

L-SERIES
BACKHOES



JOHN DEERE

310L / 310SL / 410L



**LIFT MORE
AND MULTITASK**



*LOOKING FOR MORE
RELIABILITY AND PRODUCTIVITY?*

***WE'VE GOT
YOUR BACK.***



+



RELIABLE

PRODUCTIVE





INCREASED CYCLE
TIMES DELIVER

16%
GREATER
TRENCHING
PRODUCTIVITY
FOR 310SL WITH
PCLS HYDRAULICS

WHEN WE NEED REAL-WORLD FEEDBACK,
WE ASK CUSTOMERS LIKE YOU.

Our trusted Customer Advocate Groups (CAGs) provide us with invaluable input from owners and operators – the ones just like you who know what customers really need.

And we listen. Thanks to you, closed-center, pressure-compensated load-sensing (PCLS) hydraulics that boost productivity, machine control, and lifting capacity are standard on the 310SL as well as on the 410L. And our PowerShift™ transmission now includes standard AutoShift. These are just the latest examples of how we deliver the machines and features to help your operation succeed in the working world.

GET MORE DONE WITH ONE

MULTIFUNCTION VERSATILITY, EXCEPTIONAL CAPABILITY.

Why run two machines when one will do? Whether you're loading trucks, busting up blacktop, placing pipe, digging trenches, or moving materials, an L-Series Backhoe is more than up to the task. Building upon our highly productive K-Series Backhoes, the L-Series features pressure-compensated load-sensing (PCLS) hydraulics (now on both the 310SL and the 410L), for superb multifunction performance. The result: our most versatile backhoes ever.

See what you can do now

Now with PCLS hydraulics, the 310SL features provide increased productivity and smooth multifunction control, with increased cycle times improving trenching productivity by 16 percent over the prior 310SL design. Trenching operation can be conducted at a lower engine rpm, reducing fuel consumption and jobsite noise. The 310SL delivers all the advantages of PCLS hydraulics in the 14-foot digging-depth category, enabling operator efficiency and productivity through improved multifunction control.

Powerful engines

Trust John Deere PowerTech 4.5L engines to provide the muscle needed to power through any workday. Field-proven wet-sleeve design with replaceable cylinder liners provides uniform cooling and aids in reducing oil breakdown and ring wear.

Control in close quarters

Standard on the 310SL and 410L, precision mode reduces the speed of hydraulic backhoe functions without sacrificing lift performance, for close work around underground utilities or jobsite obstacles, or when lifting. This control-enhancing feature is especially useful for less experienced operators or new trainees.

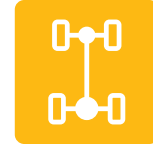




PRODUCTIVITY
ON THE MOVE.

SAY GOODBYE TO BUMPS IN THE ROAD.

Beat operator fatigue and work faster across large jobsites with the L-Series Backhoe's standard AutoShift and optional auto ride control on the 310SL and 410L. These trusted features enable you to effortlessly traverse any terrain and reduce spillage from loaded buckets in the roughest of conditions.



4WD

**OPTION AT YOUR
COMMAND**



PowerShift transmission

Responsive and productive PowerShift transmission provides smooth, on-the-go clutchless gear changes for the operator. AutoShift is now standard for the 310SL and 410L, for enhanced operator ease of use. Simply set the control lever to the highest gear desired and the transmission will optimally shift based on engine rpm and ground speed.

Control the ride and the load

Optional on the 310SL and 410L only, auto ride control eliminates the need to manually turn the feature on and off during load and carry applications, enhancing the operator's ease of use. When activated, front loader cylinders function as a shock absorber, smoothing the ride over rough terrain and reducing material spillage. On/Off functionality is controlled by ground speed and can be adjusted by the operator in the cab's display monitor.

True four-wheel drive on command

Limited-slip mechanical-front-wheel drive (MFWD) delivers surefooted traction in any ground condition. Engage momentary MFWD "on the fly" with the touch of a button on the loader control.





*PILOT TOWERS
OPTIMIZE LEGROOM
& SPACE TO ROTATE*

CONTROL AT YOUR FINGERTIPS *MAXIMUM PRODUCTIVITY IS CLOSE AT HAND.*

Increased productivity is within easy reach in an L-Series Backhoe. Loader-control grip and pilot controls provide effortless, fingertip operation of the backhoe and loader, while other machine functions are conveniently located on the steering column.



OPTIONAL LED LIGHT KIT

Extend your workday

LED lighting kit brings things into focus when your workday goes long. For enhanced trenching visibility, boom-light field kit includes two LED floodlights mounted to each side of the boom.

Take it easy

Enhanced “palm-on-top” loader-control grip is comfortable and easy to use. Redesigned loader-lever linkage reduces resistance and improves its throw and feel, decreasing lever travel by up to 15 percent.

Steering column controls

Exterior lights, wipers, and turn signals are conveniently located on the multifunction lever on the steering column — just like a regular automobile — helping operators keep their eyes on the job at hand.

Legroom and space to rotate

Pilot towers optimize legroom and space for transitioning between loader and backhoe operation.

Fatigue-beating comfort

L-Series Backhoes are loaded with creature comforts, including an efficient HVAC system, adjustable mechanical or air-suspension seat, and optional premium radio package.



PROVEN RELIABILITY

WON'T BACK DOWN. OR LET YOU DOWN.

Built with state-of-the-art tools and technology by a quality-conscious workforce at our world-class facility in Dubuque, Iowa, U.S.A., L-Series Backhoes deliver superb reliability and uptime. When you know how they're built, you'll see how tough they are.



TOUCHPAD
MACHINE-SECURITY
SYSTEM



Quick, clean filter changes

Vertical spin-on engine, transmission, and hydraulic filters and quick-release fuel filters allow fast, clean changes. Standard heavy-duty transmission oil filter enhances reliability over standard-duty filter.

Bias and radial tire options

Choose from a variety of factory-installed tire options, for the traction, performance, and long service life your specific application requires. On mechanical-front-wheel drive (MFWD)-equipped models, the machine will automatically disable MFWD in fourth and fifth gears to reduce tire wear.

Maintenance-free batteries

Standard maintenance-free batteries reduce periodic servicing, improve cold-starting reliability, and lengthen battery life.

Diff-lock protection

Enabled through the monitor, differential-lock protection prevents engagement at high travel speeds and the resulting wear and tear on axle components.

Multitasking multipurpose buckets

Our optional multipurpose buckets have been enhanced to boost durability as well as allow operators to be more productive during back-dragging, pushing, and grading applications. New clamshell design features tilt-free dumping, a third bolt-on cutting edge to boost serviceability, and improved hinge profile for minimized material spillage compared to previous offerings. It's also handy for picking up and transporting large rocks and debris.

Protect your investment

Machine-security system with touchpad passcode safeguards against unauthorized operation.

Put the brakes on

When MFWD braking is enabled through the monitor and the brakes are applied, the machine automatically activates MFWD, slowing the machine down faster and extending service-brake life.

Premium hydraulic oil

L-Series Backhoes come factory-filled with Hydra™ premium all-season, anti-wear hydraulic oil specifically designed for construction equipment. For cold weather, opt for Hydra™ XR, which offers all-season protection from -40 to 40 deg. C.



5.55-m

MAXIMUM DIGGING DEPTH
(FOR 310SL WITH OPTIONAL
EXTENDABLE DIPPERSTICK)

EASY MAINTENANCE

KEEP THE PEACE. AND YOUR PEACE OF MIND.

Save fuel with economy mode

Standard economy mode can be configured separately between loader and backhoe functions. Activate economy mode for backhoe functions while retaining full power for loader functions. This helps maximize fuel usage in lighter-work applications with minimal effect on machine performance.

Improved diagnostics

State-of-the-art multi-language monitor clearly displays machine diagnostics. Operators can quickly and easily program a multitude of time-specific functions such as auto shutdown and auto-idle.



Minimize downtime and expense

Same-side ground-level service points speed daily checks and fills. Other commonsense features such as quick-change filters, extended service intervals, simple-to-read sight gauges, and easy-access grease zerks help increase uptime and lower daily operating costs.

Quick and easy A/C cleanout

Hinged air-conditioner condenser enables convenient cleaning of the unit, for maximum efficiency.

Save fuel and reduce noise

Auto-idle decreases engine speed when hydraulics aren't in use, to help maintain quiet working conditions and conserve precious fuel. Auto shutdown turns off the engine after an operator-selected period of inactivity, further keeping noise and fuel consumption down.

Quiet, fuel-efficient fan

Temperature-controlled (viscous) variable-speed fan helps conserve power and fuel while reducing noise.



Get valuable insight with

PRECISION CONSTRUCTION

This suite of construction technology delivers **Productivity Solutions** to help you get more done, more efficiently. The in-base JDLink™ subscription provides machine location, utilization data, and alerts to help you maximize productivity and efficiency. Other productivity solutions include grade-management options for multiple machine forms and payload weighing for wheel loaders and articulated dump trucks.

To maximize uptime and lower costs, JDLink also enables **John Deere Connected Support™**. John Deere's centralized Machine Health Monitoring Center analyzes data from thousands of connected machines, identifies trends, and develops recommended actions, called Expert Alerts, to help prevent downtime. Dealers use Expert Alerts to proactively address conditions that may otherwise likely lead to downtime. Your dealer can also monitor machine health and leverage remote diagnostics and programming capability to further diagnose problems and even update machine software without a time-consuming trip to the jobsite.



