

# 310SK/310SK TC

Engine	310SK			310SK TC	
Manufacturer and Model	John Deere PowerTech™ E 4045HT073 turbo-charged, standard			John Deere PowerTech E 4045HT063 turbo-charged, standard	
Non-Road Emissions Standard	EPA Interim Tier 4/EU Stage IIIB			EPA Interim Tier 4/EU Stage IIIB	
Displacement	4.5 L (276 cu. in.)			4.5 L (276 cu. in.)	
Net Peak Power (ISO 9249)	72 kW (97 hp) at 2,000 rpm			76 kW (102 hp) at 2,000 rpm	
Net Peak Torque (ISO 9249)	400 Nm (295 lb.-ft.) at 1,400 rpm			408 Nm (301 lb.-ft.) at 1,400 rpm	
Net Torque Rise	40%			32%	
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, evacuator valve, and pre-screener	
Cooling	310SK / 310SK TC				
Fan Type	Electronically controlled, variable-rate suction type				
Engine Coolant Rating	-40 deg. C (-40 deg. F)				
Engine Oil Cooler	Oil to water				
Powertrain	310SK			310SK TC	
<b>Transmission</b>	5 speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever				
<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 19.5L-24 Rear Tires	<i>Forward</i>		<i>Reverse</i>		
	<i>Forward</i>	<i>Reverse</i>	<i>Forward</i>	<i>Reverse</i>	
Gear 1	5.6 km/h (3.5 mph)	7.0 km/h (4.4 mph)	5.7 km/h (3.6 mph)	7.3 km/h (4.5 mph)	
Gear 2	10.2 km/h (6.3 mph)	12.9 km/h (8.0 mph)	10.5 km/h (6.5 mph)	13.3 km/h (8.2 mph)	
Gear 3	20.8 km/h (13.0 mph)	20.6 km/h (12.8 mph)	21.4 km/h (13.3 mph)	21.2 km/h (13.2 mph)	
Gear 4	32.8 km/h (20.4 mph)	—	32.9 km/h (20.5 mph)	—	
Gear 5	40.0 km/h (25.0 mph)	—	40.0 km/h (25.0 mph)	—	
Axles					
Axle Oscillation, Stop to Stop, Front Axle	22 deg.				
Axle Ratings	<i>Non-Powered Front</i>	<i>Mechanical-Front-Wheel Drive (MFWD)</i>	<i>Rear</i>	<i>Mechanical-Front-Wheel Drive (MFWD)</i>	<i>Rear</i>
Static	18 000 kg (39,683 lb.)	12 000 kg (26,455 lb.)	13 000 kg (28,660 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.)	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.)	28 200 kg (62,170 lb.)	30 600 kg (67,461 lb.)
Differentials					
MFWD Axle	Automatic, limited-slip traction control			Automatic, limited-slip traction control	
Rear Axle	Electric, foot-actuated, 100% hydraulic locking			Electric, foot-actuated, 100% hydraulic locking	
Steering (ISO 5010)	Hydrostatic power steering and emergency steering				
Axle	<i>Non-Powered Front</i>	<i>MFWD</i>	<i>MFWD</i>		
Curb-Turning Radius					
With Brakes	3.44 m (11 ft. 4 in.)	3.58 m (11 ft. 9 in.)	3.58 m (11 ft. 9 in.)		
Without Brakes	3.94 m (12 ft. 11 in.)	4.08 m (13 ft. 5 in.)	4.08 m (13 ft. 5 in.)		
Bucket Clearance Circle					
With Brakes	9.89 m (32 ft. 5 in.)	10.11 m (33 ft. 2 in.)	10.40 m (34 ft. 1 in.)		
Without Brakes	10.76 m (35 ft. 4 in.)	11.05 m (36 ft. 3 in.)	11.37 m (37 ft. 4 in.)		
Steering Wheel Turns (lock to lock)	3.2	2.7	2.6 to 3.6		
<b>Final Drive, Mechanical-Front Wheel and Rear Axle Brakes (ISO 3450)</b>	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears				
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			Pressure compensated load sensing (PCLS), axial-piston pump	
Pump Flow at 2,200 rpm					
Backhoe	136 L/m (36 gpm)			159 L/m (42 gpm)	
Loader	106 L/m (28 gpm)			159 L/m (42 gpm)	
System Relief Pressure, Backhoe and Loader	24 993 kPa (3,625 psi)			24 993 kPa (3,625 psi)	
Controls					
Backhoe	2-lever manual standard; pilot controls with pattern select, 3-lever manual controls with foot swing, and manual and/or electric auxiliary functions optional			TMC electrohydraulic (EH) controls with auxiliary functions standard	

