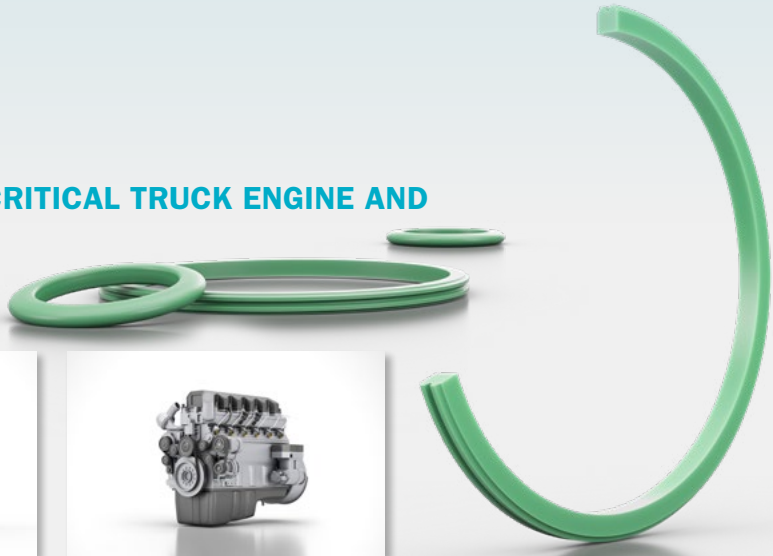




D-Seal

COMBINED SEALING AND DAMPING FOR CRITICAL TRUCK ENGINE AND TRANSMISSION APPLICATIONS.



D-Seal is a resilient, dual-function sealing and damping solution that offers a more effective alternative to O-Rings, particularly in engines and transmissions where vibrations can cause damage. It gives leak-free, long-lasting performance and prevents cavitation damage entirely.

Two main designs of the D-Seal have been developed: the single D-shaped seal and an enhanced double D-shaped version. Both designs feature a specially engineered and customized profile that effectively absorbs vibrations and maintains strength and rigidity.

The double D-shaped design forms sharper edges that fit tightly against the cylinder lining, eliminating any risk of leakage or cavitation damage, along with an increased mass and more evenly distributed pressure to improve sealing performance. It has no mold or parting line, meaning no weak points exist around the entire circumference of the seal. The single D-shaped seal uses simpler tooling and processing to meet requirements for small or very large dimensions and lower volume production.

D-Seal are simple to install and, unlike O-Rings, do not twist in the groove during installation, aiding automated assembly. Value-adding options are available, such as color-coding and several coating options to reduce assembly force.

Materials can be chosen from one of the widest selections on the market. Trelleborg Sealing Solutions manufactures its products from high-specification compounds that withstand the most challenging operating conditions, dealing with extreme temperatures and a broad range of coolants and lubricants.

Features and Benefits:

- Excellent sealing properties for static and semi-dynamic conditions
- Damps vibrations and prevents cavitation damage to cylinders
- No parting line on the sealing surface, removing joint failure risk and leak path
- Robust and rigid design, customizable to conditions
- Simple and stable assembly; no twisting in the groove and suitable for automatic handling
- Wide choice of industry-approved materials optimized for specific characteristics, including temperature, pressure, and media resistance
- Available with color-coding to avoid mixing of parts and aid identification or camera detection
- Proprietary coating options to reduce assembly forces and eliminate lubrication during installation

Application Examples:

As an improved alternative to O-Rings and other oval-shaped seals, D-Seal can be specified for multiple Automotive, Truck, and Transportation powertrain applications, including:

