

PRESS RELEASE

Cologne, 28 January 2019

Bauma 2019: DEUTZ presents its modular product kit for innovative off-highway drives

- DEUTZ at 'Bauma 2019', the world's biggest trade fair in Munich
- The modular product kit combines conventional and electric drives
- A world first: new diesel, gas and electric drives extend the product range

Between 8 and 14 April, DEUTZ will be exhibiting a modular product kit for diesel, gas, hybrid and electric drives at its stand, measuring over 400m², at Bauma 2019 in Munich. This flagship exhibition for the international construction industry is the most important trade event for DEUTZ, which specialises in supplying efficient and environmentally friendly drive systems for construction equipment and material handling applications. Bauma, acknowledged to be the 'world's biggest trade fair', has grown this year to cover 614,000m² and has already announced a new record attendance of more than 3,500 exhibitors from 55 countries; that's almost 100 more than in 2016.

The modular product kit makes for efficient off-highway drives

DEUTZ is diversifying its drive portfolio and, in future, will offer a modular range of different technologies to its customers in the construction equipment, fork-lift truck and lifting platform segments. Based on its product modules, DEUTZ will individually design the optimum drive system for each customer and, thanks to the company's expertise gained over many years, exploit and intelligently combine the benefits of various technologies. This

applies both to combustion engines, an area in which DEUTZ has been among the leading manufacturers for over 150 years, and to the electromobility segment. Electrification is an integral element of the DEUTZ development expertise. DEUTZ has already successfully developed the first prototype machines as part of its E-DEUTZ strategy. As a consequence of this work, at the end of 2018, DEUTZ was able to present two fully working prototype machines operating under real-life conditions at 'ELECTRIP', its customer, investor and press event. Two telescopic handlers which are normally powered by a 74 kW DEUTZ TCD 3.6 diesel engine were converted, one to a hybrid drive and the other to a full-electric drive, at the DEUTZ development plant in Cologne. In terms of power output and capacity, every single E-DEUTZ component is scalable, the potential savings essentially depending on the load cycle and on the length of time during which the equipment is operated in the particular application. The E-DEUTZ hybrid which was demonstrated achieves fuel savings of approximately 15 per cent, recouping the investment costs after just one year of use.

As Dr Frank Hiller, Chairman of the DEUTZ Board of Management explains: "Our customers ask us to provide machines to a particular performance specification. We supply them in each case with the best combination of conventional and electric drive components. Overall, we achieve a significant increase in efficiency which reduces total running costs, fuel consumption and emissions in equal measure."

At Bauma, DEUTZ plans to demonstrate under real-life operating conditions other prototype machines taken from actual E-DEUTZ customer projects. Together with the Manitou Group – the leading global OEM in the field of all-terrain telescopic handlers – DEUTZ has already assembled and delivered the first prototype machines to be fitted with electrified drives.

As Michael Wellenzohn, member of the Board of Management of DEUTZ AG for Sales, Service & Marketing, explains: "We have shown that electrification works in the off-highway segment and that it offers measurable cost and emissions benefits. Our next step is to industrialise these drives and transfer their benefits to our series products."

A world first: DEUTZ expands its diesel portfolio, demonstrating the TCD 5.2 for the first time

In addition to its electric solutions, DEUTZ will also be demonstrating the TCD 5.2 for the first time at Bauma, thus adding a powerful four-cylinder engine to its diesel portfolio. This engine with its corresponding cubic capacity of 5.2 litres is a new derivative of the successful DEUTZ TCD 7.8 six-cylinder in-line engine, offering an additional option between the TCD 4.1 and 9.0 four-cylinder engines.

From 2019, DEUTZ will also be making further significant additions to its higher output range portfolio, with four new in-line engines of between 9 and 18 litres capacity. The TCD 9.0 four-cylinder engine and the TCD 12.0 / 13.5 and 18.0 six-cylinder models deliver power output of between 300 and 620 kW and will be aimed in particular at heavy-duty off-highway applications. The models in the TCD 9.0 to 13.5 product range are part of a family platform concept with a standardised customer interface and identical front and rear sides, which make it considerably easier to install and service the engines.