310L SPECIFICATIONS

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Engine		310L	
Manufacturer and Model	John Deere PowerTech™ 4045TT096 turbocharged		
Non-Road Emission Standard	EPA Tier 2/EU Stage II		
Displacement	4.5 L (276 cu. in.)		
Gross Power at Rated Speed	63 kW (85 hp) at 2,200 rpm		
Gross Peak Power	64 kW (85 hp) at 2,010 rpm		
Gross Peak Torque	355 Nm (262 lb.-ft.) at 1,400 rpm		
Net Peak Power (ISO 9249)	62 kW (84 hp) at 2,000 rpm		
Net Peak Torque (ISO 9249)	347 Nm (256 lb.-ft.) at 1,400 rpm		
Net Torque Rise	30%		
Lubrication	Pressure system with spin-on filter and cooler		
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		
Cooling			
Fan Type	Variable-rate, temperature-controlled (viscous) cooling fan standard		
Engine Coolant Rating	-40 deg. C (-40 deg. F)		
Engine Oil Cooler	Oil to water		
Powertrain			
Transmission	4-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever		
Torque Converter	Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11 in.)		
Maximum Travel Speeds With Standard Engine, Measured With 19.5L-24 Rear Tires	<i>Forward</i>	<i>Reverse</i>	
Gear 1	5.4 km/h (3.4 mph)	6.8 km/h (4.2 mph)	
Gear 2	9.9 km/h (6.2 mph)	12.5 km/h (7.8 mph)	
Gear 3	20.4 km/h (12.7 mph)	-	
Gear 4	37.1 km/h (23.1 mph)	-	
Axles			
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		
Axle Ratings	<i>Front</i>	<i>Rear</i>	
SAE J43	5000 kg (11,000 lb.)	6000 kg (13,200 lb.)	
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)	
Static	24 500 kg (54,000 lb.)	26 500 kg (58,400 lb.)	
Ultimate	41 500 kg (91,500 lb.)	41 500 kg (91,500 lb.)	
Differentials			
Mechanical-Front-Wheel Drive (MFWD) Axle	Open – standard; automatic, limited-slip traction control – custom or optional		
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock		
Steering (ISO 5010)		Hydrostatic power steering and emergency steering	
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>	
Curb-Turning Radius			
With Brakes	3.45 m (11 ft. 4 in.)	3.43 m (11 ft. 3 in.)	
Without Brakes	3.96 m (13 ft. 0 in.)	3.90 m (12 ft. 10 in.)	
Bucket-Clearance Circle			
With Brakes	9.86 m (32 ft. 4 in.)	9.80 m (32 ft. 2 in.)	
Without Brakes	10.61 m (34 ft. 10 in.)	10.48 m (34 ft. 5 in.)	
Steering Wheel Turns (lock to lock)	2.7	3.2	
MFWD Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears		
Brakes (ISO 3450)			
Service	Power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing		
Parking	Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control		
Hydraulics			
Main Pump	Open center, single-gear pump		
Pump Flow at 2,200 rpm			
Backhoe	106 L/m (28 gpm)		
Loader	106 L/m (28 gpm)		
System Relief Pressure			
Backhoe	24 993 kPa (3,625 psi)		
Loader	22 063 kPa (3,200 psi)		
Controls			
Backhoe	2-lever mechanical standard; pilot controls with pattern select and manual and/or electric auxiliary functions optional; field kits available for additional mechanical-control options		

310L SPECIFICATIONS



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Hydraulics *(continued)* 310L

Controls <i>(continued)</i>	
Loader	Single-lever control with electric clutch cutoff switch standard; single-lever control with electric clutch cutoff switch, electrohydraulic (EH) proportional auxiliary roller, MFWD (momentary), and transmission quick-shift optional

Cylinder

Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins

	<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)
Loader Bucket (1)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)	110 mm (4.33 in.)	56 mm (2.20 in.)	821 mm (32.32 in.)
Backhoe Crowd (1)	110 mm (4.33 in.)	63 mm (2.48 in.)	553 mm (21.77 in.)
Backhoe Bucket (1)	80 mm (3.15 in.)	50 mm (1.97 in.)	892 mm (35.12 in.)
Backhoe Swing (2)	80 mm (3.15 in.)	45 mm (1.77 in.)	310 mm (12.20 in.)
Backhoe Extendable Dipperstick (1)	63 mm (2.48 in.)	32 mm (1.26 in.)	1062 mm (41.81 in.)
Backhoe Stabilizer, Standard (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Non-Powered Axle (1)	70 mm (2.76 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
MFWD (1)	65 mm (2.56 in.)	40 mm (1.57 in.)	210 mm (8.27 in.)

Electrical

Voltage	12 volt
Alternator Rating	130 amp
Lights	10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop and taillights; and 2 rear reflectors; factory-installed option for 2 LED spotlights and 8 LED floodlights in lieu of standard halogen light package

Operator Station

Type (ISO 3471)	Canopy, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional quarter cab (front glass only) and fully enclosed cab
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Tires/Wheels

	<i>Front</i>	<i>Rear</i>
Non-Powered Front Axle	12.5/80-18 F3 (12)	19.5L-24 R4 (12)
	14.5/75-16.1 F3 (16)	19.5L-24 R4 (12)
With MFWD	12-16.5 NHS (12)	19.5L-24 R4 (12)
	12.5/80-18 I3 (12)	19.5L-24 R4 (10)
	12.5/80-18 R4 (10)	19.5L-24 R4 (12)
	12.5/80-18 I3 (12)	21L-24 R4 (12)
	12.5/80-18 R4 (10)	21L-24 R4 (12)
	340/80R18 XMCL	500/70R24 XMCL
	340/80R18 550	500/70R24 550
	340/80R18 580	500/70R24 580

Serviceability

Refill Capacities		Refill Capacities <i>(continued)</i>	
Cooling System		Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)
Cab	27.5 L (29.1 qt.)	Hydraulic System	126.8 L (33.5 gal.)
Canopy	25.7 L (27.2 qt.)	Hydraulic Reservoir	45 L (11.9 gal.)
Rear Axle	18 L (19 qt.)	MFWD Housing	
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)	Axle	6.5 L (6.9 qt.)
Torque Converter and Transmission	15.1 L (16 qt.)	Planetary (each)	0.9 L (1 qt.)

Operating Weights

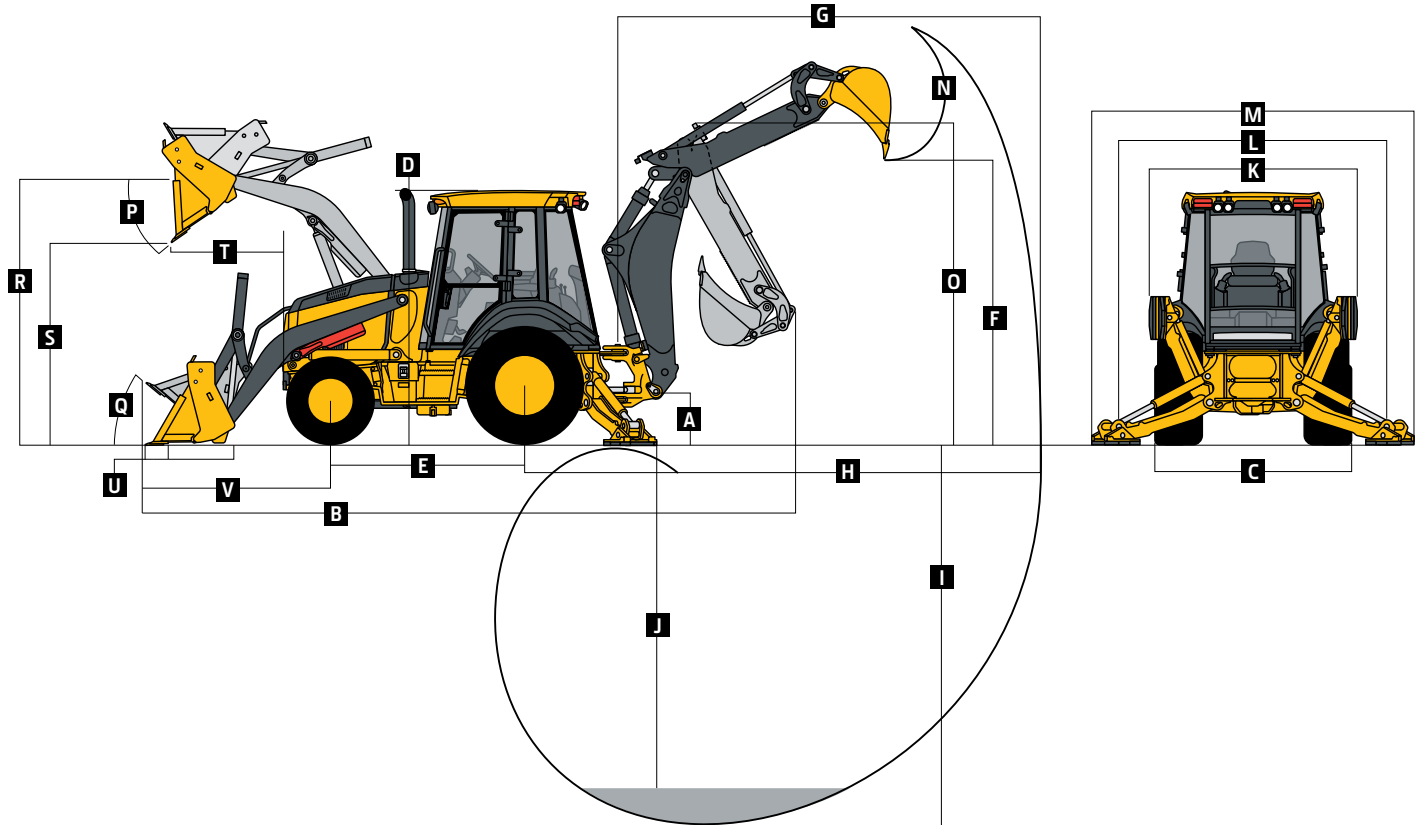
With Full Fuel Tank, 79-kg (175 lb.) Operator, and Standard Equipment	
With Bumper	6545 kg (14,430 lb.)
Typical With Cab, Extendable Dipperstick, and 204-kg (450 lb.) Counterweight	7203 kg (15,880 lb.)

