High pressure valve stem seals

Improve the quality of emissions and enhance engine operation by withstanding high pressures and minimizing friction in the exhaust and intake ports of the engine, while maintaining their primary function as an oil metering device.

Available applications
All engines with high pressures in the manifolds, e.g. because of high power turbochargers or for exhaust brakes on commercial engines.

SKF offers a new generation of high pressure valve stem seals, providing minimized guide wear and lowest friction as well as cost savings in the engine blow-by management:

- Lower risk of valve stem scuffing and guide wear, as oil lubrication remains stable under pressure
- Reduced blow-by gas volume as the seals do not allow airflow to the top of the cylinder head
- Capacity of oil separation in blow-by gases can thus be reduced, leading to cost savings in the blow-by oil separation system
- The seal design can be tuned to provide the optimum oil metering rate for the application and can be supplied with or without an integrated spring seat.

The design characteristics of the high pressure valve stem seal allow for dynamic sealing abilities:

- Optional beaded lip design feature to provide lowest friction – even with the addition of an additional sealing lip – by capturing an oil film under the pressure lip
- Independent pressure lip allows the main lip to function under high pressures for consistent oil metering
- Reduced risk of valve stem scuffing and guide wear as oil not "blown" away from valve stem under pressure
- Special static seating design avoids popping-off under pressure – a groove is required in the valve guide when spring seat not integrated into seal
- No blow-by gas leakage through seal

With SKF as the European market leader, you get a truly reliable product with the following advantages:

- Developed to specific customer requirements or use of standard seals
- Effective chemical and temperature resistance
- Low wear and high reliability
- Long-term emissions control
- Consistent oil metering and long life
- Low friction

For further information, please contact: seals.automotive@skf.com