

NEW

# Innovations 2012 Agriculture



A Product of Hard Work



# INNOVATIONS 2012

JCB is launching more machines in 2012 than any other year in its history. Many have already been unveiled at major international events earlier in the year, but here's a special look at the next generation of innovations that will be available during the coming months. New models covering Loadalls, Fastracs, Telemasters and wheeled loading shovels.

Because we understand the evolving demands of our customers, we've invested heavily in our business. Consequently, areas like R&D, manufacturing facilities, global parts distribution, dealership networks, LiveLink and JCB Finance are stronger than ever to ensure we stay ahead of the competition.

Needless to say our latest machines are Stage IIIb/ Tier 4i compliant (with many featuring the award-winning ultra-efficient JCB EcoMAX T4i engine), but engine upgrades are just the beginning. We've engineered new transmissions and revised everything from safety features to hydraulics, cab comfort to serviceability – for more productivity, efficiency and comfort than ever before.

**The latest Fastrac 3000 and 8000 feature ultra efficient T4i engines, GPS auto-steer preparation, quieter cabs and improved transmission and cruise controls.**





Our new range of JCB Loadalls feature a whole host of improvements including new cab internals and new EcoMAX T4i engines.

# AGRICULTURAL LOADALLS

**With an aggressive new look, our latest Agri Loadalls don't just look better on the outside; new cab internals increase comfort, information and safety, while our new powerful and efficient EcoMAX T4i engines give improved fuel savings of up to 10%.**

## Interior

- › New instruments with a high-res LCD screen provide clear automotive-style look and feel.
- › Backlit switches provide better night visibility and easy recognition.
- › An operator presence seat safety switch stops forward/reverse from being inadvertently operated whilst the operator is not seated.
- › A 7-speed variable fan means operators can accurately adjust heating/cooling for superb productivity.

## Exterior

- › The new-look Agri Loadall exterior isn't just aesthetic; the cooling fan airflow is now angled upwards, reducing dust build-up.

- › Offside and rearward visibility is excellent thanks to the innovative engine and transmission packaging, compact powertrain and sloping bonnet.
- › Improved rear window seal, provides positive closure to reduce dust and debris entering the cab.

## Ease of operation

- › The gear change is now on the joystick for ease of use and improved multi-functioning.
- › A standard hydraulic variable speed cooling fan automatically reacts to ambient temperature and adjusts the fan speed for maximum economy.
- › A new improved robust exterior top door slam latch means you can close the upper door from outside.

- › There are two new operating modes: Auto responds to speeds, loads and duties to select the perfect gear, while Manual puts the operator in total control.
- › The cab air intake filter is easy to access and replace.

## JCB transmission

- › The 6-speed gearbox, standard on Super and Xtra models, includes TorqueLock in 5th and 6th gears – increasing productivity, saving fuel, and improving roading, trailer towing and hill climbing.
- › There's a transmission dump on the foot brake for superb multi-functioning when loading or rehandling.

## Efficiency gains

- › High back-off brakes reduce viscous drag when roading and rehandling for economy improvements of up to 2% depending on application.
- › We've reduced the transmission oil level for a 1% efficiency boost (powershift gearbox).
- › The immobiliser has to synchronise with the machine ECU's before the machine will start, giving increased security from machine theft.

		526-56	527-58	531-70			536-60			536-70			541-70			550-80		535-95		
Maximum lift capacity	kg (lb)	2600 (5732)	2700 (5952)	3100 (6834)			3600 (7936)			3600 (7936)			4100 (9038)			4999 (11020)		3500 (7716)		
Maximum lift height	mm (in)	5600 (220)	5800 (228)	7000 (275)			6200 (244)			7000 (275)			7000 (275)			8100 (318)		9500 (374)		
Maximum forward reach	mm (in)	2950 (116)	3000 (118)	3700 (146)			3700 (146)			3700 (146)			3700 (146)			4470 (176)		6520 (257)		
Gross power	kW (hp)	81 (109)	81 (109)	81 (109)	93 (125)	108 (145)	81 (109)	93 (125)	108 (145)	81 (109)	93 (125)	108 (145)	81 (109)	93 (125)	108 (145)	108 (145)	81 (109)	93 (125)	108 (145)	
Peak torque	Nm (lb-ft)	516 (381)	516 (381)	516 (381)	550 (406)	560 (413)	516 (381)	550 (406)	560 (413)	516 (381)	550 (406)	560 (413)	516 (381)	550 (406)	560 (413)	560 (413)	516 (381)	550 (406)	560 (413)	