Alternative fuels: The LPG gas engine G 2.2 makes its first appearance

DEUTZ is extending its product offering in the lower power output range, not just as regards cubic capacity but in the choice of fuels. From 2019, based on the successful four-cylinder TCD 2.9 (30 to 75 kW), there will be a three-cylinder variant, the TCD 2.2, ranging in output from 22 to 56 kW. Both these diesel engines will also be available as liquefied petroleum gas (LPG) versions, named G 2.2 and G 2.9. All the variants will be based on the same engine platform, generating extensive synergy effects. These drives will represent a further option, in particular for low-load applications in the material handling and compact construction equipment field. The G 2.2 will be exposed to the world's gaze for the first time in Munich.

Yet another highlight to be seen at the DEUTZ stand at the fair will be a hydrogen variant of the TCD 7.8. This is because DEUTZ is not just working on electrified solutions in its efforts

to pioneer alternative drive concepts. Adapting the traditional combustion engine so it can use alternative fuels – such as hydrogen – as a sustainable energy source is another promising area of our current research. Last year the Munich start-up Keyou unveiled a DEUTZ prototype engine that has been converted to utilise hydrogen. Keyou has developed a conversion kit that turns a conventional combustion engine into a drive based on state-of-the-art hydrogen technology. DEUTZ's role as the development partner is to provide the TCD 7.8 diesel engine.

An end-to-end service concept: 'We care. We support. We deliver.'

In a separate area dedicated to its up-to-date service and aftersales business, DEUTZ will be presenting at Bauma its end-to-end service concept under the slogan 'We care. We support. We deliver.'. This is where visitors can experience the entire range of DEUTZ original parts right up to innovative, digital solutions such as the DEUTZ Connect app or the online service portal (www.deutz-serviceportal.com). This service concept enables DEUTZ to provide the option of remote engine diagnosis via smartphone plus a central online platform where end customers can contact their local service partner, register their engine or buy spare parts online 24/7.

DEUTZ at Bauma 2019: Hall A4, Stand 327

About DEUTZ AG





DEUTZ AG, a publicly traded company headquartered in Cologne, Germany, is one of the world's leading manufacturers of innovative drive systems. Its core competences are the development, production, distribution and servicing of diesel, gas and electric engines for professional applications. It offers a range of engines with capacities ranging from 19 kW to 620 kW that are used in construction equipment, agricultural machinery, material handling equipment, stationary equipment, commercial vehicles, rail vehicles and other applications. DEUTZ has around 4,000 employees worldwide and over 800 sales and service partners in more than 130 countries, and in 2017 generated revenue of €1,479.1 million.

Further information is available at www.deutz.com.

DEUTZ MODULAR PRODUCT KIT

DIESEL
alternative FUELS
GAS
ELECTRIC
HYBRID
HYDROGEN

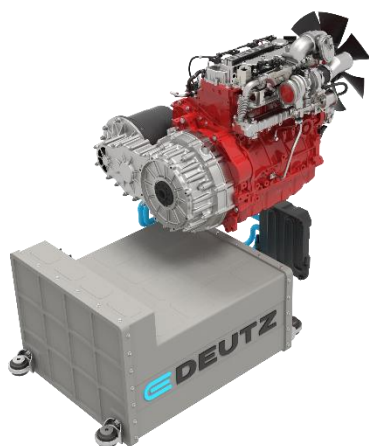
19 kW	37 kW	56 kW	75 kW	100 kW	150 kW	200 kW
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DIESEL	GAS	HYBRID	ELECTRIC
			

Clean diesel	Clean fuels	48V	360V
G 2.2 TCD 2.2	G 2.9 TCD 2.9 TCD 3.6	5-20	15-168
		BATTERY Capacity (kWh)	
		5-19 20-100	
		E-MOTOR (kW)	
		1.2 2.2 2.9 3.6	
<small>Combustion Engine (displacement in L)</small>			

DIESEL	GAS	HYBRID	ELECTRIC
75kW	Stage V: DPF + SCR Tier 4: DOC + SCR	ZERO EMISSION Mode	ZERO EMISSION
<56kW	Stage V/CN IV: DPF Tier 4: DOC	Simplified EAT	
		Optimized dynamics + Consumption	

Caption: The DEUTZ modular product kit combines various drive technologies to produce maximum efficiency.



Caption: E-DEUTZ Hybrid comprising TCD 2.9 diesel engine, e-motor, battery and power electronics.

The engine company.



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Caption: DEUTZ presents its G 2.2 LPG gas engine at Bauma 2019 (Munich) to the world public for the first time as an exhibit.

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