

310J

Engine

310J

	<i>For use in U.S., Canada, and Europe</i>	<i>For use outside U.S., Canada, and Europe</i>
Manufacturer and Model	John Deere PowerTech™ E 4045HT054 turbocharged, standard	John Deere PowerTech 4045T optional turbocharged
Non-Road Emissions Standard	EPA Tier 3/EU Stage IIIA	EPA Tier 2/EU Stage II
Displacement	4.5 L (276 cu. in.)	4.5 L (276 cu. in.)
Net Peak Power (ISO9249)	63 kW (84 hp) @ 2,000 rpm	59 kW (79 hp) @ 2,000 rpm
Net Peak Torque (ISO9249)	367 Nm (270 lb.-ft.) @ 1,300 rpm	340 Nm (250 lb.-ft.) @ 1,400 rpm
Net Torque Rise	47%	41%
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

Cooling

Fan Type	suction
Engine Coolant Rating	−37 deg. C (−34 deg. F)
Engine Oil Cooler	oil to water

Powertrain

Transmission	4-speed, helical-cut gears, full PowerShift™ 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	<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)	13.2 km/h (8.2 mph)
Gear 3	21.4 km/h (13.3 mph)	N/A
Gear 4	35.9 km/h (22.3 mph)	N/A

Axles

Axle Oscillations, Stop to Stop (both axles) . . . 22 deg.

Axle Ratings	<i>Standard</i>	<i>Mechanical-front-wheel drive</i>	<i>Rear</i>
Static	18 000 kg (39,683 lb.)	12 000 kg (26,455 lb.)	13 000 kg (28,660 lb.)
Dynamic	7200 kg (15,873 lb.)	6000 kg (13,228 lb.)	7000 kg (15,432 lb.)
Ultimate	32 950 kg (72,642 lb.)	28 200 kg (62,170 lb.)	30 600 kg (67,461 lb.)

Differentials . . . hydraulic locking rear, electric, foot actuated; open front

Steering (ISO5010) . . . hydrostatic power and emergency steering

Axle	<i>Mechanical-front-wheel drive</i>	<i>Non-powered front</i>
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Curb-Turning Radius		
With Brakes	3.58 m (11 ft. 9 in.)	3.44 m (11 ft. 4 in.)
Without Brakes	4.08 m (13 ft. 5 in.)	3.94 m (12 ft. 11 in.)
Bucket Clearance Circle		
With Brakes	10.11 m (33 ft. 2 in.)	9.89 m (32 ft. 5 in.)
Without Brakes	11.05 m (36 ft. 3 in.)	10.76 m (35 ft. 4 in.)
Steering Wheel Turns (lock to lock)	2.7	3.3

Final Drive (mechanical-front wheel and

rear axle) . . . heavy-duty, outboard planetary final drives distribute shock loads over 3 gears

Brakes (conform to 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 310J

Main Pump	open center, single gear
Pump Flow @ 2,200 rpm	
Backhoe	106 L/m (28 gpm)
Loader	106 L/m (28 gpm)
System Relief Pressure	
Backhoe	24 993 kPa (3,625 psi)
Loader	22 063 kPa (3,200 psi)
Bucket Dump at Maximum Height	1.3 sec.
Boom Lower (power down)	2.5 sec.
Backhoe Controls	two-lever manual standard; pilot controls with pattern select, three-lever manual controls with foot swing, and manual and/or electric auxiliary functions optional
Loader Controls	single-lever control with electric clutch cutoff switch standard; manual auxiliary function optional

Cylinders

Type	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.)	213 mm (8.39 in.)
Mechanical-Front-Wheel Drive (1)	67 mm (2.64 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)

Electrical

Voltage	12 volt
Alternator Rating	90 amp
Lights	4 halogen: 2 front and 2 rear (32,500 candlepower each); turn signals and flashers 2 front and 2 rear; stop and taillights and 2 rear reflectors

Operator Station

Type (SAE J1040)	canopy, isolation mounted, ROPS/FOPS, left/right access, with molded roof
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Tires/Wheels

	<i>Front</i>	<i>Rear</i>
Non-Powered Front Axle	11L-16 SL F-3 (12)	19.5L-24 R-4 (10)
Mechanical-Front-Wheel Drive	12-16.5 NHS SS-1 (8)	19.5L-24 R-4 (10)

Serviceability

Hydraulic Oil Filter, Spin-On Enclosed Replaceable Element, Vertically Mounted	6-micron filtration / 1,000 service hours
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Refill Capacities

Cooling System	25 L (26 qt.)
Rear Axle	18 L (19 qt.)
Engine Oil (including vertical spin-on filter)	13 L (14 qt.)
Torque Converter and Transmission	15 L (16 qt.)
Fuel Tank (with ground-level fueling)	155 L (41 gal.)
Hydraulic System	91 L (24 gal.)
Hydraulic Reservoir	39 L (10.2 gal.)
Mechanical-Front-Wheel-Drive Housing	
Axle	6.5 L (7 qt.)
Planetary (each)	1 L (1 qt.)