Optional Components (weight difference between base equipment and option)

Cab	263 kg (580 lb.)
MFWD With Tires	168 kg (370 lb.)
Extendable Dipperstick	191 kg (420 lb.)
Front Loader Coupler	257 kg (566 lb.)
Backhoe Bucket Coupler	59 kg (130 lb.)

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Overall Dimensions	310L
A Ground Clearance, Minimum	293 mm (12 in.)
B Overall Length, Transport	7.24 m (23 ft. 9 in.)
C Width Over Tires	2.20 m (7 ft. 3 in.)
D Height to Top of ROPS/Cab	2.81 m (9 ft. 3 in.)
E Length From Axle to Axle	
Non-Powered Front Axle	2.16 m (7 ft. 1 in.)
MFWD Axle	2.19 m (7 ft. 2 in.)



Backhoe Dimensions and Performance

Backhoe specifications are with 610-mm x 0.28-m ³ (24 in. x 10 cu. ft.) bucket			
Bucket Range	305–762 mm (12–30 in.)		
Digging Force			
Bucket Cylinder	48.2 kN (10,844 lb.)		
Crowd Cylinder	31.1 kN (6,992 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		
Leveling Angle	14 deg.		
Stabilizer Angle Rearward	18 deg.		
		With Optional Extendable Dipperstick	
	<i>With Standard Backhoe</i>	<i>Retracted</i>	<i>Extended</i>
F Loading Height, Truck Loading Position	3.38 m (11 ft. 1 in.)	3.46 m (11 ft. 4 in.)	4.12 m (13 ft. 6 in.)
G Reach From Center of Swing Pivot	5.42 m (17 ft. 9 in.)	5.49 m (18 ft. 0 in.)	6.51 m (21 ft. 4 in.)
H Reach From Center of Rear Axle	6.49 m (21 ft. 3 in.)	6.55 m (21 ft. 6 in.)	7.57 m (24 ft. 10 in.)
I Digging Depth (SAE maximum)	4.30 m (14 ft. 1 in.)	4.38 m (14 ft. 4 in.)	5.43 m (17 ft. 10 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.27 m (14 ft. 0 in.)	4.34 m (14 ft. 3 in.)	5.40 m (17 ft. 9 in.)
2440-mm (8 ft.) Flat Bottom	3.93 m (12 ft. 11 in.)	4.01 m (13 ft. 2 in.)	5.15 m (16 ft. 11 in.)
K Stabilizer Width, Transport	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)
L Stabilizer Spread, Operating	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)
M Stabilizer Overall Width, Operating	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	3.39 m (11 ft. 1 in.)	3.39 m (11 ft. 1 in.)	3.39 m (11 ft. 1 in.)

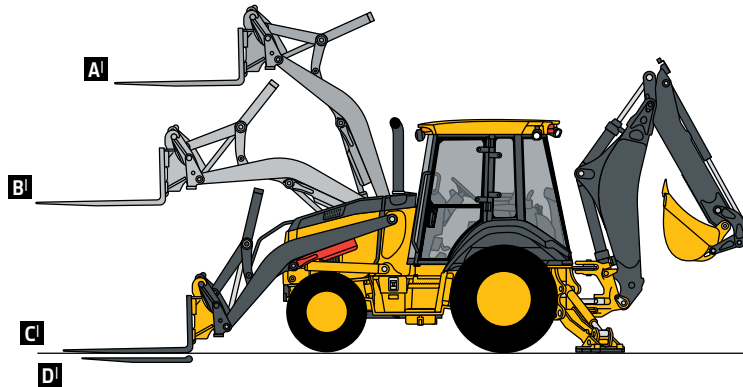
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Loader Dimensions and Performance 310L

P Bucket Dump Angle, Maximum	45 deg.			
Q Rollback Angle at Ground Level	40 deg.			
	<i>Heavy-Duty</i>	<i>Heavy-Duty</i>	<i>Heavy-Duty Long Lip</i>	<i>Multipurpose</i>
Bucket Capacity	0.77 m ³ (1.00 cu. yd.)	0.86 m ³ (1.12 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	0.96 m ³ (1.25 cu. yd.)
Width	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)
Weight	363 kg (800 lb.)	390 kg (860 lb.)	405 kg (892 lb.)	794 kg (1,750 lb.)
Breakout Force	41.6 kN (9,361 lb.)	42.3 kN (9,512 lb.)	40.0 kN (8,983 lb.)	37.0 kN (8,321 lb.)
Lift Capacity, Full Height	2919 kg (6,435 lb.)	2995 kg (6,602 lb.)	2760 kg (6,085 lb.)	2427 kg (5,352 lb.)
R Height to Bucket Hinge Pin, Maximum	3.48 m (11 ft. 5 in.)	3.48 m (11 ft. 5 in.)	3.48 m (11 ft. 5 in.)	3.48 m (11 ft. 5 in.)
S Dump Clearance, Bucket at 45 deg.	2.74 m (9 ft. 0 in.)	2.78 m (9 ft. 1 in.)	2.68 m (8 ft. 9 in.)	2.68 m (8 ft. 9 in.)
T Reach at Full Height, Bucket at 45 deg.	702 mm (27.7 in.)	667 mm (26.3 in.)	793 mm (31.2 in.)	705 mm (27.8 in.)
U Digging Depth Below Ground, Bucket Level	70 mm (2.8 in.)	71 mm (2.8 in.)	51 mm (2.0 in.)	111 mm (4.4 in.)
V Length From Front Axle Centerline to Bucket Cutting Edge	2.02 m (6 ft. 8 in.)	1.97 m (6 ft. 6 in.)	2.12 m (6 ft. 11 in.)	2.10 m (6 ft. 11 in.)

Lift Capacity With Quick-Coupler Forks

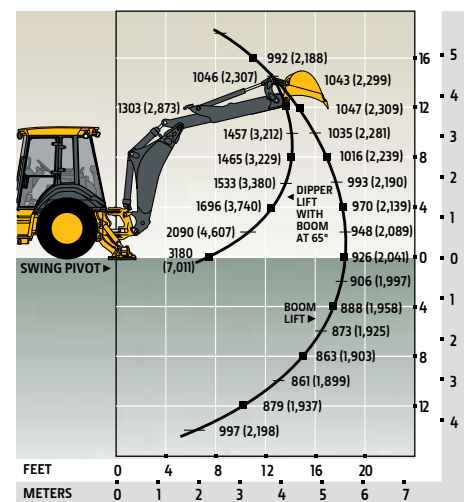
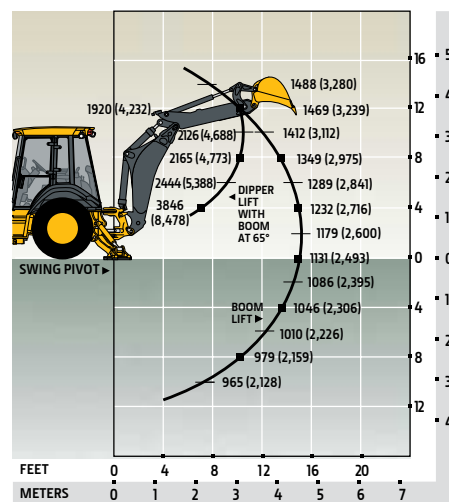
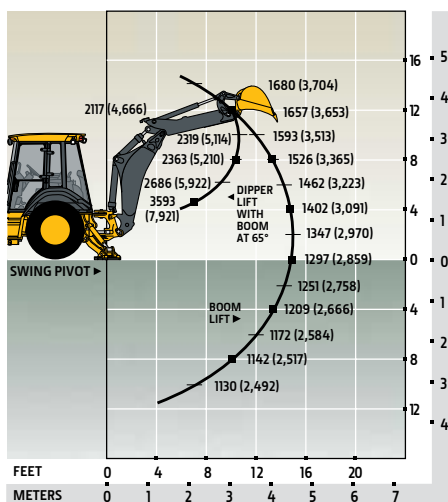
Hydraulic Capacity	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>
A Maximum Height	1737 kg (3,829 lb.)	1616 kg (3,563 lb.)	1711 kg (3,772 lb.)	1592 kg (3,510 lb.)
B Maximum Reach	2703 kg (5,959 lb.)	2542 kg (5,605 lb.)	2690 kg (5,931 lb.)	2530 kg (5,578 lb.)
C At Ground Line	3449 kg (7,603 lb.)	3248 kg (7,160 lb.)	3393 kg (7,480 lb.)	3203 kg (7,061 lb.)
D Below Ground Line	156 mm (6.1 in.)	155 mm (6.1 in.)	185 mm (7.3 in.)	185 mm (7.3 in.)



Lift Capacity With Bucket

Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

STANDARD LIFT With Standard Dipperstick **STANDARD LIFT With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted** **STANDARD LIFT With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended**



Lift capacities are over end with stabilizers down and tires tangent to ground.