- Cylinder Liners
- Tube Fittings
- Flange Seals

D-SEAL

APPLICATION EXAMPLE: D-SEAL FOR CYLINDER LINER

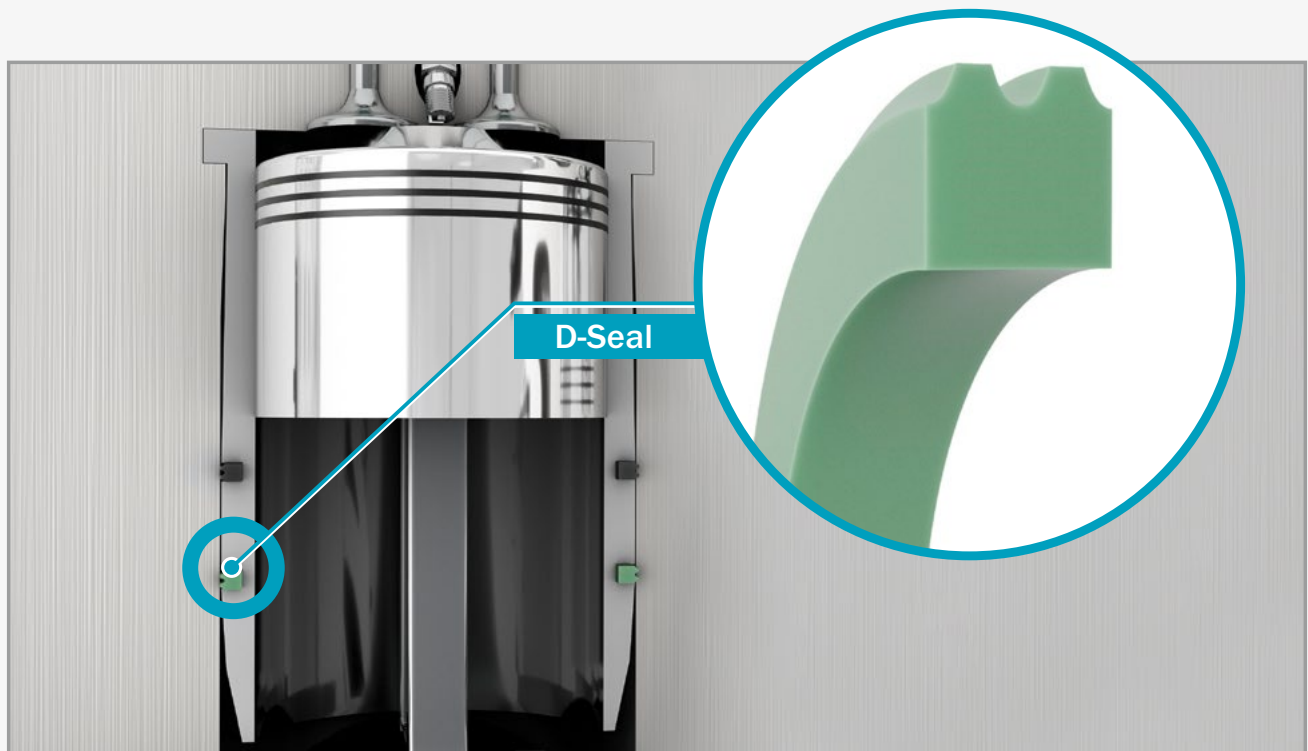
Materials: EPDM and FKM – **Application area:** Heavy diesel engine

Engine vibrations can cause contact to vary between rounded O-Ring sealing surfaces and the housing, creating a 'pumping' effect and allowing fluid to bypass the seal. Gases contained in this media can expand rapidly when pressure conditions change, causing cavitation damage and leading to failure. Replacing the O-Ring with a D-Seal maintains leak-tight contact throughout operation, stopping cavitation damage entirely and improving overall engine longevity.

Advantages: Excellent sealing – Damps vibrations – Prevents cavitation damage

Operating Conditions

Pressure:	2 to 5 bar
Movement:	Static
Media:	Oil, cooling water
Temperature:	Cooling water (+110 °C) and oil (+120 °C)
Dimensions:	inner diameter: 120 – 160 mm, cross-section: 3 – 7mm
Materials:	E7T41 (EPDM) for cooling side and V7T40 (FKM) for oil side, VCT42 (GFLT) can be used both for the cooling side, as well as for the oil side as a premium option



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