



Ground-breaking Solutions for Industrial Diesel Engines

simrit[®]

Simrit® , Your Global Technology Specialist for Seals and Vibration Control

Simrit, Your Global Technology Specialist for Seals and Vibration Control offers you a complete service package. A unique range of products and services guarantees you numerous advantages over the competition.

Simrit acts as a partner to general industry. Its position as a market leader is achieved through continuous research, development and manufacture. We have the world's widest range of seals and vibration control products, and can offer you solutions based on the demands of state-of-the-art technology, solutions which set standards.

This way we secure competitive advantages for you based on experience all around the world: Simrit has a presence throughout Europe, America and Asia, either directly or through its affiliated companies NOK (Japan) or Freudenberg-NOK (USA). The transfer of knowledge between these markets is incorporated directly into the Simrit service package.

With our many Simrit Service Centres and Simrit distribution Partners, we serve and supply more than 100,000 customers worldwide. Our Simrit Partners ensure rapid availability from stock. This means spare parts quickly arrive when and where they are needed. There is a Simrit Partner near you as well.

Make the most of Simrit's service package and give yourself a real competitive edge:

- + Constant innovations
- + Uniquely wide range of products
- + Strong product brands
- + Unique materials expertise
- + A wide range of value added services
- + Global cooperation and partnership



Simrit offers a complete package of products and services, including leading brands such as Simmerring®, Merkel, Integral Accumulator, Lederer and ISC O-Ring.

Vibration Control
Special Sealing Products: Bellows, Diaphragms, Elastomer Composite Parts and Precision Mouldings

Lederer Liquid Silicone Products

ISC O-Ring

Integral Accumulator

Merkel Hydraulics / Pneumatics

Simmerring®

Our expertise and experience reliably safeguards your engine technology

With their wide range of applications, large diesel engines depend on reliable components that continue operating even under the most adverse conditions. Whether in ships, construction equipment, farming machinery, or in stationary applications, Simrit seals and vibration control products guarantee faultless operation of diesel engines right down to the smallest part. At the same time, they provide for increased, long-term performance and cost efficiency.

With its leading seal and vibration control programme for the entire engine sector, Simrit provides innovative products that reflect the latest technological developments in diesel engine systems. You receive the optimal solution for any power plant from a single source. Anywhere in the world.



Our task: greater cost efficiency and performance

The solution: Through its policy of continuous development and maintaining in depth market knowledge, Simrit has developed solutions that optimally support the operation of modern diesel power plants. The result is longer service life, greater performance and improved cost efficiency – with all of the advantages that Simrit offers you as an innovative, globally active specialist in seals and vibration control.

