

L-SERIES  
**BACKHOES**



**JOHN DEERE**

310L EP / 310L / 310SL / 310SL HL / 315SL / 410L / 710L



**LIFT MORE  
AND MULTITASK**



# THE 310SL HL HEAVY-LIFT BACKHOE

Managing an expanding workload and multiple tasks doesn't have to mean moving up to a larger backhoe. Boasting significantly more lifting capability than previous models, along with pressure-compensated load-sensing (PCLS) hydraulics, our 310SL HL is surprisingly adept — and may be the perfect addition to your equipment lineup.



**UP TO  
15%  
INCREASE IN LIFTING  
POWER WITH LIFT MODE**



### **More lift capacity at the push of a button**

Along with the 410L, the 310SL HL can deliver up to 25-percent more backhoe-lift capacity than their comparable K-Series models. Lift mode provides an additional boost of 10 to 15 percent. Simply pushing a button on the sealed-switch module sets engine rpm at 1,400 and maximizes hydraulic pressure for increased lifting capability.

### **PCLS hydraulics for superb multifunction operation**

The 310SL HL delivers all the advantages of PCLS hydraulics in the 14–15-ft. digging-depth category, enabling operator efficiency and productivity through improved multifunction control.

### **Control in close quarters**

Standard on the 310SL HL, 410L, and 710L, precision mode reduces the speed of hydraulic backhoe functions, 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.



#### **WHAT THE EXPERTS ARE SAYING:**

“Thanks to Deere asking for my input, I get a better machine, and these improvements make all the difference in my day's productivity.”

— Todd Heiderscheidt, Backhoe CAG Member

# 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.

## **DEF concentration sensor**

Diesel exhaust fluid (DEF) concentration sensor measures fluid in the DEF tank and issues an alert of potential engine derate.

## **Minimize downtime and expense**

Same-side ground-level service points speed daily checks and fills. Other common-sense 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.

## **Coolers allow easy cleanout**

Hinged, stacked-assembly coolers tilt away from the radiator for convenient core cleanout.





### 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

Variable-speed electronically controlled fan automatically speeds up or slows down, operating only as needed to keep things cool. Conserves power and fuel, while reducing noise.

### Proven engine technology

310L EP IT4/Stage IIIB emission-certified Yanmar engine requires no aftertreatment. 310SL HL and 410L FT4/Stage IV emission-certified PowerTech Plus engines feature a diesel oxidation catalyst (DOC) and a selective catalytic reduction (SCR) system. 310L, 310SL, 315SL, and 710L FT4/Stage IV emission-certified PowerTech Plus diesels include an SCR system. Only the 710L requires a diesel particulate filter (DPF).



### Get valuable insight with **JOHN DEERE WORKSIGHT™**

John Deere WorkSight is an exclusive suite of telematics solutions that increases uptime while lowering operating costs. At its heart, JDLink™ machine monitoring provides real-time utilization data and alerts to help you maximize productivity and efficiency while minimizing downtime. Remote diagnostics enable your dealer to read codes and record performance data without a trip to the jobsite.

### Keep downtime down with **JOHN DEERE ULTIMATE UPTIME**

John Deere Ultimate Uptime, featuring John Deere WorkSight, is a customizable support solution available exclusively from your Deere dealer. This flexible offering maximizes equipment availability with standard John Deere WorkSight capabilities that can help prevent future downtime and speed repairs when needed. In addition to the base John Deere WorkSight features, our dealers work with you to build an uptime package that meets the specific needs of your machine, fleet, project, and business, including customized maintenance and repair agreements, onsite parts availability, extended warranties, fluid sampling, response-time guarantees, and more.



# 310L EP / 310L SPECIFICATIONS

Engine	310L EP		310L	
Manufacturer and Model	Yanmar 4TNV98CT turbocharged		John Deere PowerTech™ Plus 4045HT096 turbocharged	
Non-Road Emission Standard	EPA Interim Tier 4/EU Stage IIIB		EPA Final Tier 4/EU Stage IV	
Displacement	3.3 L (203 cu. in.)		4.5 L (276 cu. in.)	
Gross Peak Power	54 kW (72 hp) at 2,330 rpm		71 kW (95 hp) at 2,240 rpm	
Power Ratings				
Net Peak Power* (ISO 9249)	51 kW (69 hp) at 2,010 rpm†		69 kW (93 hp) at 2,240 rpm	
Net Peak Torque (ISO 9249)	271 Nm (200 lb.-ft.) at 1,800 rpm		383 Nm (282 lb.-ft.) at 1,400 rpm	
Net Torque Rise	27%		28%	
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		Dual-stage dry type with safety element and evacuator valve	
*Net power advertised is the power available at the flywheel when the engine is equipped with cooling fan, air cleaner, muffler, and alternator at standard conditions.				
†An engine power derate will occur with an elevation increase that may be perceivable beginning at ~3,000 ft., depending on application and conditions.				
<b>Cooling</b>				
Fan Type	Viscous variable-rate (temperature controlled) cooling fan standard		Electronically controlled, variable rate, suction-type cooling fan	
Engine Coolant Rating	-40 deg. C (-40 deg. F)		-40 deg. C (-40 deg. F)	
Engine Oil Cooler	Oil to water		Oil to water	
<b>Powertrain</b>				
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>	<i>Forward</i>	<i>Reverse</i>
Gear 1	5.3 km/h (3.3 mph)	6.7 km/h (4.2 mph)	5.4 km/h (3.4 mph)	6.8 km/h (4.2 mph)
Gear 2	9.7 km/h (6.0 mph)	12.3 km/h (7.6 mph)	9.9 km/h (6.2 mph)	12.6 km/h (7.8 mph)
Gear 3	20.1 km/h (12.5 mph)	—	20.5 km/h (12.7 mph)	—
Gear 4	36.4 km/h (22.6 mph)	—	36.9 km/h (22.9 mph)	—
<b>Axles</b>				
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		22 deg.	
Axle Ratings	<i>Front</i>	<i>Rear</i>	<i>Front</i>	<i>Rear</i>
SAE J43	5000 kg (11,000 lb.)	6000 kg (13,200 lb.)	5000 kg (11,000 lb.)	6000 kg (13,200 lb.)
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)
Static	23 500 kg (51,800 lb.)	26 500 kg (58,400 lb.)	24 500 kg (54,000 lb.)	26 500 kg (58,400 lb.)
Ultimate	37 000 kg (81,600 lb.)	39 500 kg (87,100 lb.)	41 500 kg (91,500 lb.)	41 500 kg (91,500 lb.)
<b>Differentials</b>				
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		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>	<i>MFWD</i>	<i>Non-Powered Front</i>
Curb-Turning Radius				
With Brakes	3.57 m (11 ft. 9 in.)	3.55 m (11 ft. 8 in.)	3.57 m (11 ft. 9 in.)	3.55 m (11 ft. 8 in.)
Without Brakes	4.15 m (13 ft. 7 in.)	4.12 m (13 ft. 6 in.)	4.15 m (13 ft. 7 in.)	4.12 m (13 ft. 6 in.)
Bucket-Clearance Circle				
With Brakes	9.99 m (32 ft. 9 in.)	9.98 m (32 ft. 9 in.)	9.99 m (32 ft. 9 in.)	9.98 m (32 ft. 9 in.)
Without Brakes	10.86 m (35 ft. 8 in.)	10.84 m (35 ft. 7 in.)	10.86 m (35 ft. 8 in.)	10.84 m (35 ft. 7 in.)
Steering Wheel Turns (lock to lock)	2.7	3.2	2.7	3.2
MFWD and Rear Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears			
<b>Brakes (ISO 3450)</b>				
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			
<b>Hydraulics</b>				
Main Pump	Open-center system; axial-piston pump		Open center, single-gear pump	
Pump Flow at 2,200 rpm				
Backhoe	128 L/m (33.7 gpm)		106 L/m (28 gpm)	
Loader	104 L/m (27.5 gpm)		106 L/m (28 gpm)	
System Relief Pressure				
Backhoe	24 993 kPa (3,625 psi)		24 993 kPa (3,625 psi)	
Loader	22 063 kPa (3,200 psi)		22 063 kPa (3,200 psi)	
<b>Controls</b>				
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			

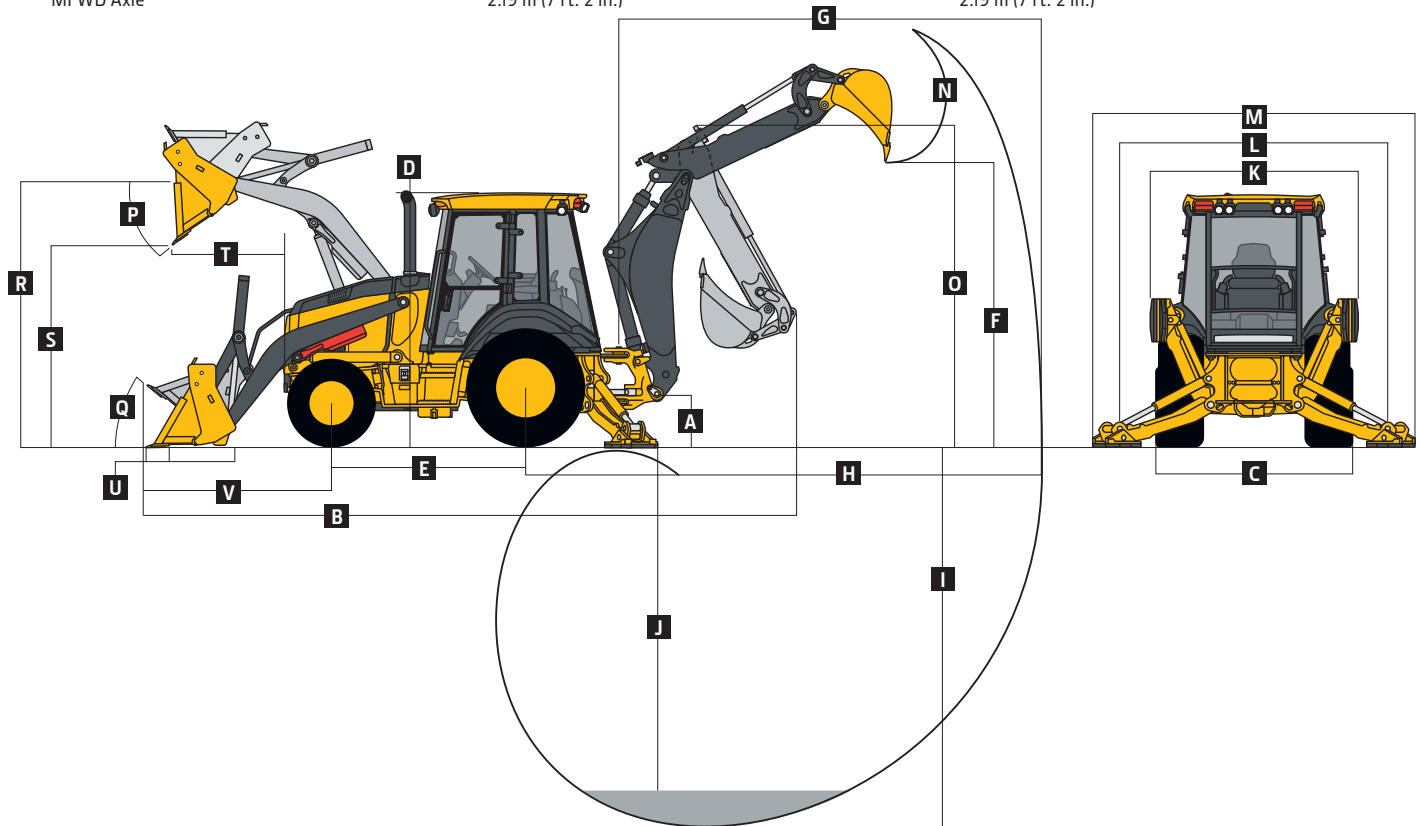
# 310L EP / 310L SPECIFICATIONS



Hydraulics (continued)	310L EP	310L		
<b>Controls (continued)</b>				
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	Single-lever control with electric clutch cutoff switch standard; manual auxiliary function (2nd lever), single-lever control with electric clutch cutoff and EH proportional auxiliary control optional		
<b>Cylinders</b>				
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 (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.)	
<b>Electrical</b>				
Voltage	12 volt	12 volt		
Alternator Rating	120 amp with canopy and quarter cab / 130 amp with cab	120 amp with canopy and quarter cab / 160 amp with cab		
<b>Lights</b>				
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				
<b>Operator Station</b>				
Type (ISO 3471)	Canopy, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional quarter cab (front glass only) and fully enclosed cab			
<b>Tires/Wheels</b>				
	<i>Front</i>	<i>Rear</i>	<i>Front</i>	<i>Rear</i>
Non-Powered Front Axle	12.5/80-18 F3 (12)	19.5L-24 R4 (12)	12.5/80-18 F3 (12)	19.5L-24 R4 (12)
	14.5/75-16.1 F3 (16)	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)	12-16.5 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
<b>Serviceability</b>				
<b>Refill Capacities</b>				
<b>Cooling System</b>				
Cab	19.3 L (20.4 qt.)	30.0 L (31.7 qt.)		
Canopy	17.4 L (18.4 qt.)	28.2 L (29.8 qt.)		
Rear Axle	18 L (19 qt.)	18 L (19 qt.)		
Engine Oil (including vertical spin-on filter)	10.5 L (11.1 qt.)	13 L (13.7 qt.)		
Torque Converter and Transmission	15.1 L (16 qt.)	15.1 L (16 qt.)		
Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)	128.7 L (34 gal.)		
Diesel Exhaust Fluid (DEF) Tank	—	13.7 L (3.6 gal.)		
Hydraulic System	126.8 L (33.5 gal.)	126.8 L (33.5 gal.)		
Hydraulic Reservoir	45 L (11.9 gal.)	45 L (11.9 gal.)		
<b>MFWD Housing</b>				
Axle	6.5 L (6.9 qt.)	6.5 L (6.9 qt.)		
Planetary (each)	0.9 L (1 qt.)	0.9 L (1 qt.)		
<b>Operating Weights</b>				
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and Bumper	6270 kg (13,822 lb.)	6654 kg (14,669 lb.)		
Typical with Cab, Extendable Dipperstick, MFWD, and 204-kg (450 lb.) Counterweight	7095 kg (15,642 lb.)	7311 kg (16,119 lb.)		
<b>Optional Components (weight difference between base equipment and option)</b>				
Cab	263 kg (580 lb.)	263 kg (580 lb.)		
MFWD with Tires	168 kg (370 lb.)	168 kg (370 lb.)		