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Engine		310SL			
Manufacturer and Model	John Deere PowerTech™ 4045TT096 turbocharged	John Deere PowerTech™ E 4045HT086 turbocharged, country specific			
Non-Road Emission Standard	EPA Tier 2/EU Stage II	EPA Tier 3/EU Stage IIIA			
Displacement	4.5 L (276 cu. in.)	4.5 L (276 cu. in.)			
Gross Peak Power	73 kW (98 hp) at 2,000 rpm	76 kW (102 hp) at 2,000 rpm			
Net Peak Power (ISO 9249)	72 kW (97 hp) at 2,000 rpm	73 kW (98 hp) at 1,980 rpm			
Net Peak Torque (ISO 9249)	391 Nm (289 lb.-ft.) at 1,400 rpm	402 Nm (296 lb.-ft.) at 1,500 rpm			
Net Torque Rise	39%	39%			
Lubrication	Pressure system with spin-on filter and cooler	Pressure system with spin-on filter and cooler			
Air Cleaner	Dual-stage dry type with safety element and evacuator valve				
Cooling					
Fan Type	Suction-type, temperature-controlled (viscous) variable-rate fan standard				
Engine Coolant Rating	-40 deg. C (-40 deg. F)				
Engine Oil Cooler	Oil to water				
Powertrain					
Transmission	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; AutoShift transmission standard				
Torque Converter	Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11 in.)				
Maximum Travel Speeds With Standard Engine, Measured With 19.5L-24 Rear Tires					
	<i>Forward</i>	<i>Reverse</i>	<i>Forward</i>	<i>Reverse</i>	
Gear 1	5.4 km/h (3.4 mph)	6.8 km/h (4.2 mph)	5.4 km/h (3.4 mph)	6.8 km/h (4.2 mph)	
Gear 2	9.9 km/h (6.2 mph)	12.6 km/h (7.8 mph)	9.9 km/h (6.2 mph)	12.5 km/h (7.8 mph)	
Gear 3	20.5 km/h (12.7 mph)	20.2 km/h (12.6 mph)	20.4 km/h (12.7 mph)	20.1 km/h (12.5 mph)	
Gear 4	37.5 km/h (23.3 mph)	—	37.2 km/h (23.1 mph)	—	
Gear 5	40.0 km/h (24.9 mph)	—	40.0 km/h (24.9 mph)	—	
Axles					
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		22 deg.		
Axle Ratings	<i>Front</i>	<i>Rear</i>			
SAE J43	5500 kg (12,100 lb.)	7000 kg (15,400 lb.)			
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)			
Static	26 500 kg (58,400 lb.)	26 500 kg (58,400 lb.)			
Ultimate	44 000 kg (97,000 lb.)	44 000 kg (97,000 lb.)			
Differentials					
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control				
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock				
Steering (ISO 5010)		Hydrostatic power steering and emergency steering			
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>			
Curb-Turning Radius					
With Brakes	3.52 m (11 ft. 7 in.)	3.56 m (11 ft. 8 in.)			
Without Brakes	4.02 m (13 ft. 2 in.)	4.17 m (13 ft. 8 in.)			
Bucket-Clearance Circle					
With Brakes	10.05 m (33 ft. 0 in.)	10.22 m (33 ft. 6 in.)			
Without Brakes	10.81 m (35 ft. 6 in.)	11.13 m (36 ft. 6 in.)			
Steering Wheel Turns (lock to lock)	2.6 to 3.6	3.2			
MFWD Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears				
Rear Axle	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears				
Brakes (ISO 3450)					
Service	Power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing				
Parking	Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control				
Hydraulics					
Main Pump	Pressure compensated load sensing (PCLS), axial-piston pump				
Pump Flow at 2,200 rpm, Backhoe and Loader	159 L/m (42 gpm)				
System Relief Pressure, Backhoe and Loader	24 993 kPa (3,625 psi)				
Controls					
Backhoe	2-lever mechanical standard; pilot control with pattern select and auxiliary functions optional; field kits available for additional mechanical-control options				

310SL SPECIFICATIONS



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Hydraulics (continued)

310SL

Controls (continued)

Loader	Single-lever control with electric clutch cutoff switch and MFWD (momentary) standard; single-lever control with electric clutch cutoff switch, electrohydraulic (EH) proportional auxiliary roller, MFWD (momentary), and transmission quick-shift optional
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Cylinders

Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins

	Bore	Rod Diameter	Stroke
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	789 mm (31.08 in.)
Loader Bucket (1)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)	120 mm (4.72 in.)	56 mm (2.20 in.)	794 mm (31.26 in.)
Backhoe Crowd (1)	115 mm (4.53 in.)	63 mm (2.48 in.)	602.5 mm (23.72 in.)
Backhoe Bucket (1)	90 mm (3.54 in.)	56 mm (2.20 in.)	810 mm (31.89 in.)
Heavy-Duty Option	100 mm (3.94 in.)	63 mm (2.48 in.)	810 mm (31.89 in.)
Backhoe Swing (2)	90 mm (3.54 in.)	50 mm (1.97 in.)	278 mm (10.94 in.)
Backhoe Extendable Dipperstick (1)	70 mm (2.76 in.)	40 mm (1.57 in.)	1062 mm (41.81 in.)
Backhoe Stabilizer (2)			
Standard	90 mm (3.54 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Optional Extended Leg	100 mm (3.94 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Non-Powered Axle (1)	70 mm (2.76 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
MFWD (1)	65 mm (2.56 in.)	40 mm (1.57 in.)	210 mm (8.27 in.)

Electrical

Voltage	12 volt
Alternator Rating	130 amp
Lights	10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop and taillights; and 2 rear reflectors; factory-installed option for 2 LED spotlights and 8 LED front floodlights in lieu of standard halogen light package

Operator Station

Type (ISO 3471)	Fully enclosed cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional quarter cab (front glass only) and canopy
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Tires/Wheels

	Front	Rear
Non-Powered Front Axle	12.5/80-18 F3 (12) 14.5/75-16.1 F3 (16)	19.5L-24 R4 (12) 19.5L-24 R4 (12)
With MFWD	12.5/80-18 I3 (12) 12.5/80-18 R4 (10) 12.5/80-18 I3 (12) 12.5/80-18 R4 (10)	19.5L-24 R4 (10) 19.5L-24 R4 (12) 21L-24 R4 (12) 21L-24 R4 (12)
	340/80R18 XMCL 340/80R18 550 340/80R18 580	500/70R24 XMCL 500/70R24 550 500/70R24 580

Serviceability

Refill Capacities

Cooling System	
Cab	27.5 L (29.1 qt.)
Canopy	25.7 L (27.2 qt.)
Rear Axle	18 L (19 qt.)
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)
Torque Converter and Transmission	15.1 L (16 qt.)

Refill Capacities (continued)

Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)
Hydraulic System	126.8 L (33.5 gal.)
Hydraulic Reservoir	45 L (11.9 gal.)
MFWD Housing	
Axle	6.5 L (6.9 qt.)
Planetary (each)	0.9 L (1 qt.)

Operating Weights

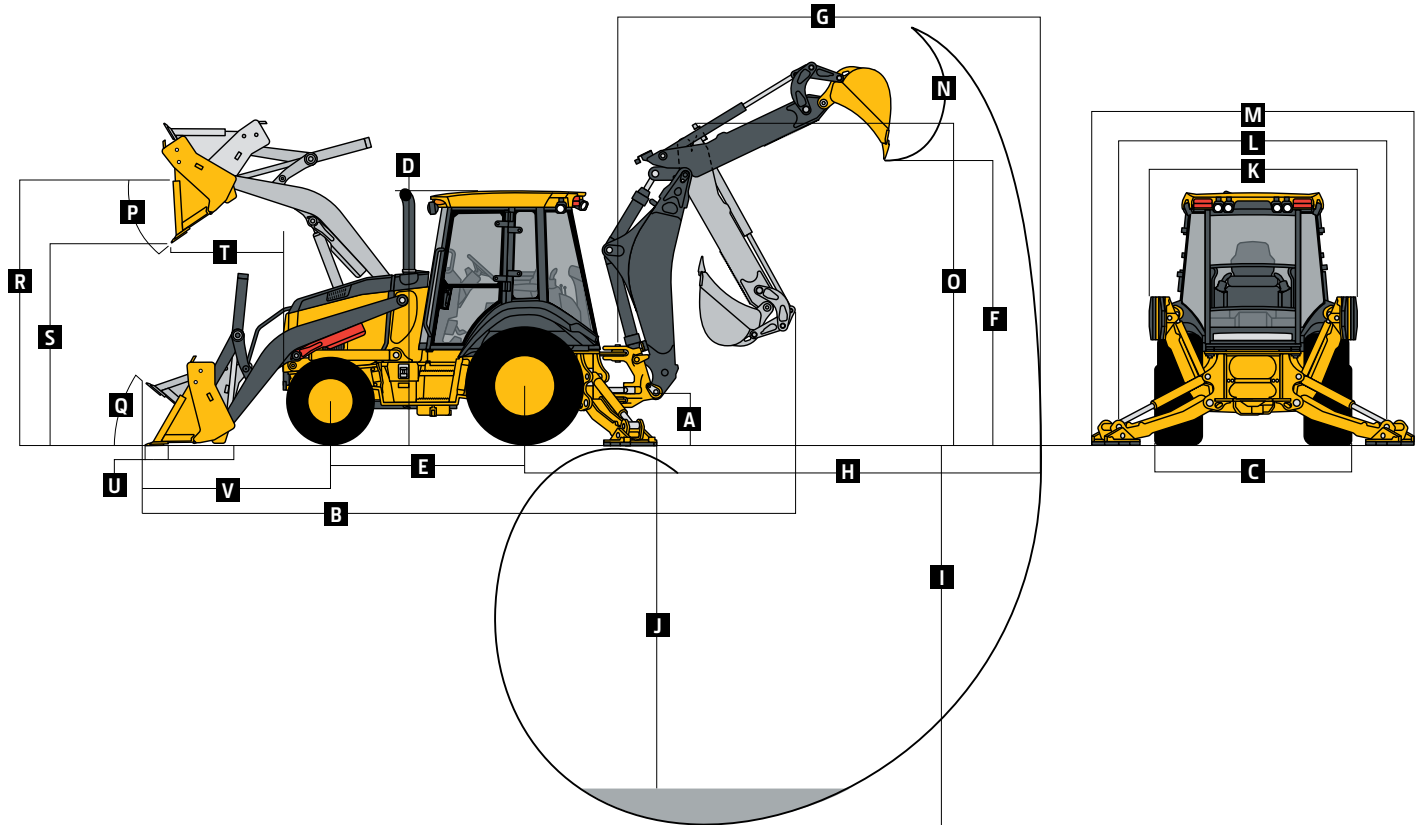
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and Bumper	7091 kg (15,633 lb.)
Typical With Cab, Extendable Dipperstick, and 340-kg (750 lb.) Counterweight	7917 kg (17,453 lb.)