Operating Weights

With Full Fuel Tank, 79-kg (175 lb.) Operator, and Standard Equipment	6295 kg (13,880 lb.)
Typical with Cab, Mechanical-Front-Wheel Drive, Extendable Dipperstick, and 454-kg (1,000 lb.) Counterweight	7356 kg (16,220 lb.)

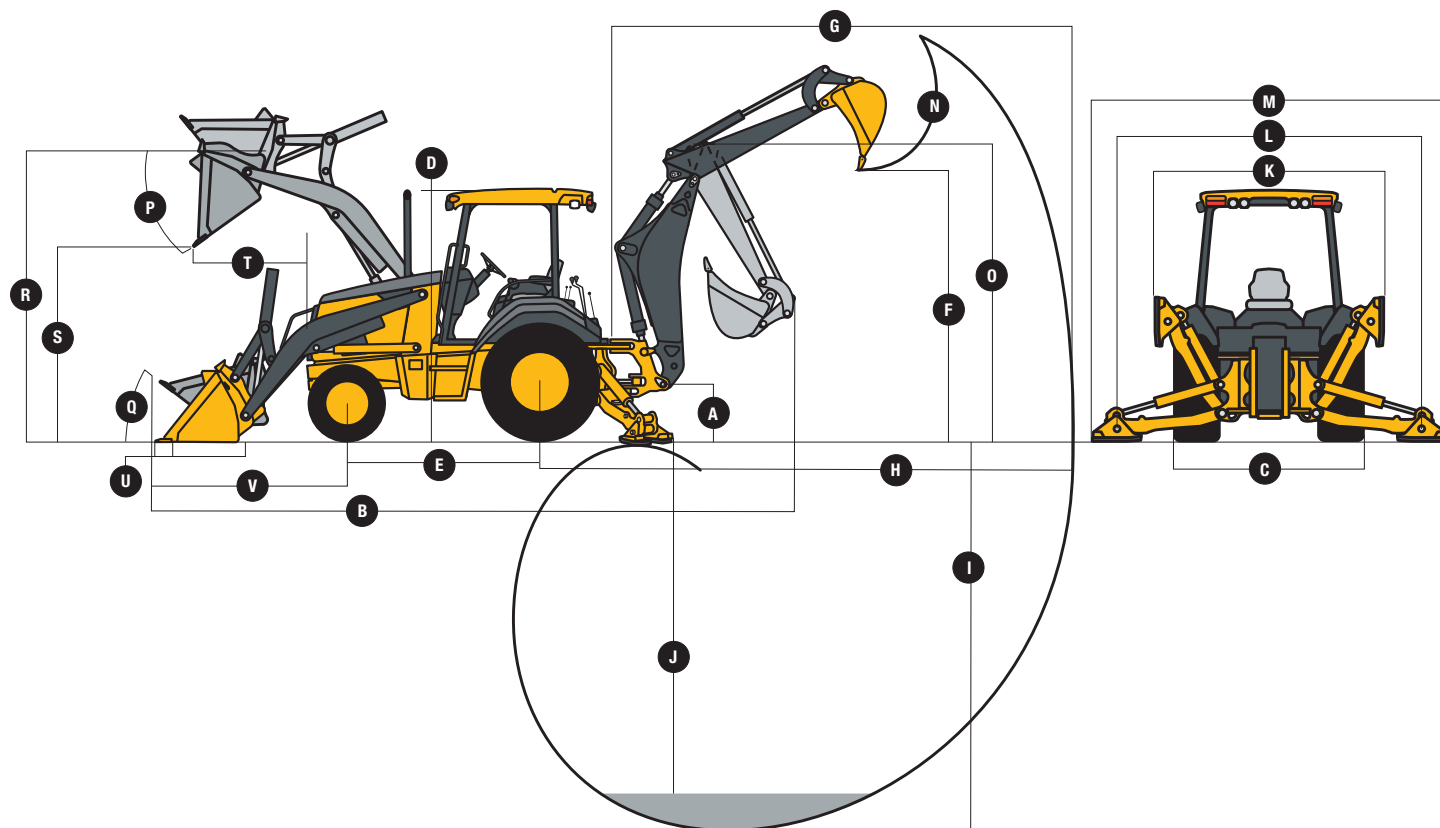
Optional Components

Cab	263 kg (580 lb.)
Mechanical-Front-Wheel Drive with Tires	168 kg (370 lb.)
Extendable Dipperstick	200 kg (440 lb.)
Front Loader Coupler	286 kg (630 lb.)
Backhoe Bucket Coupler	59 kg (130 lb.)