A step ahead in emissions reduction

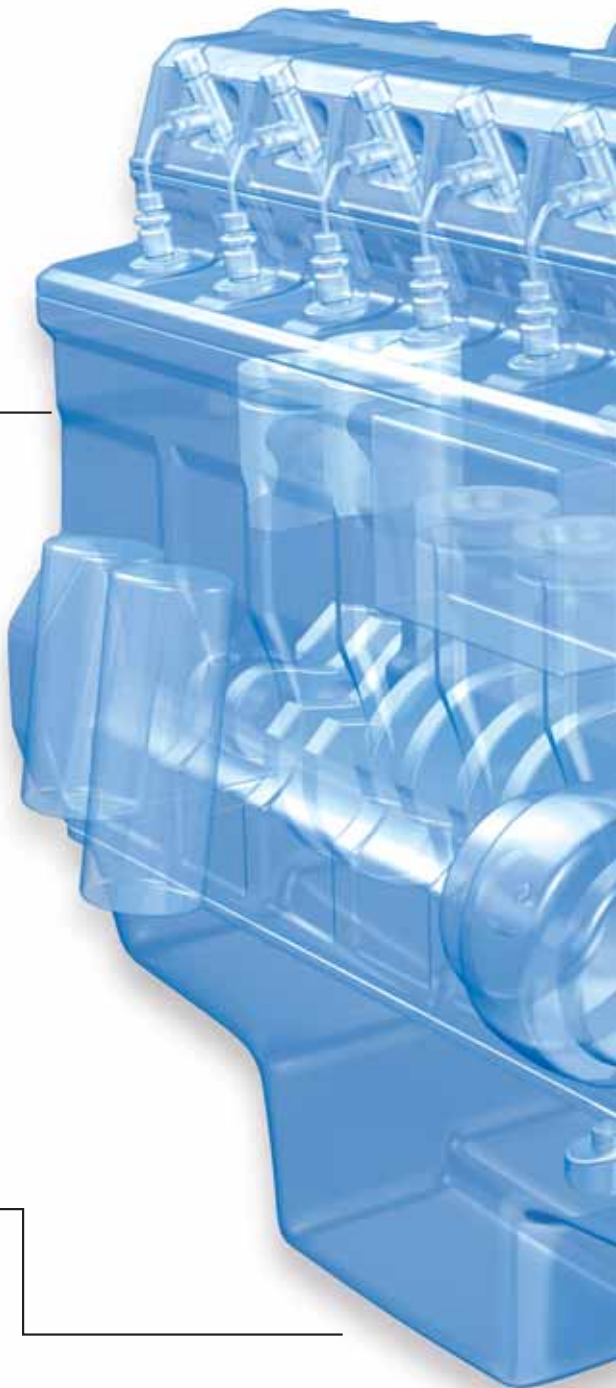
Simrit sets the standard in research and development and offers solutions today for tomorrow's technological demands. For example, new generation diesel engines must meet far-reaching emission reduction regulations (Euro 5 emission standard). With Simrit seal components, combustion systems can be optimised in anticipation of regulatory developments.

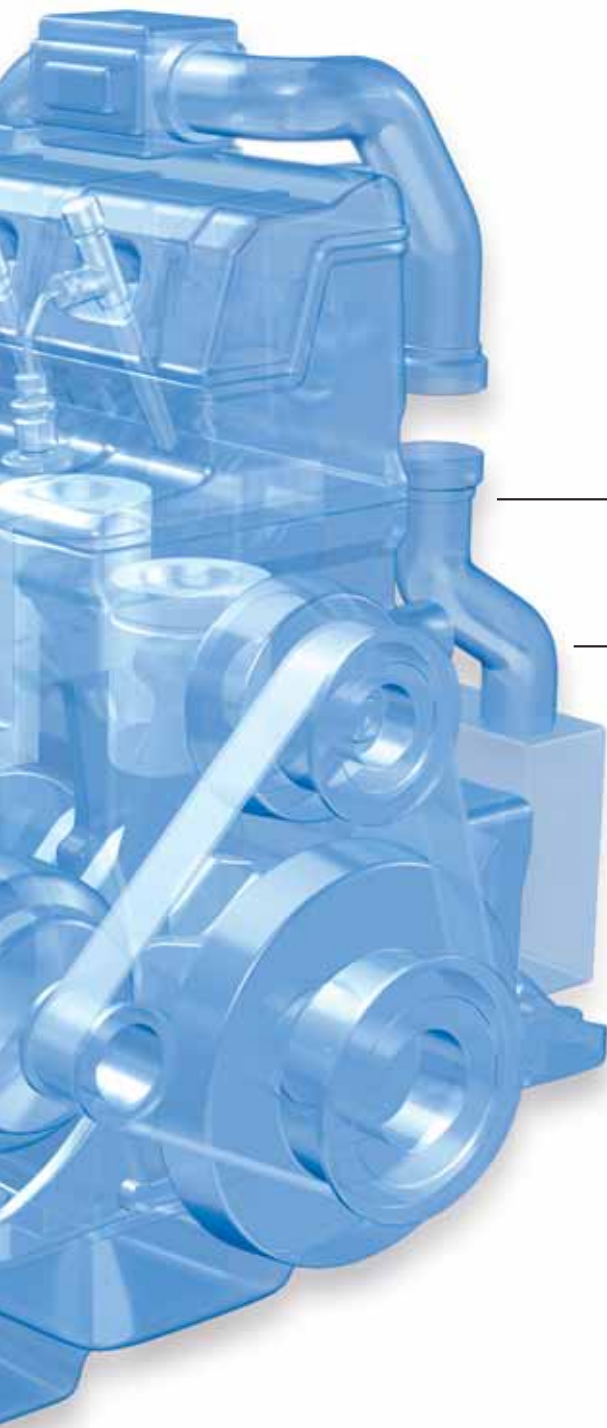


For the challenging demands
placed on today's diesel engines...