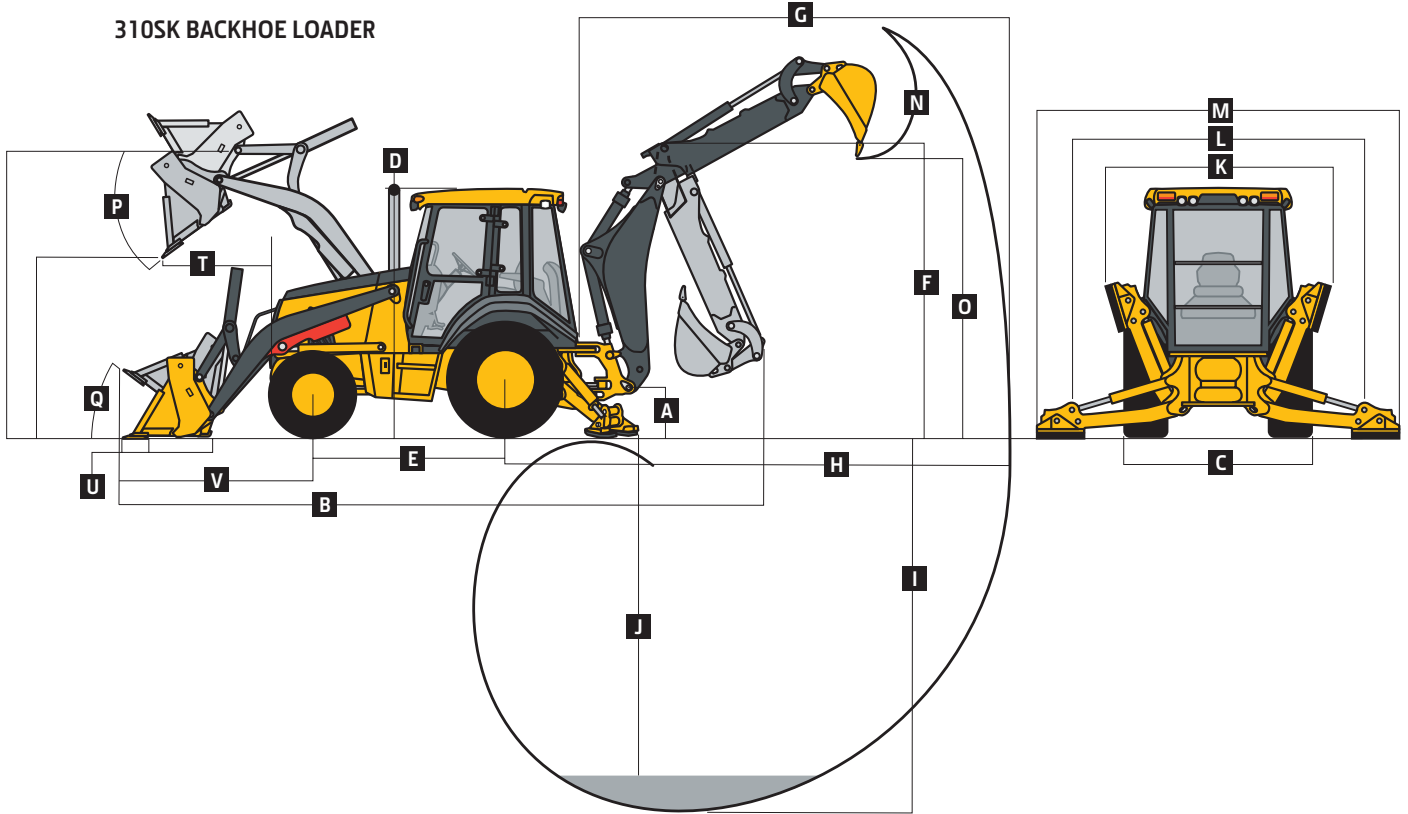


<b>Hydraulics (continued)</b>		<b>310SK</b>			<b>310SK TC</b>		
<b>Controls (continued)</b>							
Loader		Single-lever control with electric clutch cutoff switch standard; single-lever control with electric clutch cutoff switch, EH proportional auxiliary roller, and MWFD (on/off/momentary) with auxiliary hydraulics optional			TMC EH controls with auxiliary functions standard		
<b>Cylinders</b>							
Type		Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins					
		<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>	<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>
<b>Loader Boom (2)</b>		80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)	90 mm (3.54 in.)	56 mm (2.20 in.)	673 mm (26.50 in.)
<b>Loader Bucket (1)</b>		90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)	100 mm (3.94 in.)	56 mm (2.20 in.)	733 mm (28.86 in.)
<b>Backhoe Boom (1)</b>		120 mm (4.72 in.)	56 mm (2.20 in.)	795 mm (31.30 in.)	120 mm (4.72 in.)	56 mm (2.20 in.)	795 mm (31.30 in.)
<b>Backhoe Crowd (1)</b>		115 mm (4.53 in.)	63 mm (2.48 in.)	602.5 mm (23.72 in.)	115 mm (4.53 in.)	63 mm (2.48 in.)	602.5 mm (23.72 in.)
<b>Backhoe Bucket (1)</b>		90 mm (3.54 in.)	56 mm (2.20 in.)	810 mm (31.89 in.)	100 mm (3.94 in.)	63 mm (2.48 in.)	810 mm (31.89 in.)
<b>Backhoe Bucket, Heavy-Duty Option (1)</b>		100 mm (3.94 in.)	63 mm (2.48 in.)	810 mm (31.89 in.)	—	—	—
