



310SL HL SPECIFICATIONS

Engine		310SL HL	
Manufacturer and Model	John Deere PowerTech™ Plus 4045HT083 turbocharged		
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV		
Displacement	4.5 L (276 cu. in.)		
Net Peak Power (ISO 9249)	82 kW (110 hp) at 2,244 rpm		
Net Peak Torque (ISO 9249)	427 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		
Cooling			
Fan Type	Electronically controlled, variable rate, suction type		
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 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	10.5 km/h (6.5 mph)	13.3 km/h (8.3 mph)	
Gear 3	21.4 km/h (13.3 mph)	21.2 km/h (13.2 mph)	
Gear 4	36.0 km/h (22.4 mph)	—	
Gear 5	40.0 km/h (24.9 mph)	—	
Axles			
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		
Axle Ratings	<i>Mechanical-Front-Wheel Drive (MFWD)</i>		
	<i>Non-Powered Front</i>	<i>Rear</i>	
SAE J43	5500 kg (12,125 lb.)	7500 kg (16,535 lb.)	
Dynamic	8500 kg (18,739 lb.)	10 000 kg (22,046 lb.)	
Static	22 500 kg (49,604 lb.)	26 000 kg (57,320 lb.)	
Ultimate	35 000 kg (77,162 lb.)	39 500 kg (87,083 lb.)	
Differentials			
MFWD Axle	Automatic, limited-slip traction control		
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock		
Steering (ISO 5010)			
Axle	<i>Non-Powered Front</i>	<i>MFWD</i>	
Curb-Turning Radius			
With Brakes	3.61 m (11 ft. 10 in.)	3.67 m (12 ft. 0 in.)	
Without Brakes	4.24 m (13 ft. 11 in.)	4.35 m (14 ft. 3 in.)	
Bucket-Clearance Circle			
With Brakes	10.53 m (34 ft. 7 in.)	10.61 m (34 ft. 10 in.)	
Without Brakes	11.42 m (37 ft. 6 in.)	11.59 m (38 ft. 0 in.)	
Steering Wheel Turns (lock to lock)	3.1 to 4.3	2.6 to 3.6	
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		