Long service life

Performance efficiency





Cost efficiency

Noise and emissions reduction

From our spectrum of products

The Simrit product range offers more than 16,000 standard products and a multitude of customer specific solutions, with outstanding seals and vibration control for all diesel power plant components.



Simmerring® PTS (Poly Tech Seal)

Designed with a low-friction PTFE sealing lip for use in harsh thermal and chemical environments, with poor lubrication and for dry running. Features additional static sealing by means of partial rubber coating on outer circumference. Excellent static and dynamic sealing performance due to a reverse flow helix that is dependent on the direction of rotation. Pressure resistant up to min. 6 bar.



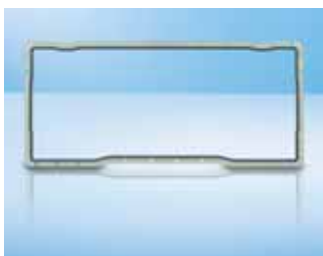
Simmerring® BAUMSLX7

A proven standard design type with excellent sealing qualities for use under harsh thermal and chemical conditions. The Simmerring BAUMSLX7 can be used in a temperature range from -20°C to 160°C, is durable even in oils with a high additive content and is well suited to sealing highly fluid liquids and gaseous media. An additional dust lip protects against typical dust influx. Pressure resistant up to min. 0.5 bar.



ISC O-Ring

Static and within certain limits also dynamic seal for all industrial areas. The ISC O-Ring is deliverable in standard and customer-specific dimensions within the broad range of ISC O-Ring materials. Also with a coating to ease fitting, for dynamic applications or for reducing the insertion force. Numerous standards approvals and customer approvals have been granted.



Oil pan gasket

Simrit offers a comprehensive range of oil pan gasket designs, for example metal/rubber edge bonded gaskets, ensuring easy assembly and positioning as well as soft moulded gaskets, with or without decoupling facilities. All designed to meet individual customer requirements.

... Simrit has the perfect solution

Innovative brand-name products from Simrit – the complete programme for industrial diesel engines.

With innovative product developments and a comprehensive standard programme, Simrit covers all major components of modern diesel engines. Our solutions not only provide reliable sealing and reduce vibrations, but also improve component service life, performance and cost efficiency.

With our diesel engine expertise and know-how as specialists in seals and vibration control, acknowledged around the world, we are able to provide you with optimal solutions for all power train components.

Cylinder head gaskets

- Reduce cylinder liner distortion
- Distribute stresses more evenly through block and head
- Permit more sealing gap movement
- Extend engine life

