

EFFICIENCY BOOST FOR HIGH PRODUCTIVITY JCB LOADERS

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JCB will launch two new wheeled loaders at Bauma 2013 - the 427 and 437, offering customers increased efficiency, lower emissions and improved operator comfort. Replacing the 426 and 436, the machines have now gone into full production. They are powered by the Cummins QSB 6.7 litre engine and feature a progressive clutch cut-off feature plus optional five-speed transmission, and automatic differential locking axles

Key product improvements include;

- Compliance with Stage 3B / Tier 4 interim emissions with no requirement for a diesel particulate filter or exhaust after treatment additives
- 9.4% increase in torque on the 427 (now 801Nm) due to increased response at low engine speeds provided by the variable geometry turbocharger
- Smart engine efficiency features including low idle setting (700 rpm), power and economy modes, optional idle shutdown
- Up to 100% traction with new automatic differential locking axles
- Up to 16% improvement in fuel consumption with optional new 5 speed transmission and lock up converter
- Dramatically lower in cab noise levels, now 68 db (A)
- Revised styling including cab refresh with full colour LCD screen, rear chassis, bodywork and counterweight

"With the 427 and 437 wheeled loaders, JCB has taken our larger machines technology and applied it to mid-weight models, bringing new levels of productivity and performance to the loader market," said Tim Burnhope, Chief Innovation and Growth Officer. "These loaders will deliver new levels of efficiency and tonnes per litre performance to a range of market sectors, reducing our customers' operating costs."

Low Emissions With Increased Productivity

The highly efficient engine meets the EU Stage IIIB and US Tier 4 Interim emissions legislation through the use of a diesel oxidation catalyst (DOC), but without any requirement for a diesel particulate filter (DPF) or any exhaust after treatment additives. The DOC has been designed to last the life of the engine, thereby not incurring further service cost for customers.

With a variable geometry turbocharger, the Cummins engine incorporates a high-pressure common rail fuel injection system, cooled exhaust gas recirculation and a diesel oxidation catalyst.

The JCB 437 delivers outstanding power, with 173hp (129kW) – equivalent to the outgoing 436 model. The JCB 427 offers power of 158hp (118kW), as well as a 9.4% increase in torque, taking it to 801Nm. The machines also feature a lower speed cooling fan, low idle speed (700 rpm after 30 seconds of inactivity), an optional engine shutdown mode (which activates after a pre-determined period to save fuel) and selectable engine modes (power and economy). The new engine modes allow the 427 and 437 to be perfectly matched to the application required with economy mode providing increased efficiency in less power hungry lighter duties by limiting engine speed to 1,800rpm.

A ZF four-speed automatic power shift transmission comes as standard with a new optional five-speed power shift box also available. This option delivers improved driving performance and acceleration as a result of the smaller steps between gears. A lock-up torque converter on the five-speed transmission activates in gears 2 - 5, reducing losses from the transmission and increasing productivity. This means customers will really notice the difference on hill climbing, roading and load and carrying duties.

The 427 Agri variant features a 6 speed transmission with lock up torque converter giving the benefits as listed above. JCB are the only manufacturer to offer this unique agricultural specific feature,

An intelligent clutch cut-off system also comes as standard, for both the 4-speed and 5-speed transmissions, making it ideal for truck loading or tight corner manoeuvres. The system dynamically adjusts the clutch cut-off point depending on transmission output torque and brake pressure. It effectively disengages the clutch to limit tractive effort, and also reduces brake wear within the new ZF axles.

When the operator presses the brake pedal, maximum power is provided to the load sensing hydraulic system, while reducing power to the driveline. This provides much greater control at higher engine rpm and lower travel speeds, boosting productivity when loading.

The ZF automatic differential lock axle option means that customers can now choose from:

- Standard open torque proportioning differential
- Limited slip differential (for poor / muddy ground conditions)
- An automatic differential lock on the front axle

This automatic option locks the differential when required - without the operator needing to activate the system, providing increased traction and less slippage. This not only reduces wheel spin and tyre wear, but also improves fuel consumption and boosts productivity.

All axle offerings benefit from wheel speed braking, lengthened service intervals to 1,500 hours and increased service life in heavy duty applications with the option of sintered pads.

Other improvements include the ability to adjust the JCB Smooth Ride System so it can be permanently activated, allowing improved performance with attachments such as snow ploughs and sweepers.

An optional Driveline Efficiency Package, incorporating the standard fitment of wheel speed brakes, progressive clutch cut-off plus the optional fitting of the five-speed transmission with lock-up converter and automatic differential locking axles, results in potential fuel savings of up to 16%.

Leading Cab Environment

The distinctive large 3m³ cab is home to a vastly enhanced interior. Styling has been revamped with darker mouldings and plastics with improved switches. Leading the improvements is a new instrument cluster with analogue dials and a full-colour LCD monitor complete with intuitive menu system. This delivers a wide array of real time information, from the machine condition through to productivity and efficiency including data on fuel consumption and cycle times. This has a major advantage of ensuring operators can adapt their driving style to be as productive and efficient as possible. Reduced in-cab noise levels complete the improvements to the operator environment with an impressive 68 db(A).

Also new on the 427 and 437 is the option of climate control, the first time this has been offered on this size of JCB wheeled loader. Customers can also specify a Grammer Actimo XXL seat option, with full adjustment, heating, armrests, lumbar support, backrest extension, headrest and air suspension, for ultimate comfort and fatigue-free operation.

Designed To Work

The JCB 427 and 437 are both available with a choice of conventional multi-lever layout, a single joystick with separate auxiliary control lever and a joystick with proportional control auxiliary controls built in. Add to this the range of arm options available, HT, ZX, High Lift HT and Super High Lift HT (on the 437), and the loader can really be tailored to each individual application. Loader detent functions for height limitation, return to dig and float can now be disabled if required by the operator in cab for added convenience.

New rear styling with a revised counterweight design gives the machines a more modern and aggressive look and the sloping engine canopy at the rear has been designed to also improve all-round visibility. Mesh screens in the engine cover prevent debris entering the cooling pack area, while improved fender coverage has been designed to work more effectively with a range of tyre widths.

The models retain class leading service and maintenance access with 500 hour service intervals. The coolant tank now comes with an electronic level sensor, informing the operator in cab if levels are low, while the repositioned toolbox improves access for regular service work. A Powercore air cleaner, with an innovative scavenge system, ensures that air cleaner elements remain clear for longer, reducing service cost further.

Plus an extension to axle service intervals to 1,500 hours.

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