

WHEELED LOADING SHOVEL | 413S





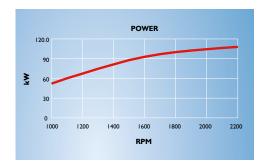
CLEANER, QUIETER AND MORE EFFICIENT.

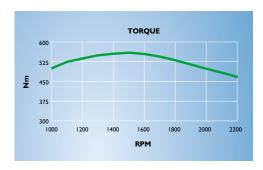




UNBEATABLE PERFORMANCE.

THE JCB 413S CAN PERFORM GREAT FEATS OF PRODUCTIVITY. WITH HIGH POWER AND TORQUE, THE MACHINE MEETS TIER 4I/STAGE 3B EMISSIONS LEGISLATION WITHOUT NEEDING A DPF OR SCR SYSTEM.





Engine productivity.

1 JCB's award-winning EcoMAX 4.8 litre engine delivers a resounding 108kW (145hp) of power and 560 Nm of torque for ultimate performance.

With a variable geometry turbo, our EcoMAX T4i engine offers increased performance at low engine speeds for improved cycle times and tractive effort.

Loading productivity.

- We've made sure that forward visibility on the 413S is excellent, while our optional quickhitch makes attachment changing easy and efficient (even with aftermarket attachments).
- Auxiliary flow rate is fully adjustable on the move for precision attachment control; you can even select constant flow for rotary attachments.







Loading productivity (continued).

4 So that you can perform parallel lifting and use plenty of attachments, the 413S is fitted with a high torque (HT) loader arm. You can also opt for a high lift (HL) arm for high-up applications like spreader and feeder loading.

Drivetrain productivity.

The 413S has been designed from the ground up to excel in agriculture. A high power-to-weight ratio, 6-speed transmission and LSD axles are perfectly suited to agricultural applications; standard-fit widecore cooling and cyclonic pre-filtering allow it to cope with even the dustiest environments.

A top speed of 46kph means less transport time between sites.

Clever JCB electronic management can disconnect the clutch via the brake pedal for efficient, productive loader operation. By controlling tractive effort through the transmission, this feature channels maximum power to the loader hydraulics, reducing service brake wear and fuel consumption.









EFFICIENT BY DESIGN.

THE JCB 413S IS DESIGNED TO MOVE MORE MATERIAL FOR LESS. TO ACHIEVE THIS, WE'VE DESIGNED THE ENGINE, AXLES, DRIVELINE AND HYDRAULICS TO WORK IN HARMONY WITH EACH OTHER, FOR ULTIMATE EFFICIENCY.

Our EcoMAX engine can be adapted to run on lower-grade fuels; you can therefore resell your machine in different territories, which improves residuals.

An efficient engine.

1 The Tier 4i EcoMAX engine uses less fuel than our Tier 3 engines, saving you money.

The 413S also saves on service costs – EcoMAX doesn't need exhaust after-treatment, so it doesn't require costly heat-resistant lube oils.

EcoMAX produces high levels of power and torque at engine speeds as low as 1500 – 1600 rpm for fuel efficient matching of transmission and hydraulics.

An efficient driveline.

High back-off brakes reduce viscous drag during roading and rehandling, which boosts fuel efficiency.





6-speed transmission comes as standard on the 413S. The close gear ratios deliver

performance and efficiency at all speeds

for ulitmate productivity.



JCB

An efficient driveline (continued).

4 A viscous coupled engine fan automatically adjusts its speed depending on ambient temperature, optimising cooling, saving fuel and lowering noise.

An efficient hydraulic system.

Using specialist attachments is easy with an adjustable proportional auxiliary flow rate.

Our regenerative dump circuit improves cycle times. It also improves economy by reducing hydraulic power consumption.





A QUALITY PROCESS.

WE KNOW THAT A WHEELED LOADING SHOVEL IS A KEY PART OF AGRICULTURE. THAT'S WHY THE JCB 413S IS BUILT ON A FOUNDATION OF QUALITY AND RELIABILITY. THE PROCESSES WE'VE USED THROUGH DESIGN AND MANUFACTURE WILL SAFEGUARD YOUR WORKING PROCESS, HOUR AFTER HOUR, DAY AFTER DAY.