Simmerring® IWDS

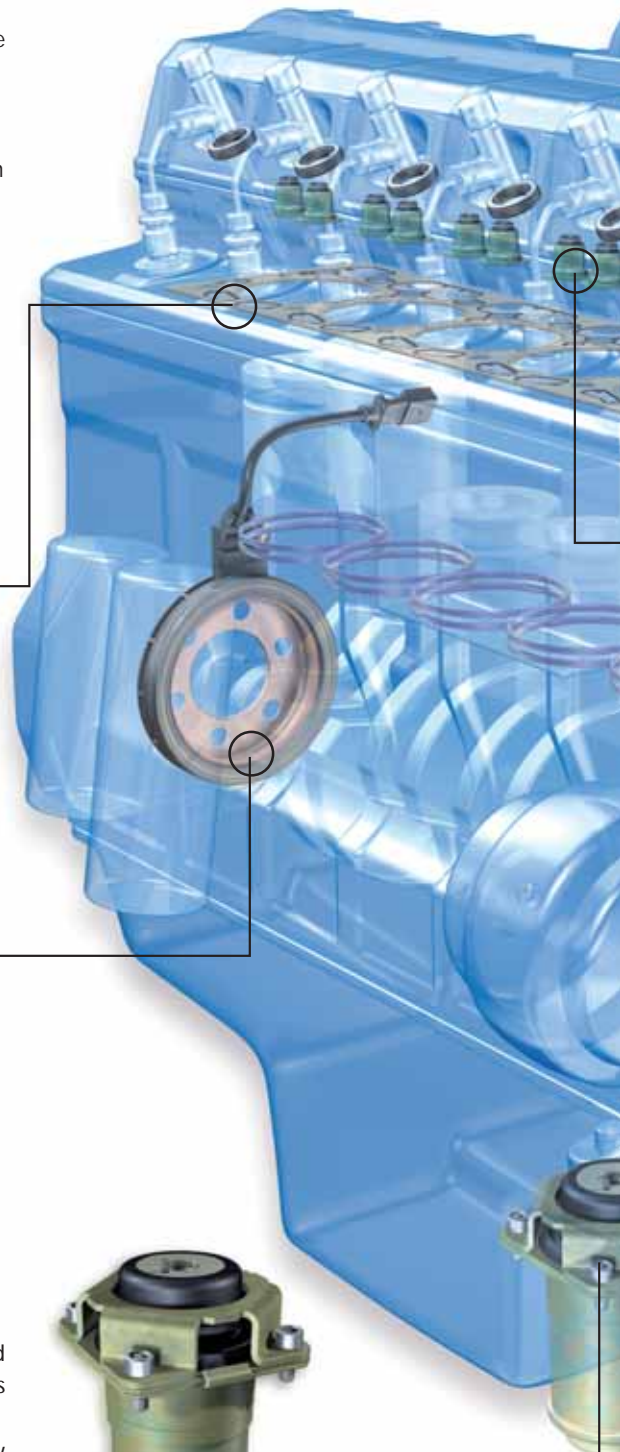
Intelligent sensory function that supports efficient engine management

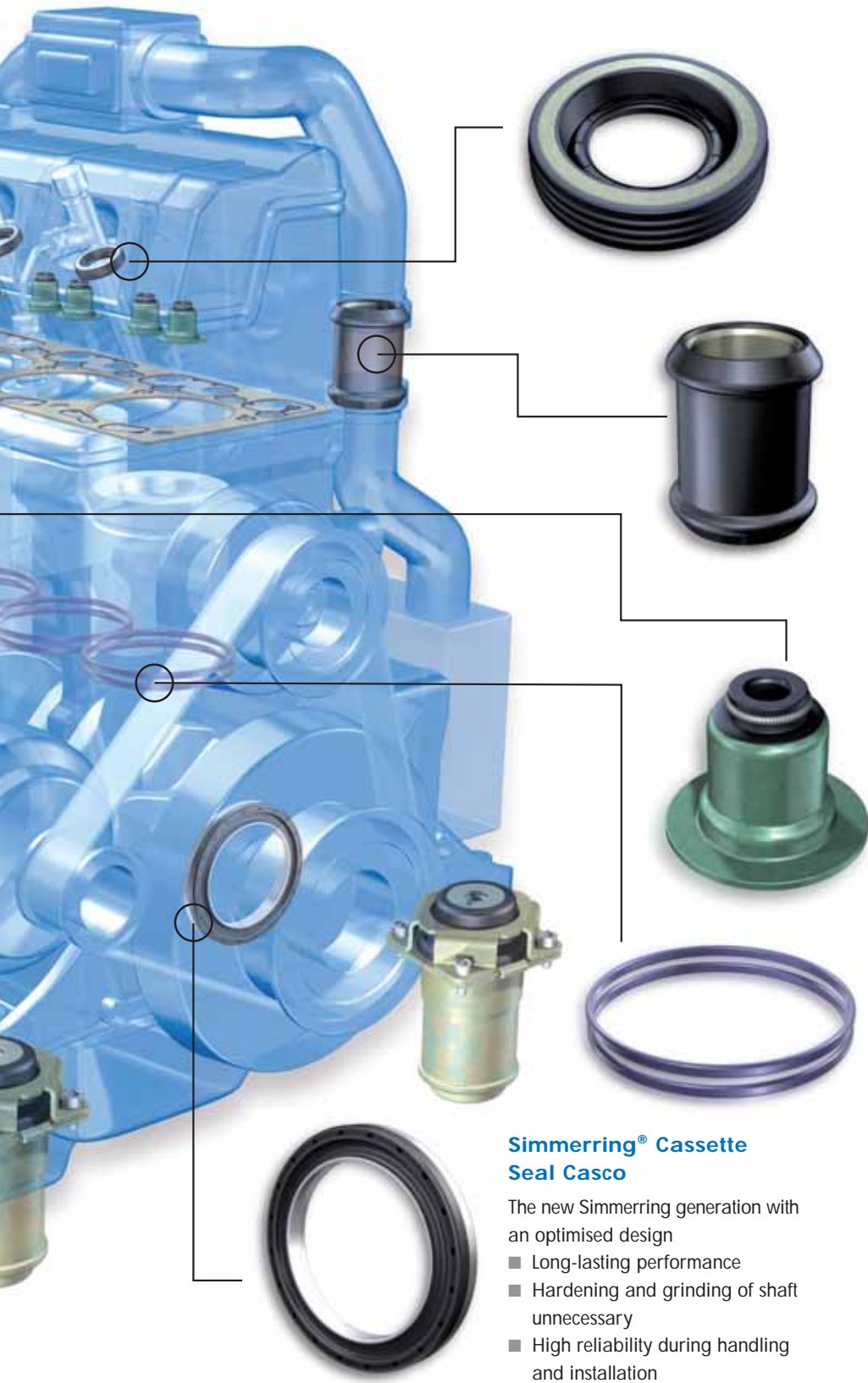
- Integrated sealing and encoder functions
- Robust sensor and active transmitter wheel design with precise speed and angular measurement
- Most effective PTFE seal design on the market