# 310L EP / 310L

Operating Weights (continued)		310L EP / 310L	
<b>Optional Components (weight difference between base equipment and option) (continued)</b>			
Extendable Dipperstick		191 kg (420 lb.)	
Front Loader Coupler		257 kg (566 lb.)	
Backhoe Bucket Coupler		59 kg (130 lb.)	
Overall Dimensions		310L EP	310L
A	Ground Clearance, Minimum	318 mm (13 in.)	293 mm (12 in.)
B	Overall Length, Transport	7.24 m (23 ft. 9 in.)	7.24 m (23 ft. 9 in.)
C	Width Over Tires	2.20 m (7 ft. 3 in.)	2.20 m (7 ft. 3 in.)
D	Height to Top of ROPS/Cab	2.81 m (9 ft. 3 in.)	2.81 m (9 ft. 3 in.)
E	Length from Axle to Axle		
	Non-Powered Front Axle	2.16 m (7 ft. 1 in.)	2.16 m (7 ft. 1 in.)
	MFWD Axle	2.19 m (7 ft. 2 in.)	2.19 m (7 ft. 2 in.)



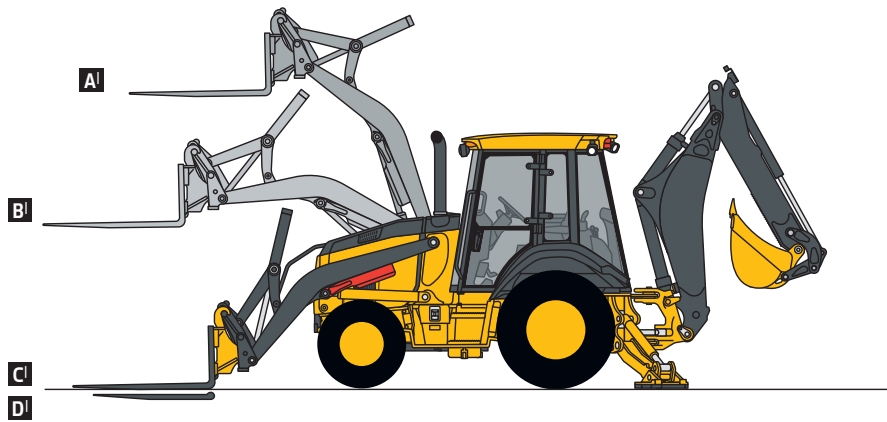
Backhoe Dimensions and Performance		310L EP / 310L		
<b>Backhoe specifications are with 610-mm x 0.18-m<sup>3</sup> (24 in. x 6.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.</b>				
Bucket Range		305–762 mm (12–30 in.)		
Digging Force				
Bucket Cylinder		48.2 kN (10,844 lb.)		
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.		
		<i>With Optional Extendable Dipperstick</i>		
		<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.)

## Loader Dimensions and Performance 310L EP / 310L

<b>P</b> Bucket Dump Angle, Maximum	45 deg.			
<b>Q</b> 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 <sup>3</sup> (1.00 cu. yd.)	0.86 m <sup>3</sup> (1.12 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	0.96 m <sup>3</sup> (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.)
<b>R</b> 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.)
<b>S</b> 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.)
<b>T</b> 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.)
<b>U</b> 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.)
<b>V</b> 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. 10 in.)

## Lift Capacity with Quick-Coupler Forks

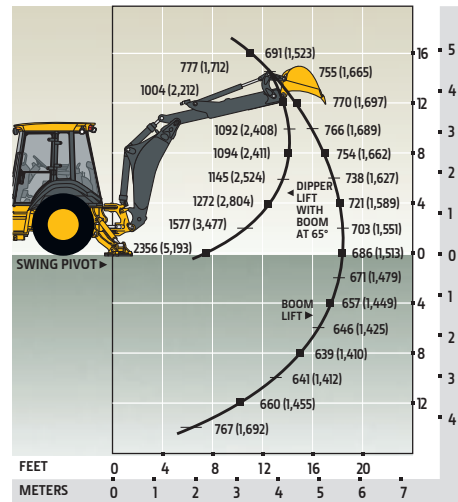
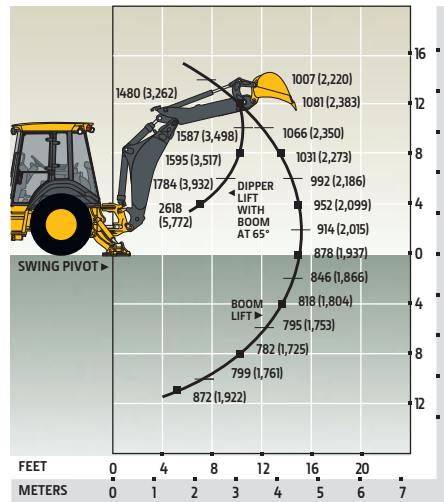
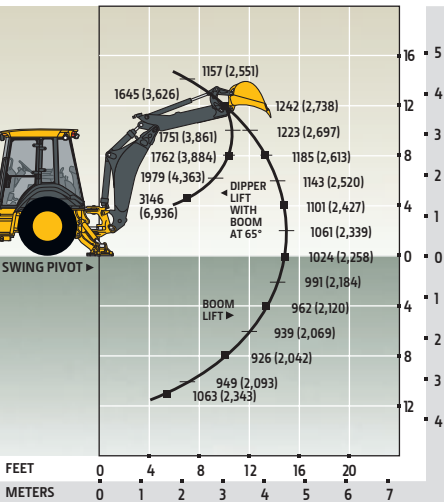
<b>Hydraulic Capacity</b>	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>
<b>A'</b> Maximum Height	1711 kg (3,772 lb.)	1592 kg (3,510 lb.)
<b>B'</b> Maximum Reach	2690 kg (5,931 lb.)	2530 kg (5,578 lb.)
<b>C'</b> At Ground Line	3393 kg (7,480 lb.)	3203 kg (7,061 lb.)
<b>D'</b> Below Ground Line	185 mm (7.3 in.)	185 mm (7.3 in.)
Rated Capacity of Tines	3900 kg (8,598 lb.)	3900 kg (8,598 lb.)
Rated Load per SAE J1197		



## Lift Capacity with Bucket

Lift capacities are over-end values in kg (lb.) according to SAE J31. Figures listed are 87% of the maximum lift force available. Calculated with 610-mm x 0.18-m<sup>3</sup> (24 in. x 6.5 cu. ft.) bucket. Bucket impacts overall lift capacity.

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
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# 310SL SPECIFICATIONS

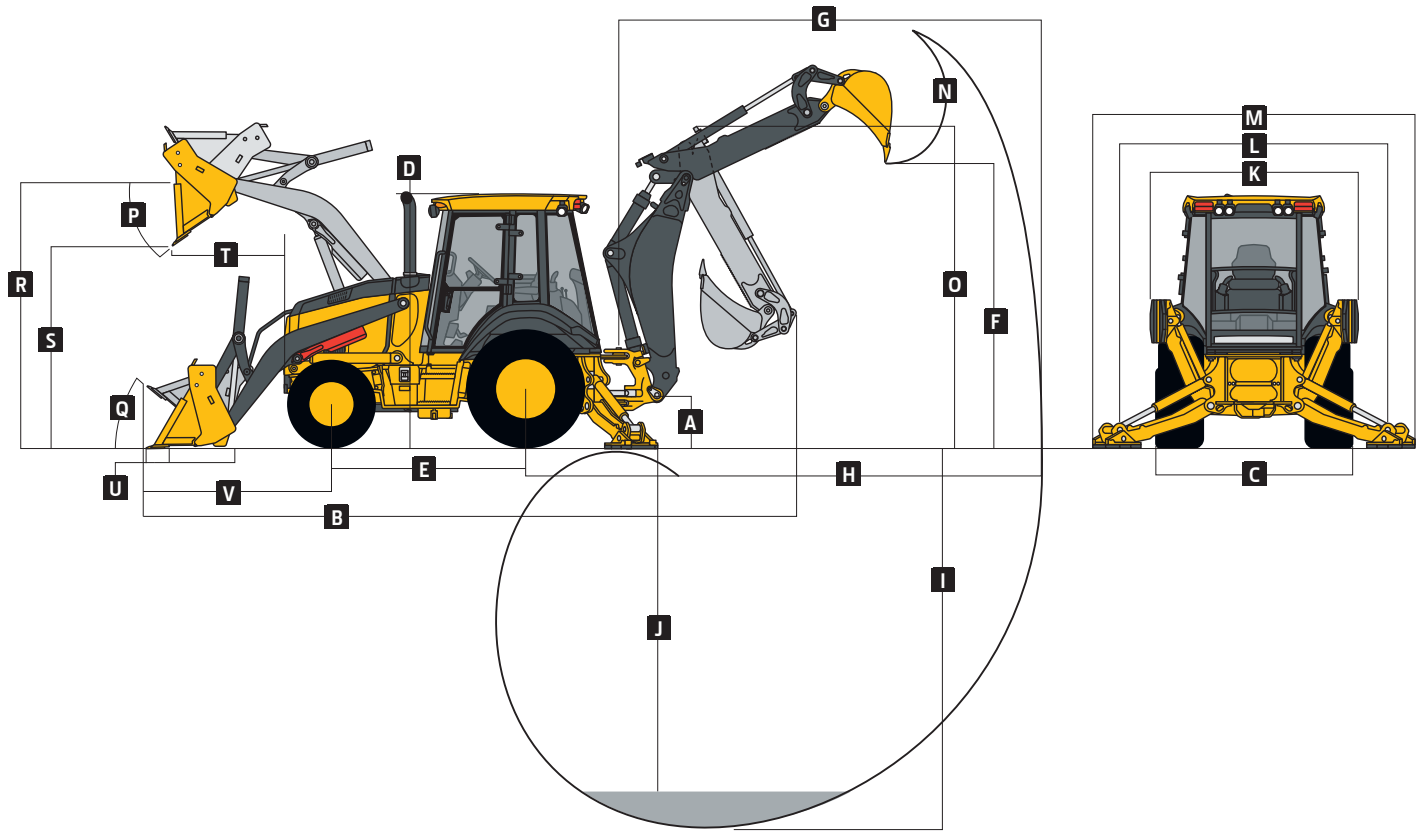
Engine		310SL	
Manufacturer and Model	John Deere PowerTech™ Plus 4045HT096 turbocharged		
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV		
Displacement	4.5 L (276 cu. in.)		
Gross Power at Rated Speed	75 kW (101 hp) at 2,200 rpm		
Net Peak Power (ISO 9249)	75 kW (100 hp) at 2,240 rpm		
Net Peak Torque (ISO 9249)	422 Nm (312 lb.-ft.) at 1,400 rpm		
Net Torque Rise	31%		
Lubrication	Pressure system with spin-on filter and cooler		
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		
Cooling			
Fan Type	Electronically controlled, variable-rate, suction-type cooling fan		
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 optional		
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)	6.9 km/h (4.3 mph)	
Gear 2	10.0 km/h (6.2 mph)	12.7 km/h (7.9 mph)	
Gear 3	20.7 km/h (12.9 mph)	20.4 km/h (12.7 mph)	
Gear 4	37.8 km/h (23.5 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	5500 kg (12,100 lb.)	7000 kg (15,400 lb.)	
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)	
Static	23 500 kg (51,800 lb.)	26 500 kg (58,400 lb.)	
Ultimate	37 000 kg (81,600 lb.)	39 500 kg (87,100 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)			
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>	
Curb-Turning Radius			
With Brakes	3.58 m (11 ft. 9 in.)	3.56 m (11 ft. 8 in.)	
Without Brakes	4.20 m (13 ft. 9 in.)	4.17 m (13 ft. 8 in.)	
Bucket-Clearance Circle			
With Brakes	10.23 m (33 ft. 7 in.)	10.22 m (33 ft. 6 in.)	
Without Brakes	11.15 m (36 ft. 7 in.)	11.13 m (36 ft. 6 in.)	
Steering Wheel Turns (lock to lock)	2.7	3.2	
MFWD and Rear 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, gear type, tandem with unloader		
Pump Flow at 2,200 rpm			
Backhoe	136 L/m (36 gpm)		
Loader	106 L/m (28 gpm)		
System Relief Pressure			
Backhoe	24 993 kPa (3,625 psi)		
Loader	24 993 kPa (3,625 psi)		
Controls			
Backhoe	2-lever mechanical standard; pilot controls with pattern select and auxiliary functions optional; field kits available for additional mechanical control options		
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		

# 310SL SPECIFICATIONS



Cylinders		310SL	
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.)	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.)
Longer Optional	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	120 amp with canopy and quarter cab / 160 amp with cab		
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		
Tires/Wheels		<i>Front</i>	<i>Rear</i>
Non-Powered Front Axle	12.5/80-18 F3 (12)	19.5L-24 R4 (12)	
With MFWD	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			
Cooling System			
Cab	30.0 L (31.7 qt.)		
Canopy	28.2 L (29.8 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.)		
Fuel Tank (with ground-level fueling)	140.1 L (37 gal.)		
Diesel Exhaust Fluid (DEF) Tank	16.3 L (4.3 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	7199 kg (15,872 lb.)		
Typical with Cab, Extendable Dipperstick, and 340-kg (750 lb.) Counterweight	8025 kg (17,692 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.)		

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	2.18 m (7 ft. 2 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-m<sup>3</sup> (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	3.43 m (11 ft. 3 in.)	3.55 m (11 ft. 8 in.)	4.17 m (13 ft. 8 in.)
G Reach from Center of Swing Pivot	5.52 m (18 ft. 1 in.)	5.62 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)	4.34 m (14 ft. 3 in.)	4.48 m (14 ft. 8 in.)	5.53 m (18 ft. 2 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.31 m (14 ft. 2 in.)	4.44 m (14 ft. 7 in.)	5.49 m (18 ft. 0 in.)
2440-mm (8 ft.) Flat Bottom	3.97 m (13 ft. 0 in.)	4.11 m (13 ft. 6 in.)	5.24 m (17 ft. 2 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.)