Quality built in.

- 1 Finite element analysis and rig testing ensure superior structural strength and durability. Cold cell testing guarantees starting performance down to -20°C.
- Precision machining provides high tolerances and accurate location of pins and bushes.
- The hydraulic tank and fuel tank are both integral to the chassis, providing protection as well as structural strength.









Well articulated.

The articulation joint has a heavy-duty box section – much stronger than a single plate with a boss.

Hoses are neatly routed and clamped through the articulation joint, well away from any pinch points. Steering rams are positioned high up and well protected from possible impact and site damage.

Protecting ancillaries.

Rear lights are safely recessed and protected by the solid counterweight casting.

✓ To protect the bonnet and cooling pack from impact damage, we've fitted a full-width rear counterweight.

The articulation joint has a heavy-duty centre pin and oversized bush, as well as twin taper roller bearings on the bottom box joints. This can tolerate both vertical and horizontal loads for durability and rigidity.









COMFORTABLY SUPERIOR.

KEEPING OPERATORS FRESH AND ALERT ALL DAY LONG RESULTS IN INCREASED SAFETY AND PRODUCTIVITY. WITH THAT IN MIND, THE 3M³ CAB IS ROOMY, EASY TO ACCESS, AND QUIET. IT ALSO HAS EXCELLENT VISIBILITY AND INTUITIVE ERGONOMIC CONTROLS.

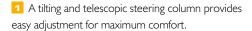


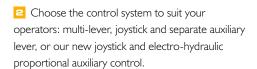












■ A stylish, modern central dash display combines analogue dials and a colour LCD screen – this can display machine health details, service requirements, operating information and more.







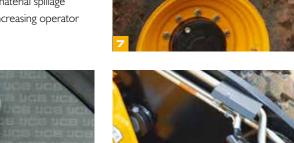
The 413S has air conditioning and automatic climate control options to create perfect working temperatures.

Exterior comforts.

- 3 or 4 spool hydraulics and a quickhitch enable many attachments to be used easily for extra versatility.
- The 413S's selectable loader arm detents mean operators can set loader arm height limitations, return to dig and float functions for improved safety and productivity.
- Z Large glass panels and narrow cab pillars provide excellent all round visibility.

In JCB Smoothride load suspension limits shock loadings and therefore reduces material spillage and structural stress, as well as increasing operator comfort.











LOW MAINTENANCE LONG INTERVALS.

A WHEELED LOADING SHOVEL NEEDS TO SPEND THE MAXIMUM AMOUNT OF TIME HARD AT WORK. WE'VE DESIGNED THE 413S TO DO JUST THAT, WITH LONG SERVICE INTERVALS AND QUALITY COMPONENTS.



- 1 A cyclonic air cleaner reduces debris build up in the air filter while an air intake scavenge system removes debris, extending service intervals.
- Ground level daily checks and grease point access make life easier and safer.
- Batteries can be easily accessed with no special tools required.

Looking after itself.

- The electronic monitoring system relays machine condition in real time alerts, safeguarding the machine and operator.
- With the optional auto lubrication kit your machine will take care of its own greasing requirements.











DRIVE SAFELY.

THE 413S IS DESIGNED TO KEEP THE OPERATOR SAFE AT ALL TIMES. GREAT VISIBILITY, NON-SLIP SURFACES AND AIR FILTRATION IS JUST THE START.

Safety first.

- 1 The cab is isolator-mounted, compliant with ROPS/FOPS standards, and positively pressurised against dust. You can choose from fresh air, carbon and P3 – HEPA recirculation filters as well.
- 2 Our optional rear camera displays an unobstructed rearwards view on an in-cab colour monitor.
- The 413S has interior mirrors, heated exterior mirrors and bonnet mirrors for superb all round visibility.
- 4 The 413S offers uncompromised visibility; our EcoMAX engine doesn't require bulky exhaust after-treatment, so it's extremely compact, housed beneath a sloping rear bonnet with the exhaust silencer and air intake filter both out of sight.
- Our in-cab electronic two-stage quickhitch isolation protects against uncontrolled release of attachments.



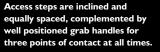














LIVELINK, WORK SMARTER.

