

Leak Repair

Rear Main Seal Sets (BS)

Rear main bearing seals keep oil from leaking at the rear of the crankshaft. In the case of a vehicle with a manual transmission, a faulty or worn seal can allow oil to leak onto the clutch, causing slipping and chattering.



Types of Seals

Rear main bearing seals are made of either rope or synthetic rubber materials. The **rope** or **wick** style seal is typically found on older engines. This type of seal, which can be tricky to install, is no longer designed into most new engines. In fact, in certain older applications, synthetic rubber seals have replaced the rope material. However, due to the strict tolerances involved, a rubber seal can **ONLY** be substituted reliably when indicated by the Fel-Pro® catalog.

Molded synthetic rubber is the material most commonly used for rear main seals. It offers proven sealing ability, excellent heat resistance, and easy installation.

Material Choices

Nitrile rubber is used on many older engine applications where heat resistance (up to 250° F) is not a problem. Most synthetic rubber, two-piece rear main bearing seals are made of **polyacrylate**. It offers good heat resistance (350° F) and tough abrasion resistance at a reasonable cost.

Silicone is often used in higher temperature (480° F) engine applications. The drawback of silicone is that it is fragile and requires careful handling during installation.

Viton® combines the abrasion resistance of polyacrylate and the heat resistance (450° F) of silicone – at a premium price. It is required on many high-temperature engines.

PTFE rubber is the ultimate in rear main seal design and material. It offers the best in fluid and high-temperature compatibility, and the unique “laydown lip” contact sealing surface can run on undersize shafts, seal minor shaft imperfections, and virtually eliminate shaft wear.

Seal Designs

Some seals are designed with ribs around the lip. These ribs, or helixes, help direct the oil back into the engine for proper oil control. Other seals have a double lip design. The inner lip has a helix that helps direct oil back into the engine, while the outer lip keeps dust and dirt from contaminating the inner sealing lip. This improves the long-term performance of the seal.

An optional design available for several Chevrolet engines has an offset sealing lip. This can be used when the point of contact of the previous seal has worn a groove into the crankshaft sealing surface. The offset lip contacts the shaft at a different point than the original equipment seal, preventing oil leaking through the groove and eliminating the need for expensive crankshaft repair or replacement.

For certain applications, Fel-Pro offers a choice of single lip, offset lip, or double lip design as shown in the catalog entry.



Single Lip (left) Double Lip (right)

Fel-Pro® gasket sets commonly feature premium National® Oil Seals, also manufactured by Federal-Mogul Motorparts, a global leader in crankshaft seal manufacturing as well as gasket manufacturing.