## Backhoe Dimensions and Performance (continued)

310SL

With Optional Extendable Dipperstick

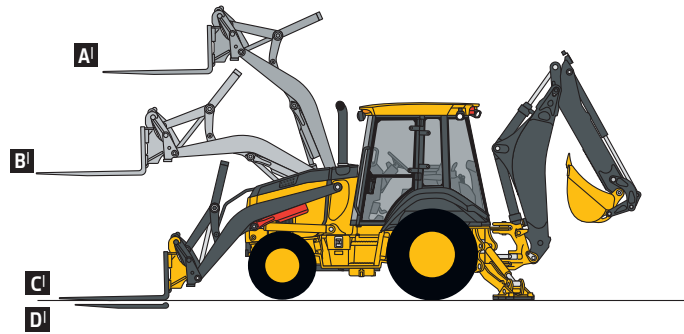
	With Standard Backhoe	Retracted	Extended
<b>N</b> Bucket Rotation	190 deg.	190 deg.	190 deg.
<b>O</b> Transport Height	3.49 m (11 ft. 6 in.)	3.50 m (11 ft. 6 in.)	3.50 m (11 ft. 6 in.)

## Loader Dimensions and Performance

	Heavy-duty	Heavy-duty long lip	Heavy-duty	Multipurpose
<b>P</b> Bucket Dump Angle, Maximum	45 deg.			
<b>Q</b> Rollback Angle at Ground Level	40 deg.			
Bucket Capacity	0.86 m <sup>3</sup> (1.12 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)	1.00 m <sup>3</sup> (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	49.1 kN (11,045 lb.)	46.4 kN (10,438 lb.)	46.8 kN (10,532 lb.)	43.2 kN (9,714 lb.)
Lift Capacity, Full Height	3462 kg (7,632 lb.)	3198 kg (7,050 lb.)	3322 kg (7,324 lb.)	2834 kg (6,248 lb.)
<b>R</b> Height to Bucket Hinge Pin, Maximum	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
<b>S</b> Dump Clearance, Bucket at 45 deg.	2.62 m (8 ft. 7 in.)	2.64 m (8 ft. 8 in.)	2.68 m (8 ft. 10 in.)	2.65 m (8 ft. 8 in.)
<b>T</b> Reach at Full Height, Bucket at 45 deg.	699 mm (27.5 in.)	825 mm (32.5 in.)	695 mm (27.4 in.)	737 mm (29.0 in.)
<b>U</b> Digging Depth Below Ground, Bucket Level	106 mm (4.2 in.)	87 mm (3.4 in.)	151 mm (5.9 in.)	147 mm (5.8 in.)
<b>V</b> Length from Front Axle Centerline to Bucket Cutting Edge	1.97 m (6 ft. 6 in.)	2.12 m (6 ft. 11 in.)	2.04 m (6 ft. 8 in.)	2.09 m (6 ft. 10 in.)

## Lift Capacity with Quick-Coupler Forks

Hydraulic Capacity	1219-mm (48 in.) Tines	1524-mm (60 in.) Tines
<b>A</b> Maximum Height	2002 kg (4,413 lb.)	1872 kg (4,126 lb.)
<b>B</b> Maximum Reach	3149 kg (6,943 lb.)	2969 kg (6,545 lb.)
<b>C</b> At Ground Line	4007 kg (8,833 lb.)	3789 kg (8,353 lb.)
<b>D</b> Below Ground Line	228 mm (9 in.)	228 mm (9 in.)

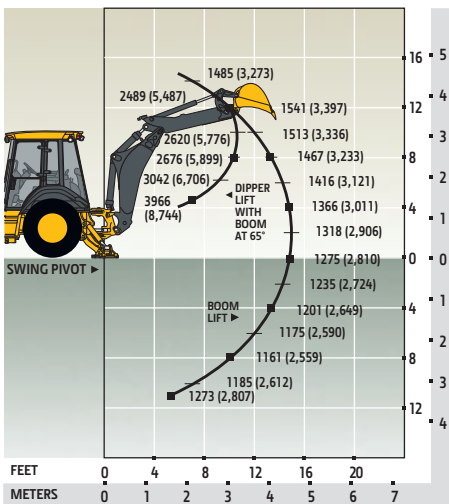


## Lift Capacity with Bucket

Lift capacities are over-end values in kg (lb.) according to SAE J31. Figures listed are 87% of the maximum lift force available. Calculated with 610-mm x 0.21-m<sup>3</sup> (24 in. x 7.5 cu. ft.) bucket. Bucket impacts overall lift capacity.

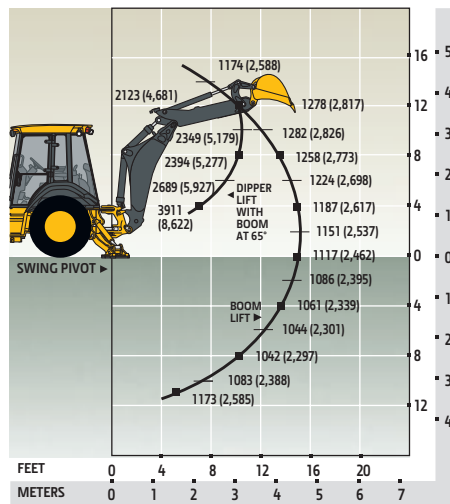
### STANDARD LIFT

With Standard Dipperstick



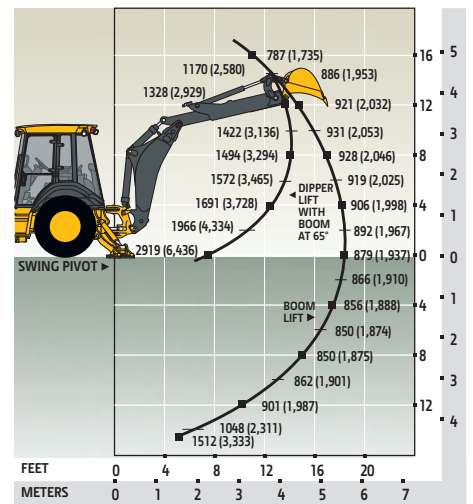
### STANDARD LIFT

With 1.06-m (3 ft. 6 in.)  
Extendable Dipperstick, Retracted



### STANDARD LIFT

With 1.06-m (3 ft. 6 in.)  
Extendable Dipperstick, Extended





# 310SL HL SPECIFICATIONS

<b>Engine</b>		<b>310SL HL</b>	
Manufacturer and Model	John Deere PowerTech™ Plus 4045HT096 turbocharged		
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV		
Displacement	4.5 L (276 cu. in.)		
Gross Peak Power	83 kW (112 hp) at 2,240 rpm		
Net Peak Power (ISO 9249)	82 kW (110 hp) at 2,240 rpm		
Net Peak Torque (ISO 9249)	428 Nm (315 lb.-ft.) at 1,400 rpm		
Net Torque Rise	21%		
Lubrication	Pressure system with spin-on filter and cooler		
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		
<b>Cooling</b>			
Fan Type	Electronically controlled, variable rate, suction-type cooling fan		
Engine Coolant Rating	-40 deg. C (-40 deg. F)		
Engine Oil Cooler	Oil to water		
<b>Powertrain</b>			
<b>Transmission</b>	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; AutoShift transmission optional		
<b>Torque Converter</b>	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	5.6 km/h (3.5 mph)	7.0 km/h (4.3 mph)	
Gear 2	10.2 km/h (6.3 mph)	12.9 km/h (8.0 mph)	
Gear 3	21.0 km/h (13.0 mph)	20.7 km/h (12.9 mph)	
Gear 4	38.2 km/h (23.7 mph)	—	
Gear 5	40.0 km/h (24.9 mph)	—	
<b>Axles</b>			
Axle Oscillation, Stop to Stop, Front Axle	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	43 500 kg (95,900 lb.)	43 500 kg (95,900 lb.)	
<b>Differentials</b>			
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control		
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock		
<b>Steering (ISO 5010)</b>		Hydrostatic power steering and emergency steering	
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>	
Curb-Turning Radius			
With Brakes	3.60 m (11 ft. 10 in.)	3.57 m (11 ft. 9 in.)	
Without Brakes	4.20 m (13 ft. 9 in.)	4.17 m (13 ft. 8 in.)	
Bucket-Clearance Circle			
With Brakes	10.27 m (33 ft. 8 in.)	10.26 m (33 ft. 8 in.)	
Without Brakes	11.17 m (36 ft. 8 in.)	11.15 m (36 ft. 7 in.)	
Steering Wheel Turns (lock to lock)	2.6 to 3.6	3.1 to 4.3	
<b>MFWD Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears		
<b>Rear Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears		
<b>Brakes (ISO 3450)</b>			
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		
<b>Hydraulics</b>			
Main Pump	Pressure compensated load sensing (PCLS), axial-piston pump		
Pump Flow at 2,200 rpm			
Backhoe	159 L/m (42 gpm)		
Loader	159 L/m (42 gpm)		
System Relief Pressure			
Backhoe	24 993 kPa (3,625 psi)		
Lift Mode	27 579 kPa (4,000 psi)		
Loader	24 993 kPa (3,625 psi)		
<b>Controls</b>			
Backhoe	Pilot controls with pattern select standard; electrohydraulic (EH) auxiliary functions optional		
Loader	Single-lever control with electric clutch cutoff switch and MFWD (momentary) standard; single-lever control with electric clutch cutoff switch, EH proportional auxiliary roller, and transmission quick-shift optional		

# 310SL HL SPECIFICATIONS

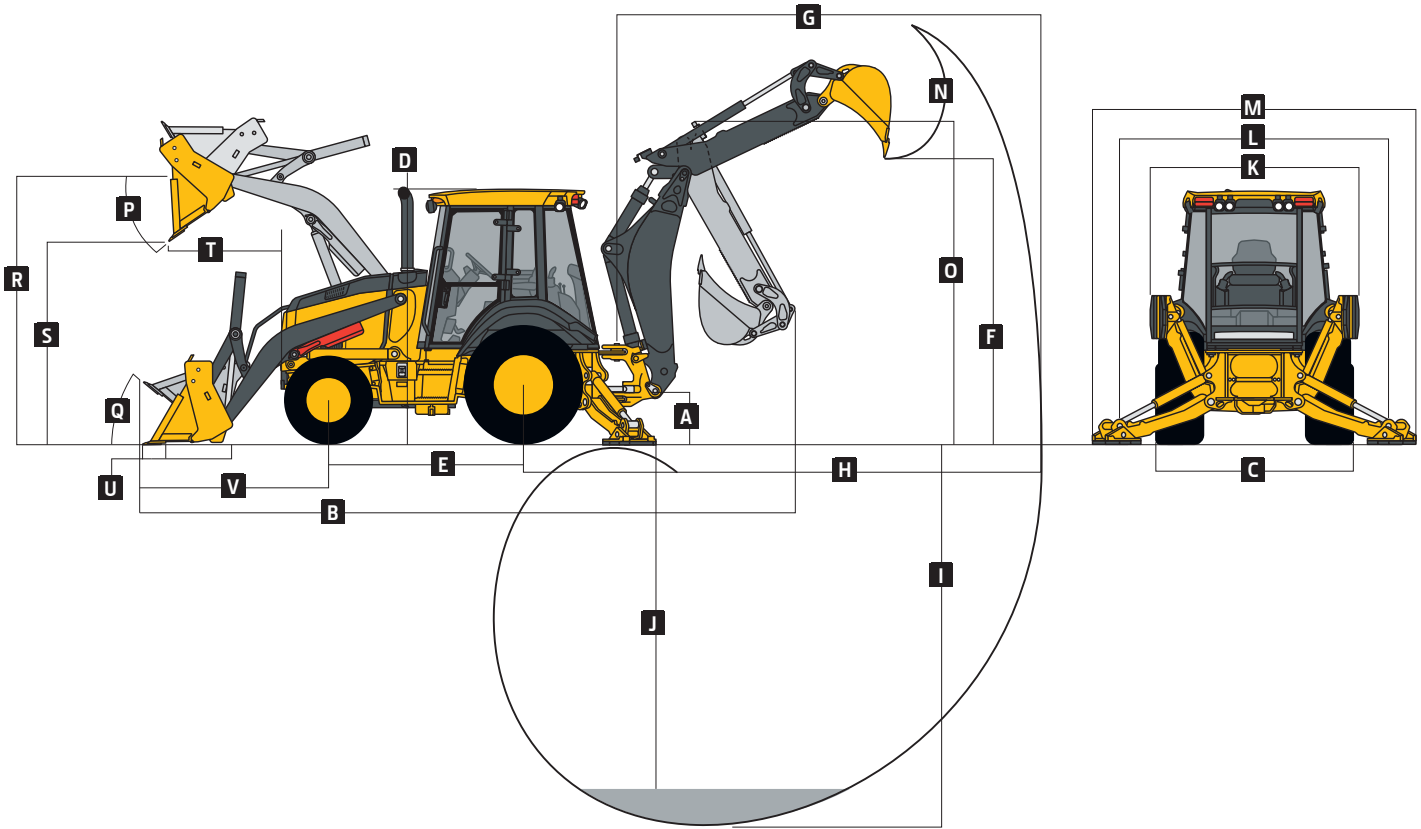


Cylinders		310SL HL	
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins			
	<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)
Loader Bucket (1)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)	125 mm (4.92 in.)	63 mm (2.48 in.)	887 mm (34.92 in.)
Backhoe Crowd (1)	120 mm (4.72 in.)	63 mm (2.48 in.)	591 mm (23.27 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)	80 mm (3.15 in.)	45 mm (1.77 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.)
Longer Optional	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	120 amp with canopy and quarter cab / 160 amp with cab		
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		
Tires/Wheels		<i>Front</i>	<i>Rear</i>
Non-Powered Front Axle	12.5/80-18 F3 (12)	19.5L-24 R4 (12)	
With MFWD	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			
Cooling System			
Cab	31.4 L (33.2 qt.)		
Canopy	29.6 L (31.3 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.)		
Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)		
Diesel Exhaust Fluid (DEF) Tank	13.7 L (3.6 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 Standard Bumper	7516 kg (16,571 lb.)		
Typical with Cab and 454-kg (1,000 lb.) Counterweight	8495 kg (18,729 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 (578 lb.)		
Front Loader Coupler	257 kg (566 lb.)		
Backhoe Bucket Coupler	64 kg (141 lb.)		



