



# 310L EP / 310L SPECIFICATIONS

Engine	310L EP	310L	
Manufacturer and Model	John Deere PowerTech™ E 4045HT072 turbocharged	John Deere PowerTech™ Plus 4045HT082 turbocharged	
Non-Road Emission Standard	EPA Interim Tier 4/EU Stage IIIB	EPA Final Tier 4/EU Stage IV	
Displacement	4.5 L (276 cu. in.)	4.5 L (276 cu. in.)	
Net Peak Power (ISO 9249)	52 kW (70 hp) at 1,900 rpm	69 kW (93 hp) at 2,244 rpm	
Net Peak Torque (ISO 9249)	311 Nm (229 lb.-ft.) at 1,500 rpm	383 Nm (282 lb.-ft.) at 1,400 rpm	
Net Torque Rise	32%	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		
<b>Cooling</b>			
Fan Type	Suction-type cooling fan standard; viscous variable-rate (temperature-controlled) fan optional	Electronically controlled, variable rate, suction type	
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>
Gear 1	5.2 km/h (3.2 mph)	6.6 km/h (4.1 mph)	5.5 km/h (3.4 mph)
Gear 2	9.5 km/h (5.9 mph)	12.0 km/h (7.5 mph)	10.1 km/h (6.3 mph)
Gear 3	19.4 km/h (12.1 mph)	—	20.7 km/h (12.9 mph)
Gear 4	31.6 km/h (19.6 mph)	—	33.9 km/h (21.1 mph)
			<i>Reverse</i>
			7.0 km/h (4.3 mph)
			12.8 km/h (8.0 mph)
			—
			—
<b>Axles</b>			
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	4500 kg (9,921 lb.)	4500 kg (9,921 lb.)	6500 kg (14,330 lb.)
Dynamic	7000 kg (15,432 lb.)	8500 kg (18,739 lb.)	9500 kg (20,944 lb.)
Static	20 500 kg (45,195 lb.)	23 500 kg (51,809 lb.)	26 000 kg (57,320 lb.)
Ultimate	32 500 kg (71,650 lb.)	37 000 kg (81,571 lb.)	39 500 kg (87,083 lb.)
<b>Differentials</b>			
MFWD Axle	Open – standard; automatic, limited-slip traction control – custom or optional		
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock		
<b>Steering (ISO 5010)</b>			
Axle	<i>Non-Powered Front</i>	<i>MFWD</i>	
Curb-Turning Radius			
With Brakes	3.58 m (11 ft. 9 in.)	3.58 m (11 ft. 9 in.)	
Without Brakes	4.21 m (13 ft. 10 in.)	4.24 m (13 ft. 11 in.)	
Bucket-Clearance Circle			
With Brakes	10.18 m (33 ft. 5 in.)	10.23 m (33 ft. 7 in.)	
Without Brakes	11.08 m (36 ft. 4 in.)	11.19 m (36 ft. 9 in.)	
Steering Wheel Turns (lock to lock)	3.2	2.7	
<b>MFWD and Rear Axle</b>	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, gear type, tandem with unloader	Open center, single-gear pump	
Pump Flow at 2,200 rpm			
Backhoe	119 L/m (31.5 gpm)	106 L/m (28 gpm)	
Loader	98 L/m (26 gpm)	106 L/m (28 gpm)	

