

310J LOADER BACKHOE**Specs**

MANUFACTURER	John Deere
MODEL	310J LOADER BACKHOE
DATE OF SPECIFICATION	Jan-09
ENGINE	
Manufacturer/Model	John Deere / 4045HT054
Net Power hp (kW) @ Rated rpm	84 (63) @ 2000
# Cylinders and Displacement cu in. (L)	4 - 276 (4.5)
ELECTRICAL Volts / Alternator Amps	12 / 90
TRANSMISSION	
Type	Powershift / Power shuttle
Speed Ranges F/R	4 x 2
Forward	22.3 (35.9)
Reverse	8.2 (13.2)
BRAKES	
Type	Wet multiple disc
Actuation	Hydraulic
HYDRAULIC SYSTEM	
Pump Type	Gear
Pump Flow gpm (L/min.)	28 (106)
System Pressure psi (kPa)	3625 (24980)
BACKHOE, Fixed Length Dipperstick	
Max. Digging Depth, ft & in. (mm)	14' 3" (4340)
2 ft (0.61 m) Flat Bottom, ft & in. (mm)	14' 2" (4320)
Reach from Swing Center, ft & in. (mm)	17' 10" (5440)
Truck Loading Height, ft & in. (mm)	10' 11" (3330)
Digging Force Crowd, lb (kN)	7,006 (31.2)
Bucket, Digging Force lb (kN)	11,106 (49.4)
Boom Lift Cap. @ Ground Level, lb (kg)	2,545 (1154)
Dipperstick Lift Cap.@12' height lb (kg)	4,859 (2204)
EXTENDABLE DIPPERSTICK	
Optional, Standard, None	Optional
Amount of Extension, ft (m)	3' 6"
Max. Digging Depth, ft & in. (mm)	14' 5" (4390)
2 ft (0.61 m) Flat Bottom, ft & in. (mm)	14' 4" (4370)
Reach from Swing Center, ft & in. (mm)	18' 1" (5510)
Truck Loading Height, ft & in. (mm)	11' 1" (3380)
Digging Force Crowd, lb (kN)	Not published
Bucket, Digging Force lb (kN)	Not published
Boom Lift Cap. @ Ground Level, lb (kg)	2,227 (1010)
Dipperstick Lift Cap.@12' height lb (kg)	4,437 (2013)
Max. Digging Depth, ft & in. (mm)	17' 11" (5460)
2 ft (0.61m) Flat Bottom, ft & in. (mm)	17' 10" (5440)
Reach from Swing Center, ft & in. (mm)	21' 5" (6530)
Truck Loading Height, ft & in. (mm)	13' 11" (4240)
Digging Force Crowd, lb (kN)	Not published
Boom Lift Cap. @ Ground Level, lb (kg)	1,697 (770)
Dipperstick Lift Cap. @ 12' height lb (k	2,841 (1289)
BACKHOE STANDARD BUCKET	
SAE Heaped Capacity, cu ft (cu m)	Not published
Backhoe Bucket Width, in. (mm)	12" - 30" (300 - 760)
Bucket Rotation, deg.	190°
LOADER	
SAE Heaped Capacity, cu yd (cu m)	1 (0.77)
Loader Bucket Width, in. (mm)	82" (2080)
Breakout Force, lb (kN)	9,350 (41.6)
Lift Capacity to Full Height, lb (kg)	6,600 (2994)

