

# PREMIUM PRESSURE SEAL (PPS)



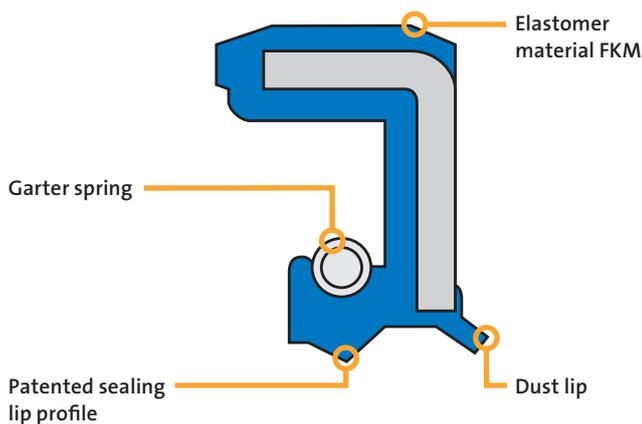
Typically, with medium pressure seals, high friction and hollow wear occur due to pressure deformation at the elastomeric flex section of the seal—resulting in an enlarged contact band width.

Freudenberg Sealing Technologies' medium- and high-pressure Simmerring® shaft seals are designed to prevent this deformation via a combination of a shorter flex section, flex section support features, reinforced metal cases, defined lip geometries, and proprietary wear-resistant materials.

The Freudenberg Sealing Technologies' Premium Pressure Seal (PPS) features a patented lip design which keeps the lip profile stable up to twice the level of pressure loading of conventional designs. The PPS seal works like a standard Simmerring shaft seal, with a spring-loaded lip that applies a radial load on the shaft in order to perform the sealing function. The dust lip provides superior protection from dirt ingress and other contamination in order to prevent deterioration of the oil lip. This design is particularly effective under conditions of pressure cycling (pressure spike).

## VALUES FOR THE CUSTOMER

- **Lower torque**—The PPS seal shows a 50% reduction in torque than comparable BAB pressure seals
- **Improved capabilities of medium pressure seal range**—Specially designed lip makes the PPS seal best suited for high velocity and medium pressure applications
- **Velocity maximum**—up to 15 m/s compared to 9 m/s on the BABSL
- **PV maximum**—up to 40 m\*bar/s compared to 10 m\*bar/s on the BABSL
- **Better resistance**—seal integrity in a variety of lubricating oils
- **Increased temperature ratings with FKM elastomer**
- Availability of Simmerring® PPS in catalog program





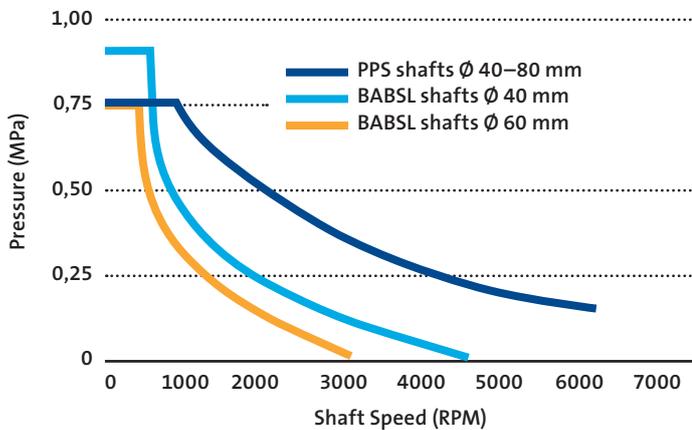
## FEATURES AND BENEFITS

Other features of the PPS include:

- **Average ratings with backup support:**  
 Static pressure spikes up to 100 bar  
 Pulse pressure up to 25 bar (depending on the frequency)  
 Average dynamic pressure up to 5 bar (short term, 10 bar)  
 PV ( $m^*bar/s$ ) = 40 (short term)

Seal Type	Pressure ave. bar	Pulse Pressure max. bar	Velocity max. m/s	PV, max. $m^*bar/s$	Preferred material	Advantages
BABSL	3,5	7	9	10	FKM	Classic medium pressure seal: industry standard for decades
PPS	5	25	15	40	FKM	Improved pressure rating, one-piece seal, lower friction

Seal design comparison PV curves\*



\*Data for reference use only. Actual values will vary depending upon conditions.

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