### New **ecoMAX** T4i engine

- › Our new EcoMAX Stage IIIB/Tier 4i engine is so clean that it doesn't need after treatments from devices like DPFs or AdBlue.
- › The high pressure common rail fuel injection engine has a high efficiency combustion process and produces virtually no exhaust Particulate Matter.
- › No DPF technology means a low bonnet line for excellent visibility.
- › New engines give improved running costs and give increased efficiency savings.
- › Can be adapted for use in non-legislated territories where fuel specification and quality may differ.

### New **LIVE<sup>360</sup>LINK** features Loadall

Livelink can now provide additional reports on fuel consumption, high and low idling times and engine off and on times, meaning machine owners can manage their fleet and reduce whole life operating costs.

Engine load measurement records the machine work load on the engine into three bands high, medium and low, allowing the operator/owner to review the machine work characteristics.



# FASTRAC 3000 SERIES AND 8000 SERIES

**With ultra efficient T4i engines, GPS auto-steer preparation, improved transmission and cruise controls, and quieter cabs, the latest Fastrac 3000 and 8000 models are better than ever.**

## More efficiency

- › The Sisu Tier 4i/Stage IIIB compliant engines are more fuel-efficient than outgoing units (by 10% on all models).
- › GPS auto-steer preparation provides highly efficient performance. It can minimise fatigue, reduce fuel, fertiliser, spray and seed inputs by up to 10%, and increase accuracy even at up to 40kph.
- › The suspension and cab position makes the GPS super-accurate.
- › Increased GWW = more payload: 8000 Series – additional 2,000kg; 3000 Series – additional 2,000kg with 24" wheels; 1,000kg or 3,000kg on other wheels (if upgrading from previous machine with twin caliper brakes or single caliper brakes respectively).

## More operator comfort

- › We've reduced in-cab noise levels by around 40% for even greater operator comfort.
- › An optional rear hitch camera makes implement or trailer hitching easy.
- › A new fender-mounted auxiliary spool control saves operators from getting in and out of the cab (3000 Series only).
- › There's all-improved cab and service access.
- › The new fender design keeps the cab windows cleaner.

## More productivity

- › Improved P-TRONIC and V-TRONIC transmissions and cruise controls reduce driver workload and increase productivity.
- › We've redesigned the 3000 Series chassis for better manoeuvrability. It also means we've been able to fit 34 inch wheels as standard.
- › Activ Traction on the 8000 Series reduces engine revs when wheels start to slip, and increases them once traction is regained.

- › The 3000 series' new Road Performance Package includes Traction Assist for improved grip and reduced tyre wear under acceleration and on loose road surfaces. There's also an improved ABS braking system.
- › Hill Hold keeps the 3000 Series stationary on a hill after the brake is released.



		3200 XTRA	3230 XTRA	8280	8310
Engine type		Sisu Power 7.4l Litre Stage IIIB / Tier 4 Interim	Sisu Power 7.4l Litre Stage IIIB / Tier 4 Interim	Sisu Power 8.4 Litre Stage IIIB / Tier 4 Interim	Sisu Power 8.4 Litre Stage IIIB / Tier 4 Interim
Gross power @ rated speed (SAE J1995)	hp (kW)	190 (142) @ 2100rpm 220hp** (for transport)	220 (164.2) @ 2100rpm 260hp** (for transport)	256 (191) @ 2100rpm	280 (209) @ 2100rpm
Max torque @ engine rpm	Nm	960 @ 1500rpm	1015 @ 1500rpm	1195 @ 1500rpm	1310 @ 1500rpm
*Road speed	kph (mph)	65/80 (40/50)	65/80 (40/50)	70 (44)	70 (44)
Transmission		P-TRONIC	P-TRONIC	V-TRONIC	V-TRONIC



# 427 AGRI AND 437 AGRI WHEELED LOADING SHOVELS

The latest JCB 427 Agri and 437 Agri are more efficient, comfortable, durable and productive than ever, delivering a fuel saving of up to 16%.

## More productivity

- › The engine, axles, driveline and hydraulics work in harmony with each other for reduced cycle times, improved productivity and a target 16% fuel saving.
- › Our innovative electronic management system can automatically perform progressive clutch cut-off to divert maximum power to loader hydraulics while limiting vehicle speed.
- › Wheel speed braking means that these wheeled loading shovels' brakes rotate at the same speed as the wheels for heat and drag reduction, as well as improved fuel economy.