<b>Backhoe Swing (2)</b>		90 mm (3.54 in.)	50 mm (1.97 in.)	278 mm (10.94 in.)	90 mm (3.54 in.)	50 mm (1.97 in.)	278 mm (10.94 in.)
<b>Backhoe Extendable Dipperstick (1)</b>		70 mm (2.76 in.)	40 mm (1.57 in.)	1067 mm (42.01 in.)	70 mm (2.76 in.)	40 mm (1.57 in.)	1067 mm (42.01 in.)
<b>Backhoe Stabilizer, Standard (2)</b>		90 mm (3.54 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)	—	—	—
<b>Backhoe Stabilizer, Longer Optional (2)</b>		100 mm (3.94 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)	100 mm (3.94 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
<b>Non-Powered Axle (1)</b>		70 mm (2.76 in.)	42 mm (1.65 in.)	213 mm (8.39 in.)	70 mm (2.76 in.)	42 mm (1.65 in.)	213 mm (8.39 in.)
<b>MFWD (1)</b>		67 mm (2.64 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)	67 mm (2.64 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
<b>Electrical</b>							
Voltage		12 volt			12 volt		
Alternator Rating		120 amp			200 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					
<b>Operator Station</b>		<b>310SK / 310SK TC</b>					
Type (SAE J1040)		Canopy, isolation mounted, ROPS/FOPS, left/right access, with molded roof					
<b>Tires/Wheels</b>		<b>310SK</b>			<b>310SK TC</b>		
		<i>Front</i>	<i>Rear</i>		<i>Front</i>	<i>Rear</i>	
Non-Powered Front Axle		11L-16 F-3 (12)	19.5L-24 R-4 (10)		—	—	
MFWD		12.5/80-18 I-3 (14)	19.5L-24 R-4 (10)		12.5/80-18 I-3 (14)	19.5L-24 R-4 (10)	