# 310SL HL

Overall Dimensions	310SL HL
A Ground Clearance, Minimum	310 mm (12 in.)
B Overall Length, Transport	7.37 m (24 ft. 2 in.)
C Width Over Tires	2.34 m (7 ft. 8 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

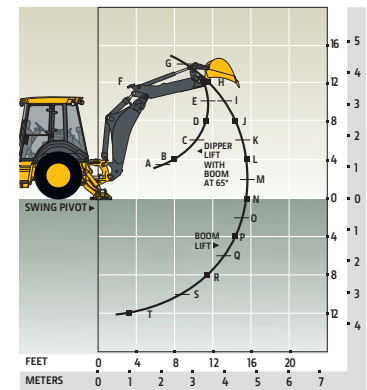
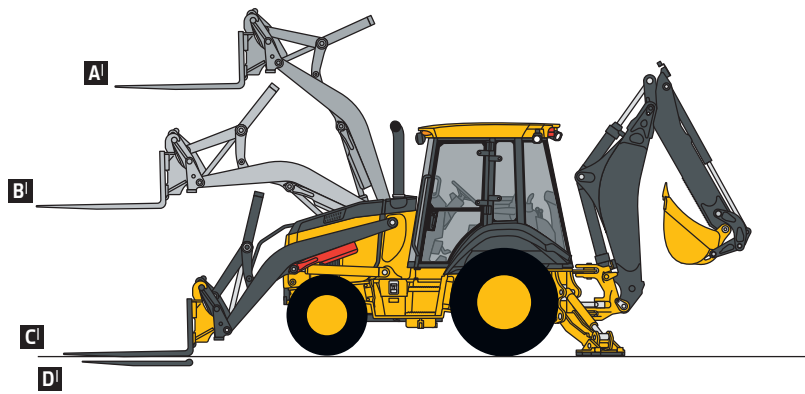
Backhoe specifications are with 610-mm x 0.21-m<sup>3</sup> (24 in. x 7.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.

Bucket Range	305–610 mm (12–24 in.)		
Digging Force			
Bucket Cylinder	69.9 kN (15,723 lb.)		
Lift Mode	77.2 kN (17,349 lb.)		
Crowd Cylinder	38.2 kN (8,581 lb.)		
Lift Mode	42.1 kN (9,468 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		

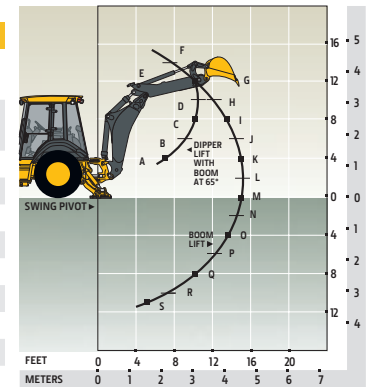
	With Standard Backhoe	With Optional Extendable Dipperstick Retracted	With Optional Extendable Dipperstick Extended
F Loading Height, Truck Loading Position	3.63 m (11 ft. 11 in.)	3.62 m (11 ft. 10 in.)	4.24 m (13 ft. 11 in.)
G Reach from Center of Swing Pivot	5.68 m (18 ft. 8 in.)	5.62 m (18 ft. 5 in.)	6.61 m (21 ft. 8 in.)
H Reach from Center of Rear Axle	6.74 m (22 ft. 1 in.)	6.68 m (21 ft. 11 in.)	7.67 m (25 ft. 2 in.)
I Digging Depth (SAE maximum)	4.59 m (15 ft. 1 in.)	4.53 m (14 ft. 10 in.)	5.53 m (18 ft. 2 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.55 m (14 ft. 11 in.)	4.49 m (14 ft. 9 in.)	5.50 m (18 ft. 0 in.)
2440-mm (8 ft.) Flat Bottom	4.25 m (13 ft. 11 in.)	4.18 m (13 ft. 8 in.)	5.28 m (17 ft. 4 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	3.56 m (11 ft. 8 in.)	3.56 m (11 ft. 8 in.)	3.56 m (11 ft. 8 in.)

Loader Dimensions and Performance		310SL HL			
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 <sup>3</sup> (1.12 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)
Width		2184 mm (86 in.)	2184 mm (86 in.)	2346 mm (92 in.)	2346 mm (92 in.)
Weight		390 kg (860 lb.)	405 kg (892 lb.)	521 kg (1,148 lb.)	863 kg (1,902 lb.)
Breakout Force		49.4 kN (11,116 lb.)	46.7 kN (10,503 lb.)	47.1 kN (10,598 lb.)	43.5 kN (9,778 lb.)
Lift Capacity, Full Height		3425 kg (7,552 lb.)	3166 kg (6,980 lb.)	3286 kg (7,244 lb.)	2801 kg (6,175 lb.)
R	Height to Bucket Hinge Pin, Maximum	3.46 m (11 ft. 4 in.)			
S	Dump Clearance, Bucket at 45 deg.	2.75 m (9 ft. 0 in.)			
T	Reach at Full Height, Bucket at 45 deg.	724 mm (28.5 in.)			
U	Digging Depth Below Ground, Bucket Level	101 mm (4.0 in.)			
V	Length from Front Axle Centerline to Bucket Cutting Edge	1.97 m (6 ft. 5 in.)			

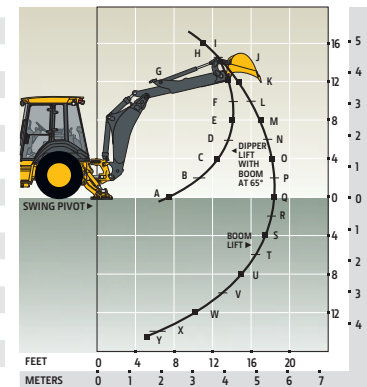
Lift Capacity with Quick-Coupler Forks		1219-mm (48 in.) Tines		1524-mm (60 in.) Tines	
<b>Hydraulic Capacity</b>					
A'	Maximum Height	2028 kg (4,472 lb.)		1896 kg (4,180 lb.)	
B'	Maximum Reach	3163 kg (6,974 lb.)		2982 kg (6,575 lb.)	
C'	At Ground Line	3997 kg (8,812 lb.)		3781 kg (8,335 lb.)	
D'	Below Ground Line	216 mm (8.5 in.)		216 mm (8.5 in.)	



With Standard Dipperstick



With Extendable Dipperstick, Retracted



With Extendable Dipperstick, Extended

**Lift Capacity with Bucket**  
Lift capacities are over-end values in kg (lb.) according to SAE J31. Figures listed are 87% of the maximum lift force available. Calculated with 610-mm x 0.21-m<sup>3</sup> (24 in. x 7.5 cu. ft.) bucket. Bucket impacts overall lift capacity.

With Standard Dipperstick		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended	
Standard Lift	Lift Mode	Standard Lift	Lift Mode	Standard Lift	Lift Mode
A	5316 kg (11,721 lb.)	5316 kg (11,721 lb.)	4452 kg (9,816 lb.)	4452 kg (9,816 lb.)	3308 kg (7,292 lb.)
B	4053 kg (8,935 lb.)	4177 kg (9,210 lb.)	2957 kg (6,520 lb.)	2957 kg (6,520 lb.)	2156 kg (4,752 lb.)
C	3016 kg (6,649 lb.)	3016 kg (6,649 lb.)	2609 kg (5,753 lb.)	2609 kg (5,753 lb.)	1871 kg (4,124 lb.)
D	2705 kg (5,963 lb.)	2705 kg (5,963 lb.)	2545 kg (5,611 lb.)	2545 kg (5,611 lb.)	1760 kg (3,880 lb.)
E	2647 kg (5,836 lb.)	2647 kg (5,836 lb.)	2548 kg (5,617 lb.)	2692 kg (5,934 lb.)	1697 kg (3,742 lb.)
F	2553 kg (5,629 lb.)	2782 kg (6,134 lb.)	1091 kg (2,406 lb.)	1258 kg (2,774 lb.)	1646 kg (3,628 lb.)
G	1220 kg (2,689 lb.)	1381 kg (3,045 lb.)	1318 kg (2,905 lb.)	1516 kg (3,341 lb.)	1577 kg (3,477 lb.)
H	1449 kg (3,195 lb.)	1641 kg (3,618 lb.)	1376 kg (3,034 lb.)	1584 kg (3,492 lb.)	1449 kg (3,195 lb.)
I	1518 kg (3,347 lb.)	1721 kg (3,794 lb.)	1383 kg (3,048 lb.)	1594 kg (3,514 lb.)	697 kg (1,536 lb.)
J	1534 kg (3,382 lb.)	1741 kg (3,838 lb.)	1368 kg (3,016 lb.)	1580 kg (3,484 lb.)	881 kg (1,942 lb.)
K	1528 kg (3,368 lb.)	1736 kg (3,827 lb.)	1345 kg (2,966 lb.)	1557 kg (3,432 lb.)	964 kg (2,126 lb.)
L	1512 kg (3,333 lb.)	1720 kg (3,792 lb.)	1320 kg (2,909 lb.)	1530 kg (3,373 lb.)	1005 kg (2,216 lb.)
M	1492 kg (3,290 lb.)	1700 kg (3,748 lb.)	1295 kg (2,855 lb.)	1505 kg (3,317 lb.)	1024 kg (2,257 lb.)
N	1473 kg (3,248 lb.)	1681 kg (3,706 lb.)	1274 kg (2,809 lb.)	1483 kg (3,271 lb.)	1030 kg (2,272 lb.)
O	1458 kg (3,215 lb.)	1666 kg (3,672 lb.)	1260 kg (2,778 lb.)	1471 kg (3,242 lb.)	1030 kg (2,272 lb.)
P	1450 kg (3,197 lb.)	1659 kg (3,657 lb.)	1259 kg (2,776 lb.)	1472 kg (3,245 lb.)	1027 kg (2,265 lb.)
Q	1455 kg (3,207 lb.)	1666 kg (3,674 lb.)	1285 kg (2,832 lb.)	1504 kg (3,316 lb.)	1023 kg (2,255 lb.)
R	1487 kg (3,277 lb.)	1705 kg (3,759 lb.)	1392 kg (3,069 lb.)	1631 kg (3,595 lb.)	1020 kg (2,248 lb.)
S	1598 kg (3,523 lb.)	1835 kg (4,046 lb.)	1587 kg (3,498 lb.)	1857 kg (4,094 lb.)	1019 kg (2,247 lb.)
T	3342 kg (7,367 lb.)	3833 kg (8,451 lb.)	—	—	1025 kg (2,259 lb.)
U	—	—	—	—	1040 kg (2,292 lb.)
V	—	—	—	—	1074 kg (2,368 lb.)
W	—	—	—	—	1155 kg (2,547 lb.)
X	—	—	—	—	1440 kg (3,175 lb.)
Y	—	—	—	—	2819 kg (6,215 lb.)



# 315SL SPECIFICATIONS

Engine		315SL	
Manufacturer and Model	John Deere PowerTech™ Plus 4045HT096 turbocharged		
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV		
Displacement	4.5 L (276 cu. in.)		
Gross Power at Rated Speed	75 kW (101 hp) at 2,200 rpm		
Net Peak Power (ISO 9249)	75 kW (100 hp) at 2,240 rpm		
Net Peak Torque (ISO 9249)	422 Nm (312 lb.-ft.) at 1,400 rpm		
Net Torque Rise	31%		
Lubrication	Pressure system with spin-on filter and cooler		
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		
Cooling			
Fan Type	Electronically controlled, variable-rate, suction-type cooling fan		
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 optional		
Torque Converter	Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11 in.)		
Maximum Travel Speeds with Standard Engine, Measured with 16.9-28 Rear Tires	<i>Forward</i>	<i>Reverse</i>	
Gear 1	5.8 km/h (3.6 mph)	7.4 km/h (4.6 mph)	
Gear 2	10.7 km/h (6.6 mph)	13.6 km/h (8.5 mph)	
Gear 3	22.1 km/h (13.7 mph)	21.8 km/h (13.5 mph)	
Gear 4	40.0 km/h (24.9 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	5500 kg (12,100 lb.)	7500 kg (16,500 lb.)	
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)	
Static	23 500 kg (51,800 lb.)	26 500 kg (58,400 lb.)	
Ultimate	37 000 kg (81,600 lb.)	39 500 kg (87,100 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)			
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>	
Curb-Turning Radius			
With Brakes	3.60 m (11 ft. 10 in.)	3.58 m (11 ft. 9 in.)	
Without Brakes	4.20 m (13 ft. 9 in.)	4.17 m (13 ft. 8 in.)	
Bucket-Clearance Circle			
With Brakes	10.25 m (33 ft. 8 in.)	10.24 m (33 ft. 7 in.)	
Without Brakes	11.15 m (36 ft. 7 in.)	11.13 m (36 ft. 6 in.)	
Steering Wheel Turns (lock to lock)	3.6	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	Open center, gear type, tandem with unloader		
Pump Flow at 2,200 rpm			
Backhoe	136 L/m (36 gpm)		
Loader	106 L/m (28 gpm)		
System Relief Pressure			
Backhoe	24 993 kPa (3,625 psi)		
Loader	24 993 kPa (3,625 psi)		
Controls			
Backhoe	2-lever mechanical standard, pilot controls with pattern select and manual and/or electric auxiliary functions optional		
Loader	Single-lever control with electric clutch cutoff switch standard; manual auxiliary function (2nd lever), single-lever control with electric clutch cutoff switch, electrohydraulic (EH) proportional auxiliary roller, MWFD (momentary), and transmission quick-shift optional		

