

UNSTOPPABLE | Kohler KDI global platform

Kohler presents the KDI integrated suite of engine systems

Kohler at Agritechnica in Hannover, Germany – November 12, 2017

- KOHLER Flex™, Kohler's integrated suite of engine systems
- KDI line-up extension: one engine platform for the entire world
- Introducing KDI Stage V

The platform of KDI engines is unstoppable: Kohler presents a new development of its platform of diesel engines, designed to meet the requirements of a market that demands more application flexibility and compliance with the various emissions limits, along with performance and productivity.

Agritechnica, the most important international stage for agricultural industry, is the perfect occasion for presenting this new milestone in the KDI engines development.

Kohler's Stage V solution is once again "the game changer" for all machinery manufacturers, reaffirming the elements that ensure the success of KDIs since the launch in 2011: compact design, best-in-class performance, reduced consumption, easy installation, and optimized solutions for every emissions regulation.

With the Stage V development, Kohler adds another model to the line-up. KDI engines are characterized by extremely clean combustion and now, with the introduction of the DPF, we take full advantage of the efficiency of the combustion to deliver to our customers the most advanced technology and the most compact aftertreatment system in the market. We are especially proud of the DPF smart regeneration strategy that we developed through extensive use of advanced simulation tools and testing. Kohler's exclusive regeneration strategy is completely transparent to the end users in every application and duty cycle.

KOHLER Flex™, Kohler's integrated suite of engine systems

KOHLER Flex™ is the range of solutions for emission control that Kohler has designed to enable each configuration of the KDI platform to comply with all emissions standards and regulations, worldwide.

At the heart of KOHLER Flex™ there is the clean combustion of KDI engines that enables the adoption of a compact, state-of-the-art DPF to meet the Stage V emission standard.

KOHLER Flex™ combines the clean in-cylinder combustion of KDI engines, made possible by high-pressure common rail (2000 bar), 4 valves head, turbocharger and cooled EGR, and the most compact aftertreatment devices (DOC, DPF and SCR) to comply with all emission requirements.

Each combination of KOHLER Flex™ has been designed in line with the all-in-one philosophy, with the objective of minimizing change for engine installation into existing packages.

These efficient and reliable systems can be deployed in many combinations to achieve effective emissions solutions for the different markets.

		KOHLER Flex™ solutions									
		EA	EB	E4	E5	U3	U4	UF	C3	C4	NE
		EUROPE				NORTH AMERICA & CANADA			CHINA		LESS REGULATED COUNTRIES
	EMISSION STANDARD	STAGE 3A	STAGE 3B	STAGE IV	STAGE V*	TIER 3	TIER 4 INTERIM	TIER 4 FINAL/ CARB	CHINA 3	CHINA 4#	
<56kW	MECHANICAL INJECTION	•									•
	HIGH-PRESSURE COMMON RAIL		•		•	•		•	•	•	(•***)
	C-EGR		•		•			•		•	
	DOC		•		•			•		•	
	DPF				•			(•)**			
>56kW	HIGH-PRESSURE COMMON RAIL			•	•	•		•	•	•	(•***)
	C-EGR			•		•		•	•	•	
	DOC			•	•			•		•	
	DPF				•			(•)**			
	SCR			•	•			•			

emission level under definition

* from January 1, 2019 (19 – 56 kW), from January 1, 2020 (56 – 130 kW)

** on demand for selected models

*** with limitation on max sulfur content in fuel

KDI line-up extension: one engine platform for the entire world

The Stage V version of KOHLER Flex™ is the most functional solution for manufacturers and end users, as the regeneration strategy has been designed to maintain optimal machine operation, even at low load and low temperatures, thus preventing downtime due to forced regeneration events. From this perspective, the aftertreatment system is a key enabler to spend more time in motion, consequently increasing machine productivity.

Kohler released two DPF versions. The first one reaches a maximum service interval of 10,000 hours, whereas the second is the most compact of the market and ensures a maintenance interval of 6,000 hours.

Kohler offers the aftertreatment system mounted on the engine or separate, and thanks to the 360° rotation of the axial and radial inlet/outlet pipes it provides excellent adaptability for every application.

While complying with the new Stage V limits, the engines are also optimized for increased torque response and torque density. The KDI 3404 reaches 640 Nm at 1400 rpm of maximum torque and 105 kW of rated power. These new ratings improve productivity and efficiency of machines and give OEMs a great chance to adopt smaller and more compact engines.

For applications that require simple and compact solutions, the new KDI version without Charge Air Cooling (CAC) offers OEMs an extremely cost-competitive solution. This simplified non-CAC version is characterized by an upgraded fuel injection strategy that delivers the necessary torque and power and at the same time frees up space, reduces cooling load on the equipment and simplifies the engine installation.

Kohler is also extending the KDI engine line-up with new configurations for less regulated countries. These versions, with a 1600 bar pressure common rail, no EGR and no DOC, will ensure the same performance of other configurations.

Introducing KDI Stage V

The Stage V models of KOHLER Flex™ enhance the strong points of the KDI range in terms of efficiency, compactness, power and torque delivery, simplified installation package, low operating costs and ease of maintenance, offering manufacturers and end users a complete and versatile engine platform. Cost competitiveness and superior performance are key advantages that are appreciated in every geographical area.

Kohler's Stage V development has followed our simple, straightforward philosophy: deliver more value to our customers and end users. We have developed a solution that is functional and compact so that OEMs are not required to re-engineer their machines. It offers end users a DPF technology that eliminates machine downtime thanks to the smart regeneration strategy

and the clean combustion of KDIs, with positive effects in terms of fuel consumption and oil cleanliness.

Up to now in the European Union, the emissions standards only regulated the weight of the particulate matter emitted into the atmosphere. Stage V introduces the particle number (PN), which requires the use of a particulate filter system (DPF).

To facilitate the transition to Stage V, KDI engines are already available for development and validation tests.

About Kohler Engines

Kohler began manufacturing engines more than 90 years ago and has continually enhanced its product lineup in an effort to help make life easier and more profitable for end users around the globe. Today, the company offers a full array of diesel, gasoline and gaseous-fueled engines – up to 134 hp. – which are supplied to equipment manufacturers worldwide in the construction, agricultural, industrial and lawn and garden markets. To learn more, visit KohlerEngines.com/eu or Facebook.com/KOHLERPowerEMEA.

About Kohler Co.

Founded in 1873 and headquartered in Kohler, Wis. Kohler Co. is one of America's oldest and largest privately held companies. With more than 50 manufacturing locations worldwide, Kohler is a global leader in the manufacture of engines and power systems; kitchen and bath products; and owner/operator of two of the world's finest five-star hospitality and golf resort destinations in Kohler and St Andrews, Scotland. For more details, please visit Kohler.com.

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