Dump Clearance @ 45 deg., ft & in. (mm)	8' 10" (2690)
Dump Reach, in. (mm)	30.9" (780)
Bucket Hinge Pin Max. Hgt, ft & in. (mm)	11' 1" (3380)
Coupler (Mechanical, Hydraulic)	Opt / Hydraulic
TWO WHEEL DRIVE	
Wheelbase, in. (mm)	83" (2110)
Without Brakes, ft in. (mm)	12' 11" (3940)
With Brakes, ft in. (mm)	11' 4" (3450)
Without Brakes, ft in. (mm)	35' 4" (10770)
With Brakes, ft in. (mm)	32' 5" (9880)
FOUR WHEEL DRIVE	
Wheelbase, in. (mm)	84" (2130)
Without Brakes, ft in. (mm)	13' 5" (4090)
With Brakes, ft in. (mm)	11' 9" (3580)
Without Brakes, ft in. (mm)	36' 3" (11050)
With Brakes, ft in. (mm)	33' 2" (10110)
DIMENSIONS	
Transport Height ft & in. (mm)	11' 3" (3430)
Transport Length ft & in. (mm)	23' 3" (7090)
Transport Width ft & in. (mm)	7' 2" (2180)
Width Over Tires in. (mm)	7' 2" (2180)
STANDARD TIRES	
Rear Tire Size 2wd	19.5 L-24 10 PR
Rear Tire Size 4wd	19.5 L-24 10 PR
Front Tire Size 2wd	11L-16 12 PR
Front Tire Size 4wd	12-16.5 8 PR
CAPACITIES	
Fuel Tank gal (L)	41 (155)
Hydraulic Reservoir gal (L)	10.2 (39)
OPERATING WEIGHT, lb (kg) 2WD,ROPS	13,880 (6296)
OPERATING WT, lb (kg) 4WD, CAB,EXT.HOE	17,430 (7906)

Specifications are based on published information at the time of publication. Specifications are subject to change without notice.

05/13/2010

310J



Engine 310J

Manufacturer and Model	John Deere PowerTech™ E 4045HT054 turbocharged, standard
Non-Road Emission Standards	certified to EPA Tier 3 emissions
Displacement	276 cu. in. (4.5 L)
Net Peak Power (ISO9249)	84 hp (63 kW) @ 2,000 rpm
Net Peak Torque (ISO9249)	270 lb.-ft. (367 Nm) @ 1,300 rpm
Net Torque Rise	47%
Lubrication	pressure system with spin-on filter and cooler
Air Cleaner	dual-stage dry type with safety element and evacuator valve

Cooling

Fan Type	suction
Engine Coolant Rating	-34 deg. F (-37 deg. C)
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; 11 in. (280 mm)

Maximum Travel Speeds with Standard

Engine	<i>Forward</i>	<i>Reverse</i>
Gear 1	3.5 mph (5.7 km/h)	4.5 mph (7.2 km/h)
Gear 2	6.5 mph (10.4 km/h)	8.2 mph (13.2 km/h)
Gear 3	13.3 mph (21.4 km/h)	N/A
Gear 4	22.3 mph (35.9 km/h)	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	39,683 lb. (18 000 kg)	26,455 lb. (12 000 kg)	28,660 lb. (13 000 kg)
Dynamic	15,873 lb. (7200 kg)	13,228 lb. (6000 kg)	15,432 lb. (7000 kg)
Ultimate	72,642 lb. (32 950 kg)	62,170 lb. (28 200 kg)	67,461 lb. (30 600 kg)

Differentials hydraulic locking front and rear, electric, foot actuated

Steering (ISO5010) hydrostatic power and emergency steering

Axle	<i>Mechanical-front-wheel drive</i>	<i>Non-powered front</i>
Curb-Turning Radius		
With Brakes	11 ft. 9 in. (3.58 m)	11 ft. 4 in. (3.44 m)
Without Brakes	13 ft. 5 in. (4.08 m)	12 ft. 11 in. (3.94 m)
Bucket Clearance Circle		
With Brakes	33 ft. 2 in. (10.11 m)	32 ft. 5 in. (9.89 m)
Without Brakes	36 ft. 3 in. (11.05 m)	35 ft. 4 in. (10.76 m)
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 SAE J1473)