Hydro mount KL

Engine mounts of the highest standard

- Conform to the latest noise and vibration reduction regulations
- Optimum isolation and damping of high and low frequency vibrations
- Great flexibility for individual applications





Injector seals

Innovative sealing solution for guiding the injector pipe through the cam cover

- Maintenance-free sealing solution
- Adaptability due to flexible design
- High degree of radial deflection
- Simple and reliable installation

Plug & Seal

Housing/piping connectors with excellent sealing qualities

- Reliable sealing performance even at high pressure
- Balance centre/axial offset in housing
- Simple, reliable and cost-efficient installation

Valve stem seals

Outstanding seals especially designed for diesel engines with turbocharger and particle filter

- Minimize and control lubricant overflow
- Reduce valve stem wear
- Increase component performance and life

Coated ISC O-Rings

Elastomer seals for wet cylinder liners with optimal surface characteristics

- Simple, twist-free installation due to surface coating
- Avoid the risk of damaging the O-Ring during installation
- Shorter installation time, less follow-up work, reduced wear

Simmerring® Cassette Seal Casco

The new Simmerring generation with an optimised design

- Long-lasting performance
- Hardening and grinding of shaft unnecessary
- High reliability during handling and installation
- Unique friction reduction

From our spectrum of products



Anti-backlash gear

Tolerances of drive gears or, respectively, drivetrains can lead to backlash between the cylinder gears, which are often utilised to drive auxiliaries. Simrit minimises the ensuing noises by vertically separating the cylinder gears and pretensioning them by means of elastomers, thus limiting the extent of the backlash. With success: noise emissions under load are reduced by 1dB, when idling in fact as much as 3dB.



Decoupled cylindrical gearing

Cylindrical gearing is used to drive camshafts as well as subassemblies on diesel engines. Undesirable vibration, which generates noise and impairs smooth running, is transmitted into the system through these drive systems. The problem is solved by decoupling the inner and outer parts of the gear with a bonded elastomer layer. Transmitted noise and vibration is thus substantially reduced.



