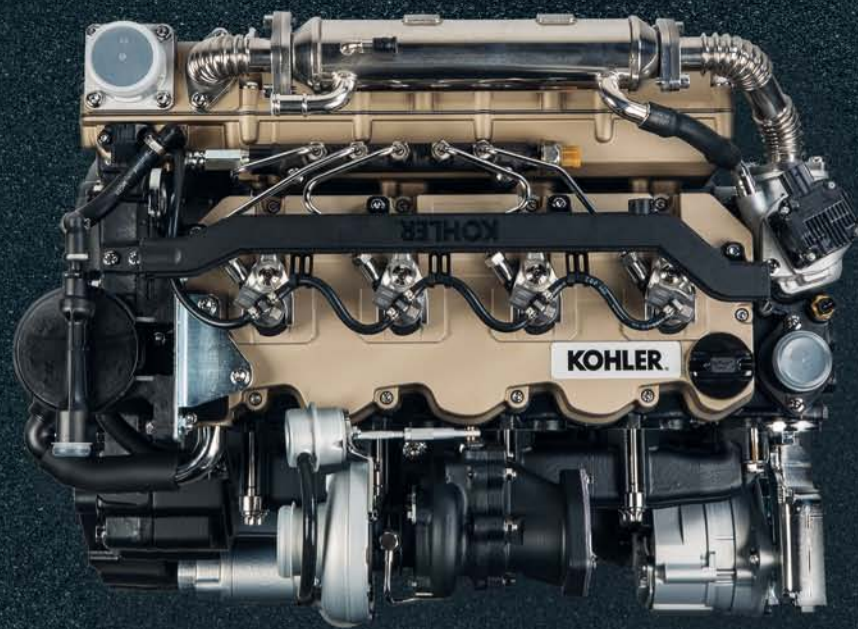


MOTOR WORLD

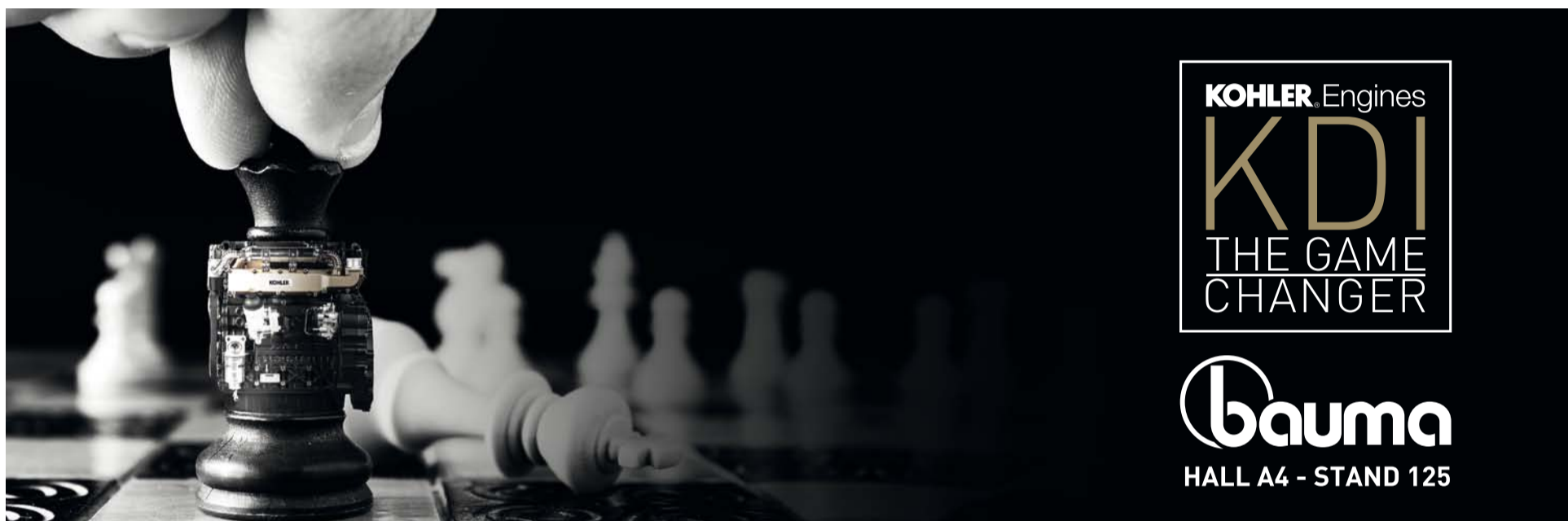
KOHLER Engines

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KDI, The Game Changer



Right from its introduction to the market, the new KDI range of engines from KOHLER became a technological standard of reference within the 30kW to 100kW power range showcasing its ability to offer a clear, effective, and functional response to a demand that is increasingly oriented towards compact engines. Thanks to the high power density, low fuel consumption and smooth yet uniform delivery of power throughout the RPM range, KDI engines ensure maximum productivity and offer an approach to limiting emissions that is effective yet easy

to manage from the technical standpoint whilst requiring limited maintenance.