Optional Components (weight difference between base equipment and option)

Cab	263 kg (580 lb.)
MFWD With Tires	220 kg (485 lb.)
Extendable Dipperstick	222 kg (490 lb.)
Front Loader Coupler	257 kg (566 lb.)
Backhoe Bucket Coupler	63 kg (138 lb.)

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Overall Dimensions	310SL
A Ground Clearance, Minimum	330 mm (13 in.)
B Overall Length, Transport	7.28 m (23 ft. 11 in.)
C Width Over Tires	2.20 m (7 ft. 3 in.)
D Height to Top of ROPS/Cab	2.79 m (9 ft. 2 in.)
E Length From Axle to Axle	
Non-Powered Front Axle	2.16 m (7 ft. 1 in.)
MFWD Axle	2.19 m (7 ft. 2 in.)



Backhoe Dimensions and Performance

Backhoe specifications are with 610-mm x 0.21-m³ (24 in. x 7.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.

Bucket Range	305–762 mm (12–30 in.)		
Digging Force			
Bucket Cylinder	55.0 kN (12,356 lb.)		
With Heavy-Duty Cylinder Option	67.8 kN (15,254 lb.)		
Crowd Cylinder	36.6 kN (8,229 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		

	With Optional Extendable Dipperstick		
	With Standard Backhoe	Retracted	Extended
F Loading Height, Truck Loading Position	3.42 m (11 ft. 3 in.)	3.54 m (11 ft. 7 in.)	4.16 m (13 ft. 8 in.)
G Reach From Center of Swing Pivot	5.52 m (18 ft. 1 in.)	5.61 m (18 ft. 5 in.)	6.62 m (21 ft. 9 in.)
H Reach From Center of Rear Axle	6.58 m (21 ft. 7 in.)	6.68 m (21 ft. 11 in.)	7.68 m (25 ft. 2 in.)
I Digging Depth (SAE maximum)	4.35 m (14 ft. 3 in.)	4.50 m (14 ft. 9 in.)	5.55 m (18 ft. 2 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.32 m (14 ft. 2 in.)	4.45 m (14 ft. 7 in.)	5.51 m (18 ft. 1 in.)
2440-mm (8 ft.) Flat Bottom	3.99 m (13 ft. 1 in.)	4.13 m (13 ft. 7 in.)	5.25 m (17 ft. 3 in.)
K Stabilizer Width, Transport	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)
L Stabilizer Spread, Operating			
Standard Stabilizers	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)
Long Stabilizers	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
M Stabilizer Overall Width, Operating			
Standard Stabilizers	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)
Long Stabilizers	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	3.48 m (11 ft. 5 in.)	3.49 m (11 ft. 5 in.)	3.49 m (11 ft. 5 in.)

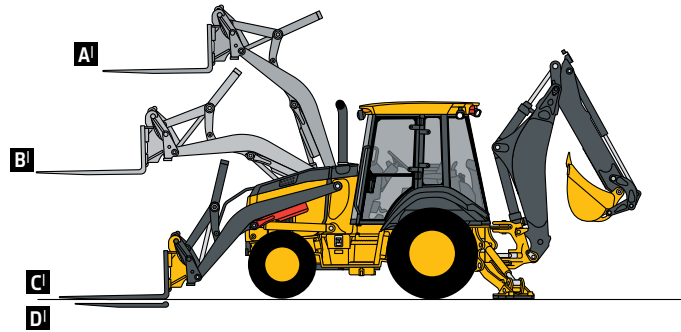
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Loader Dimensions and Performance 310SL

P Bucket Dump Angle, Maximum	45 deg.			
Q Rollback Angle at Ground Level	40 deg.			
	<i>Heavy-duty</i>	<i>Heavy-duty long lip</i>	<i>Heavy-duty</i>	<i>Multipurpose</i>
Bucket Capacity	0.86 m ³ (1.12 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	1.00 m ³ (1.31 cu. yd.)	1.00 m ³ (1.31 cu. yd.)
Width	2184 mm (86 in.)	2184 mm (86 in.)	2337 mm (92 in.)	2337 mm (92 in.)
Weight	390 kg (860 lb.)	405 kg (892 lb.)	521 kg (1,148 lb.)	863 kg (1,902 lb.)
Breakout Force	49.2 kN (11,052 lb.)	46.4 kN (10,442 lb.)	46.9 kN (10,541 lb.)	43.2 kN (9,722 lb.)
Lift Capacity, Full Height	3492 kg (7,698 lb.)	3224 kg (7,108 lb.)	3352 kg (7,390 lb.)	2862 kg (6,309 lb.)
R Height to Bucket Hinge Pin, Maximum	3.47 m (11 ft. 5 in.)	3.47 m (11 ft. 5 in.)	3.47 m (11 ft. 5 in.)	3.47 m (11 ft. 5 in.)
S Dump Clearance, Bucket at 45 deg.	2.76 m (9 ft. 1 in.)	2.66 m (8 ft. 9 in.)	2.70 m (8 ft. 10 in.)	2.67 m (8 ft. 9 in.)
T Reach at Full Height, Bucket at 45 deg.	678 mm (26.7 in.)	804 mm (31.7 in.)	675 mm (26.6 in.)	716 mm (28.2 in.)
U Digging Depth Below Ground, Bucket Level	83 mm (3.3 in.)	64 mm (2.5 in.)	128 mm (5.0 in.)	124 mm (4.9 in.)
V Length From Front Axle Centerline to Bucket Cutting Edge	1.96 m (6 ft. 5 in.)	2.10 m (6 ft. 11 in.)	2.03 m (6 ft. 8 in.)	2.08 m (6 ft. 10 in.)

Lift Capacity With Quick-Coupler Forks

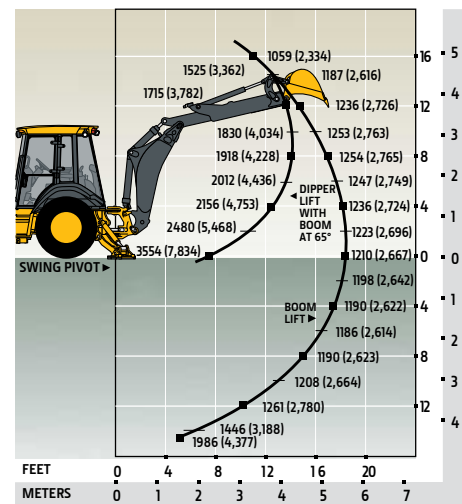
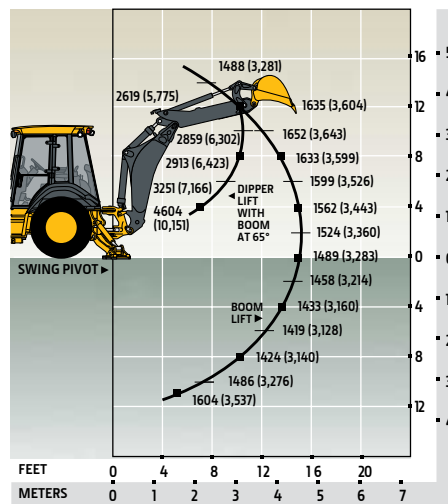
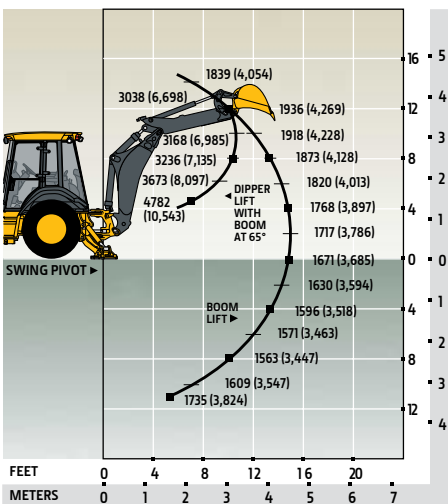
Hydraulic Capacity	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>
A Maximum Height	2067 kg (4,558 lb.)	1932 kg (4,260 lb.)
B Maximum Reach	3183 kg (7,017 lb.)	3001 kg (6,617 lb.)
C At Ground Line	4020 kg (8,863 lb.)	3768 kg (8,306 lb.)
D Below Ground Line	198 mm (7.8 in.)	198 mm (7.8 in.)