GA, GSA type sealing caps

Simrit offers elastomer-coated push-fit sealing caps for static sealing of apertures, e.g., on gearboxes. The elastomer coating protects the seal from bores with rough surfaces, heat expansion and split casings. Standard material: NBR; other materials: FKM, ACM, AEM, etc.



Tapered mounts

Tapered mounts for light, medium and heavy weight engines in mobile and stationary machinery. The natural rubber compound of the engine mount is resistant to high temperatures. The applications of this engine mount range from agricultural and construction machinery and marine solutions.



Ultra bushings

Ultra bushings are designed for damping and isolating radial and axial vibrations. They are used as maintenance-free joints to absorb torsional and cardan-like forces. Their durability relies on the double-sided bonding of the pretensioned elastomer layer.

Top performance even under the harshest conditions

Seals and vibration control components from Simrit are the perfect choice whenever diesel engines must meet stringent requirements.

Industrial diesel engines are used, they increase component reliability and efficiency.



Designed specifically for marine, agricultural and construction equipment as well as stationary systems, our solutions are outstanding in their functionality and operational reliability. For example, with its extremely robust construction and innovative sensor technology, Simmerring® IWDS combines the advantages of modern engine management with markedly improved sealing performance. The Simrit Hydromount KL is convincing in its damping capacity while maintaining its soundproofing capability – perfectly designed for commercial vehicles and ships. Wherever Simrit products for



The complete programme for all components of your diesel engine

Simrit's comprehensive programme provides over 16,000 standard products and many customised solutions. You receive optimum seals and vibration control components for all diesel power train systems from a single source, giving you an economic as well as technological advantage.

Customer benefits

Seal and vibration control components from Simrit are exactly in line with customer requirements. For maximum economy and reliability in usage.

Concentration on the essentials: Simrit focuses its entire technical expertise and comprehensive application know-how on the development of solutions in tune with the market, which provide our customers with lasting added value in operation.

Increasing engine performance and lifetime

Simrit's overall programme increases the performance of industrial diesel power plants and reliably ensures the longevity of the engines even under the toughest operational conditions. Modern sensor technology supports the engine management, thus effectively increasing power plant performance. At the same time, the latest generation of valve stem seals improve the performance and durability of modern engines with turbochargers and particle filters.

Emissions reduction for tomorrow's requirements

The strict legal constraints for emissions reduction confront research and development with ever increasing challenges for future-oriented solutions. Already today, our products for diesel engines contribute

to the fulfillment of current and future standards. Simrit helps you to adhere to the EURO-norm 5 as a dependable partner in fulfilling development periods for emissions reduction.

makes it possible to attain an efficient parts reduction on power plants. Last but not least, our product innovations – such as Plug & Seal – replace more cost intensive seal solutions, providing above average increases in cost-effectiveness. Maintenance-free

Cost position	Cost O-Ring solution €	Cost Plug & Seal solution in €
1x expensive plastic-base part (incl. refinishing of groove)	0.65	n/a
Plug & Seal complete	n/a	0.70
2x O-Rings EPDM (2 x 0.05)	0.10	n/a
1x moulded part seal EPDM	0.20	n/a
Logistical costs as a function of the number of components	0.15	0.05
Additional costs of housing manufacture (tolerances)	0.05	n/a
Additional fitting costs	0.05	n/a
Reworking due to fitting defects (twisting and damage to O-Rings)	0.15	n/a
Total costs	1.35	0.75

Economic overall solutions

Your single point of contact for leading edge technology: Simrit can provide you with all essential seal and vibration control components from a single source. With us you can optimise your supplier base in a particularly cost-effective manner – with the certainty that you are employing the right solution for each component. Moreover, the standardised designs of many of our products

and especially easy to install component developments round out the advantages provided by our integrated product range.



Simrit® , Your Global Technology Specialist for Seals and Vibration Control

Simrit Services



Your Benefits



e. g.

Ground-breaking Solutions for Industrial Diesel Engines

Your benefits

- Cost-effective overall solutions for diesel power plants
- Increase engine performance and life time
- Adherence to all emissions and noise reduction standards

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