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	28 gpm (106 L/m)
Loader	28 gpm (106 L/m)
System Relief Pressure	
Backhoe	3,625 psi (24 993 kPa)
Loader	3,200 psi (22 063 kPa)
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)	3.15 in. (80 mm)	1.97 in. (50 mm)	31.10 in. (790 mm)
Loader Bucket (1)	3.54 in. (90 mm)	1.97 in. (50 mm)	29.29 in. (744 mm)
Backhoe Boom (1)	4.33 in. (110 mm)	2.20 in. (56 mm)	32.32 in. (821 mm)
Backhoe Crowd (1)	4.33 in. (110 mm)	2.48 in. (63 mm)	21.77 in. (553 mm)
Backhoe Bucket (1)	3.15 in. (80 mm)	1.97 in. (50 mm)	35.12 in. (892 mm)
Backhoe Swing (2)	3.15 in. (80 mm)	1.77 in. (45 mm)	12.20 in. (310 mm)
Backhoe Extendable Dipperstick (1)	2.48 in. (63 mm)	1.26 in. (32 mm)	41.81 in. (1062 mm)
Backhoe Stabilizer (2)	3.15 in. (80 mm)	1.97 in. (50 mm)	19.69 in. (500 mm)
Non-Powered Axle (1)	2.76 in. (70 mm)	1.65 in. (42 mm)	8.39 in. (213 mm)
Mechanical-Front-Wheel Drive (1)	2.64 in. (67 mm)	1.65 in. (42 mm)	8.27 in. (210 mm)

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

Operating Weights

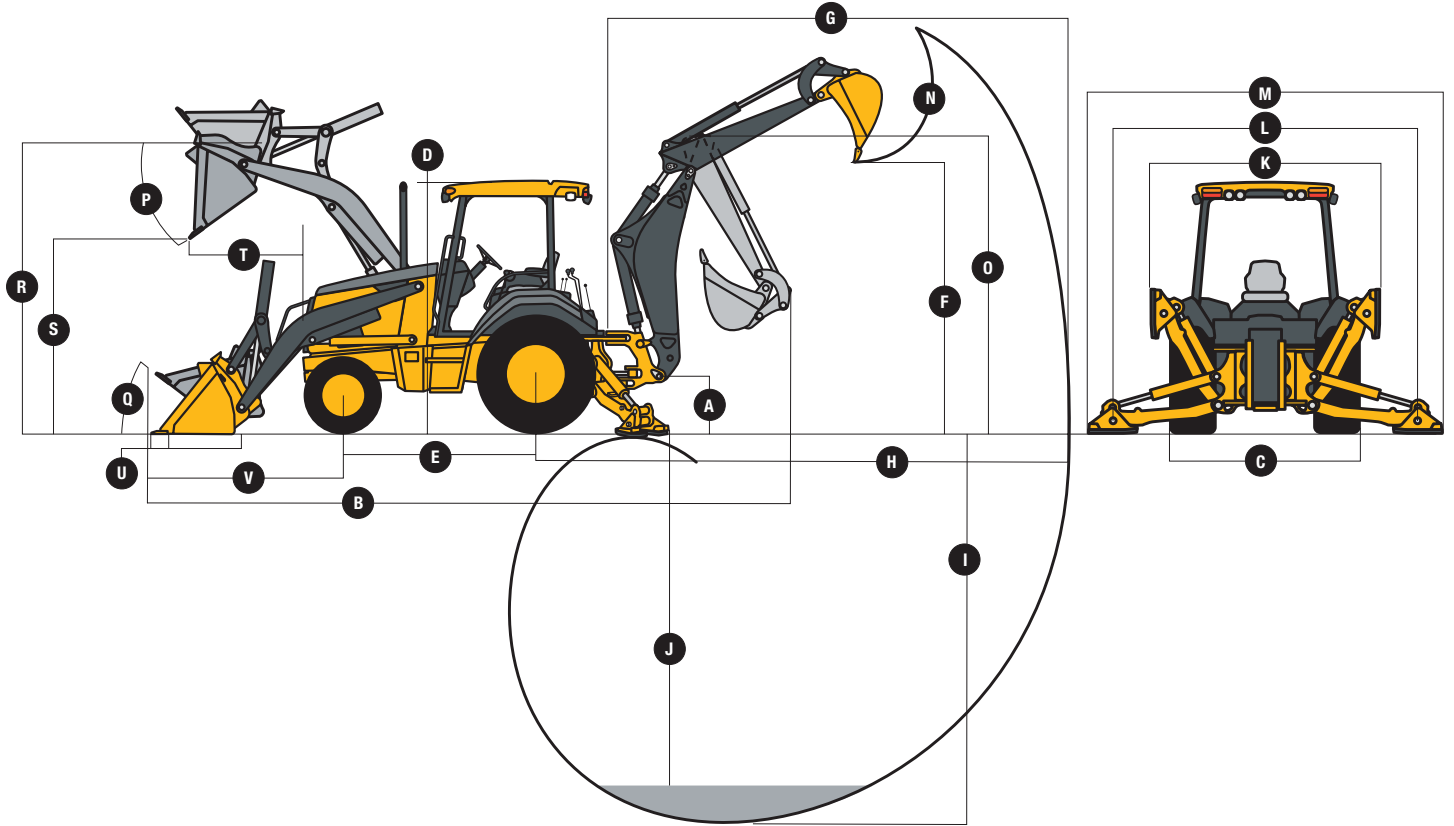
With Full Fuel Tank, 175-lb. (79 kg) Operator, and Standard Equipment	13,880 lb. (6295 kg)
Typical with Cab, Mechanical-Front-Wheel Drive, Extendable Dipperstick, and 1,000-lb. (454 kg) Counterweight	16,220 lb. (7356 kg)