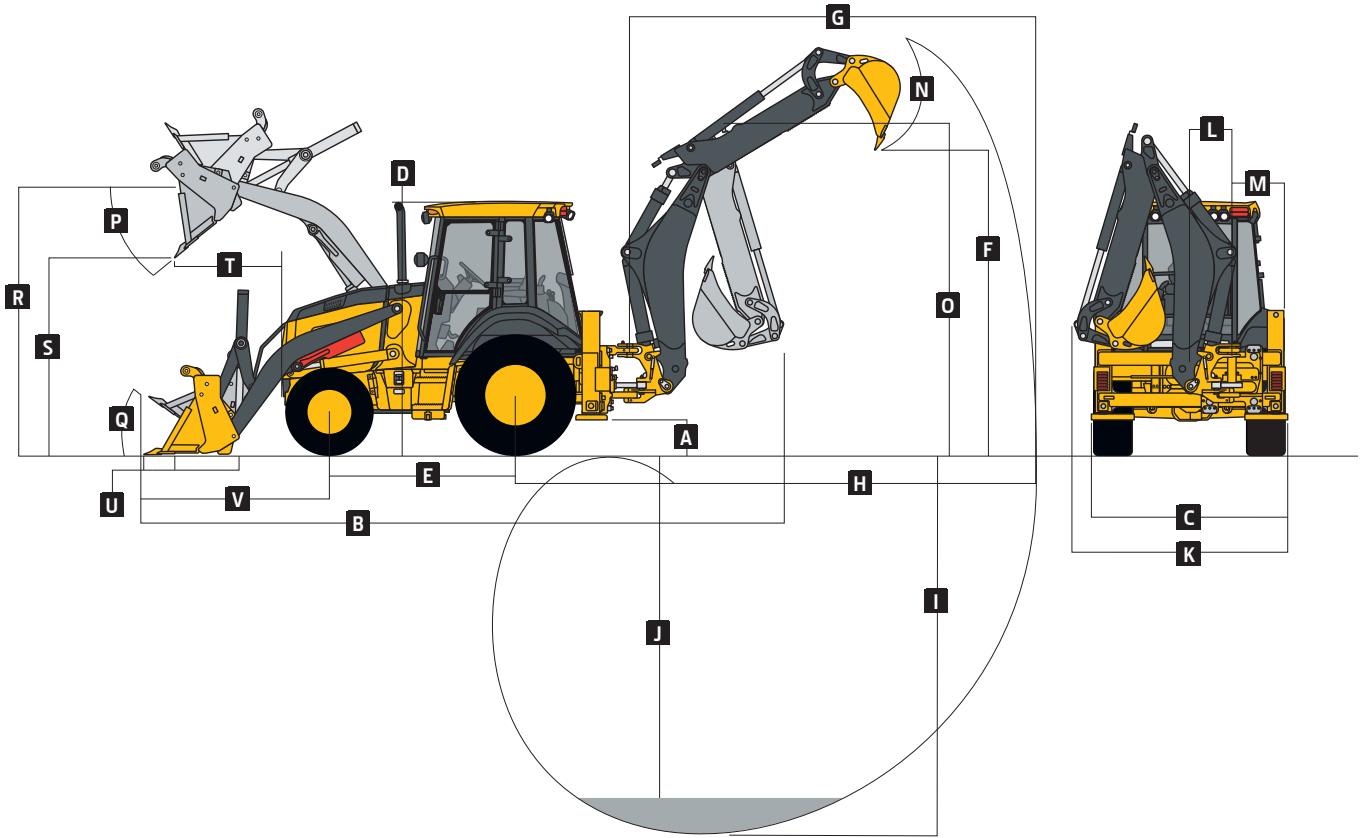


# 315SL SPECIFICATIONS



Cylinders		315SL	
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)	120 mm (4.72 in.)	56 mm (2.20 in.)	795 mm (31.30 in.)
Backhoe Crowd (1)	115 mm (4.53 in.)	63 mm (2.48 in.)	622 mm (24.47 in.)
Backhoe Bucket (1)	90 mm (3.54 in.)	56 mm (2.20 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, Standard (2)	70 mm (2.76 in.)	45 mm (1.77 in.)	716 mm (28.19 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	160 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; front drive lamps with 55/60-watt halogen, plate lamp, reverse lamp, and front marker lamps; factory-installed option for 2 LED spotlights and 8 LED floodlights in lieu of standard halogen light package		
Operator Station			
Type (ISO 3471)	Cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof		
Tires/Wheels		<i>Front</i>	<i>Rear</i>
Non-Powered Front Axle	12.5/80-18 F3 (12)	19.5L-24 R4 (12)	16.9L-28 R4 (12)
With MFWD	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)	
	12.5/80-18 R4 (10)	16.9L-28 R4 (12)	
	340/80R18 XMCL	500/70R24 XMCL	
	340/80R18 550	550/70R24 550	
	340/80R18 580	500/70R24 580	
	340/80R18 550	440/80R28 550	
Serviceability			
Refill Capacities			
Cooling System			
Cab	30 L (31.7 qt.)		
Canopy	28.2 L (29.8 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.)		
Fuel Tank (with ground-level fueling)	140.1 L (37 gal.)		
Diesel Exhaust Fluid (DEF) Tank	16.3 L (4.3 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	7962 kg (17,554 lb.)		
Typical with Extendable Dipperstick and 204-kg (450 lb.) Counterweight	8389 kg (18,494 lb.)		
Optional Components (weight difference between base equipment and option)			
MFWD with Tires	220 kg (485 lb.)		
Extendable Dipperstick	222 kg (490 lb.)		

Overall Dimensions	315SL
A Ground Clearance, Minimum	351 mm (14 in.)
B Overall Length, Transport	5.96 m (19 ft. 7 in.)
C Stabilizer Spread	2.26 m (7 ft. 5 in.)
D Height to Top of ROPS/Cab	2.84 m (9 ft. 4 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-m<sup>3</sup> (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 (8,231 lb.)
Swing Arc	180 deg.
Operator Control	2 levers

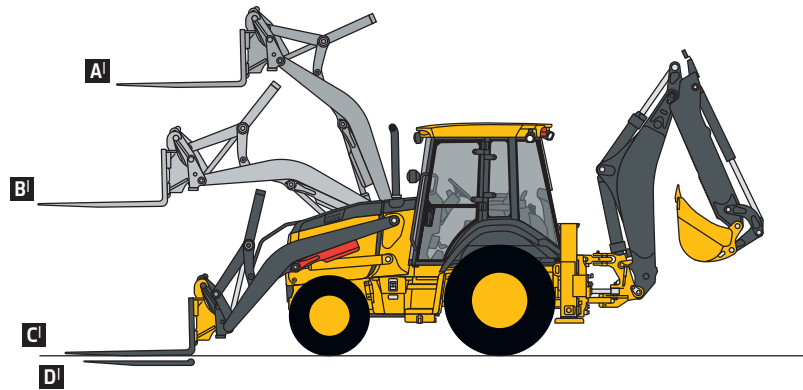
	With Standard Backhoe	With Optional Extendable Dipperstick	
		Retracted	Extended
F Loading Height, Truck Loading Position	3.57 m (11 ft. 8 in.)	3.69 m (12 ft. 1 in.)	4.31 m (14 ft. 2 in.)
G Reach from Center of Swing Pivot	5.44 m (17 ft. 10 in.)	5.61 m (18 ft. 5 in.)	6.62 m (21 ft. 9 in.)
H Reach from Center of Rear Axle	6.80 m (22 ft. 4 in.)	6.98 m (22 ft. 11 in.)	7.98 m (26 ft. 2 in.)
I Digging Depth (SAE maximum)	4.17 m (13 ft. 8 in.)	4.34 m (14 ft. 3 in.)	5.39 m (17 ft. 8 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.13 m (13 ft. 6 in.)	4.30 m (14 ft. 1 in.)	5.35 m (17 ft. 7 in.)
2440-mm (8 ft.) Flat Bottom	3.77 m (12 ft. 5 in.)	3.96 m (13 ft. 0 in.)	5.09 m (16 ft. 9 in.)
K Overall Width (less loader bucket)	2.43 m (8 ft. 0 in.)	2.41 m (7 ft. 11 in.)	—
L Side-Shift from Tractor Centerline	537 mm (21 in.)	537 mm (21 in.)	537 mm (21 in.)
M Wall to Swing Centerline	604 mm (24 in.)	604 mm (24 in.)	604 mm (24 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	3.63 m (11 ft. 11 in.)	3.63 m (11 ft. 11 in.)	3.63 m (11 ft. 11 in.)

## Loader Dimensions and Performance 315SL

<b>P</b> Bucket Dump Angle, Maximum	45 deg.			
<b>Q</b> Rollback Angle at Ground Level	40 deg.			
	<i>Heavy-duty</i>	<i>Heavy-duty</i>	<i>Multipurpose</i>	<i>Multipurpose</i>
Bucket Capacity	0.77 m <sup>3</sup> (1.00 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)
Width	2184 mm (86 in.)	2337 mm (92 in.)	2184 mm (86 in.)	2337 mm (92 in.)
Weight	363 kg (800 lb.)	521 kg (1,148 lb.)	794 kg (1,750 lb.)	863 kg (1,902 lb.)
Breakout Force	48.3 kN (10,866 lb.)	46.8 kN (10,532 lb.)	43.5 kN (9,789 lb.)	43.2 kN (9,714 lb.)
Lift Capacity, Full Height	3375 kg (7,440 lb.)	3322 kg (7,324 lb.)	2875 kg (6,338 lb.)	2834 kg (6,248 lb.)
<b>R</b> Height to Bucket Hinge Pin, Maximum	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
<b>S</b> Dump Clearance, Bucket at 45 deg.	2.71 m (8 ft. 11 in.)	2.68 m (8 ft. 10 in.)	2.65 m (8 ft. 8 in.)	2.65 m (8 ft. 8 in.)
<b>T</b> Reach at Full Height, Bucket at 45 deg.	734 mm (28.9 in.)	695 mm (27.4 in.)	737 mm (29.0 in.)	737 mm (29.0 in.)
<b>U</b> Digging Depth Below Ground, Bucket Level	106 mm (4.2 in.)	151 mm (5.9 in.)	147 mm (5.8 in.)	147 mm (5.8 in.)
<b>V</b> Length from Front Axle Centerline to Bucket Cutting Edge	2.02 m (6 ft. 8 in.)	2.04 m (6 ft. 8 in.)	2.09 m (6 ft. 10 in.)	2.09 m (6 ft. 10 in.)

## Lift Capacity with Quick-Coupler Forks

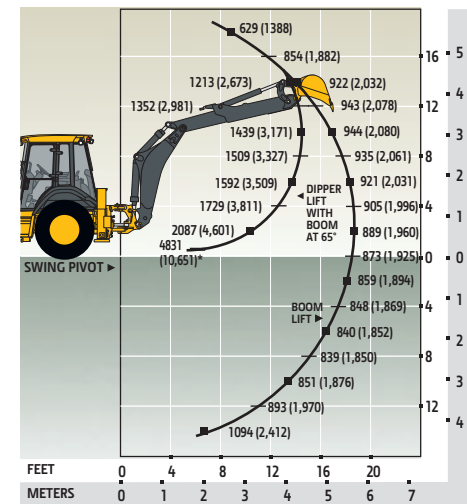
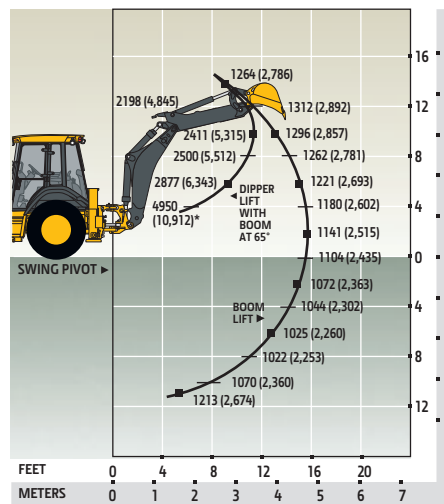
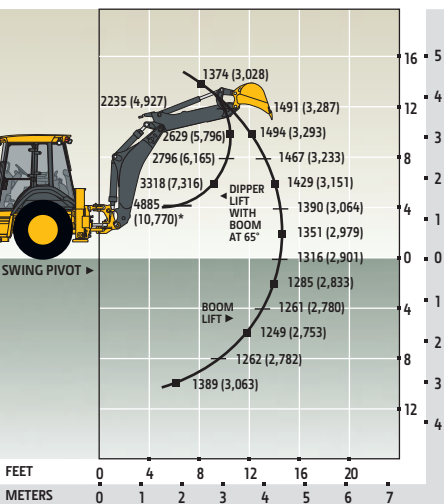
<b>Hydraulic Capacity</b>	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>
<b>A'</b> Maximum Height	2002 kg (4,413 lb.)	1872 kg (4,126 lb.)
<b>B'</b> Maximum Reach	3149 kg (6,943 lb.)	2969 kg (6,545 lb.)
<b>C'</b> At Ground Line	4007 kg (8,833 lb.)	3789 kg (8,353 lb.)
<b>D'</b> Below Ground Line	228 mm (9 in.)	228 mm (9 in.)



## Lift Capacity with Bucket

Lift capacities are over-end values in kg (lb.) according to SAE J31. Figures listed are 87% of the maximum lift force available. Calculated with 610-mm x 0.21-m<sup>3</sup> (24 in. x 7.5 cu. ft.) bucket. Bucket impacts overall lift capacity.

<b>STANDARD LIFT</b>	<b>STANDARD LIFT</b>	<b>STANDARD LIFT</b>
With Standard Dipperstick	With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted	With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended



\*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.



# 410L SPECIFICATIONS

<b>Engine</b>		<b>410L</b>	
Manufacturer and Model	John Deere PowerTech™ Plus 4045HT096 turbocharged		
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV		
Displacement	4.5 L (276 cu. in.)		
Gross Power at Rated Speed	85 kW (114 hp) at 2,200 rpm		
Net Peak Power (ISO 9249)	84 kW (113 hp) at 2,240 rpm		
Net Peak Torque (ISO 9249)	452 Nm (334 lb.-ft.) at 1,400 rpm		
Net Torque Rise	24%		
Lubrication	Pressure system with spin-on filter and cooler		
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		
<b>Cooling</b>			
Fan Type	Electronically controlled, variable rate, suction-type cooling fan		
Engine Coolant Rating	-40 deg. C (-40 deg. F)		
Engine Oil Cooler	Oil to water		
<b>Powertrain</b>			
<b>Transmission</b>	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; AutoShift transmission optional		
<b>Torque Converter</b>	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	5.7 km/h (3.5 mph)	7.2 km/h (4.5 mph)	
Gear 2	10.4 km/h (6.5 mph)	13.1 km/h (8.1 mph)	
Gear 3	21.4 km/h (13.3 mph)	21.1 km/h (13.1 mph)	
Gear 4	38.9 km/h (24.2 mph)	—	
Gear 5	40.0 km/h (24.9 mph)	—	
<b>Axles</b>			
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		
Axle Ratings	<i>Front</i>	<i>Rear</i>	
SAE J43	6500 kg (14,330 lb.)	7500 kg (16,500 lb.)	
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)	
Static	23 500 kg (51,800 lb.)	26 500 kg (58,400 lb.)	
Ultimate	37 000 kg (81,600 lb.)	39 500 kg (87,100 lb.)	
<b>Differentials</b>			
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control		
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock		
<b>Steering (ISO 5010)</b>	Hydrostatic power steering and emergency steering		
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>	
Curb-Turning Radius			
With Brakes	3.60 m (11 ft. 10 in.)	3.57 m (11 ft. 9 in.)	
Without Brakes	4.20 m (13 ft. 9 in.)	4.17 m (13 ft. 8 in.)	
Bucket-Clearance Circle			
With Brakes	10.38 m (34 ft. 1 in.)	10.37 m (34 ft. 0 in.)	
Without Brakes	11.28 m (37 ft. 0 in.)	11.25 m (36 ft. 11 in.)	
Steering Wheel Turns (lock to lock, flow amplified)	2.6 to 3.6	3.1 to 4.3	
<b>MFWD Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears		
<b>Rear Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears		
<b>Brakes (ISO 3450)</b>			
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		
<b>Hydraulics</b>			
Main Pump	Pressure compensated load sensing (PCLS), axial-piston pump		
Pump Flow at 2,200 rpm			
Backhoe	159 L/m (42 gpm)		
Loader	159 L/m (42 gpm)		
System Relief Pressure			
Backhoe	24 993 kPa (3,625 psi)		
Lift Mode	27 579 kPa (4,000 psi)		
Loader	24 993 kPa (3,625 psi)		
<b>Controls</b>			
Backhoe	2-lever mechanical standard; pilot controls with pattern select and auxiliary functions optional; field kits available for additional mechanical-control options		