JCB LIVELINK IS AN INNOVATIVE SOFTWARE SYSTEM THAT LETS YOU MONITOR AND MANAGE YOUR MACHINES REMOTELY — ONLINE, BY EMAIL OR BY MOBILE PHONE.

Productivity and cost benefits -

By providing information like idle time monitoring and machine fuel consumption, JCB Livelink helps reduce your fuel usage, saving money and improving productivity. Machine location information can help improve efficiency and perhaps even reduce insurance costs.



Maintenance benefits – Manage machine maintenance easily – accurate hours monitoring and service alerts improve maintenance planning, while real-time location data helps you manage your fleet. Critical machine alerts and maintenance history records are also available.

Security benefits – Livelink's real-time geofencing alerts tell you when machines move out of predetermined zones, and real-time curfew alerts inform you of unauthorised usage. Further benefits include real-time location information.

VALUE ADDED.

JCB'S WORLDWIDE CUSTOMER SUPPORT IS FIRST CLASS.
WHATEVER YOU NEED AND WHEREVER YOU ARE, WE'LL BE
AVAILABLE QUICKLY AND EFFICIENTLY TO HELP MAKE SURE
YOUR MACHINERY IS PERFORMING TO ITS FULL POTENTIAL.





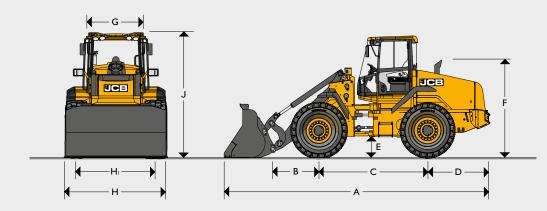
Our Technical Support Service provides instant access to factory expertise, day or night, while our Finance and Insurance teams are always on hand to provide fast, flexible, competitive quotes.

JCB Assetcare offers comprehensive extended warranties and service agreements, as well as service-only or repair and maintenance contracts. Irrespective of what you opt for, our Maintenance teams around the world charge competitive labour rates, and offer non-obligation quotations as well as fast, efficient insurance repair work.

The global network of JCB Parts Centres is another model of efficiency; with 16 regional bases, we can deliver around 95% of all parts anywhere in the world within 24 hours. Our genuine JCB parts are designed to work in perfect harmony with your machine for optimum performance and productivity.

Note: JCB LIVELINK and JCB ASSETCARE may not be available in your region, so please check with your local dealer.

STATIC DIMENSIONS



			413S HT	413S HT HL
Α	Overall length	mm	6524	6718
В	Axle to pivot pin	mm	1215	1409
С	Wheel base	mm	2750	2750
D	Axle to counterweight face	mm	1365	1365
Е	Minimum ground clearance	mm	351	351
F	Height over exhaust	mm	2280	2280
G	Width over cab	mm	1431	1431
Н	Width over tyres	mm	2347	2347
Ηι	Wheel track	mm	1880	1880
J	Height over cab	mm	3030	3030
	Pin height (maximum)	mm	3579	3824
Κ	Overall operating height	mm	3375	3375
	Front axle weight	kg	3620	3768
	Rear axle weight	kg	5115	5049
	Total weight	kg	8735	8817
	Inside turn radius	mm	2600	2600
	Maximum turn radius over shovel	mm	5445	5534
	Articulation angle	degrees	± 40°	± 40°

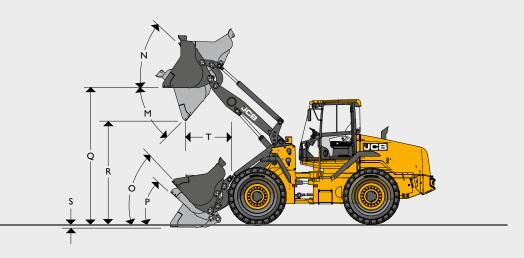
Based on machine equipped with quickhitch mounted $\,\mathrm{I}\,\mathrm{m}^3$ shovel with bolt on toe plate and Michelin XMCL 460/70 R24 tyres

