

New three litre JCB engine offers huge fuel efficiency savings

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Production is set to get underway of a brand-new fuel-efficient JCB engine following the culmination of a £31 million investment programme.

JCB announced in 2011 that it was launching a new engine development project with the help of £4.5 million from the Government's Regional Growth Fund.

Today the company unveiled the results of that investment for the first time – a brand new three litre engine. It is the third engine line to be launched by JCB since production first started in 2004 at JCB Power Systems in Derbyshire and joins the 4.4, 4.8 and 7.2 litre models.

JCB CEO Graeme Macdonald said: "It is hard to believe that, just over 12 years ago, JCB didn't make engines. Today JCB has produced 400,000 high-performance diesel engines, leading the way with a purpose-built range which saves fuel, is clean and highly efficient.

"The launch of the brand new three litre JCB430 DieselMax engine will build on the success of the JCB Power Systems business and takes the productivity and environmental performance of our engines to a completely new level, particularly on fuel efficiency."

One of the most impressive features of the new three litre JCB DieselMax engine is its fuel consumption – using up to 8% less fuel than the already very fuel efficient 4.4 litre JCB engine.

The totally new 3.0 litre fuel-efficient JCB430 DieselMax engine is also 30% lighter than JCB's popular 4.4 litre EcoMax engine and has been designed specifically for mid-range construction and industrial equipment operating cycles.

Other key features include:

- High torque, heavy duty design, for maximum durability
- Launched at Stage IIIB/Tier 4 Final emissions standard
- Automatic valve adjusters require no regular maintenance
- No DOC, DPF or SCR (no requirement for DEF)

- Heavy duty PTO

Driving force

JCB's third engine line, alongside the four cylinder 4.4/4.8 litre EcoMax and the six-cylinder 7.2 litre DieselMax, is a four-cylinder design with a displacement of 3.0 litres. Designed for maximum durability, the heavy-duty engine features a cast iron bedplate structure and a rear mounted geartrain, for long service life and low operating noise.

Launched initially with 55kW (74hp), at Stage IIIB/Tier 4 Final, the 3.0 litre engine produces an impressive 400Nm of torque from just 1300rpm. The engine meets the relevant emissions legislation without any requirement for a costly Diesel Particulate Filter (DPF), Selective Catalytic Reduction (SCR) or any form of exhaust additive or aftertreatment. This will make it an ideal powerplant for a wide range of mid-weight construction and industrial equipment. The engine has been designed to be ready for Stage V emissions standards and it will be available with additional power ratings in the future.

JCB Power Systems has opted to use automatic valve adjustors for the first time on the engine. This means that there is no requirement for any form of regular valvetrain adjustment, reducing downtime for customers and boosting productivity. The 3.0 litre unit also features integrated glow plugs, for faster cold starting.

The engine's Mass Air Flow meter system, which allows the ECU to balance and deliver the correct fuel mass to the engine regardless of temperature, altitude and air density, has been integrated into the engine itself, minimising the amount of air inlet system development and engine set-up work required for different machine configurations. Mounting interfaces are shared with those of the larger 4.4 and 4.8 litre engines, making installation in existing equipment easier. The engine also retains the HD PTO capabilities of the larger JCB engines.

The new engine has 45°gradeability as standard - a 10 degree increase - which allows it to be used in a wide range of machinery and off-highway equipment. It can be equipped with an engine or chassis mounted ECU, to suit a wide variety of applications. With no requirement for special oils, no DPF and no DEF, this latest addition to the DieselMax engine family offers a robust, high torque, compact engine solution.

Source: wyynot GmbH; JCB