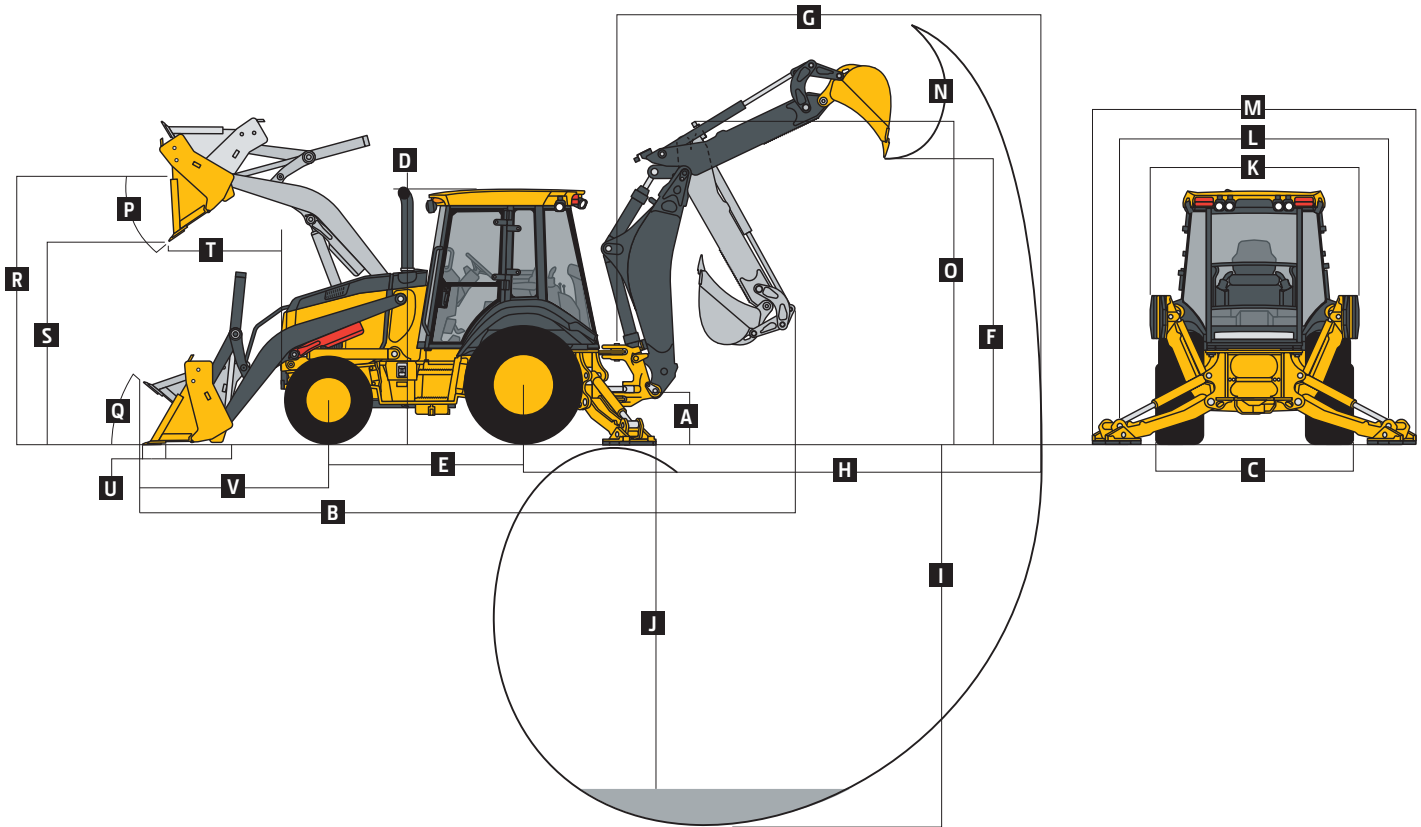
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Hydraulics		310SL HL
Main Pump	Pressure compensated load sensing (PCLS), axial-piston pump	
Pump Flow at 2,200 rpm, Backhoe and Loader	159 L/m (42 gpm)	
System Relief Pressure, Backhoe and Loader	24 993 kPa (3,625 psi)	
Backhoe (lift mode)	27 579 kPa (4,000 psi)	
Controls		
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	
Electrical		
Voltage	12 volt	
Alternator Rating	150 amp with cab / 120 amp with canopy and quarter 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; LED light field kits available with both flood- and spotlights		
Operator Station		
Type (SAE J1040)	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 580	500/70R24 580
Serviceability		
Refill Capacities		
Cooling System	35 L (37 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.)	
Hydrau™ XR Hydraulic Oil	Optional	
Operating Weights		
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and 567-kg (1,250 lb.) Counterweight	8269 kg (18,231 lb.)	
Typical with Cab and 567-kg (1,250 lb.) Counterweight	8533 kg (18,811 lb.)	
Optional Components (weight difference between base equipment and option)		
Cab	263 kg (580 lb.)	
MFWD with Tires	110 kg (242 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	2.18 m (7 ft. 2 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.)