Overall Dimensions

310J

A Ground Clearance (minimum)	305 mm (12 in.)
B Overall Length (transport)	7.09 m (23 ft. 3 in.)
C Width over Tires	2.18 m (7 ft. 2 in.)
D Height to Top of ROPS/Cab	2.74 m (9 ft. 0 in.)
E Length from Axle to Axle	
Non-Powered Front Axle	2.11 m (6 ft. 11 in.)
Mechanical-Front-Wheel-Drive Axle	2.14 m (7 ft. 0 in.)



Backhoe Dimensions / Performance

310J

Backhoe specifications are with 610-mm x
0.18-m³ (24 in. x 6.5 cu. ft.) bucket

Bucket Range	305–762 mm (12–30 in.)
Digging Force	
Bucket Cylinder	49.4 kN (11,106 lb.)
Crowd Cylinder	31.2 kN (7,006 lb.)
Swing Arc	180 deg.
Operator Control	two levers
Leveling Angle	14 deg.
Stabilizer Angle Rearward	18 deg.

With Standard Backhoe

With Optional Extendable Dipperstick Retracted Extended

F Loading Height (truck loading position)	3.33 m (10 ft. 11 in.)	3.38 m (11 ft. 1 in.)	4.24 m (13 ft. 11 in.)
G Reach from Center of Swing Pivot	5.44 m (17 ft. 10 in.)	5.51 m (18 ft. 1 in.)	6.53 m (21 ft. 5 in.)
H Reach from Center of Rear Axle	6.50 m (21 ft. 4 in.)	6.58 m (21 ft. 7 in.)	7.59 m (24 ft. 11 in.)
I Digging Depth (SAE maximum)	4.34 m (14 ft. 3 in.)	4.39 m (14 ft. 5 in.)	5.46 m (17 ft. 11 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.32 m (14 ft. 2 in.)	4.37 m (14 ft. 4 in.)	5.44 m (17 ft. 10 in.)
2440-mm (8 ft.) Flat Bottom	3.96 m (13 ft. 0 in.)	4.06 m (13 ft. 4 in.)	5.18 m (17 ft. 0 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	3.43 m (11 ft. 3 in.)	3.40 m (11 ft. 2 in.)	3.40 m (11 ft. 2 in.)