Optional Components

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

Overall Dimensions 310J

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



Backhoe Dimensions / Performance 310J

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

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

	<i>With Standard Backhoe</i>	<i>With Optional Extendable Dipperstick Retracted</i>	<i>Extended</i>
F Loading Height (truck loading position)	10 ft. 11 in. (3.33 m)	11 ft. 1 in. (3.38 m)	13 ft. 11 in. (4.24 m)
G Reach from Center of Swing Pivot	17 ft. 10 in. (5.44 m)	18 ft. 1 in. (5.51 m)	21 ft. 5 in. (6.53 m)
H Reach from Center of Rear Axle	21 ft. 4 in. (6.50 m)	21 ft. 7 in. (6.58 m)	24 ft. 11 in. (7.59 m)
I Digging Depth (SAE maximum)	14 ft. 3 in. (4.34 m)	14 ft. 5 in. (4.39 m)	17 ft. 11 in. (5.46 m)
J Digging Depth (SAE)			
2-ft. (610 mm) Flat Bottom	14 ft. 2 in. (4.32 m)	14 ft. 4 in. (4.37 m)	17 ft. 10 in. (5.44 m)
8-ft. (2440 mm) Flat Bottom	13 ft. 0 in. (3.96 m)	13 ft. 4 in. (4.06 m)	17 ft. 0 in. (5.18 m)
K Stabilizer Width (transport)	7 ft. 2 in. (2.18 m)	7 ft. 2 in. (2.18 m)	7 ft. 2 in. (2.18 m)
L Stabilizer Spread (operating)	10 ft. 2 in. (3.10 m)	10 ft. 2 in. (3.10 m)	10 ft. 2 in. (3.10 m)
M Stabilizer Overall Width (operating)	11 ft. 7 in. (3.53 m)	11 ft. 7 in. (3.53 m)	11 ft. 7 in. (3.53 m)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	11 ft. 3 in. (3.43 m)	11 ft. 2 in. (3.40 m)	11 ft. 2 in. (3.40 m)