ENGINE		
Туре		4 Stroke direct injection
Model		JCB EcoMAX T4i
Capacity	litres	4.8
Aspiration		Turbo charged
Cylinders		4
Max gross power to SAE J1995/ISO 14396	kW (hp) @ 2200rpm	108 (145)
Max torque	Nm @ 1500rpm	560

TRANSMISSION						
Туре		Smooth s	hift powershift			
Make and model	ake and model ZF 6WG115					
Torque convertor stall ration		3	.01:1			
		Forward	Reverse			
T	kph	5.7	6.0			
2	kph	8.8	14.2			
3	kph	13.5	32.3			
4	kph	20.6	-			
5	kph	30.7	-			
6	kph	46	-			

AXLES	
Туре	Limited slip differential
Make & model	JCB PD70 (front and rear)
Overall axle ratio	18.16:1
Rear axle oscillation	± °

STEERING	Hydraulic power steering system with emergency steering.
BRAKES	Hydraulic power braking on all wheels. In-board mounted, oil immersed, multi-plate disc brakes. Mechanical disc type parking brake operating on transmission output shaft.
TYRES	17.5 R25 SNOPLUS, 17.5 R25 XTLA, 15.5 R25 LOADER GRIP 2, 17.5 R25 LOADER GRIP, 460/70 R24 XMCL, 500/70 R24 XMCL



ELECTRICAL SYSTEM		
System voltage	Volt	24
Alternator output	Amp hour	60
Battery capacity	Amp hour	2 x 110

TYRE SIZE									
413S					Tipping	g loads	Dimensions		
Tyre size	Manufacturer	Туре	Rating	Op weight kg	STL kg	FTTL kg	Vertical mm	Width mm	
500/70 R24	Michelin	XMCL		74	12	10	21	84	
17.5 R25	Michelin	SNOPLUS	L2	370	115	103	18	-59	
17.5 R25	Michelin	XTLA	L2	318	99	88	14	-48	
15.5 R25	Nokian	LOADER GRIP 2	L3	-36	-11	-10	-4	-153	
17.5 R25	Nokian	LOADER GRIP	L2	228	71	63	32	-62	

OADER DIMENSIONS																			
Assumes machine is fitted with Michelin XMCL 460/70 R24 tyres.																			
Model			413S HT							413S HT HL									
Bucket mounting				Direct				Quick	Hitch				Direct				Quick	Hitch	
Bucket type					G	eneral purpo	se							G	eneral purpo	ose			
Bucket equipment		Tipped	d teeth	Re	versible toep	late		Reversible	e toeplate		Tippe	d teeth	Rev	versible toep	late		Reversible	e toeplate	
Bucket capacity (SAE heaped)	m³	1.2	1.4	1.2	1.4	1.6	- 1	1.2	1.4	1.6	1.2	1.4	1.2	1.4	1.6	1	1.2	1.4	1.6
Bucket capacity (Sstruck)	m³	1.009	1.18	1.009	1.18	1.362	0.840	1.009	1.18	1.362	1.009	1.18	1.009	1.18	1.362	0.840	1.009	1.18	1.362
Bucket width	mm	2250	2400	2250	2400	2400	2286	2250	2400	2400	2250	2400	2250	2400	2400	2286	2250	2400	2400
Bucket weight	kg	502	681	528	638	638	386	505	580	638	502	681	528	638	638	386	505	580	638
Maximum material density	kg/m³	2340	1956	2340	1956	1691	2397	2215	1864	1610	2145	1793	2145	1793	1530	2202	2029	1704	1451
Tipping load straight	kg	6575	6426	6575	6426	6350	5656	6293	6149	6078	6042	5904	6042	5904	5836	5213	5775	5642	5508
Tipping load full turn	kg	5616	5478	5616	5478	5410	4793	5315	5218	5153	5148	5020	5148	5020	4956	4404	4896	4773	4643
Payload	kg	2808	2739	2808	2739	2705	2397	2658	2609	2577	2574	2510	2574	2510	2448	2202	2435	2386	2322
Maximum breakout force	kN	73.2	67.7	73.2	67.7	62.7	67.9	67.2	62.3	57.1	73.2	67.7	73.2	67.7	62.7	67.9	67.2	62.3	57.1
M Dump angle maximum	degrees	47	47	47	47	47	47	47	47	47	43	43	43	43	43	43	43	43	43
N Roll back angle full height	degrees	45	45	45	45	45	42	45	45	45	45	45	45	45	45	55	45	45	45
O Roll back at carry	degrees	46	46	46	46	46	43	46	46	46	49	49	49	49	49	46	49	49	49
P Roll back and ground level	degrees	42	42	42	42	42	40	42	42	42	46	46	46	46	46	44	46	46	46
Q Load over height	mm	3354	3354	3354	3354	3354	3379	3371	3371	3371	3599	3599	3599	3599	3599	3624	3616	3616	3616
R Dump height (45° dump)	mm	2775	2709	2775	2709	2658	2610	2739	2673	2622	3051	2992	3051	2992	2945	2900	3016	2955	2907
S Dig depth	mm	122	122	122	122	122	105	105	105	105	122	122	122	122	122	97	107	107	107
T Reach at dump height	mm	937	998	937	998	1046	1064	994	1056	1103	950	1018	950	1018	1071	109	1013	1079	1130
Reach maximum (45° dump) - horizontal arm	mm	1671	1734	1671	1734	1784	1840	1732	1796	1846	1821	1885	1821	1885	1939	1990	1880	1948	1992
Operating weight (includes 80kg operator and full fuel tank)	kg	8547	8615	8547	8610	8650	8815	8733	8800	8834	8631	8699	8631	8694	8734	8899	8817	8884	8918