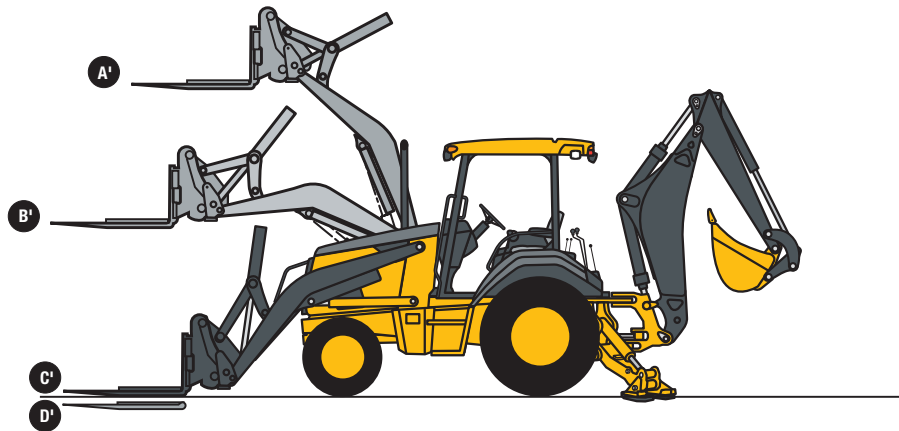
Loader Dimensions / Performance

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P Bucket Dump Angle (maximum)	45 deg.				
Q Rollback Angle at Ground Level	40 deg.				
	<i>Heavy-duty</i>	<i>Heavy-duty</i>	<i>Heavy-duty long lip</i>	<i>Multipurpose</i>	<i>Multipurpose</i>
Bucket Capacity	0.77 m ³ (1.00 cu. yd.)	0.86 m ³ (1.12 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	0.77 m ³ (1.00 cu. yd.)	0.96 m ³ (1.25 cu. yd.)
Width	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)	2083 mm (82 in.)	2184 mm (86 in.)
Weight	363 kg (800 lb.)	390 kg (860 lb.)	405 kg (892 lb.)	771 kg (1,699 lb.)	795 kg (1,750 lb.)
Breakout Force	41.6 kN (9,350 lb.)	42.3 kN (9,500 lb.)	39.9 kN (8,975 lb.)	37.3 kN (8,375 lb.)	36.4 kN (8,175 lb.)
Lift Capacity (full height)	2996 kg (6,600 lb.)	3076 kg (6,775 lb.)	2849 kg (6,275 lb.)	2554 kg (5,625 lb.)	3757 kg (8,275 lb.)
R Height to Bucket Hinge Pin (maximum)	3.38 m (11 ft. 1 in.)	3.38 m (11 ft. 1 in.)	3.38 m (11 ft. 1 in.)	3.38 m (11 ft. 1 in.)	3.38 m (11 ft. 1 in.)
S Dump Clearance (bucket at 45 deg.)	2.69 m (8 ft. 10 in.)	2.69 m (8 ft. 10 in.)	2.48 m (8 ft. 2 in.)	2.59 m (8 ft. 6 in.)	2.59 m (8 ft. 6 in.)
T Reach at Full Height (bucket at 45 deg.)	785 mm (30.9 in.)	767 mm (30.2 in.)	809 mm (31.9 in.)	818 mm (32.2 in.)	818 mm (32.2 in.)
U Digging Depth Below Ground (bucket level)	160 mm (6.3 in.)	175 mm (6.9 in.)	147 mm (5.8 in.)	197 mm (7.8 in.)	197 mm (7.8 in.)
V Length From Front Axle Centerline to Bucket Cutting Edge	2.03 m (6 ft. 8 in.)	2.03 m (6 ft. 8 in.)	2.18 m (7 ft. 2 in.)	2.15 m (7 ft. 1 in.)	2.20 m (7 ft. 3 in.)

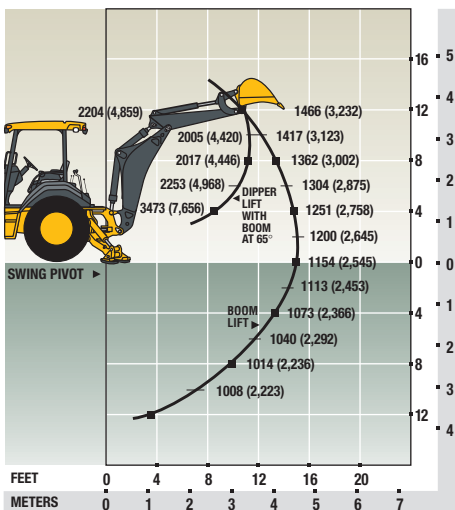
Lift Capacity with Quick-Coupler / Forks

Hydraulic Capacity	1219-mm (48 in.) tines	1524-mm (60 in.) tines
A' Maximum Height	1746 kg (3,850 lb.)	1556 kg (3,430 lb.)
B' Maximum Reach	2688 kg (5,925 lb.)	2467 kg (5,438 lb.)
C' At Ground Line	3493 kg (7,700 lb.)	3269 kg (7,207 lb.)
D' Below Ground Line	262 mm (10.3 in.)	262 mm (10.3 in.)

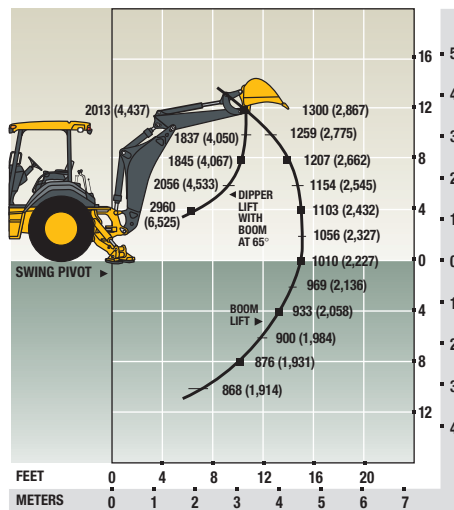


Lift capacities are over-end values in kg (lb.) according to SAE J31. Figures listed are 87% of the maximum lift force available. Base vehicle includes counterweight.

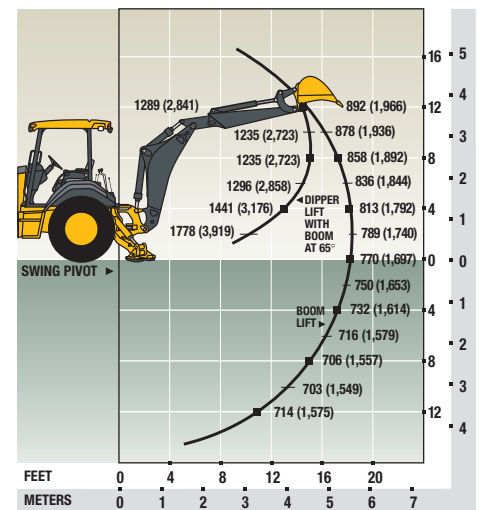
310J Backhoe with Standard Dipperstick



310J Backhoe with 1.07-m (3 ft. 6 in.) Extendable Dipperstick, Retracted



310J Backhoe with 1.07-m (3 ft. 6 in.) Extendable Dipperstick, Extended



For more detailed spec information and available options, log on to www.JohnDeere.com.