Lift Capacities

Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

STANDARD LIFT With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted **STANDARD LIFT With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended**



Lift capacities are over end with stabilizers down and tires tangent to ground.



410L SPECIFICATIONS

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Engine		410L	
Manufacturer and Model	John Deere PowerTech™ 4045TT096 turbocharged		
Non-Road Emission Standard	EPA Tier 2/EU Stage II		
Displacement	4.5 L (276 cu. in.)		
Gross Peak Power	76 kW (102 hp) at 2,100 rpm		
Net Peak Power (ISO 9249)	75 kW (101 hp) at 2,100 rpm		
Net Peak Torque (ISO 9249)	387 Nm (285 lb.-ft.) at 1,500 rpm		
Net Torque Rise	23%		
Lubrication	Pressure system with spin-on filter and cooler		
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		
Cooling			
Fan Type	Suction-type, temperature-controlled (viscous) variable-rate fan standard		
Engine Coolant Rating	-40 deg. C (-40 deg. F)		
Engine Oil Cooler	Oil to water		
Powertrain			
Transmission	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; AutoShift transmission standard		
Torque Converter	Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11 in.)		
Maximum Travel Speeds With Standard Engine, Measured With 21L-24 Rear Tires	<i>Forward</i>	<i>Reverse</i>	
Gear 1	5.4 km/h (3.4 mph)	6.9 km/h (4.6 mph)	
Gear 2	10.0 km/h (6.2 mph)	12.7 km/h (8.4 mph)	
Gear 3	20.7 km/h (12.9 mph)	20.4 km/h (13.6 mph)	
Gear 4	37.7 km/h (23.4 mph)	—	
Gear 5	40.0 km/h (24.9 mph)	—	
Axles			
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		
Axle Ratings	<i>Front</i>	<i>Rear</i>	
SAE J43	6500 kg (14,300 lb.)	7500 kg (16,500 lb.)	
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)	
Static	26 500 kg (58,400 lb.)	26 500 kg (58,400 lb.)	
Ultimate	43 500 kg (95,900 lb.)	43 500 kg (95,900 lb.)	
Differentials			
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control		
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock		
Steering (ISO 5010)	Hydrostatic power steering and emergency steering		
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>	
Curb-Turning Radius			
With Brakes	3.53 m (11 ft. 7 in.)	3.45 m (11 ft. 4 in.)	
Without Brakes	4.02 m (13 ft. 2 in.)	3.90 m (12 ft. 10 in.)	
Bucket-Clearance Circle			
With Brakes	10.20 m (33 ft. 6 in.)	10.13 m (33 ft. 3 in.)	
Without Brakes	10.93 m (35 ft. 10 in.)	10.80 m (35 ft. 5 in.)	
Steering Wheel Turns (lock to lock, flow amplified)	2.6 to 3.6	3.1 to 4.3	
MFWD Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears		
Rear Axle	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears		
Brakes (ISO 3450)			
Service	Power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing		
Parking	Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control		
Hydraulics			
Main Pump	Pressure compensated load sensing (PCLS), axial-piston pump		
Pump Flow at 2,200 rpm, Backhoe and Loader	159 L/m (42 gpm)		
System Relief Pressure, Backhoe and Loader	24 993 kPa (3,625 psi)		
Controls			
Backhoe	2-lever mechanical standard; pilot controls with pattern select and manual and auxiliary functions optional; field kits available for additional mechanical control options		

410L

SPECIFICATIONS

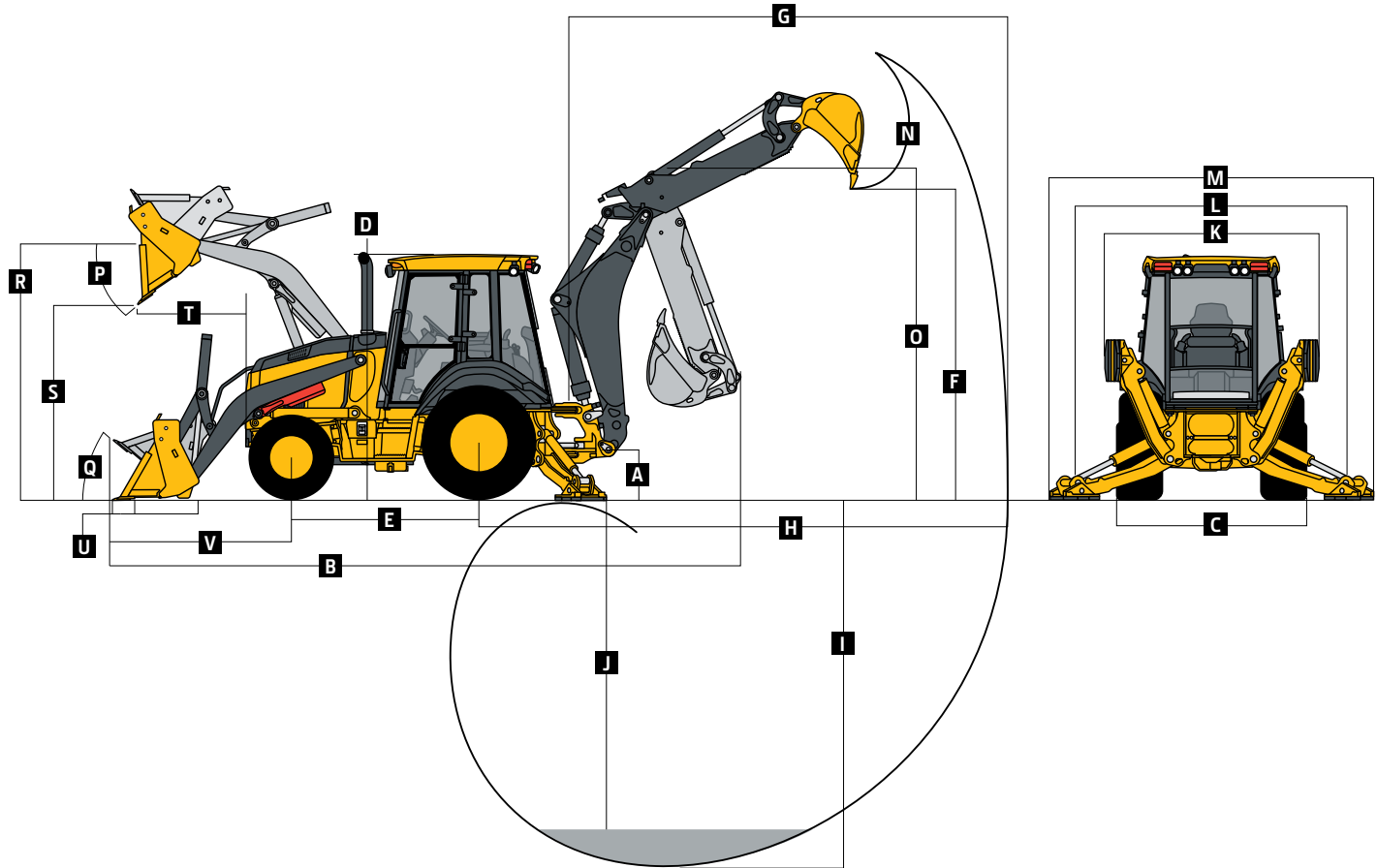


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Hydraulics (continued)		410L	
Controls (continued)			
Loader	Single-lever control with electric clutch cutoff switch and MFWD (momentary) standard; single-lever control with electric clutch cutoff switch, electrohydraulic (EH) proportional auxiliary roller, MFWD (momentary), and transmission quick-shift optional		
Cylinders			
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins			
	<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)
Loader Bucket (1)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)	140 mm (5.51 in.)	70 mm (2.76 in.)	897 mm (35.31 in.)
Backhoe Crowd (1)	120 mm (4.72 in.)	63 mm (2.48 in.)	727 mm (28.62 in.)
Backhoe Bucket (1)	100 mm (3.94 in.)	63 mm (2.48 in.)	810 mm (31.89 in.)
Backhoe Swing (2)	90 mm (3.54 in.)	50 mm (1.97 in.)	278 mm (10.94 in.)
Backhoe Extendable Dipperstick (1)	80 mm (3.15 in.)	45 mm (1.77 in.)	1214 mm (47.78 in.)
Backhoe Stabilizer, Extended (2)	100 mm (3.94 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Non-Powered Axle (1)	70 mm (2.76 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
MFWD (1)	65 mm (2.56 in.)	40 mm (1.57 in.)	210 mm (8.27 in.)
Electrical			
Voltage	12 volt		
Alternator Rating	130 amp		
Lights	10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop and taillights; and 2 rear reflectors; factory-installed option for 2 LED spotlights and 8 LED front floodlights in lieu of standard halogen light package		
Operator Station			
Type (ISO 3471)	Fully enclosed cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional canopy		
Tires/Wheels			
	<i>Front</i>	<i>Rear</i>	
Non-Powered Front Axle	12.5/80-18 F3 (12)	21L-24 R-4 (12)	
	14.5/75-16.1 F3 (16)	21L-24 R-4 (12)	
With MFWD	12.5/80-18 R4 (10)	21L-24 R-4 (12)	
	12.5/80-18 I3 (12)	21L-24 R-4 (12)	
	340/80R18 XMCL	500/70R24 XMCL	
	340/80R18 550	500/70R24 550	
	340/80R18 580	500/70R24 580	
Serviceability			
Refill Capacities		Refill Capacities (continued)	
Cooling System		Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)
Cab	27.5 L (29.1 qt.)	Hydraulic System	126.8 L (33.5 gal.)
Canopy	25.7 L (27.2 qt.)	Hydraulic Reservoir	45 L (11.9 gal.)
Rear Axle	18 L (19 qt.)	MFWD Housing	
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)	Axle	6.5 L (6.9 qt.)
Torque Converter and Transmission	15.1 L (16 qt.)	Planetary (each)	0.9 L (1 qt.)
Operating Weights			
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and 340-kg (750 lb.) Counterweight	7959 kg (17,547 lb.)		
Typical With Cab, Extendable Dipperstick, and 567-kg (1,250 lb.) Counterweight	8720 kg (19,224 lb.)		
Optional Components (weight difference between base equipment and option)			
Cab	263 kg (580 lb.)		
MFWD With Tires	110 kg (242 lb.)		
Extendable Dipperstick	271 kg (597 lb.)		
Front Loader Coupler	257 kg (566 lb.)		
Backhoe Bucket Coupler	64 kg (141 lb.)		