SPECIFICATION

413S WHEELED LOADING SHOVEL

HYDRAULICS							
Pump type		Variable displacement piston pump					
Pump max. flow		I	56				
Pump max. pressure			bar	2	40		
Hydraulic cycle times at full en	gine revs	Sec	Seconds				
Arms raise (full bucket)		4.4					
Bucket dump (full bucket)				1.7			
Arms lower (empty bucket)				2.8			
Total cycle				3	8.9		
Ram dimensions		Bore	Rod	Closed centres	Stroke		
Bucket ram x2	mm	80	50	1502	928		
Lift ram x2	mm	90	50	1107	743		
Steer ram x2	mm	60	30	621	312		

CAB	In-cab noise level – 7 I dB(A). External noise 104dB(A).

SERVICE FILL CAPACITIES		
Hydraulic system	litres	155
Fuel tank	litres	133*
Engine oil sump	litres	14
Transmission oil system	litres	27
Axle oil (front)	litres	25
Axle oil (rear)	litres	25
Engine coolant system	litres	26

^{*246} with aux tank

STANDARD EQUIPMENT Loader: Shovel reset mechanism, loader arm kickout mechanism, loader control isolator, single lever servo control, high torque geometry combined with excellent visibility between the arms.

> Engine: Cyclonic air pre-cleaner with scavenge system, fuel filters, sediment bowl, isolated single faced cooling package, viscous coupled variable speed cooling fan, wide core radiator, no serviceable after treatment of exhaust gas, no external silencer or pre-cleaner, low profile exhaust stack.

Transmission: Single lever shift control, speed inhibitor, neutral start, disconnect on footbrake and loader lever. Disconnect isolator switch, direction changes and kick down on rear selector and loader control lever.

Axles: Epicyclical wheel hub reduction, fixed front, oscillating rear.

Brakes: Multi-plate wet disc brakes, single circuit hydraulic power assisted. Parking disc brake on transmission.

Hydraulics: Variable displacement piston pump with priority steer, emergency steer back-up, 2 spool loader circuit with accumulator support, 3rd spool auxiliary hydraulic circuit as standard. Hydraulic tank located in the rear chassis fabrication.

Steering: Adjustable steering column, resilient stops on max lock.

Cab: ROPS/FOPS safety structure, interior reading light, centre mounted master warning light, electronic monitoring panel with LCD message display. Two speed intermittent front windscreen wipe/wash and self park, single speed rear windscreen wipe/wash and self park. 3 speed heater/demisting with replicable air filter, LH and RH opening windows, sun visor, internal rear view mirror, external mirrors, adjustable suspension seat with belt and headrest, operator storage facilities, laminated windscreen, heated rear screen, loader control isolator, horn, adjustable armrest, lower front quarter glass.