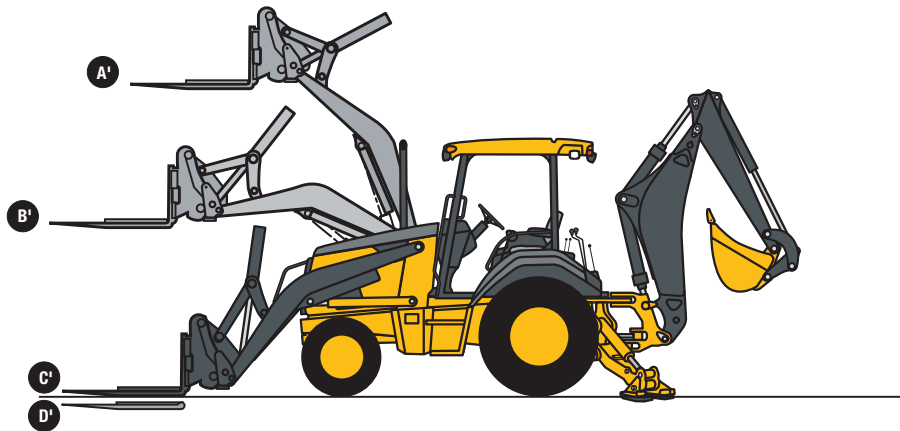
Loader Dimensions / Performance

310J

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

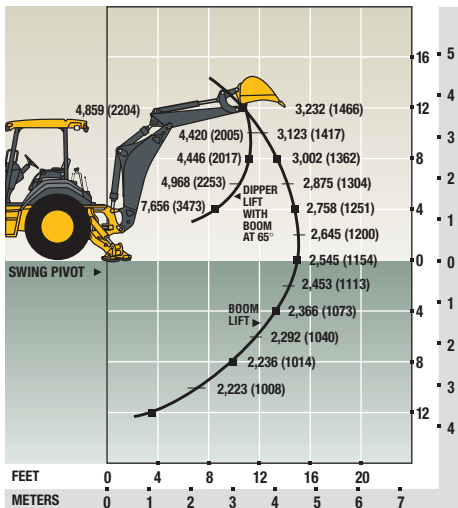
Lift Capacity with Quick-Coupler / Forks

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

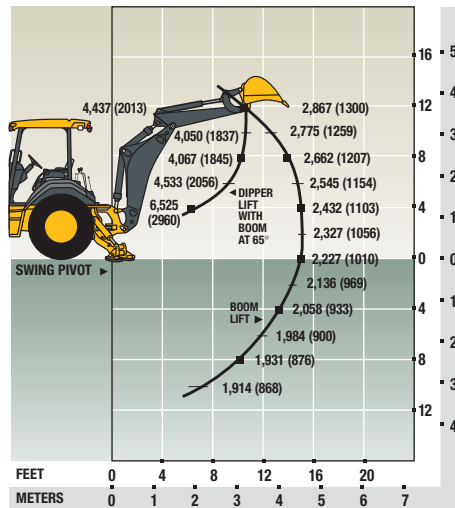


Lift capacities are over-end values in lb. (kg) according to SAE J31. Figures listed are 87% of the maximum lift force available. Base vehicle includes counterweight.

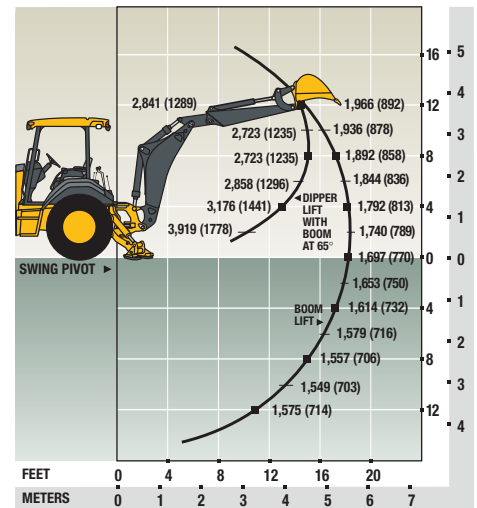
310J Backhoe with Standard Dipperstick



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



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



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