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Overall Dimensions		410L
A	Ground Clearance, Minimum	334 mm (13 in.)
B	Overall Length, Transport	7.43 m (24 ft. 5 in.)
C	Width Over Tires	2.34 m (7 ft. 8 in.)
D	Height to Top of ROPS/Cab	2.87 m (9 ft. 5 in.)
E	Length From Axle to Axle	
	Non-Powered Front Axle	2.16 m (7 ft. 1 in.)
	MFWD Axle	2.19 m (7 ft. 2 in.)



Backhoe Dimensions and Performance

Backhoe specifications are with 610-mm x 0.21-m³ (24 in. x 7.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 60 deg.

Bucket Range	305–762 mm (12–30 in.)		
Digging Force			
Bucket Cylinder	69.9 kN (15,723 lb.)		
Crowd Cylinder	44.1 kN (9,907 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		
	<i>With Standard Backhoe</i>	<i>With Optional Extendable Dipperstick</i>	
		<i>Retracted</i>	<i>Extended</i>
F Loading Height, Truck Loading Position	3.97 m (13 ft. 0 in.)	4.01 m (13 ft. 2 in.)	4.72 m (15 ft. 6 in.)
G Reach From Center of Swing Pivot	6.02 m (19 ft. 9 in.)	6.02 m (19 ft. 9 in.)	7.14 m (23 ft. 5 in.)
H Reach From Center of Rear Axle	7.14 m (23 ft. 5 in.)	7.14 m (23 ft. 5 in.)	8.26 m (27 ft. 1 in.)
I Digging Depth (SAE maximum)	4.85 m (15 ft. 11 in.)	4.85 m (15 ft. 11 in.)	6.00 m (19 ft. 8 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.80 m (15 ft. 9 in.)	4.80 m (15 ft. 9 in.)	5.97 m (19 ft. 7 in.)
2440-mm (8 ft.) Flat Bottom	4.49 m (14 ft. 9 in.)	4.49 m (14 ft. 9 in.)	5.75 m (18 ft. 10 in.)
K Stabilizer Width, Transport	2.35 m (7 ft. 9 in.)	2.35 m (7 ft. 9 in.)	2.35 m (7 ft. 9 in.)
L Stabilizer Spread, Operating	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
M Stabilizer Overall Width, Operating	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	3.91 m (12 ft. 10 in.)	3.91 m (12 ft. 10 in.)	3.91 m (12 ft. 10 in.)

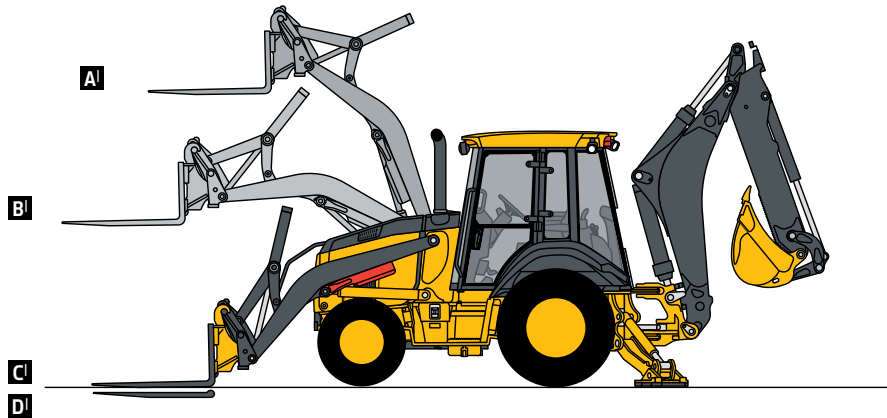
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Loader Dimensions and Performance 410L

P Bucket Dump Angle, Maximum	45 deg.		
Q Rollback Angle at Ground Level	40 deg.		
	<i>Heavy-duty</i>	<i>Heavy-duty</i>	<i>Multipurpose</i>
Bucket Capacity	1.00 m ³ (1.31 cu. yd.)	1.15 m ³ (1.50 cu. yd.)	1.00 m ³ (1.31 cu. yd.)
Width	2346 mm (92 in.)	2394 mm (94 in.)	2346 mm (92 in.)
Weight	521 kg (1,148 lb.)	548 kg (1,208 lb.)	863 kg (1,902 lb.)
Breakout Force	47.3 kN (10,645 lb.)	46.1 kN (10,361 lb.)	43.7 kN (9,824 lb.)
Lift Capacity, Full Height	3271 kg (7,211 lb.)	3160 kg (6,967 lb.)	2787 kg (6,144 lb.)
R Height to Bucket Hinge Pin, Maximum	3.47 m (11 ft. 4 in.)	3.47 m (11 ft. 4 in.)	3.47 m (11 ft. 4 in.)
S Dump Clearance, Bucket at 45 deg.	2.70 m (8 ft. 10 in.)	2.66 m (8 ft. 9 in.)	2.67 m (8 ft. 9 in.)
T Reach at Full Height, Bucket at 45 deg.	730 mm (28.7 in.)	772 mm (30.4 in.)	772 mm (30.4 in.)
U Digging Depth Below Ground, Bucket Level	135 mm (5.3 in.)	135 mm (5.3 in.)	131 mm (5.1 in.)
V Length From Front Axle Centerline to Bucket Cutting Edge	2.03 m (6 ft. 8 in.)	2.09 m (6 ft. 10 in.)	2.08 m (6 ft. 10 in.)

Lift Capacity With Quick-Coupler Forks

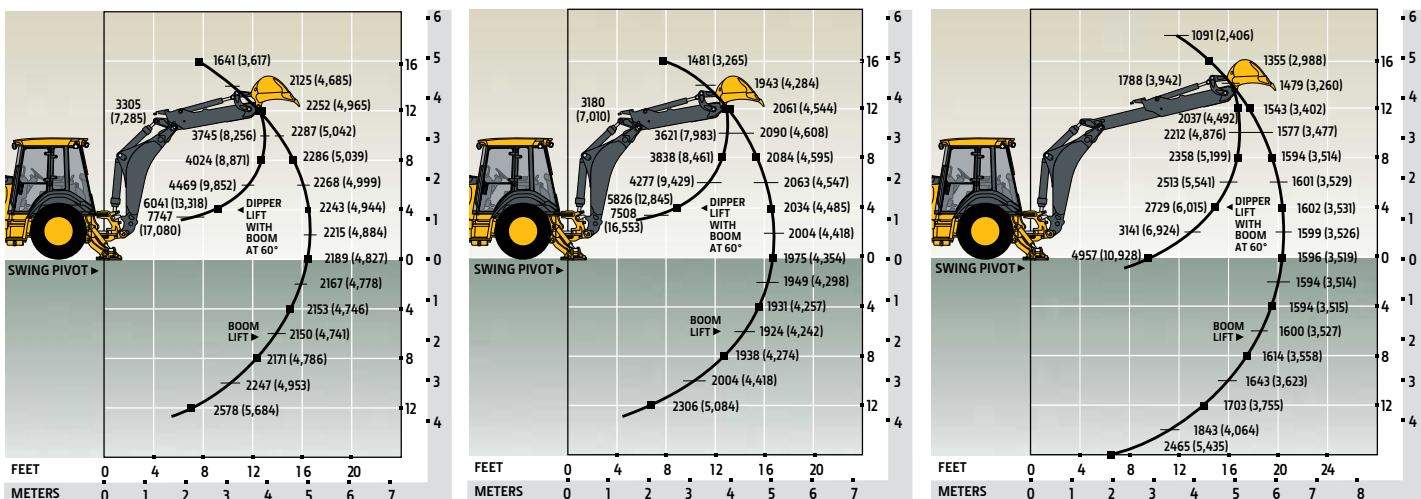
Hydraulic Capacity	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>
A¹ Maximum Height	2019 kg (4,452 lb.)	1887 kg (4,161 lb.)
B¹ Maximum Reach	3158 kg (6,963 lb.)	2978 kg (6,565 lb.)
C¹ At Ground Line	4009 kg (8,839 lb.)	3792 kg (8,360 lb.)
D¹ Below Ground Line	206 mm (8.1 in.)	206 mm (8.1 in.)



Lift Capacities

Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

STANDARD LIFT With Standard Dipperstick **STANDARD LIFT With 1.21-m (4 ft. 0 in.) Extendable Dipperstick, Retracted** **STANDARD LIFT With 1.21-m (4 ft. 0 in.) Extendable Dipperstick, Extended**



Lift capacities are over end with stabilizers down and tires tangent to ground.