## Improved serviceability

- › The EMS controls tractive effort through the transmission to reduce service brake wear and fuel consumption.
- › We've extended axle service intervals from 1000 hours to 1500 hours.

- › An improved sloping bonnet and counterweight refreshes styling, while standard-fit mesh air intake screens prevent material ingress.
- › Optional long-life sintered brake and axle pads are ideal for heavy-duty applications.
- › Our new fender design keeps the machine and windows cleaner.

## New driveline efficiency package

- › Standard transmission is 4-speed with optional 5-speed on both (featuring lock-up torque convertor in 2nd gear upwards) and a further option of 6-speed on 427 – providing closer ratios for improved cycle times, acceleration, hill climbing and performance.
- › A variety of axle configurations allow you to tailor your machine to any environment.
- › Open differentials are ideal for hard standing ground conditions.

- › The LSD option is perfect for soft, muddy terrain with reduced traction.
- › The Open differential with automatic locking front axle is suited to all ground conditions with 100% traction.
- › You can set SRS to automatically activate at 6kph or have it set to constant for smooth, precise control.

## New cab refresh

- › The stylish modern central dash display has operating, service, machine health information and more.
- › Air conditioning and automatic climate control options create the perfect working environment.
- › There's a range of seat options: mechanical or air suspension, vinyl or fabric bases, or even the luxury Actimo XXL option.

## New Stage IIIB/Tier 4i engine

- › No DPF or SCR makes our wheeled loading shovels easier, quicker and more economical to service.
- › A VGT provides increased response for high performance at low revs.
- › Idle automatically returns to 700rpm after 30 secs of inactivity.

		427 ZX	427 HT	427 HT HL	437 ZX	437 HT	437 HT HL	437 HT SHL
Gross engine power	kW (hp)	118 (158)			129 (173)			
Peak torque	Nm (lb-ft)	801 (591)			801 (591)			
Operating weight	kg (lb)	13112 (28907)	13025 (28715)	13925 (30699)	14989 (33045)	14576 (32135)	15066 (33215)	15618 (34432)
Full turn tipping load	kg (lb)	8051 (17749)	7944 (17514)	6633 (14623)	9055 (19963)	9436 (20803)	7171 (15809)	5841 (12877)
Pin height-	mm (ft-in)	3906 (12-10)	3906 (12-10)	4336 (14-3)	3996 (13-1)	3996 (13-1)	4650 (15-3)	5213 (17-1)



# TELEMASTER TM320

The new JCB TM320 may have the same dimensions as our outgoing model but it's much improved. More hydraulic power, new engines and an efficiency package will save up to 16% fuel, improve productivity and reduce cycle times.

## Hydraulics

- › Lift capacity is increased to 3200kg.
- › The TM320S has a new high-flow 160 l/min pump for ultimate productivity.
- › Variable flow auxiliary hydraulics are easy to use, aid productivity and maximise efficiency. The new TM320S allows you to change flow rate on-the-go – perfect for feeder or sweeper use.

## JCB transmission

- › The TM320 has TorqueLock in 5th and 6th gears for reduced fuel consumption when roading. The TM320S has this feature on 2nd to 6th gears for improved performance on the clamp and targeted efficiency gains of 12%.
- › The gear change is now on the joystick for ease of use and improved multi-functioning.

## Serviceability

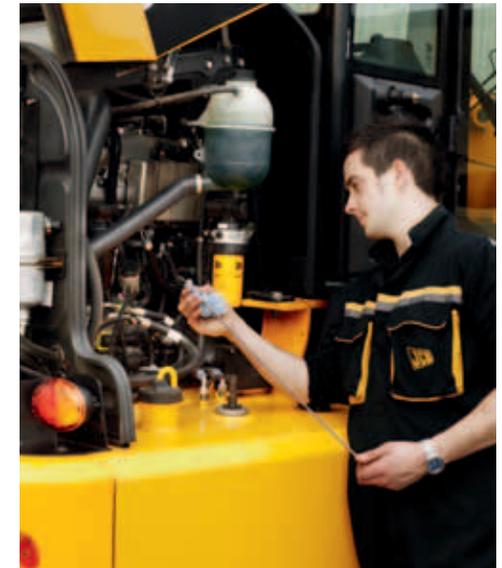
- › A wide opening rear bonnet gives quick, easy access for daily checks and servicing.
- › All daily maintenance can be done safely at ground level.
- › The TM320's air intake scavenge system eliminates debris build-up.