		12.5/80-18 I-3 (12)	19.5L-24 R-4 (10)		12.5/80-18 I-3 (12)	19.5L-24 R-4 (10)	
		12.5/80-18 I-3 (12)	21L-24 R-4 (12)		12.5/80-18 I-3 (12)	21L-24 R-4 (12)	
		340/80R18 XMCL	500/70R24 XMCL		340/80R18 XMCL	500/70R24 XMCL	
<b>Serviceability</b>		<b>310SK / 310SK TC</b>					
Hydraulic Oil Filter, Spin-On Enclosed Replaceable Element		6-micron filtration; 1,000 break-in/service hours					
<b>Refill Capacities</b>							
Cooling System		32.9 L (34.8 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)		155.2 L (41 gal.)					
Hydraulic System		89.3 L (23.6 gal.)					
Hydraulic Reservoir		37.1 L (9.8 gal.)					
MFWD Housing							
Axle		6.5 L (6.9 qt.)					
Planetary (each)		0.9 L (1 qt.)					
<b>Operating Weights</b>		<b>310SK</b>			<b>310SK TC</b>		
With Full Fuel Tank, 79-kg (175 lb.) Operator, and Standard Equipment		6670 kg (14,708 lb.)			—		
Typical with Cab, MFWD, Extendable Dipperstick, and 454-kg (1,000 lb.) Counterweight		7827 kg (17,258 lb.)			—		
With Cab, MFWD, Extendable Dipperstick, and 567-kg (1,250 lb.) Counterweight		—			9004 kg (19,855 lb.)		
<b>Adjustments to Operating Weights with Optional Components</b>							
Cab		263 kg (580 lb.)			In base		
MFWD with Tires		220 kg (485 lb.)			In base		
Extendable Dipperstick		222 kg (490 lb.)			In base		
Front Loader Coupler		286 kg (630 lb.)			In base		
Backhoe Bucket Coupler		63 kg (138 lb.)			63 kg (138 lb.)		