The success enjoyed by the KOHLER Engines KDI range is clearly demonstrated by the large number of applications present in the market and the confidence in our products shown by numerous top-tier brands in the world of construction and beyond.

This success is demonstrated by the many OEMs that have chosen KDI engines for their applications, many of which exhibited at BAUMA 2016. These include: Avant Tecno, Bruno

Generators, Bugnot Broyeurs, Elentek srl, Fiori Group, Green Power Systems, Haulotte Group, Kramer-Werke, Idrofoglia, Inmesol, JaNo, JCB, MDB srl, MultiOne (CSF), Omac, SDMO Industries, Varisco, Vietz, and Zeck.

We asked a few of these OEMs to describe their experience with KOHLER Engines and to explain why they chose KDI engines and the benefits obtained for their customers.

Checkmate! KDI, a winning solution

Haulotte



Haulotte Group, a French company that is a world leader in the **manufacture of aerial platforms and telehandlers**, chose the KDI 3404 in the 55 kW calibration for two of its most successful telehandlers, the HTL 4014 and the HTL 4017, designed for markets subject to the Stage IV/ Tier 4 Final standards. As explained by **Vincent Mazzoleni**, Telehandlers Business Unit Manager, "We were looking for an engine that, in addition to using emis-

sions reduction technology that does not involve the use of DPF and SCR, would provide the same torque delivery of the Tier 3 engines we were using previously."

Why did you choose KDI engines? "First of all for their compliance with the requirements I mentioned, that is, no particulate filter or SCR and torque values in line with our expectations. Added to

these elements were an engineering timeframe that was consistent with our programme and no less important, a competitive cost point." What benefits have you gained by using KDI engines? "This choice allowed us to obtain a solid competitive advantage, as we were the first manufacturers of telescopic handlers to introduce on the market machines in the over-10 metre segment equipped with Tier 4 Final engines." What aspects of your relationship with KOHLER have been the most satisfying? "Without a doubt the close collaboration between our team of designers and the KOHLER Engines technicians, which enabled us to respect the established engineering times, and the proactive support provided by KOHLER".



Telehandler
HTL 4017



Fiori Group is an Italian company operating at the international level that designs, develops, and produces off-road vehicles for concrete production.

For its DB line of mid-segment concrete mixers with capacity up to 2.5 m³, Fiori chose the KDI 2504TCR in the 56 kW calibration. The excellent results obtained led the company to extend the use of KDI engines, in the 90 kW calibration (KDI 3404TCR-SCR), to its high-end solutions with capacity of 4 or 5 m³.

“The characteristics and performance features we were looking for when considering the use of new engines on our products,” affirms Enrico Santini, Managing Director of Fiori Group, “were focused primarily on interchangeability with other engine versions in order to be able to use a single platform for the entire world market.”

Why did you choose KDI engines? *“Essentially for the emissions management system employed, which allows the versions with power greater than 56 kW to pass from the Stage IIIB/Tier 4 Interim to the Stage IV/Tier 4 Final and therefore to the subsequent stages in view of ‘Stage V Built’ by simply taking certain measures as regards the layout.”*

What benefits have you had by using KDI engines? *“Alongside an excellent price/performance ratio, the easy interchangeability of other models already used, aimed at markets that have less restrictive emissions regulations.”*

What aspects of your relationship with KOHLER have been the most satisfying? *“Without a doubt the collaboration we had in the product engineering phase, which turned out to be a determining factor in the development of these engines, whose installation on-board operating machines is decidedly challenging, alongside the willingness to produce variants and customisations for any size of supply.”*



Concrete DB 260



A brand known throughout the world for its wide range of pumps used in construction, civil engineering, and fire-fighting, the Italian company **Varisco Pompe** chose the

new KDIs to equip their two families of motor pumps Super J and Albatross, which currently use the entire range of KDI engines with 1.9L and 2.5L displacement in both the mechanical and common rail versions with calibrations and delivery curves customised for this type of use. *“For these two product lines, and in particular the line of silenced canopy pumps,” states Massimo Scapolo, Vice President Sales & Marketing of Varisco Pompe, “we were looking for engines featuring technologically advanced architecture and high performance but that would also offer power delivery suitable for our needs, and naturally water-cooled engines, given our installation requirements.”*