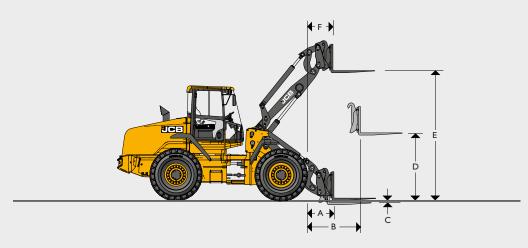
Electrical: Road lights front and rear, parking lights, front and rear working lights, reverse alarm and light, rear fog light, battery isolator located at cab steps, radio wiring and speakers, 60 amp alternator, rotating beacon.

Bodywork: Full chassis integral fender coverage that accommodates all wheel and tyre options, sloping one piece rear bonnet, full width counter weight.

OPTIONAL EQUIPMENT

Auxiliary 4th spool hydraulic service, constant auxiliary flow (on 3rd spool), air conditioning, automatic temperature control, tooth guard, replaceable shovel wear parts, smooth ride system (SRS), engine grid heater, transmission cooler bypass, belly guards, hydraulic quick hitch, reversing camera (colour), auto greasing system, auxiliary control rollers on joystick, 24v to 12v in cab convertor, cab screen guards, light guards, additional front and rear mounted LED work lights, air suspensions seat, sun visor, fire extinguisher, number plate light kit, grease gun, broadband sound reverse alarm (BBS), smart reverse alarm, hydraulic tow hitch.

LOADER DIMENSIONS

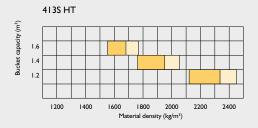


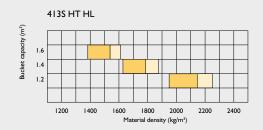
Assumes the fitment of Michelin 460/70 R24 XMCL tyres			Paralle	el fork	Non parallel fork			
			413S HT	413S HT HL	413S HT	413S HT HL		
	Fork carriage width	mm	1500	1500	1500	1500		
	Length of tines	mm	1220	1220	1220	1220		
Α	Reach at ground level	mm	922	1117	937	1132		
В	Reach at arms horizontal	mm	1535	1685	1542	1692		
С	Below ground level	mm	74	74	84	84		
D	Arms, horizontal height	mm	1671	1671	1660	1660		
Ε	Arms, maximum height	mm	3402	3647	3392	3637		
F	Reach at maximum height	mm	829	789	836	796		
	Payload*	kg	3326	3084	3319	3078		
	Tipping load straight	kg	4900	4557	4889	4549		
	Tipping load full turn (40°)	kg	4158	3855	4149	3848		
	Attachment weight	kg	435	435	430	430		

^{*}At the centre-of-gravity distance 500mm. Based on 80% of full turn tipping load as defined by ISO 8313.

Manual fork spacings at 50mm increments. Fork section 100mm x 50mm.

Material	Loose density (kg/m³)	Fill factor (%)
Snow (fresh)	200	110
Peat (dry)	400	100
Sugar beet	530	100
Coke (loose)	570	85
Barley	600	85
Petroleum coke	680	85
Wheat	730	85
Coal bitumous	765	100
Fertiliser (mixed)	1030	85
Coal anthracite	1046	100
Earth (dry) (loose)	1150	100
Nitrate fertiliser	1250	85
Sodium chloride (dry) (salt)	1300	85
Cement Portland	1440	100
Limestone (crushed)	1530	100
Sand (dry)	1550	100
Asphalt	1600	100
Gravel (dry)	1650	85
Clay (wet)	1680	110
Sand (wet)	1890	110
Fire clay	2080	100
Copper (concentrate)	2300	85
Slate	2800	100
Magnetite	3204	100









ONE COMPANY, OVER 300 MACHINES.

Your nearest JCB dealer

Wheeled Loading Shovel 413S

Operating weight: 8,650kg Gross rated power: 145hp (108kW) Full turn tipping load: 5,410kg Standard shovel capacity: 1.6m³

JCB Agriculture, Harewood Estate, Leek Road, Cheadle, Staffordshire ST 10 2JX. Tel: 01538 755641 Email: salesinfo@jcb.com

Download the very latest information on this product range at: www.jcb.com

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