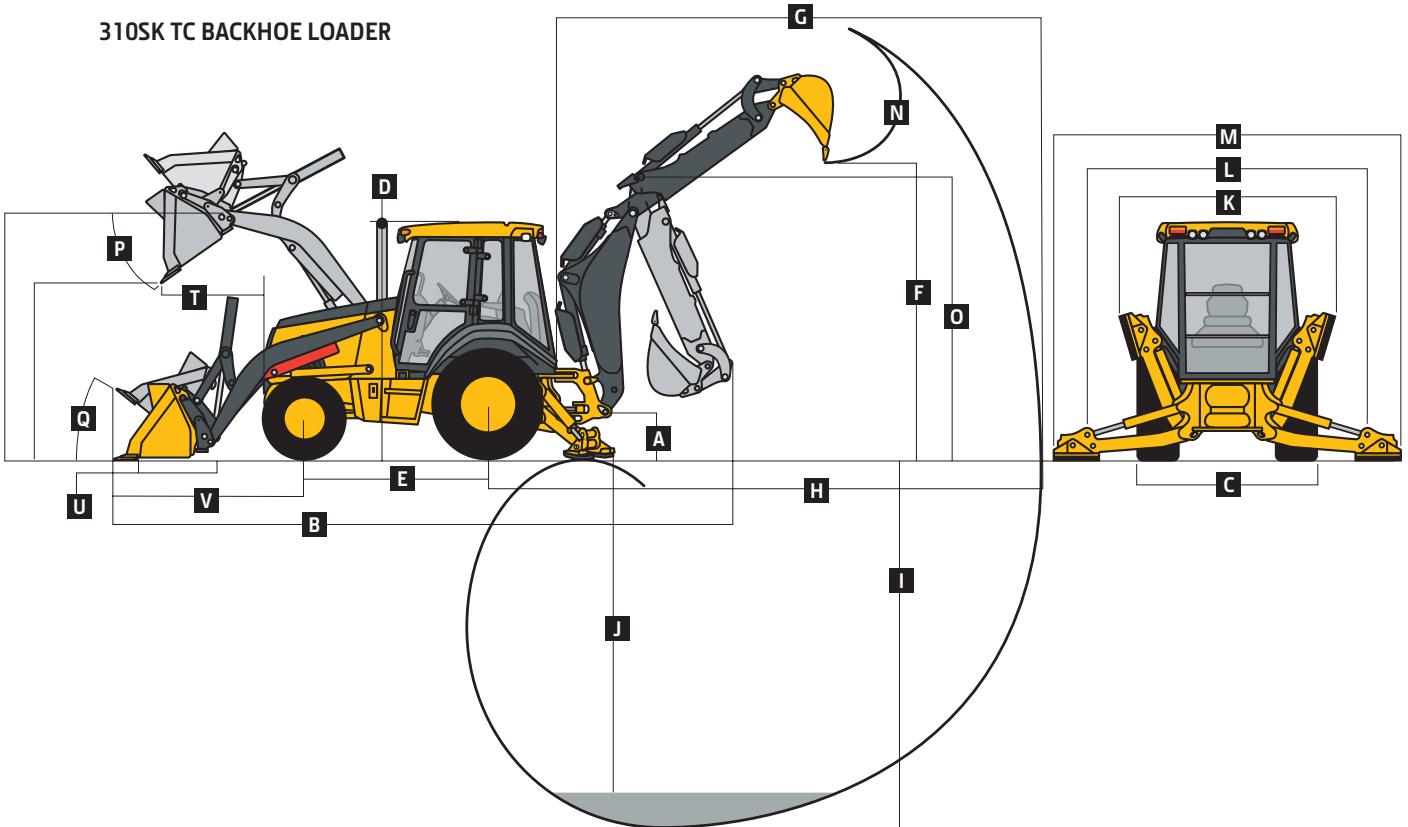
**Overall Dimensions**

	310SK	310SK TC
<b>A</b> Ground Clearance, Minimum	330 mm (13 in.)	330 mm (13 in.)
<b>B</b> Overall Length, Transport	7.16 m (23 ft. 6 in.)	7.27 m (23 ft. 10 in.)
<b>C</b> Width Over Tires	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)
<b>D</b> Height to Top of ROPS/Cab	2.79 m (9 ft. 2 in.)	2.79 m (9 ft. 2 in.)
<b>E</b> Length from Axle to Axle		
Non-Powered Front Axle	2.11 m (6 ft. 11 in.)	—
MFWD Axle	2.14 m (7 ft. 0 in.)	2.14 m (7 ft. 0 in.)