Why did you choose KDI engines? *“After seeing on paper the requisites we needed in terms of efficiency and consumption as well as the design layout, in particular the absence of the DPF, we conducted a series of tests to check their behaviour in the field. The results were more than positive, confirming that we had made a good choice. Also the extensive KOHLER service network carried a lot of weight in our final decision.”*

What benefits have you had by using KDI engines? *“Without a doubt, excellent performance under the operating conditions typical of our products, with clearly advantageous fuel consumption compared to the solutions we had used in the past, as well as great versatility in the operating powers we chose.”*

What aspects of your relationship with KOHLER have been the most satisfying? *“The outstanding availability of the technical staff, both during the product engineering phase and in the calibration of the delivery curves most suitable to our specific uses.”*



Pump JD 6-250



Since 1991 the Finnish company **Avant Tecno** has designed and produced multi-functional loaders designed to operate in the most diverse contexts thanks to the possibility to use a series of more

than 100 different attachments. For one of their most successful models, the Avant 760i, the company chose to use the KDI 1903TCR, an engine that complies with the Stage IV/Tier 4 Final standards, thus allowing the machine to be sold on both the American market and the Northern European market, the main commercial outlet of Avant Tecno. *“We were looking for an engine that complied with the Tier 4 final standard,” explains Jani Käkälä, owner of Avant Tecno, “but at the same time it had to be compact to facilitate its installation on the machine and above all it had to offer performance features that would allow our machine to be operated easily with loads up to 2.5 tons.”* Why did you choose KDI engines? *“The KDI engine was the right compromise between all our needs. It’s compact, because it has an injection system that enables a relatively small displacement engine (1.9 litres) to reach a power of 42 kW and does not need a DPF in order to meet the Tier 4 Final standards, but it also has a design tailored to the needs of OEMs. The positioning of the PTOs, for example, makes it possible to draw power from different points, thus achieving optimal machine-engine integration. Also, the high torque at low rpms reduces fuel consumption and lessens acoustic emissions, a consideration that turned out to be crucial for us since our machines are used on construction sites for public works maintenance in cities like Helsinki, so the reduced noise is a feature that is highly appreciated by our customers.”* What benefits have you had by using KDI engines? *“Certainly the low fuel consumption as well as, I mentioned, the reduced noise. But I think that those who operate our machines also greatly appreciate the ready response to load variations.”* What aspects of your relationship with KOHLER have been the most satisfying? *“Working with KOHLER Engines was certainly important during the machine design phase, especially in the engineering phase of the engine inside a machine that was already in our product portfolio. The technical office in Reggio Emilia worked with us directly, approving each step of the development of the control unit so as to guarantee that the engine would respond to the particular needs of its use.”*



Multipurpose machine 760i



Operating in the market since 1966, the French company **SDMO** is now one of the major world manufacturers of generating sets with power ranging from 1

to 3300 kVA, from small portable models to large industrial and cogeneration units. The company uses the KDI models 1903M, 2504M, 2504TM and 3404TM for its range of industrial gensets from 20 to 60 kVA (Models: K22, K27, K33, K44 and soon K66, as well as for the R22, R33 and R44 models designed for the rental market). *“We were looking for an engine solution that could satisfy the requirements of size, durability, efficient response under load, and low consumption that are essential for our applications,”* underlines **Philippe Forest**, Communication Manager of SDMO.

Why did you choose KDI engines? *“What oriented us towards the KOHLER Engines KDI range was mainly their innovative design layout and outstanding reliability, naturally along with the ability of KOHLER engines to satisfy the typical needs of our applications in terms of engineering, operating economy, and service life.”*

What benefits have you had by using KDI engines? *“As regards the gensets in our industrial range, the characteristics of the KDIs allowed us to produce soundproofed 22 and 27 kVA cabinet models in a particularly compact size, thanks to which the number of units that can be housed in a standard 40-foot container is almost doubled, considerably reducing transport costs.”*

What aspects of your relationship with KOHLER have been the most satisfying? *“Without a doubt the outstanding availability demonstrated by KOHLER Engines in the phase of product development and engineering, as well as the prompt technical support provided by the company.”*



Genset K44



JCB, a world leader in the production of construction machinery and equipment, chose Kohler KDI engines for their many lines of compact machines, including Mini and Midi Excavators, Skid Steer Loaders, Telescopic Handlers, and Teletrukks. The engines fitted on these machines are branded JCB Diesel by Kohler, underscoring the strong partnership established between the two companies in this operation.