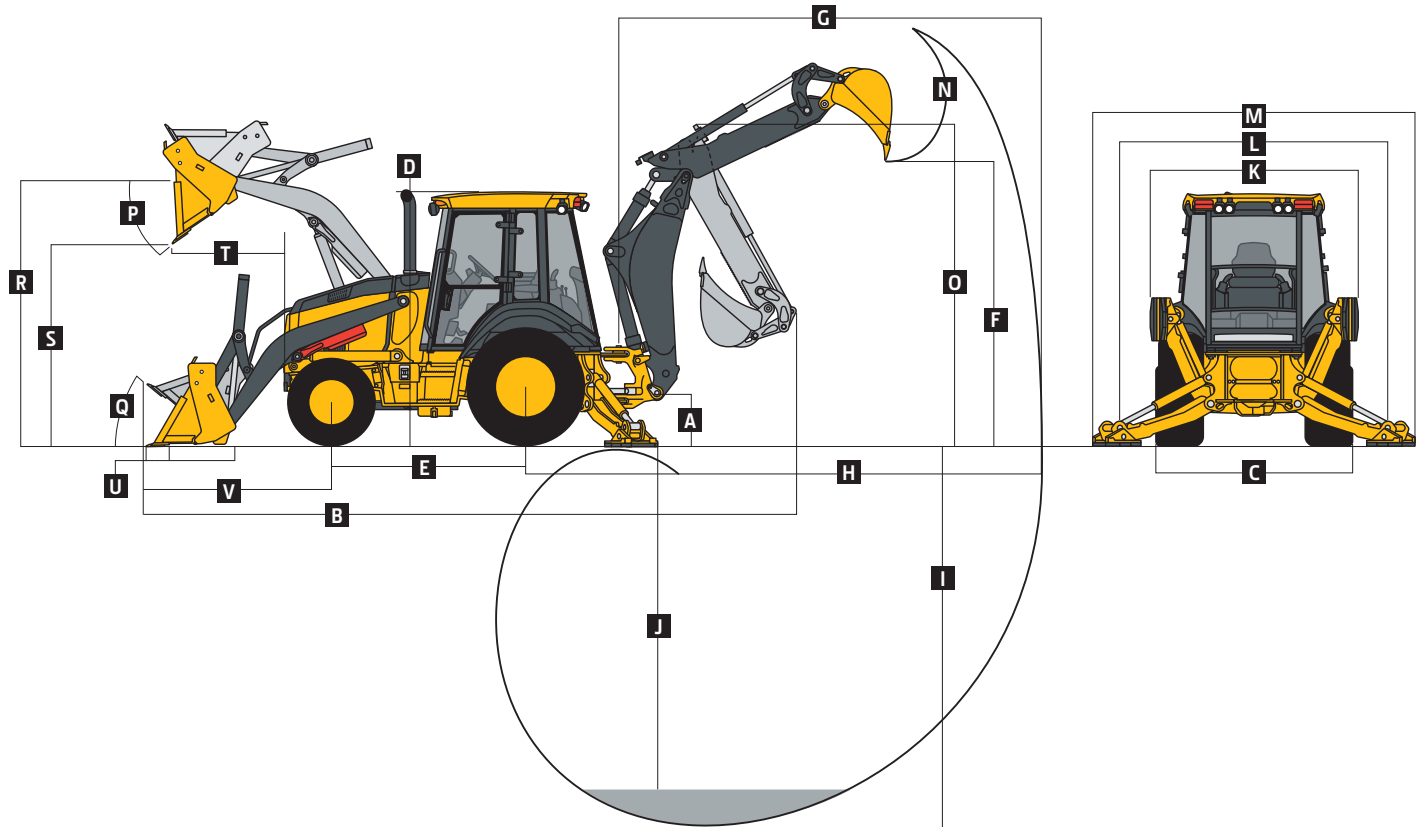
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Hydraulics <i>(continued)</i>		310L EP	310L	
System Relief Pressure				
Backhoe		24 993 kPa (3,625 psi)	24 993 kPa (3,625 psi)	
Loader		22 063 kPa (3,200 psi)	22 063 kPa (3,200 psi)	
<b>Controls</b>				
Backhoe		2-lever mechanical standard; pilot controls with pattern select and manual and/or electric auxiliary functions optional; field kits available for additional mechanical control options		
Loader		Single-lever control with electric clutch cutoff switch standard; manual auxiliary function (2nd lever), single-lever control with electric clutch cutoff and electrohydraulic (EH) proportional auxiliary control optional		
<b>Electrical</b>				
Voltage		12 volt	12 volt	
Alternator Rating		120 amp with cab / 90 amp with canopy and quarter cab	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		
<b>Operator Station</b>				
Type (SAE J1040)		310L EP / 310L 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>		<b>310L EP</b>	<b>310L</b>	
		<i>Front</i>	<i>Rear</i>	<i>Front</i>
Non-Powered Front Axle		12.5/80-18 F3 (12)	19.5L-24 R-4 (12)	12.5/80-18 F3 (12)
With MFWD		12-16.5 NHS (12)	19.5L-24 R-4 (12)	19.5L-24 R-4 (12)
		—	—	12.5/80-18 I3 (12)
		—	—	19.5L-24 R-4 (10)
		—	—	12.5/80-18 R4 (10)
		—	—	19.5L-24 R-4 (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
<b>Serviceability</b>				
<b>Refill Capacities</b>				
Cooling System		30 L (31.7 qt.)	35 L (37 qt.)	
Rear Axle		18 L (19 qt.)	18 L (19 qt.)	
Engine Oil (including vertical spin-on filter)		13 L (13.7 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)		140.1 L (37 gal.)	140.1 L (37 gal.)	
Diesel Exhaust Fluid (DEF) Tank		—	16.3 L (4.3 gal.)	
Hydraulic System		111.7 L (29.5 gal.)	111.7 L (29.5 gal.)	
Hydraulic Reservoir		45 L (11.9 gal.)	45 L (11.9 gal.)	
MFWD Housing				
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.)	
Hydra™ XR Hydraulic Oil		Optional	Optional	
<b>Operating Weights</b>				
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and Bumper		6545 kg (14,430 lb.)	6654 kg (14,669 lb.)	
Typical with Cab, Extendable Dipperstick, and 204-kg (450 lb.) Counterweight		7203 kg (15,880 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.)	
Extendable Dipperstick		191 kg (420 lb.)	191 kg (420 lb.)	
Front Loader Coupler		257 kg (566 lb.)	257 kg (566 lb.)	
Backhoe Bucket Coupler		59 kg (130 lb.)	59 kg (130 lb.)	