## Ease of use

- › A new instrument cluster displays auxiliary flow rate.
- › A standard hydraulic variable speed cooling fan automatically reacts to ambient temperature and adjusts the fan speed for maximum economy and lower noise.
- › The TM320's Smooth Ride System is easy to operate via a rocker switch. It can be auto-engaged by road speed or constantly activated.
- › There's a transmission dump on the foot brake for superb multi-functioning when loading or rehandling.
- › You can choose an optional 2nd boom auxiliary.

## New **ecoMAX** T4i engine

- › Our new EcoMAX Stage IIIB/Tier 4i engine is so clean that it doesn't need after treatments from devices like DPFs or AdBlue.
- › The high pressure common rail fuel injection engine has a high efficiency combustion process and produces virtually no exhaust Particulate Matter.
- › No DPF technology means a low bonnet line for excellent visibility.
- › New engines give improved running costs and give increased efficiency savings.
- › Can be adapted for use in non-legislated territories where fuel specification and quality may differ.



		TM320	TM320S
Gross engine power	kW (hp)	93 (125)	108 (145)
Peak torque	Nm (lb-ft)	550 (406)	
Operating weight	kg (lb)	8000 (17637)	
Max lift capacity	kg (lb)	3200 (7055)	
Max lift height	mm (ft-in)	5200 (17-1)	
Maximum forward reach	mm (ft-in)	2950 (9-7)	
Maximum hydraulic flow	l/min (gal/min)	140 (30.7)	160 (35.2)



# THE NEW ECOMAX T4i ENGINE

The new JCB EcoMAX T4i engine uses a combination of cooled Exhaust Gas Recirculation (EGR), a high pressure common rail fuel system and a Variable Geometry Turbocharging (VGT) to achieve very low emissions and fuel consumption. It doesn't need a DPF.

## Complying with Stage IIIB/Tier 4i

- › Our compact new EcoMAX T4i engine is so clean that it doesn't need after-treatment from devices like DPFs or AdBlue.
- › By utilising a high-pressure common rail fuel injection system (up to 2,000 bar) with a high efficiency combustion system the engine produces virtually no exhaust particulate matter.
- › Cooled Exhaust Gas Recirculation (EGR) reduces oxides of nitrogen during combustion.
- › Operators can manage fuel consumption by reviewing data from their various work cycles via JCB LiveLink (model dependent).

## Low maintenance by design

- › All engine checks are carried out and reported automatically by the engine management system, meaning an end to daily manual checks (model dependent).
- › Because our EcoMAX engine meets Stage IIIB/Tier 4i requirements without complex after-treatments, it's easier, quicker and more economical to service.
- › No DPF means a more spacious engine compartment and all service points are easy to access.
- › Can be adapted for use in non-legislated territories where fuel specification and quality may differ.