**310SK BACKHOE LOADER**



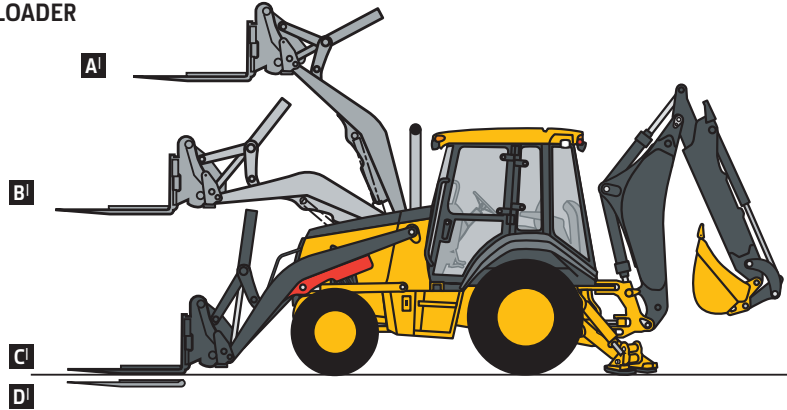
**310SK TC BACKHOE LOADER**



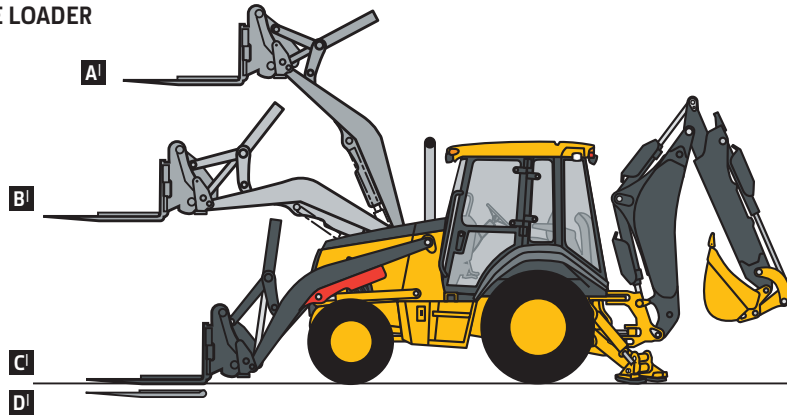
Backhoe Dimensions/Performance		310SK			310SK TC	
<b>Backhoe specifications are with 610-mm x 0.21-m<sup>3</sup> (24 in. x 7.5 cu. ft.) bucket</b>						
Bucket Range	305–762 mm (12–30 in.)			305–762 mm (12–30 in.)		
Digging Force				2 joysticks		
Bucket Cylinder	53.3 kN (11,990 lb.)			67.8 kN (15,236 lb.)		
With Heavy-Duty Cylinder Option	67.8 kN (15,236 lb.)			—		
Crowd Cylinder	36.0 kN (8,090 lb.)			36.0 kN (8,090 lb.)		
Swing Arc	180 deg.			180 deg.		
Operator Control	2 levers			2 joysticks		
	<i>With Standard Backhoe</i>	<i>With Optional Extendable Dipperstick</i>		<i>With Extendable Dipperstick</i>		
		<i>Retracted</i>	<i>Extended</i>	<i>Retracted</i>	<i>Extended</i>	
<b>F</b> Loading Height, Truck Loading Position	3.43 m (11 ft. 3 in.)	3.43 m (11 ft. 3 in.)	4.29 m (14 ft. 1 in.)	3.43 m (11 ft. 3 in.)	4.29 m (14 ft. 1 in.)	
<b>G</b> Reach from Center of Swing Pivot	5.56 m (18 ft. 3 in.)	5.66 m (18 ft. 7 in.)	6.68 m (21 ft. 11 in.)	5.66 m (18 ft. 7 in.)	6.68 m (21 ft. 11 in.)	
<b>H</b> Reach from Center of Rear Axle	6.63 m (21 ft. 9 in.)	6.73 m (22 ft. 1 in.)	7.72 m (25 ft. 4 in.)	6.73 m (22 ft. 1 in.)	7.72 m (25 ft. 4 in.)	
<b>I</b> Digging Depth (SAE maximum)	4.42 m (14 ft. 6 in.)	4.55 m (14 ft. 11 in.)	5.61 m (18 ft. 5 in.)	4.55 m (14 ft. 11 in.)	5.61 m (18 ft. 5 in.)	
<b>J</b> Digging Depth (SAE)						
610-mm (2 ft.) Flat Bottom	4.37 m (14 ft. 4 in.)	4.50 m (14 ft. 9 in.)	5.56 m (18 ft. 3 in.)	4.50 m (14 ft. 9 in.)	5.56 m (18 ft. 3 in.)	
2440-mm (8 ft.) Flat Bottom	4.06 m (13 ft. 4 in.)	4.19 m (13 ft. 9 in.)	5.33 m (17 ft. 6 in.)	4.19 m (13 ft. 9 in.)	5.33 m (17 ft. 6 in.)	
<b>K</b> Stabilizer Width, Transport	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	
<b>L</b> 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.)	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.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	