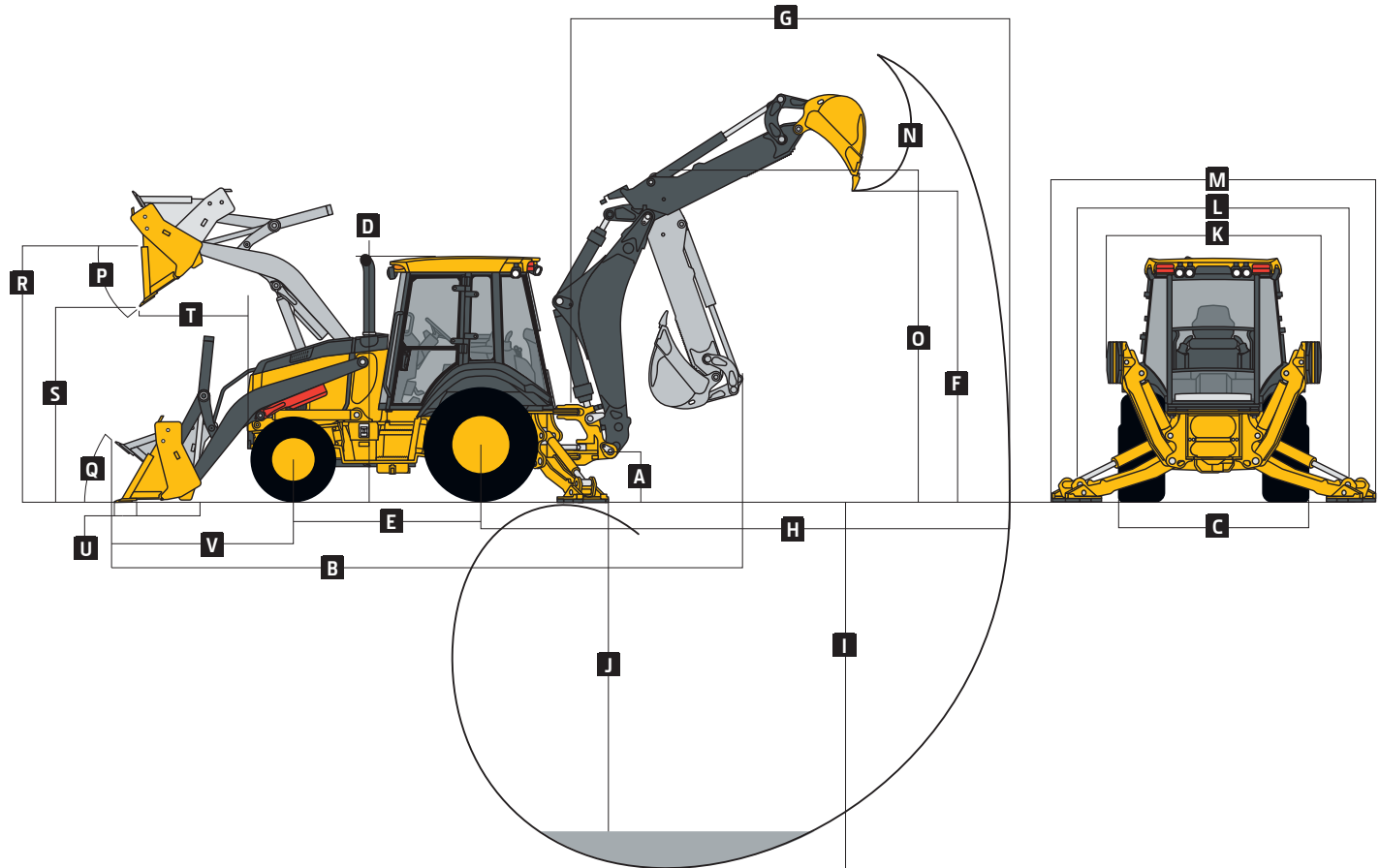
# 410L

## SPECIFICATIONS



Hydraulics <i>(continued)</i>		410L
<b>Controls <i>(continued)</i></b>		
Loader	Single-lever control with electric clutch cutoff, momentary MFWD, transmission quick-shift, and electrohydraulic (EH) auxiliary loader control optional	
<b>Cylinders</b>		
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins		
	<i>Bore</i>	<i>Rod Diameter</i>
<b>Loader Boom (2)</b>	80 mm (3.15 in.)	50 mm (1.97 in.)
<b>Loader Bucket (1)</b>	90 mm (3.54 in.)	50 mm (1.97 in.)
<b>Backhoe Boom (1)</b>	140 mm (5.51 in.)	70 mm (2.76 in.)
<b>Backhoe Crowd (1)</b>	120 mm (4.72 in.)	63 mm (2.48 in.)
<b>Backhoe Bucket (1)</b>	100 mm (3.94 in.)	63 mm (2.48 in.)
<b>Backhoe Swing (2)</b>	90 mm (3.54 in.)	50 mm (1.97 in.)
<b>Backhoe Extendable Dipperstick (1)</b>	80 mm (3.15 in.)	45 mm (1.77 in.)
<b>Backhoe Stabilizer, Standard (2)</b>	100 mm (3.94 in.)	50 mm (1.97 in.)
<b>Non-Powered Axle (1)</b>	70 mm (2.76 in.)	42 mm (1.65 in.)
<b>MFWD (1)</b>	65 mm (2.56 in.)	40 mm (1.57 in.)
<b>Electrical</b>		
Voltage	12 volt	
Alternator Rating	120 amp with canopy and quarter cab / 160 amp with cab	
<b>Lights</b>	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	
<b>Operator Station</b>		
Type (ISO 3471)	Canopy, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional quarter cab (front glass only) and fully enclosed cab	
<b>Tires/Wheels</b>		
	<i>Front</i>	<i>Rear</i>
Non-Powered Front Axle	12.5/80-18 F3 (12)	21L-24 R4 (12)
With MFWD	12.5/80-18 R4 (10)	21L-24 R4 (12)
	12.5/80-18 I3 (12)	21L-24 R4 (12)
	340/80R18 XMCL	500/70R24 XMCL
	340/80R18 550	500/70R24 550
	340/80R18 580	500/70R24 580
<b>Serviceability</b>		
<b>Refill Capacities</b>		
<b>Cooling System</b>		
Cab	31.4 L (33.2 qt.)	
Canopy	29.6 L (31.3 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.)	
Fuel Tank (with ground-level fueling)	140.1 L (37 gal.)	
Diesel Exhaust Fluid (DEF) Tank	16.3 L (4.3 gal.)	
Hydraulic System	126.8 L (33.5 gal.)	
Hydraulic Reservoir	45 L (11.9 gal.)	
<b>MFWD Housing</b>		
Axle	6.5 L (6.9 qt.)	
Planetary (each)	0.9 L (1 qt.)	
<b>Operating Weights</b>		
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and 340-kg (750 lb.) Counterweight	8068 kg (17,786 lb.)	
Typical with Cab, Extendable Dipperstick, and 567-kg (1,250 lb.) Counterweight	8828 kg (19,463 lb.)	
<b>Optional Components (weight difference between base equipment and option)</b>		
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.)	

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	2.18 m (7 ft. 2 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-m<sup>3</sup> (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.)		
Lift Mode	77.2 kN (17,350 lb.)		
Crowd Cylinder	44.1 kN (9,907 lb.)		
Lift Mode	48.6 kN (10,932 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		

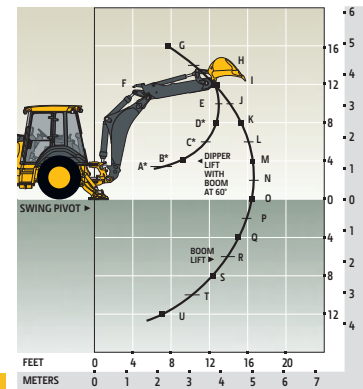
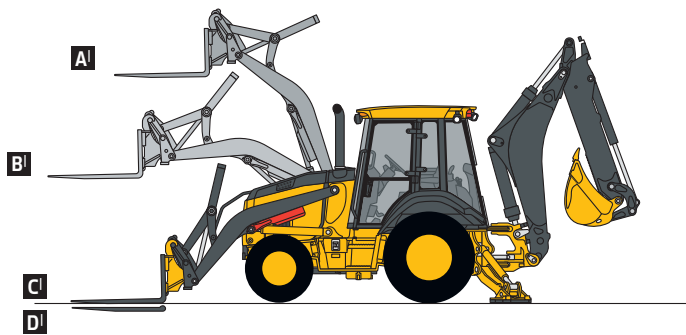
	With Optional Extendable Dipperstick			
	With Standard Backhoe	Retracted	Extended	
F	Loading Height, Truck Loading Position	3.98 m (13 ft. 1 in.)	4.02 m (13 ft. 2 in.)	4.73 m (15 ft. 6 in.)
G	Reach from Center of Swing Pivot	6.02 m (19 ft. 9 in.)	6.02 m (19 ft. 9 in.)	7.14 m (23 ft. 5 in.)
H	Reach from 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)	4.83 m (15 ft. 10 in.)	4.83 m (15 ft. 10 in.)	5.99 m (19 ft. 8 in.)
J	Digging Depth (SAE)			
	610-mm (2 ft.) Flat Bottom	4.78 m (15 ft. 8 in.)	4.78 m (15 ft. 8 in.)	5.96 m (19 ft. 7 in.)
	2440-mm (8 ft.) Flat Bottom	4.47 m (14 ft. 8 in.)	4.47 m (14 ft. 8 in.)	5.73 m (18 ft. 9 in.)
K	Stabilizer Width, Transport	2.30 m (7 ft. 7 in.)	2.30 m (7 ft. 7 in.)	2.30 m (7 ft. 7 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	3.93 m (12 ft. 11 in.)	3.93 m (12 ft. 11 in.)	3.93 m (12 ft. 11 in.)

**Loader Dimensions and Performance 410L**

<b>P</b> Bucket Dump Angle, Maximum	45 deg.		
<b>Q</b> Rollback Angle at Ground Level	40 deg.		
	<i>Heavy-duty</i>	<i>Heavy-duty</i>	<i>Multipurpose</i>
Bucket Capacity	1.00 m <sup>3</sup> (1.31 cu. yd.)	1.15 m <sup>3</sup> (1.50 cu. yd.)	1.00 m <sup>3</sup> (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 (10,634 lb.)	46.0 kN (10,351 lb.)	43.6 kN (9,813 lb.)
Lift Capacity, Full Height	3243 kg (7,149 lb.)	3134 kg (6,909 lb.)	2761 kg (6,087 lb.)
<b>R</b> Height to Bucket Hinge Pin, Maximum	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
<b>S</b> Dump Clearance, Bucket at 45 deg.	2.68 m (8 ft. 10 in.)	2.64 m (8 ft. 8 in.)	2.65 m (8 ft. 8 in.)
<b>T</b> Reach at Full Height, Bucket at 45 deg.	750 mm (29.5 in.)	792 mm (31.2 in.)	792 mm (31.2 in.)
<b>U</b> Digging Depth Below Ground, Bucket Level	157 mm (6.2 in.)	157 mm (6.2 in.)	153 mm (6.0 in.)
<b>V</b> Length from Front Axle Centerline to Bucket Cutting Edge	2.04 m (6 ft. 8 in.)	2.10 m (6 ft. 11 in.)	2.09 m (6 ft. 10 in.)

**Lift Capacity with Quick-Coupler Forks**

<b>Hydraulic Capacity</b>	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>
<b>A</b> Maximum Height	2002 kg (4,413 lb.)	1872 kg (4,126 lb.)
<b>B</b> Maximum Reach	3149 kg (6,943 lb.)	2969 kg (6,545 lb.)
<b>C</b> At Ground Line	4007 kg (8,833 lb.)	3789 kg (8,353 lb.)
<b>D</b> Below Ground Line	228 mm (9 in.)	228 mm (9 in.)



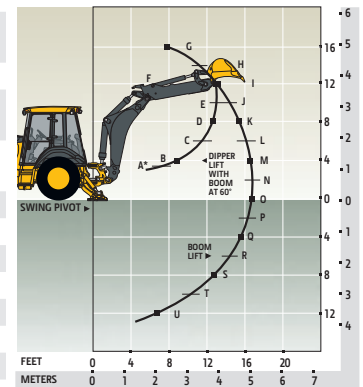
**Lift Capacity with Bucket**

Lift capacities are over-end values in kg (lb.) according to SAE J31. Figures listed are 87% of the maximum lift force available. Calculated with 610-mm x 0.21-m<sup>3</sup> (24 in. x 7.5 cu. ft.) bucket. Bucket impacts overall lift capacity.