The Kohler KDI engines chosen by JCB – the KDI 1903TCR, KDI 2504M and KDI 2504TCR models – use a common rail injection system at 2000 bar, exhaust gas recirculation (EGR), four valves per cylinder, and a diesel oxidation catalyst (DOC) inside the exhaust system.

Why did you choose KDI engines? *“The decision to collaborate with Kohler Engines to use their engines for our compact JCB machines,”* explains Alan Tolley, JCB’s Director of Engine Programmes, *“was guided by the synergy between the technologies used by both JCB and Kohler to reach the thresholds established by the regulations. These compact engines meet the strict EU Stage IIIB and EPA Tier 4 Final standards for exhaust gas emissions without using a DPF. This is perfectly in line with JCB’s wide-ranging engine strategy.”*

What do you appreciate most about your relationship with Kohler? *“First of all, the shared design philosophy adhered to by both companies to comply with the limits established by the current emissions regulations. These characteristics make it an ideal solution for the JCB lines of machines.”*

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Wheel Loader 409



A company belonging to the Solano group, Inmesol of Spain has operated since 1989 in the sector of power generation with five product ranges – Portable, Industrial, Stand-by, Rental, and Heavy-duty generator sets and tower light – designed for a wide range of applications. For the rental segment, Inmesol uses the KDI 1903M, 2504M, 2504TM, and 3404TM models, an application in which KOHLER engines are especially appreciated for both their performance features and competitiveness compared to other solutions available in the market. *“The expectations our customers have in regard to Inmesol products,”* mentions **Antonio Marmol**, *Inmesol Rental Product Manager,* *“and consequently the guidelines that we follow in designing our generators, are focussed mainly on reliability, low fuel consumption, and efficient after-sales service, all within a product having the best price/quality ratio possible.”*

Why did you choose KDI engines? *“The presence of KOHLER Stage 3A engines in our generators has given a strong impetus to our sales, becoming a real added value that is rewarded by the market. Consequently, this has led us to consolidate and expand our business relationship.”* What benefits have you had by using KDI engines? *“We have found KDI engines to be a sturdy and reliable solution, easy to install and with a simple and linear architecture despite their high level of technology and full compliance with Stage IIIA.”* What aspects of your relationship with KOHLER have been the most satisfying? *“The effectiveness of the technical support, the comprehensive documentation, and the efficient after-sales service are without a doubt the most positive aspects of our relationship with KOHLER.”*

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Genset IKR 044

KDI, The Game Changer on web and social.

KDI BAUMA Diary – Each day of exhibition we posted a customer interview. The additional contents gathered during the show will be used for promoting the customers experience until July 2016.

Il video finale, disponibile sul nostro canale Youtube, include tutti i 20 clienti che hanno presentato le proprie applicazioni equipaggiate con motori KDI.

<https://www.youtube.com/watch?v=iMDD8nleubw>

KDI, The Game Changer will continue at Eima 2016: Follow us!



7 MOVIES FOR 7 DAYS

JCB

<http://tinyurl.com/gt4qqth>

SDMO

<http://tinyurl.com/zfwfws7>

AVANT TECNO

<http://tinyurl.com/z7aes8u>

VARISCO

<http://tinyurl.com/hnrm989>

HULOTTE

<http://tinyurl.com/z95f4w>

FIORI

<http://tinyurl.com/h3ugjuxn>

INMESOL

<http://tinyurl.com/h6z523w>



STAGE V FEVER, the vision of KOHLER Engines

Once again, KOHLER Engines is committed to delivering state of the art solutions to our customers globally by following our inspiring guiding principle “to be on the leading edge of technology and innovation”.

By 2019, the new generation of the KDI Engines platform will see the integration of the Diesel Particle Filter to meet Stage V emission requirements. Our Engineering teams are actively developing a state of the art compact after-treatment solution that will leverage the latest DPF technology and experience. The solution will be based on a passive regeneration approach and will be transparent to OEMs and end users. Passive regeneration is a continuous process that allows the DPF to perform as intended without the need to raise the temperature.

This enables:

- Optimized solutions under all operating conditions
- Easy maintenance
- Long service intervals
- No impact on engine performance or machine productivity

STAGE V BUILT

With our Stage V solution, our KDI platform will maintain best in class performance and a low cost of ownership. The new generation of KDI Engines will be unveiled at AGRITECHNICA 2017. Stay tuned!



Visit the www.lombardini.it website to read about our history, upcoming trade fairs and product news.



KDI, The Game Changer
will continue at Eima 2016: Follow us!