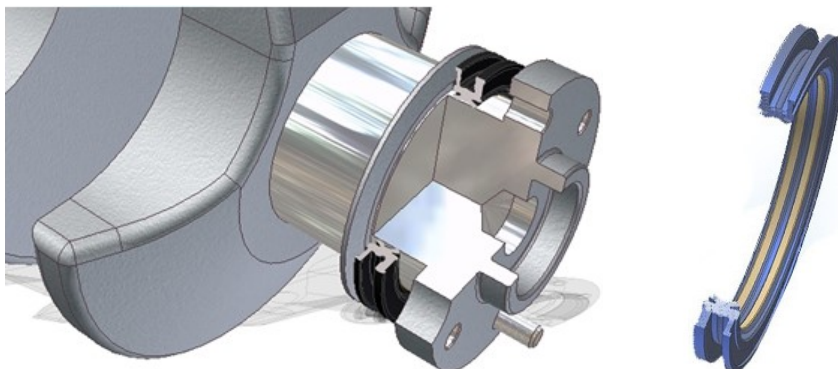
We can offer three different styles of seal depending on the application demands:

PL1 seal is a conventional spring energised lip with a PTFE liner bonded on the contact zone. PL6 seal is a springless design, again with a PTFE lined sealing lip.

PL7 seal is a springless design with two sealing lips, both with PTFE liners.

The PL6 and PL7 seals have been tested to 24.5" Hg (200 mb absolute).

PL7 Split Crankshaft



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Performance Features

Materials

For typical race engine performance the elastomer selected will be either Hydrogenated Nitrile (HNBR) or Fluoroelastomer (FKM).

The PTFE grade selected may be a basic “virgin” grade through a range of filled and specially developed grades, which are designed and selected according to specific application requirements.

Technical Features

The PL1, PL6 and PL7 seals offer a low running friction, minimise shaft wear, and can also accept greater levels of shaft dynamics without any loss of performance.

During development, in house rig tests extended to 25,000 rpm (surface speed 100 m/s) while maintaining full vacuum thus exceeding the highest requirements of our customers.



The PL7 design has two opposed PTFE lined lips, one controlling the oil sealing function whilst the second lips offers both dust protection and vacuum control. The PL7 seal is available as a one piece construction or two piece split seal for particular US crankshaft designs.

To help assembly Race-Tec is able to bond the seal profile directly to customer housings, therefore, reducing cost and weight, whilst also simplifying seal assembly. Once the seal has reached the end of its life, the seal housing can be recycled and a new seal bonded in to place.

On dry sump systems we can also offer bespoke sump straps to seal between the bearing caps and sump to provide a seal between cylinders when multiple pumps are used.



Applications

Race-Tec seals are used in all forms of top motorsport i.e. F1, F3, NASCAR, Super league, BTCC, LMES, etc, where seals are custom designed to meet the performance demands of application, whether it be ultra low friction, high vacuum, or dirt exclusion.