Additional equipment

Key: ● Standard ▲ Optional or special See your John Deere dealer for further information.

310L	310SL	410L	Engine
●	●	●	Coolant recovery tank with low-level indicator
●	●	●	Foldout, hinged cooling system
●	●	●	Serpentine belt with automatic belt tensioner
●	●	●	Suction-type (viscous) variable-rate cooling fan
●	●	●	Severe-duty fuel filter with water in fuel sensor
▲	▲	▲	Chrome exhaust extension
▲	▲	▲	Ether start aid
	●		Glow plugs
▲	▲	▲	1,000-watt electric engine coolant heater
Powertrain			
●			PowerShift™ transmission: Torque converter with twist-grip TCL and neutral safety switch interlock (1st through 4th gears)
	●	●	PowerShift transmission: Torque converter with twist-grip TCL and neutral safety switch interlock (1st through 5th gears)
	●	●	5th-gear overdrive
	●	●	AutoShift transmission
●	●	●	Transmission oil cooler
▲	▲	▲	Transmission remote oil-sampling port
●	●	●	Differential lock, electric foot actuated, protection on/off
	●	●	Auto shutdown
●	●	●	Planetary final drives
●	●	●	Power-assisted hydraulic service brakes (conform to ISO 3450): Inboard, wet multi-disc, self-adjusting and self-equalizing
●	●	●	Parking/emergency brake with electric switch control (conforms to ISO 3450): Spring applied, hydraulically released wet multi-disc / Independent of service brakes
●	●	●	Hydrostatic power steering with emergency manual mode
▲	▲	▲	Non-powered front axle
●			Mechanical-front-wheel drive (MFWD) with open differential: Electric on/off control / Sealed axle
▲	●	●	MFWD with traction-control limited-slip differential: Electric on/off control / Sealed axle
●			Automatic MFWD braking (4th gear overdrive only)
	●	●	Automatic MFWD braking (4th and 5th gear overdrive only)
▲	▲	▲	MFWD driveshaft guard

310L	310SL	410L	Backhoe
			Standard dipperstick digging depth
●			4.27 m (14 ft. 0 in.)
	●		4.34 m (14 ft. 3 in.)
		●	4.83 m (15 ft. 10 in.)
			Extendable dipperstick extension
▲	▲		1.06 m (3 ft. 6 in.)
		▲	1.21 m (4 ft. 0 in.)
	▲		Heavy-duty backhoe bucket cylinder
●	●	●	ISO (Deere) 2-lever mechanical backhoe controls
▲	▲	▲	2-lever pilot controls with pattern-selection feature
●	●	●	Swing lock pin stored in operator's station
●	●	●	Stabilizers with 2-direction anti-drift valves
	▲		Extended (long) stabilizers with reversible pads
	▲	▲	Severe-duty backhoe bucket with lift loops
▲	▲	▲	Backhoe couplers for John Deere, Case, and CAT buckets
▲	▲	▲	Auxiliary backhoe valve for swingers, thumbs, etc. with auxiliary plumbing
▲	▲	▲	Auxiliary backhoe valve for hammers and compactors with auxiliary plumbing
▲	▲	▲	Hydraulic thumb
Loader†			
●	●	●	Loader bucket anti-spill (rollback)
●	●	●	Return-to-dig feature
●	●	●	Single-lever control with electric clutch disconnect
●	●	●	Bucket-level indicator
●	●	●	Loader boom service lock
▲	▲	▲	Auxiliary loader hydraulics with single control lever with electrohydraulic (EH) auxiliary control (MFWD and clutch disconnect)
▲	▲	▲	Hydraulic coupler for buckets, forks, etc.
▲			Manual ride control
	▲	▲	Auto ride control
†See dealer for range of heavy-duty, multipurpose, and coupler buckets and forks.			
Hydraulic System			
●			106-L/m (28 gpm) single-gear pump, open-center system
	●	●	159-L/m (42 gpm) axial-piston pump, pressure-compensated load-sensing (PCLS) system
	●	●	Auto-idle

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan at test conditions specified per ISO 9249. No derating is required up to 1500-m (5,000 ft.) altitude and up to 3050-m (10,000 ft.) with optional altitude-compensating turbocharger. Specifications and design are subject to change without notice. Wherever applicable, specifications are in accordance with ISO standards. Except where otherwise noted, these specifications are based on a 310L unit with 19.5-24-in. 10PR (R4) tubeless rear and 12.5/80-18 12PR front tires, and 0.96-m³ (1.25 cu. yd.) loader bucket; a 310SL unit with 19.5L-24-in. 12PR (R4) tubeless rear and 12.5/80-18 10PR (R4) front tires, and 1.00-m³ (1.31 cu. yd.) loader bucket; and a 410L unit with 21L-24-in. 12PR (R4) tubeless rear and 12.5/80-18 10PR (R4) front tires, and 1.15-m³ (1.5 cu. yd.) loader bucket.

Additional equipment *(continued)*

Key: ● Standard ▲ Optional or special See your John Deere dealer for further information.

310L	310SL	410L	Hydraulic System <i>(continued)</i>
	●	●	Economy mode
●	●	●	Dedicated hydraulic reservoir
Electrical System			
●	●	●	12-volt system
●	●	●	130-amp alternator
●	●	●	Single battery with 175-min. reserve capacity and 950 CCA
▲	▲	▲	Dual batteries with 350-min. reserve capacity and 1,900 CCA
▲	▲	▲	Remote jump posts and battery disconnect
Lights			
●	●	●	Halogen lights (10), 32,500 candlepower each (4 front driving/working, 4 rear working, and 2 side docking)
●	●	●	Turn signal/flashing (2 front and 2 rear)
●	●	●	Rear stop and tail (2)
▲	▲	▲	2 LED spotlights and 8 LED front floodlights in lieu of standard halogen light package
Operator's Station			
●	●	●	ROPS/FOPS (level 2) canopy with molded roof (meets ISO 3471 and ISO 3449)
●	●	●	Molded floor mats (with pilot controls only)
●	●	●	12-volt outlet
●	●	●	Lockable right-side storage
▲	▲	▲	Lockable left-hand storage with cup holders
▲	▲	▲	Interior front-view mirror
▲	▲	▲	Outside rearview mirrors
●	●	●	Rotary-dial hand throttle
●	●	●	Suspended foot throttle
▲	▲	▲	Air-suspension seat (with cab only)
●	●	●	Tilt steering, infinitely adjustable (with cab only)
▲	▲	▲	Tilt steering, infinitely adjustable (with canopy and quarter cab)
●			Key start switch
	●	●	Keyless start
▲	●	●	Machine security (enabled through monitor)
●	●	●	Digital display of engine hours, engine rpm, and system voltage
	●	●	Sealed-switch module
	●	●	Multi-function lever: Turn signals / Windshield wipers / Some light functionality

310L	310SL	410L	Operator's Station <i>(continued)</i>
●	●	●	Monitor system with audible and visual warnings: Engine air restriction / Low alternator voltage / Engine oil pressure / Hydraulic filter restriction / Parking brake on/off / Aftertreatment temperature / Transmission fluid temperature / Fuel / Hour meter / Machine diagnostic information via 4-push-button/LCD operator interface
●	●	●	Canopy: Mechanical-suspension deluxe vinyl swivel seat with lumbar adjustment and armrests (fully adjustable)
▲	▲		Quarter Cab: Mechanical-suspension deluxe fabric swivel seat with lumbar adjustment and armrests (fully adjustable) front windshield, and windshield wiper (1 front)
▲	▲	▲	Cab with Dual Doors and A/C: Mechanical-suspension deluxe fabric swivel seat with lumbar adjustment / Headliner, dome light, left and right cab doors, tinted safety glass, windshield wipers (1 rear and 1 front), front windshield washer, fresh-air intake, and heater/defroster/pressurizer (11.7-kW 40,000 Btu/h heater) / A/C (7.6-kW [26,000 Btu/h] output and CFC-free R134a refrigerant
▲	▲	▲	AM/FM/Weather-Band (WB) radio (with cab only)
▲	▲	▲	Premium radio package (with cab only; includes additional 12-volt and USB outlets)
Overall Vehicle			
●	●	●	1-piece unitized construction mainframe
●	●	●	Vehicle tie-downs (2 front and 2 rear)
●	●	●	Remote grease bank for front axle
●	●	●	Front cover
▲	▲	▲	Heavy-duty front bumper
▲	▲	▲	Front counterweight – 204 kg (450 lb.), 340 kg (750 lb.), 454 kg (1,000 lb.), or 567 kg (1,250 lb.)
▲	▲	▲	Rubber grille bumpers
●	●	●	Fuel tank, 128.7 L (34 gal.), ground-level fueling
●	●	●	2-position easy-tilt hood
●	●	●	Extended grille frame
●	●	●	Toolbox with padlock hasp
●	●	●	Vandal protection for locking monitor, engine hood, toolbox, hydraulic reservoir, and fuel tank
●	●	●	Reverse warning alarm
●	●	●	Dent-resistant full-coverage rear fenders
▲	▲	▲	Backhoe boom-protection plate
●	●	●	JDLink™ wireless communication system (available in specific countries; see your dealer for details)

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JOHN DEERE

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RIISING TO THE CHALLENGE.

Every day brings new challenges — demanding jobsites, long hours, and an increasing focus on uptime. Our job is to bring you the opportunities to overcome them. Our experienced engineers, specialized service techs, and global parts and service network are always ready to step up to help you **Run Your World.**



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