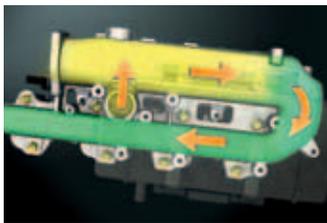
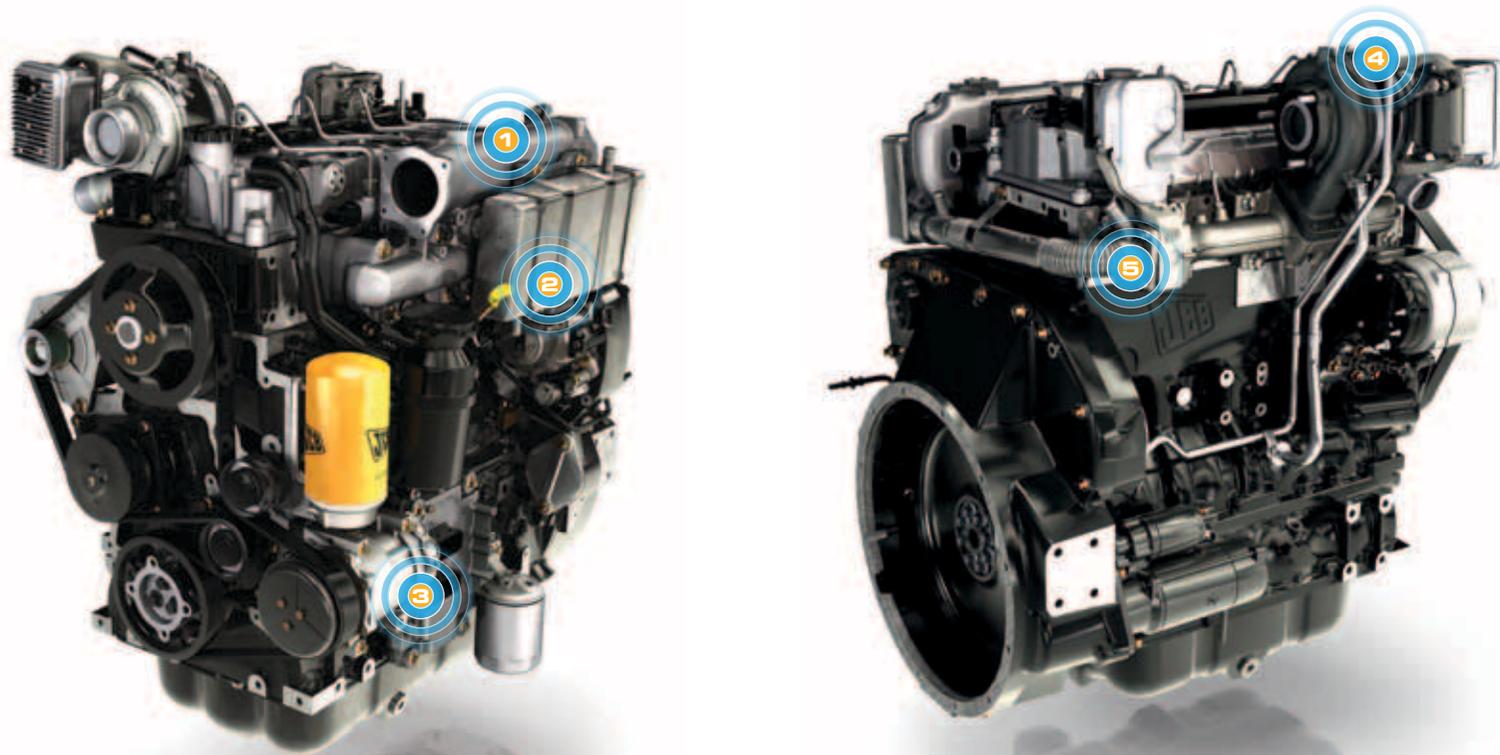
## Ultra-efficient

- › EcoMAX uses less fuel because of its efficient combustion system as well as its lack of DPF.
- › The torque curve is designed to deliver class leading high torque at low engine speeds.
- › EcoMAX has a "constant power" curve for more kW availability at lower engine speeds.

## Making EcoMAX

- › An enormous amount of R&D has gone into our new T4i EcoMAX engine. Instead of after-treating engine pollutants, we focused on developing a high-efficiency combustion system that simply doesn't create them in the first place.
- › A welcome side-effect of our high-efficiency combustion approach is extremely low fuel consumption levels.
- › We worked with R&D specialists Ricardo and, using cutting edge techniques like computational fluid dynamics, along with raising injections pressures to 2,000bar, has perfected our combustion process.
- › We also worked with fuel system and electronics specialists Delphi to develop a new electronic control system with a form of learning capacity.
- › Although it's brand new, EcoMAX is tried and tested; we've carried out over 110,000 testing hours including test bed operation, many different machine cycles, extreme operator envelope usage, cold weather trials inside the arctic circle, altitude testing in Spain and extreme ambient temperature testing.

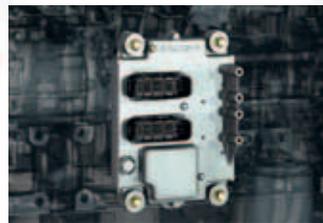




**1** Intake manifold – effective mixing of gases from the EGR result in low emissions and fuel economy



**2** EGR System – reduces NOx and optimises fuel efficiency



**3** Sophisticated control systems – integrally mounted for improved reliability



**4** VGT – optimised torque curve (driveability), gives reduced fuel consumption



**5** Hot side valve – gives heavy-duty durability







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Download the very latest information on this product range at: [www.jcb.com](http://www.jcb.com)

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