<b>M</b> 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.)	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.)	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)	
<b>N</b> Bucket Rotation	190 deg.	190 deg.	190 deg.	190 deg.	190 deg.	
<b>O</b> Transport Height	3.51 m (11 ft. 6 in.)	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>Loader Dimensions/Performance</b>						
<b>P</b> Bucket Dump Angle, Maximum	45 deg.			45 deg.		
<b>Q</b> Rollback Angle at Ground Level	40 deg.			40 deg.		
	<b>Standard Loader Option</b>				<b>Tool-Carrier Loader Option</b>	
	<i>Heavy-duty</i>	<i>Heavy-duty long lip</i>	<i>Heavy-duty</i>	<i>Multipurpose</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.)	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.)	2337 mm (92 in.)	2337 mm (92 in.)
Weight	390 kg (860 lb.)	405 kg (892 lb.)	521 kg (1,148 lb.)	817 kg (1,800 lb.)	493 kg (1,085 lb.)	789 kg (1,737 lb.)
Breakout Force	49.2 kN (11,051 lb.)	45.4 kN (10,210 lb.)	45.8 kN (10,300 lb.)	42.9 kN (9,650 lb.)	50.9 kN (11,450 lb.)	43.1 kN (9,680 lb.)
Lift Capacity, Full Height	3338 kg (7,353 lb.)	3332 kg (7,340 lb.)	3269 kg (7,200 lb.)	2996 kg (6,600 lb.)	3276 kg (7,215 lb.)	2656 kg (5,850 lb.)
<b>R</b> Height to Bucket Hinge Pin, Maximum	3.40 m (11 ft. 2 in.)	3.40 m (11 ft. 2 in.)	3.40 m (11 ft. 2 in.)	3.40 m (11 ft. 2 in.)	3.40 m (11 ft. 2 in.)	3.40 m (11 ft. 2 in.)
<b>S</b> Dump Clearance, Bucket at 45 deg.	2.69 m (8 ft. 10 in.)	2.48 m (8 ft. 2 in.)	2.64 m (8 ft. 8 in.)	2.62 m (8 ft. 7 in.)	2.59 m (8 ft. 6 in.)	2.50 m (8 ft. 2 in.)
<b>T</b> Reach at Full Height, Bucket at 45 deg.	767 mm (30.2 in.)	911 mm (35.9 in.)	765 mm (30.1 in.)	818 mm (32.2 in.)	762 mm (30.0 in.)	836 mm (32.9 in.)
<b>U</b> Digging Depth Below Ground, Bucket Level	175 mm (6.9 in.)	147 mm (5.8 in.)	206 mm (8.1 in.)	185 mm (7.3 in.)	140 mm (5.5 in.)	152 mm (6.0 in.)
<b>V</b> Length from Front Axle Centerline to Bucket Cutting Edge	2.03 m (6 ft. 8 in.)	2.18 m (7 ft. 2 in.)	2.03 m (6 ft. 8 in.)	2.15 m (7 ft. 1 in.)	2.15 m (7 ft. 1 in.)	2.27 m (7 ft. 5 in.)