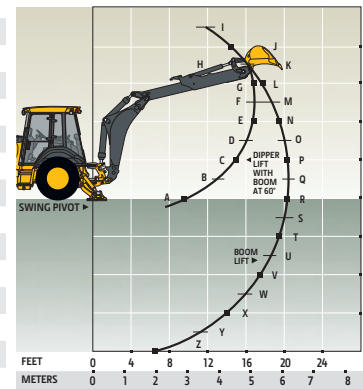
	<i>With Standard Dipperstick</i>		<i>With 1.21-m (4 ft. 0 in.) Extendable Dipperstick, Retracted</i>		<i>With 1.21-m (4 ft. 0 in.) Extendable Dipperstick, Extended</i>	
	<i>Standard Lift</i>	<i>Lift Mode</i>	<i>Standard Lift</i>	<i>Lift Mode</i>	<i>Standard Lift</i>	<i>Lift Mode</i>
<b>A</b>	6359 kg (14,020 lb.)*	6359 kg (14,020 lb.)*	6513 kg (14,359 lb.)*	6513 kg (14,359 lb.)*	4181 kg (9,217 lb.)	4554 kg (10,041 lb.)
<b>B</b>	4893 kg (10,788 lb.)*	4893 kg (10,788 lb.)*	4985 kg (10,990 lb.)	4985 kg (10,990 lb.)	2548 kg (5,618 lb.)	2855 kg (6,294 lb.)
<b>C</b>	3627 kg (7,996 lb.)*	3627 kg (7,996 lb.)*	3587 kg (7,908 lb.)	3587 kg (7,908 lb.)	2193 kg (4,836 lb.)	2461 kg (5,426 lb.)
<b>D</b>	3268 kg (7,204 lb.)*	3268 kg (7,204 lb.)*	3200 kg (7,055 lb.)	3200 kg (7,055 lb.)	2010 kg (4,432 lb.)	2258 kg (4,978 lb.)
<b>E</b>	3087 kg (6,805 lb.)	3168 kg (6,984 lb.)*	2979 kg (6,568 lb.)	3093 kg (6,820 lb.)	1879 kg (4,142 lb.)	2112 kg (4,657 lb.)
<b>F</b>	2717 kg (5,990 lb.)	3029 kg (6,678 lb.)	2608 kg (5,750 lb.)	2920 kg (6,438 lb.)	1755 kg (3,870 lb.)	1975 kg (4,355 lb.)
<b>G</b>	1341 kg (2,957 lb.)	1511 kg (3,330 lb.)	1202 kg (2,649 lb.)	1371 kg (3,023 lb.)	1608 kg (3,545 lb.)	1812 kg (3,995 lb.)
<b>H</b>	1718 kg (3,788 lb.)	1938 kg (4,272 lb.)	1560 kg (3,438 lb.)	1779 kg (3,923 lb.)	1397 kg (3,080 lb.)	1579 kg (3,480 lb.)
<b>I</b>	1813 kg (3,996 lb.)	2047 kg (4,513 lb.)	1646 kg (3,629 lb.)	1880 kg (4,146 lb.)	828 kg (1,825 lb.)	956 kg (2,109 lb.)
<b>J</b>	1834 kg (4,043 lb.)	2073 kg (4,571 lb.)	1662 kg (3,665 lb.)	1902 kg (4,193 lb.)	1041 kg (2,295 lb.)	1198 kg (2,642 lb.)
<b>K</b>	1826 kg (4,026 lb.)	2067 kg (4,557 lb.)	1651 kg (3,639 lb.)	1892 kg (4,171 lb.)	1139 kg (2,511 lb.)	1311 kg (2,889 lb.)
<b>L</b>	1805 kg (3,980 lb.)	2046 kg (4,511 lb.)	1627 kg (3,587 lb.)	1868 kg (4,118 lb.)	1189 kg (2,621 lb.)	1368 kg (3,017 lb.)
<b>M</b>	1779 kg (3,923 lb.)	2019 kg (4,452 lb.)	1598 kg (3,523 lb.)	1838 kg (4,052 lb.)	1214 kg (2,676 lb.)	1398 kg (3,083 lb.)
<b>N</b>	1752 kg (3,863 lb.)	1991 kg (4,389 lb.)	1568 kg (3,457 lb.)	1807 kg (3,983 lb.)	1225 kg (2,700 lb.)	1412 kg (3,114 lb.)
<b>O</b>	1726 kg (3,805 lb.)	1964 kg (4,329 lb.)	1539 kg (3,394 lb.)	1777 kg (3,917 lb.)	1227 kg (2,706 lb.)	1417 kg (3,124 lb.)
<b>P</b>	1704 kg (3,756 lb.)	1941 kg (4,278 lb.)	1514 kg (3,338 lb.)	1751 kg (3,860 lb.)	1225 kg (2,701 lb.)	1416 kg (3,123 lb.)
<b>Q</b>	1687 kg (3,720 lb.)	1924 kg (4,242 lb.)	1494 kg (3,294 lb.)	1731 kg (3,817 lb.)	1221 kg (2,691 lb.)	1413 kg (3,115 lb.)
<b>R</b>	1681 kg (3,706 lb.)	1920 kg (4,232 lb.)	1484 kg (3,271 lb.)	1723 kg (3,798 lb.)	1216 kg (2,680 lb.)	1409 kg (3,106 lb.)
<b>S</b>	1693 kg (3,733 lb.)	1937 kg (4,270 lb.)	1491 kg (3,287 lb.)	1734 kg (3,824 lb.)	1211 kg (2,670 lb.)	1406 kg (3,099 lb.)
<b>T</b>	1751 kg (3,859 lb.)	2005 kg (4,421 lb.)	1539 kg (3,393 lb.)	1794 kg (3,955 lb.)	1209 kg (2,666 lb.)	1405 kg (3,098 lb.)
<b>U</b>	2020 kg (4,454 lb.)	2319 kg (5,112 lb.)	1783 kg (3,930 lb.)	2081 kg (4,588 lb.)	1211 kg (2,671 lb.)	1410 kg (3,108 lb.)
<b>V</b>	—	—	—	—	1221 kg (2,692 lb.)	1423 kg (3,136 lb.)
<b>W</b>	—	—	—	—	1243 kg (2,740 lb.)	1450 kg (3,196 lb.)
<b>X</b>	—	—	—	—	1290 kg (2,844 lb.)	1506 kg (3,321 lb.)
<b>Y</b>	—	—	—	—	1404 kg (3,094 lb.)	1640 kg (3,615 lb.)
<b>Z</b>	—	—	—	—	1933 kg (4,261 lb.)	2253 kg (4,967 lb.)

\*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.

**With Standard Dipperstick**



**With Extendable Dipperstick, Retracted**



**With Extendable Dipperstick, Extended**



# 710L SPECIFICATIONS

Engine		710L	
Manufacturer and Model	John Deere PowerTech™ Plus 4045HT084 series turbocharged		
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV		
Displacement	4.5 L (276 cu. in.)		
Gross Power at Rated Speed	111 kW (149 hp) at 2,200 rpm		
Net Peak Power (ISO 9249)	110 kW (148 hp) at 2,240 rpm		
Net Peak Torque (ISO 9249)	575 Nm (424 lb.-ft.) at 1,400 rpm		
Net Torque Rise	21%		
Lubrication	Pressure system with spin-on filter and cooler		
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		
Cooling			
Fan Type	Electronically controlled, variable rate, suction-type cooling fan		
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; AutoShift transmission optional		
Torque Converter	Single stage, dual phase with 1.92:1 stall ratio, 280 mm (11 in.)		
Maximum Travel Speeds with Standard Engine with Mechanical-Front-Wheel Drive (MFWD), Measured with 21L-28 Rear Tires	<i>Forward</i>	<i>Reverse</i>	
Gear 1	6.0 km/h (3.7 mph)	6.8 km/h (4.2 mph)	
Gear 2	10.2 km/h (6.3 mph)	11.3 km/h (7.0 mph)	
Gear 3	25.0 km/h (15.5 mph)	27.8 km/h (17.3 mph)	
Gear 4	37.6 km/h (23.4 mph)	—	
Axles			
Axle Oscillation, Stop to Stop, Front Axle	18 deg.		
Axle Ratings	<i>Front</i>	<i>Rear</i>	
SAE J43	9000 kg (19,800 lb.)	11 500 kg (25,400 lb.)	
Dynamic	12 500 kg (27,600 lb.)	14 000 kg (30,900 lb.)	
Static	30 500 kg (67,200 lb.)	31 000 kg (68,300 lb.)	
Ultimate	45 000 kg (99,200 lb.)	45 000 kg (99,200 lb.)	
Differentials			
MFWD Axle	Automatic, limited-slip traction control		
Rear Axle	Foot actuated, hydraulically engaged mechanical lock		
Steering (ISO 5010)			
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>	
Curb-Turning Radius			
With Brakes	4.04 m (13 ft. 3 in.)	4.07 m (13 ft. 4 in.)	
Without Brakes	4.71 m (15 ft. 5 in.)	4.75 m (15 ft. 7 in.)	
Bucket-Clearance Circle			
With Brakes	11.29 m (37 ft. 0 in.)	11.30 m (37 ft. 1 in.)	
Without Brakes	12.32 m (40 ft. 5 in.)	12.35 m (40 ft. 6 in.)	
Steering Wheel Turns (lock to lock, flow amplified)	2.7 to 4.4	2.9 to 4.7	
MFWD Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears		
Rear Axle	Heavy duty, inboard planetary final drives distribute shock loads over 3 gears		
Brakes (ISO 3450)			
Service	Full power, 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	197 L/m (52 gpm)		
Loader	197 L/m (52 gpm)		
System Relief Pressure, Backhoe and Loader			
Backhoe	24 993 kPa (3,625 psi)		
Lift Mode	26 890 kPa (3,900 psi)		
Loader	24 993 kPa (3,625 psi)		



# 710L

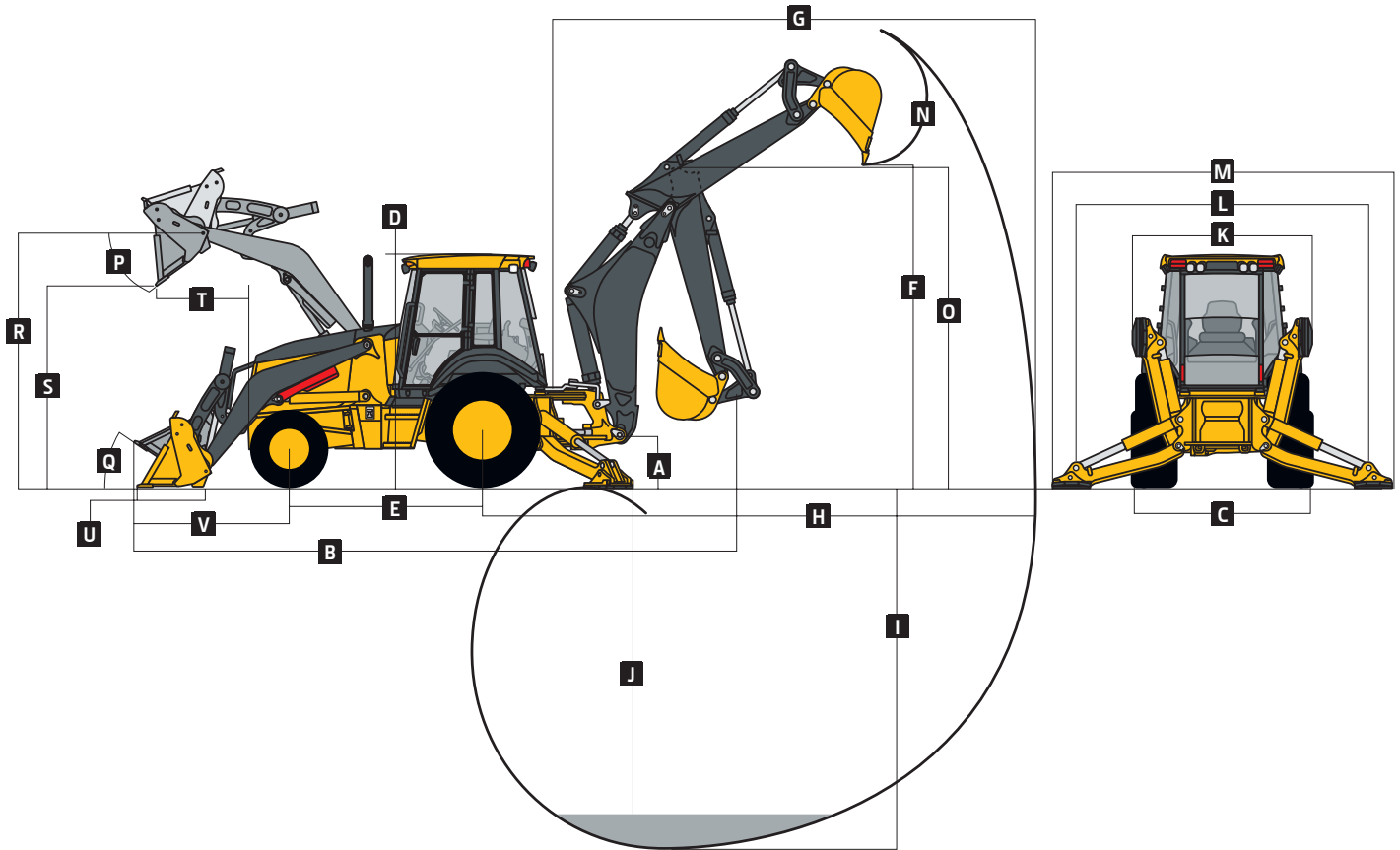
## SPECIFICATIONS



Hydraulics (continued)		710L	
<b>Controls</b>			
Backhoe	Pilot controls with pattern select standard; 2-lever mechanical and auxiliary functions optional; field kits available for additional mechanical-control options		
Loader	Single-lever control with electric clutch cutoff, momentary MFWD, transmission quick-shift, and electrohydraulic (EH) auxiliary loader control optional		
<b>Cylinders</b>			
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)	100 mm (3.94 in.)	56 mm (2.20 in.)	805 mm (31.69 in.)
Loader Bucket (1)	110 mm (4.33 in.)	56 mm (2.20 in.)	672 mm (26.44 in.)
Backhoe Boom (1)	160 mm (6.30 in.)	95 mm (3.74 in.)	944 mm (37.17 in.)
Backhoe Crowd (1)	140 mm (5.51 in.)	85 mm (3.35 in.)	792 mm (31.16 in.)
Backhoe Bucket (1)	110 mm (4.33 in.)	70 mm (2.76 in.)	939 mm (36.97 in.)
Backhoe Swing (2)	110 mm (4.33 in.)	56 mm (2.20 in.)	308 mm (12.13 in.)
Backhoe Extendable Dipperstick (1)	80 mm (3.15 in.)	45 mm (1.77 in.)	1372 mm (54.00 in.)
Backhoe Stabilizer, Standard (2)	115 mm (4.53 in.)	63 mm (2.48 in.)	588 mm (23.15 in.)
Non-Powered Axle (1)	75 mm (2.95 in.)	45 mm (1.77 in.)	240 mm (9.45 in.)
MFWD (1)	75 mm (2.95 in.)	50 mm (1.97 in.)	260 mm (10.24 in.)
<b>Electrical</b>			
Voltage	12 volt		
Alternator Rating	160 amp with cab		
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		
<b>Operator Station</b>			
Type (ISO 3471)	Canopy, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional fully enclosed cab		
<b>Tires/Wheels</b>			
	<i>Front</i>	<i>Rear</i>	
Non-Powered Front Axle	12.5/80-18 F3 (16)	21L-28 R4 (18)	
	12.5/80-18 F3 (16)	20.5-25 L-3 (20)	
With MFWD	15-19.5 R4 (12)	21L-28 R4 (18)	
	15-19.5 R4 (12)	20.5-25 L-3 (20)	
<b>Serviceability</b>			
<b>Refill Capacities</b>			
Cooling System			
Cab	27 L (28.5 qt.)		
Canopy	25 L (26.4 qt.)		
Rear Axle	25 L (26.4 qt.)		
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)		
Torque Converter and Transmission	15.1 L (16 qt.)		
Fuel Tank (with ground-level fueling)	185.5 L (49 gal.)		
Diesel Exhaust Fluid (DEF) Tank	16.3 L (4.3 gal.)		
Hydraulic System	174.1 L (46 gal.)		
Hydraulic Reservoir	50.1 L (13.2 gal.)		
MFWD Housing			
Axle	15 L (15.9 qt.)		
Planetary (each)	2.2 L (2.3 qt.)		
<b>Operating Weights</b>			
With Full Fuel Tank, 79-kg (175 lb.) Operator, and Standard Equipment	11 607 kg (25,588 lb.)		
Typical with Cab, MFWD, Extendable Dipperstick, and 680-kg (1,500 lb.) Counterweight	12 262 kg (27,033 lb.)		
<b>Optional Components (weight difference between base equipment and option)</b>			
Cab	293 kg (645 lb.)		
MFWD with Tires	373 kg (822 lb.)		
Extendable Dipperstick	318 kg (700 lb.)		
Front Loader Coupler	363 kg (800 lb.)		