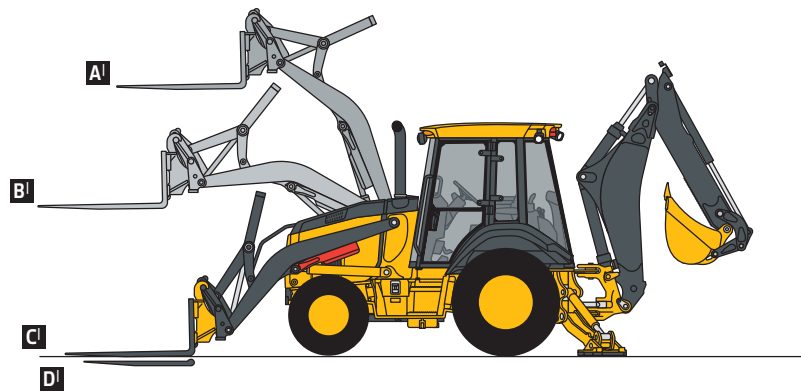
Backhoe Dimensions and Performance

Backhoe specifications are with 610-mm x 0.21-m³ (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	70.9 kN (15,947 lb.)	
Lift Mode	78.3 kN (17,596 lb.)	
Crowd Cylinder	38.9 kN (8,750 lb.)	
Lift Mode	42.9 kN (9,655 lb.)	
Swing Arc	180 deg.	
Operator Control	2 levers	
	<i>With Extendable Dipperstick</i>	<i>With Extendable Dipperstick</i>
	<i>Retracted</i>	<i>Extended</i>
F Loading Height, Truck Loading Position	3.63 m (11 ft. 11 in.)	4.25 m (13 ft. 11 in.)
G Reach from Center of Swing Pivot	5.62 m (18 ft. 5 in.)	6.60 m (21 ft. 8 in.)
H Reach from Center of Rear Axle	6.68 m (21 ft. 11 in.)	7.67 m (25 ft. 2 in.)
I Digging Depth (SAE maximum)	4.51 m (14 ft. 10 in.)	5.52 m (18 ft. 1 in.)
J Digging Depth (SAE)		
610-mm (2 ft.) Flat Bottom	4.47 m (14 ft. 8 in.)	5.49 m (18 ft. 0 in.)
2440-mm (8 ft.) Flat Bottom	4.16 m (13 ft. 8 in.)	5.26 m (17 ft. 3 in.)
K Stabilizer Width, Transport	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.)
Long Stabilizers	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.)
Long Stabilizers	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)
N Bucket Rotation	190 deg.	
O Transport Height	3.57 m (11 ft. 9 in.)	3.57 m (11 ft. 9 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 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.)	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 (11,106 lb.)	46.7 kN (10,497 lb.)	47.1 kN (10,587 lb.)	43.4 kN (9,767 lb.)
	Lift Capacity, Full Height	3397 kg (7,489 lb.)	3141 kg (6,924 lb.)	3257 kg (7,181 lb.)	2774 kg (6,116 lb.)
R	Height to Bucket Hinge Pin, Maximum	3.43 m (11 ft. 3 in.)			
S	Dump Clearance, Bucket at 45 deg.	2.73 m (8 ft. 11 in.)			
T	Reach at Full Height, Bucket at 45 deg.	744 mm (29.3 in.)			
U	Digging Depth Below Ground, Bucket Level	124 mm (4.9 in.)			
V	Length from Front Axle Centerline to Bucket Cutting Edge	1.98 m (6 ft. 6 in.)			

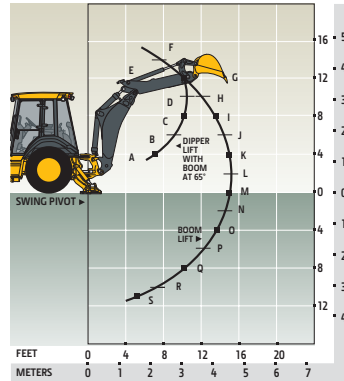
Lift Capacity with Quick-Coupler Forks		1219-mm (48 in.) Tines		1524-mm (60 in.) Tines	
Hydraulic Capacity					
A ¹	Maximum Height	2059 kg (4,539 lb.)	2008 kg (4,426 lb.)		
B ¹	Maximum Reach	3542 kg (7,809 lb.)	3484 kg (7,681 lb.)		
C ¹	At Ground Line	4079 kg (8,992 lb.)	4027 kg (8,879 lb.)		
D ¹	Below Ground Line	211 mm (8.3 in.)	211 mm (8.3 in.)		