Lift Capacity with Quick-Coupler/Forks	310SK		310SK TC	
Hydraulic Capacity	1219-mm (48 in.) Tines	1524-mm (60 in.) Tines	1219-mm (48 in.) Tines	1524-mm (60 in.) Tines
A <sup>1</sup> Maximum Height	2073 kg (4,570 lb.)	1891 kg (4,170 lb.)	2211 kg (4,875 lb.)	2053 kg (4,526 lb.)
B <sup>1</sup> Maximum Reach	3162 kg (6,971 lb.)	3003 kg (6,621 lb.)	3438 kg (7,580 lb.)	3294 kg (7,261 lb.)
C <sup>1</sup> At Ground Line	4145 kg (9,138 lb.)	3883 kg (8,561 lb.)	4400 kg (9,700 lb.)	4180 kg (9,215 lb.)
D <sup>1</sup> Below Ground Line	211 mm (8.3 in.)	211 mm (8.3 in.)	211 mm (8.3 in.)	211 mm (8.3 in.)

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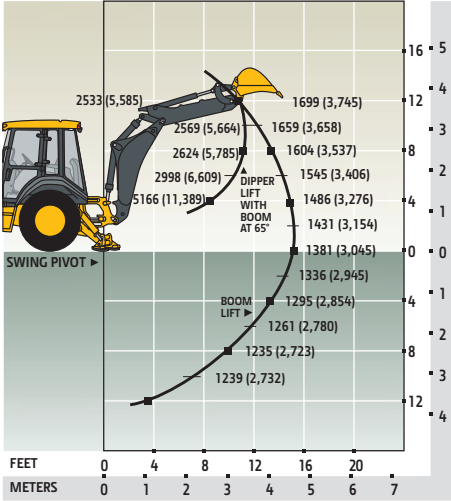


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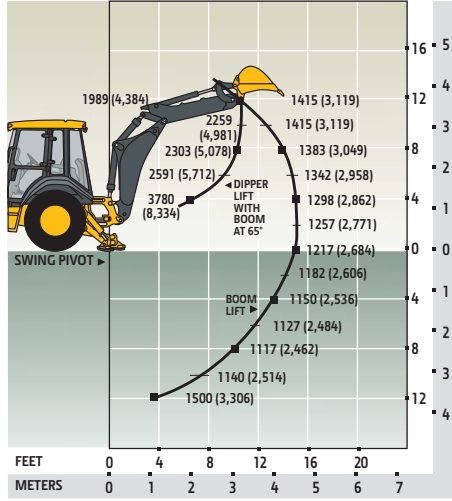


Lift capacities are over-end values in kg (lb.) according to SAE J31. Figures listed are 87% of the maximum lift force available. Base vehicle includes counterweight.

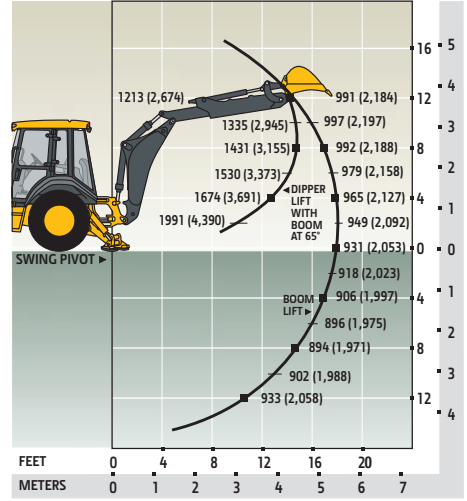
310SK Backhoe with Standard Dipperstick



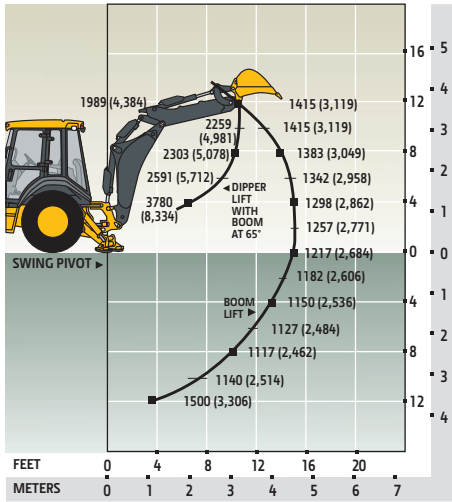
310SK Backhoe with 1.07-m (3 ft. 6 in.) Extendable Dipperstick, Retracted



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



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



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