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Overall Dimensions	310L EP / 310L
A Ground Clearance, Minimum	293 mm (12 in.)
B Overall Length, Transport	7.24 m (23 ft. 9 in.)
C Width Over Tires	2.16 m (7 ft. 1 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 310L EP / 310L

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.

Bucket Range	305–762 mm (12–30 in.)
Digging Force	
Bucket Cylinder	48.2 kN (10,844 lb.)
Crowd Cylinder	31.1 kN (6,992 lb.)
Swing Arc	180 deg.
Operator Control	2 levers
Leveling Angle	14 deg.
Stabilizer Angle Rearward	18 deg.

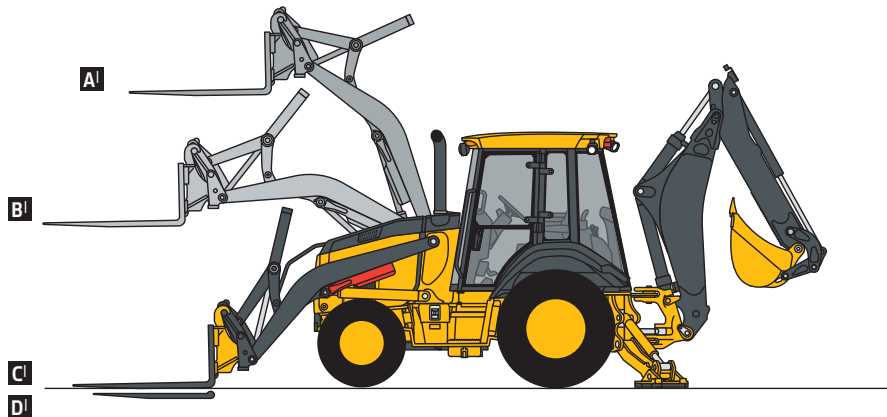
	With Optional Extendable Dipperstick		
	With Standard Backhoe	Retracted	Extended
F Loading Height, Truck Loading Position	3.41 m (11 ft. 2 in.)	3.49 m (11 ft. 6 in.)	4.15 m (13 ft. 7 in.)
G Reach from Center of Swing Pivot	5.42 m (17 ft. 10 in.)	5.49 m (18 ft. 0 in.)	6.51 m (21 ft. 4 in.)
H Reach from 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)	4.27 m (14 ft. 0 in.)	4.33 m (14 ft. 2 in.)	5.39 m (17 ft. 8 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.22 m (13 ft. 10 in.)	4.29 m (14 ft. 1 in.)	5.36 m (17 ft. 7 in.)
2440-mm (8 ft.) Flat Bottom	3.89 m (12 ft. 9 in.)	3.96 m (13 ft. 0 in.)	5.10 m (16 ft. 9 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	3.42 m (11 ft. 2 in.)	3.42 m (11 ft. 2 in.)	3.42 m (11 ft. 2 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 (9,353 lb.)	42.3 kN (9,504 lb.)	39.9 kN (8,978 lb.)	37.0 kN (8,311 lb.)
Lift Capacity, Full Height	3099 kg (6,833 lb.)	3179 kg (7,009 lb.)	2934 kg (6,469 lb.)	2605 kg (5,743 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.)	2.74 m (9 ft. 0 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.	734 mm (28.9 in.)	699 mm (27.5 in.)	825 mm (32.5 in.)	737 mm (29.0 in.)
<b>U</b> Digging Depth Below Ground, Bucket Level	107 mm (4.2 in.)	107 mm (4.2 in.)	88 mm (3.5 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.)	1.97 m (6 ft. 6 in.)	2.12 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	1695 kg (3,736 lb.)	1561 kg (3,442 lb.)
<b>B</b> Maximum Reach	2646 kg (5,833 lb.)	2629 kg (5,795 lb.)
<b>C</b> At Ground Line	3583 kg (7,900 lb.)	3269 kg (7,207 lb.)
<b>D</b> Below Ground Line	262 mm (10.3 in.)	262 mm (10.3 in.)



## Lift Capacity with Bucket

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	STANDARD LIFT	STANDARD LIFT
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