# 710L

Overall Dimensions		710L
A	Ground Clearance, Minimum	356 mm (14 in.)
B	Overall Length, Transport	8.23 m (27 ft. 0 in.)
C	Width Over Tires	2.29 m (7 ft. 6 in.)
D	Height to Top of ROPS/Cab	2.97 m (9 ft. 9 in.)
E	Length from Axle to Axle	
	Non-Powered Front Axle	2.58 m (8 ft. 5 in.)
	MFWD Axle	2.55 m (8 ft. 4 in.)



## Backhoe Dimensions and Performance

Backhoe specifications are with 610-mm x 0.31-m<sup>3</sup> (24 in. x 11 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.

Bucket Range	610–914 mm (24–36 in.)		
Digging Force			
Bucket Cylinder	78.4 kN (17,622 lb.)		
Lift Mode	84.3 kN (18,959 lb.)		
Crowd Cylinder	53.4 kN (11,999 lb.)		
Lift Mode	57.4 kN (12,910 lb.)		
Swing Arc	180 deg.		
Operator Control	Pilot control		
		<i>With Optional Extendable Dipperstick</i>	
	<i>With Standard Backhoe</i>	<i>Retracted</i>	<i>Extended</i>
F Loading Height, Truck Loading Position	4.45 m (14 ft. 7 in.)	4.49 m (14 ft. 9 in.)	5.35 m (17 ft. 6 in.)
G Reach from Center of Swing Pivot	6.84 m (22 ft. 5 in.)	6.84 m (22 ft. 5 in.)	8.15 m (26 ft. 9 in.)
H Reach from Center of Rear Axle	8.11 m (26 ft. 7 in.)	8.11 m (26 ft. 7 in.)	9.42 m (30 ft. 11 in.)
I Digging Depth (SAE maximum)	5.26 m (17 ft. 3 in.)	5.26 m (17 ft. 3 in.)	6.63 m (21 ft. 9 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	5.25 m (17 ft. 3 in.)	5.25 m (17 ft. 2 in.)	6.62 m (21 ft. 8 in.)
2440-mm (8 ft.) Flat Bottom	4.96 m (16 ft. 3 in.)	4.96 m (16 ft. 3 in.)	6.40 m (21 ft. 0 in.)
K Stabilizer Width, Transport	2.41 m (7 ft. 11 in.)	2.41 m (7 ft. 11 in.)	2.41 m (7 ft. 11 in.)
L Stabilizer Spread, Operating	3.99 m (13 ft. 1 in.)	3.99 m (13 ft. 1 in.)	3.99 m (13 ft. 1 in.)
M Stabilizer Overall Width, Operating	4.65 m (15 ft. 3 in.)	4.65 m (15 ft. 3 in.)	4.65 m (15 ft. 3 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	4.23 m (13 ft. 10 in.)	4.23 m (13 ft. 10 in.)	4.23 m (13 ft. 10 in.)

## Loader Dimensions and Performance

P	Bucket Dump Angle, Maximum	45 deg.
Q	Rollback Angle at Ground Level	40 deg.

## Loader Dimensions and Performance (continued)

### 710L

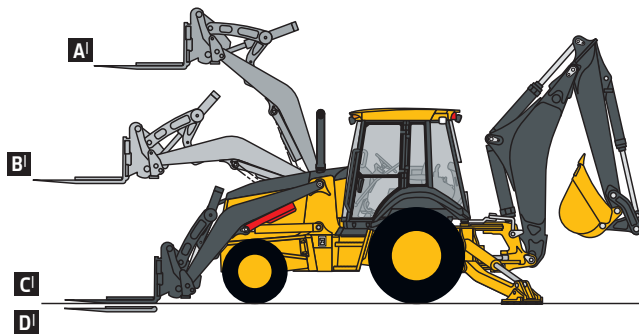
	Standard-duty	Standard-duty	Multipurpose
Bucket Capacity	1.24 m <sup>3</sup> (1.62 cu. yd.)	1.43 m <sup>3</sup> (1.87 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)
Width	2464 mm (97 in.)	2464 mm (97 in.)	2451 mm (96 in.)
Weight	830 kg (1,830 lb.)	866 kg (1,909 lb.)	995 kg (2,193 lb.)
Breakout Force	73.6 kN (16,539 lb.)	70.5 kN (15,853 lb.)	73.3 kN (16,474 lb.)
Lift Capacity, Full Height	4475 kg (9,866 lb.)	4239 kg (9,346 lb.)	4081 kg (8,998 lb.)
R Height to Bucket Hinge Pin, Maximum	3.73 m (12 ft. 3 in.)	3.73 m (12 ft. 3 in.)	3.73 m (12 ft. 3 in.)
S Dump Clearance, Bucket at 45 deg.	2.89 m (9 ft. 6 in.)	2.81 m (9 ft. 3 in.)	2.92 m (9 ft. 7 in.)
T Reach at Full Height, Bucket at 45 deg.	768 mm (30.2 in.)	849 mm (33.4 in.)	763 mm (30 in.)
U Digging Depth Below Ground, Bucket Level	157 mm (6.2 in.)	157 mm (6.2 in.)	141 mm (5.5 in.)
V Length from Front Axle Centerline to Bucket Cutting Edge	2.14 m (7 ft. 0 in.)	2.26 m (7 ft. 5 in.)	2.11 m (6 ft. 11 in.)

## Lift Capacity with Quick-Coupler Forks

### Hydraulic Capacity

1219-mm (48 in.) Tines

A <sup>1</sup> Maximum Height	2632 kg (5,803 lb.)
B <sup>1</sup> Maximum Reach	4378 kg (9,651 lb.)
C <sup>1</sup> At Ground Line	6057 kg (13,353 lb.)
D <sup>1</sup> Below Ground Line	140 mm (5.5 in.)

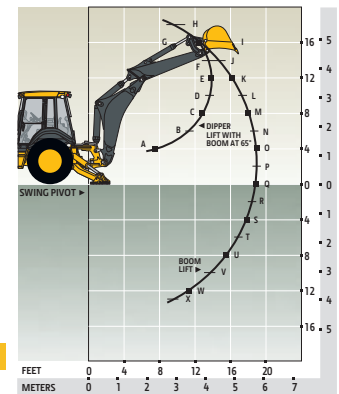


## Lift Capacity with Bucket

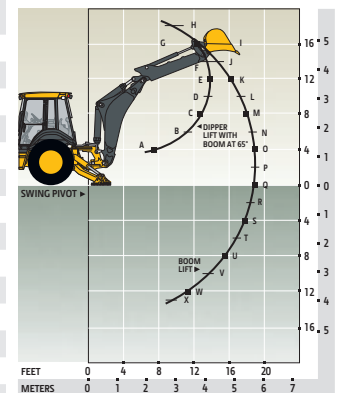
Lift capacities are over-end values in kg (lb.) according to SAE J31. Figures listed are 87% of the maximum lift force available. Calculated with 610-mm x 0.31-m<sup>2</sup> (24 in. x 11 cu. ft.) bucket. Bucket impacts overall lift capacity.

With Standard Dipperstick		With 1.37-m (4 ft. 6 in.) Extendable Dipperstick, Retracted		With 1.37-m (4 ft. 6 in.) Extendable Dipperstick, Extended	
Standard Lift	Lift Mode	Standard Lift	Lift Mode	Standard Lift	Lift Mode
A	7938 kg (17,501 lb.)	7938 kg (17,501 lb.)	7784 kg (17,160 lb.)	4344 kg (9,577 lb.)	4733 kg (10,435 lb.)
B	4219 kg (9,302 lb.)	4480 kg (9,877 lb.)	4101 kg (9,042 lb.)	4291 kg (9,461 lb.)	2632 kg (5,803 lb.)
C	3592 kg (7,919 lb.)	3318 kg (8,418 lb.)	3463 kg (7,636 lb.)	3634 kg (8,012 lb.)	2228 kg (4,912 lb.)
D	3255 kg (7,177 lb.)	3545 kg (7,815 lb.)	3121 kg (6,881 lb.)	3390 kg (7,473 lb.)	2015 kg (4,442 lb.)
E	2948 kg (6,500 lb.)	3212 kg (7,082 lb.)	2808 kg (6,192 lb.)	3072 kg (6,773 lb.)	1865 kg (4,112 lb.)
F	2528 kg (5,573 lb.)	2758 kg (6,080 lb.)	2381 kg (5,249 lb.)	2610 kg (5,754 lb.)	1736 kg (3,827 lb.)
G	1751 kg (3,860 lb.)	1919 kg (4,231 lb.)	1593 kg (3,513 lb.)	1760 kg (3,880 lb.)	1602 kg (3,532 lb.)
H	1931 kg (4,257 lb.)	2120 kg (4,673 lb.)	1750 kg (3,857 lb.)	1938 kg (4,273 lb.)	1442 kg (3,179 lb.)
I	1977 kg (4,360 lb.)	2180 kg (4,806 lb.)	1783 kg (3,931 lb.)	1986 kg (4,378 lb.)	1227 kg (2,704 lb.)
J	1935 kg (4,266 lb.)	2139 kg (4,716 lb.)	1735 kg (3,824 lb.)	1939 kg (4,274 lb.)	904 kg (1,993 lb.)
K	1872 kg (4,128 lb.)	2075 kg (4,574 lb.)	1668 kg (3,677 lb.)	1870 kg (4,123 lb.)	1156 kg (2,549 lb.)
L	1804 kg (3,978 lb.)	2004 kg (4,417 lb.)	1597 kg (3,520 lb.)	1796 kg (3,960 lb.)	1197 kg (2,639 lb.)
M	1736 kg (3,828 lb.)	1932 kg (4,260 lb.)	1526 kg (3,365 lb.)	1722 kg (3,797 lb.)	1198 kg (2,641 lb.)
N	1670 kg (3,683 lb.)	1863 kg (4,107 lb.)	1458 kg (3,215 lb.)	1651 kg (3,640 lb.)	1182 kg (2,605 lb.)
O	1608 kg (3,544 lb.)	1797 kg (3,962 lb.)	1393 kg (3,071 lb.)	1583 kg (3,489 lb.)	1157 kg (2,551 lb.)
P	1548 kg (3,413 lb.)	1734 kg (3,823 lb.)	1332 kg (2,936 lb.)	1518 kg (3,347 lb.)	1128 kg (2,487 lb.)
Q	1492 kg (3,289 lb.)	1675 kg (3,693 lb.)	1273 kg (2,807 lb.)	1457 kg (3,212 lb.)	1097 kg (2,419 lb.)
R	1439 kg (3,172 lb.)	1620 kg (3,571 lb.)	1218 kg (2,686 lb.)	1400 kg (3,085 lb.)	1066 kg (2,350 lb.)
S	1389 kg (3,063 lb.)	1568 kg (3,458 lb.)	1167 kg (2,572 lb.)	1346 kg (2,967 lb.)	1035 kg (2,281 lb.)
T	1343 kg (2,962 lb.)	1521 kg (3,353 lb.)	1118 kg (2,465 lb.)	1296 kg (2,856 lb.)	1004 kg (2,213 lb.)
U	1302 kg (2,869 lb.)	1478 kg (3,259 lb.)	1073 kg (2,365 lb.)	1250 kg (2,755 lb.)	974 kg (2,148 lb.)
V	1265 kg (2,789 lb.)	1443 kg (3,180 lb.)	1032 kg (2,275 lb.)	1210 kg (2,667 lb.)	946 kg (2,085 lb.)
W	1239 kg (2,732 lb.)	1421 kg (3,132 lb.)	998 kg (2,201 lb.)	1180 kg (2,601 lb.)	919 kg (2,026 lb.)
X	1237 kg (2,727 lb.)	1424 kg (3,140 lb.)	988 kg (2,179 lb.)	1176 kg (2,592 lb.)	894 kg (1,971 lb.)
Y	—	—	—	—	871 kg (1,921 lb.)
Z	—	—	—	—	852 kg (1,878 lb.)
a	—	—	—	—	837 kg (1,845 lb.)
b	—	—	—	—	830 kg (1,830 lb.)
c	—	—	—	—	842 kg (1,856 lb.)
d	—	—	—	—	934 kg (2,060 lb.)

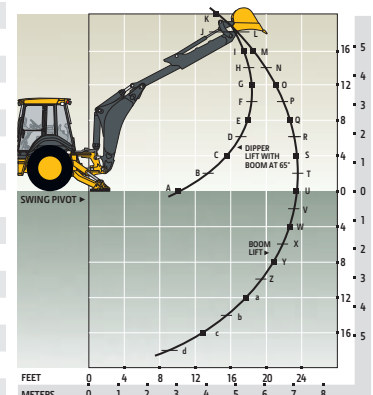
\*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.



With Standard Dipperstick



With Extendable Dipperstick, Retracted



With Extendable Dipperstick, Extended