# POP® SEALS

**The Freudenberg Sealing Technologies PTFE POP Seal** is designed for reduced friction in automotive drive assemblies as opposed to standard sealing elements. Especially in turbocharged combustion engines the seal proves robustness against the pressure conditions that are considerably different to those in naturally aspirated engines.

**The surface structure of the contact area of the sealing lip** made of polytetrafluoroethylene has an optimized helix to provide a micro pump effect, ensuring perfect sealing behavior and—due to the lubrication—a minimized power loss.

**Freudenberg Sealing Technologies' superior customer service** in all customer contact areas provides consistent and excellent service starting with the engineering team's commitment to design and validation support, through all aspects of production quality checks, order scheduling, and safe assembly.

**Our world-class manufacturing processes** achieve consistent quality control in the production of PTFE POP Seals, and all our products.

## VALUES FOR THE CUSTOMER

**The PTFE POP technology** has been developed specifically to achieve the following advantages:

- Dynamic sealing efficiency improved (micro pump principle)
- Friction reduction = power consumed = reduction of the fuel consumption
- Reduction of the temperature in the contact area
- No oil carbonization
- No shaft wearing

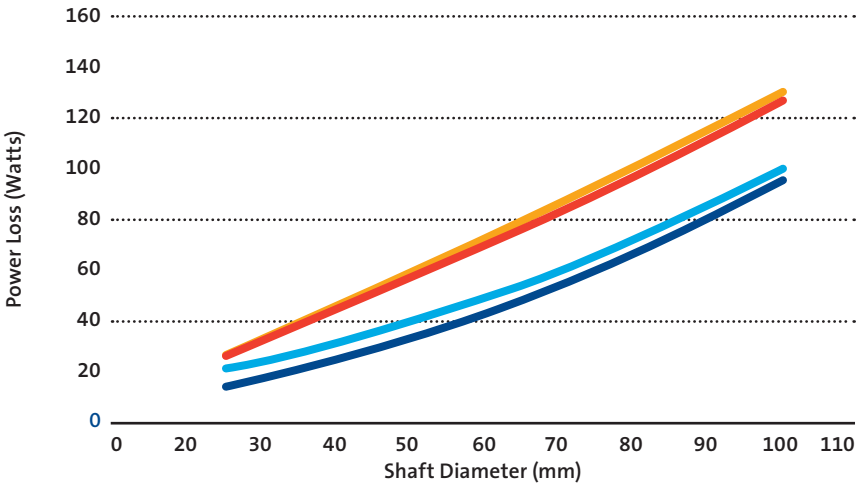
**Features of PTFE POP Seal**

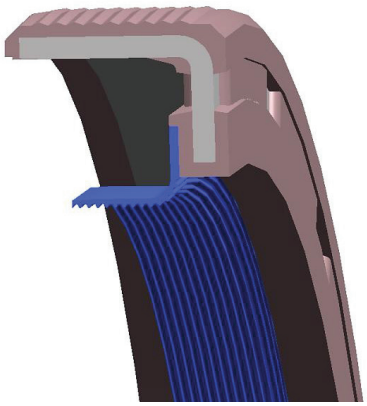
- Material provides resistance to extreme engine conditions which include large temperature fluctuations and aggressive synthetic oil
- Optimized sealing design to reduce the friction up to 30% compared to a conventional Simmerring shaft seal lip
- Outer diameter in full rubber to ensure a safe assembly and proper retention over all engine conditions and application parameters
- Also optional as modules in a variety of housing materials
- Available in integrated thermoplastic housing with static seal, reducing overall weight and installation complexity

# FEATURES AND BENEFITS

| Characteristic | Effect | Result for Customer |
|---|---|---|
| Low friction PTFE lip design | • Reduced power loss<br>• Temperature reduction in the contact area | • Reduced $CO_2$ emissions<br>• Reduction of shaft wear<br>• Reduction of oil carbonization<br>• Compatibility with oils and fuels |
| Sealing lip contact | • Good performance in specific engine conditions<br>• Better resistance under pressure in the engine | • Improved dynamic sealing efficiency<br>• Reliable sealing durability |
| Pumping effect | • Seal lubrication<br>• Perfect sealing behavior | • Increased sealing system durability<br>• Reliable sealing durability |

**Power conservation with PTFE POP Seals**



Standard FKM Seal
Standard PTFE Seal
**PTFE POP® Seal**
ESS™, Energy Saving Seal*

[at 6,000 rpm/140 °C]

*Please refer to our ESS™ Seal datasheet



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