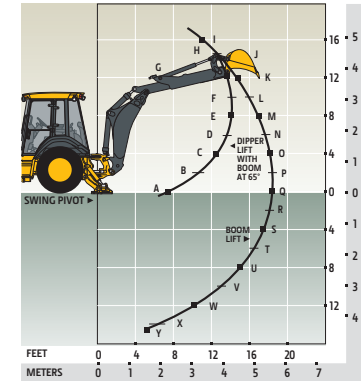
Lift Capacity with Bucket

Calculated with 610-mm x 0.21-m³ (24 in. x 7.5 cu. ft.) bucket; bucket impacts overall lift capacity

	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
A	4588 kg (10,116 lb.)	4591 kg (10,122 lb.)	3404 kg (7,504 lb.)	3811 kg (8,401 lb.)
B	3012 kg (6,640 lb.)	3012 kg (6,640 lb.)	2165 kg (4,772 lb.)	2435 kg (5,367 lb.)
C	2652 kg (5,846 lb.)	2652 kg (5,846 lb.)	1873 kg (4,130 lb.)	2111 kg (4,653 lb.)
D	2583 kg (5,694 lb.)	2583 kg (5,694 lb.)	1761 kg (3,883 lb.)	1955 kg (4,309 lb.)
E	2553 kg (5,629 lb.)	2727 kg (6,011 lb.)	1698 kg (3,744 lb.)	1853 kg (4,086 lb.)
F	1131 kg (2,494 lb.)	1303 kg (2,872 lb.)	1647 kg (3,630 lb.)	1832 kg (4,039 lb.)
G	1338 kg (2,951 lb.)	1539 kg (3,392 lb.)	1578 kg (3,480 lb.)	1781 kg (3,926 lb.)
H	1388 kg (3,061 lb.)	1598 kg (3,522 lb.)	1452 kg (3,202 lb.)	1641 kg (3,617 lb.)
I	1390 kg (3,064 lb.)	1602 kg (3,532 lb.)	725 kg (1,599 lb.)	847 kg (1,867 lb.)
J	1372 kg (3,025 lb.)	1584 kg (3,493 lb.)	899 kg (1,982 lb.)	1044 kg (2,302 lb.)
K	1346 kg (2,968 lb.)	1558 kg (3,435 lb.)	977 kg (2,154 lb.)	1133 kg (2,499 lb.)
L	1318 kg (2,907 lb.)	1529 kg (3,371 lb.)	1014 kg (2,235 lb.)	1176 kg (2,594 lb.)
M	1292 kg (2,848 lb.)	1501 kg (3,310 lb.)	1030 kg (2,270 lb.)	1196 kg (2,637 lb.)
N	1269 kg (2,798 lb.)	1478 kg (3,259 lb.)	1034 kg (2,280 lb.)	1203 kg (2,651 lb.)
O	1254 kg (2,764 lb.)	1463 kg (3,226 lb.)	1032 kg (2,276 lb.)	1202 kg (2,651 lb.)
P	1251 kg (2,757 lb.)	1463 kg (3,255 lb.)	1028 kg (2,266 lb.)	1199 kg (2,642 lb.)
Q	1273 kg (2,807 lb.)	1492 kg (3,288 lb.)	1022 kg (2,253 lb.)	1194 kg (2,632 lb.)
R	1376 kg (3,034 lb.)	1614 kg (3,557 lb.)	1018 kg (2,243 lb.)	1191 kg (2,625 lb.)
S	1570 kg (3,460 lb.)	1839 kg (4,053 lb.)	1016 kg (2,240 lb.)	1191 kg (2,625 lb.)
T	—	—	1020 kg (2,249 lb.)	1197 kg (2,639 lb.)
U	—	—	1034 kg (2,279 lb.)	1214 kg (2,677 lb.)
V	—	—	1066 kg (2,351 lb.)	1254 kg (2,764 lb.)
W	—	—	1145 kg (2,524 lb.)	1346 kg (2,968 lb.)
X	—	—	1428 kg (3,149 lb.)	1675 kg (3,693 lb.)
Y	—	—	3058 kg (6,741 lb.)	3552 kg (7,831 lb.)



With Extendable Dipperstick, Retracted



With Extendable Dipperstick, Extended