

315SG

BACKHOE LOADER

SPECIFICATIONS



CONSTRUCTION EQUIPMENT DIVISION

Engine

315SG

Type	John Deere 4045T – Turbocharged
Maximum rated power	89 SAE gross hp (66 kW) / 84 SAE net hp (63 kW) @ 2,000 rpm
Cylinders	4
Displacement	276 cu. in. (4.524 L)
Fuel consumption, typical	1.3 to 2.3 gal./hr. (4.9 to 8.7 L/h)
Torque rise	38 percent
Maximum net torque	273 lb.-ft. (369 Nm)
Lubrication	pressure system with spin-on filter and cooler
Air cleaner	dual stage dry type with safety element and precleaner
Electrical system	12 volt with 65-amp alternator
Sucker-type cooling fan	

Transmission

Four-speed, helical cut gear, collar-shift transmission synchronized in all gears with hydraulic reverser

Torque converter, single stage, dual phase with 2.63:1 stall ratio

Travel speeds with 16.9-28 rear tires

Forward

Reverse

Gear 1	3.8 mph (6.1 km/h)	4.2 mph (6.8 km/h)
Powershift	3.8 mph (6.1 km/h)	4.2 mph (6.8 km/h)
Gear 2	6.3 mph (10.1 km/h)	7.0 mph (11.3 km/h)
Powershift	6.4 mph (10.3 km/h)	7.1 mph (11.4 km/h)
Gear 3	15.3 mph (24.6 km/h)	17.1 mph (27.5 km/h)
Powershift	15.8 mph (25.4 km/h)	17.7 mph (28.5 km/h)
Gear 4	25.8 mph (41.5 km/h)	28.8 mph (46.3 km/h)
Powershift	26.0 mph (41.8 km/h)	N/A

Final Drives

Heavy-duty, inboard planetary final drives evenly distribute shock loads over three gears

Brakes

Power-assisted, hydraulic wet disc, mounted inboard, self adjusting and self equalizing

Capacities

Fuel tank (with ground level fueling)	36 gal. (136 L)
Engine coolant	17 qt. (16 L)
Engine oil including filter	9 qt. (8.5 L)
Torque converter and transmission	15 qt. (14 L)
Hydraulic system	24 gal. (91 L)
Rear axle	3.5 gal. (13 L)
Mechanical-front-wheel-drive axle	2.3 gal. (8.5 L)

Steering

Hydrostatic power steering and emergency steering conform to ISO5010

Non-powered axle

Curb turning radius with brakes	11 ft. 9 in. (3.57 m)
Without brakes	13 ft. 3 in. (4.04 m)
Bucket clearance circle with brakes	31 ft. 6 in. (9.61 m)
Without brakes	34 ft. 7 in. (10.55 m)
Steering wheel turns, stop to stop	2.3 to 3.0

Mechanical-front-wheel-drive

Curb turning radius with brakes	10 ft. 11 in. (3.34 m)
Without brakes	13 ft. 8 in. (4.17 m)
Bucket clearance circle with brakes	29 ft. 9 in. (9.07 m)
Without brakes	35 ft. 3 in. (10.74 m)
Steering wheel turns, stop to stop	2.5

Axle oscillations stop to stop, both axles

Axle ratings (SAE J43)

Front	18,860 lb. (8555 kg)
Rear	14,700 lb. (6670 kg)

Hydraulic System

System

Pressure

Backhoe	3,625 psi (25 000 kPa)
Loader	3,625 psi (25 000 kPa)

Pump

Hydraulic System (continued)

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Flow @ 2,200 rpm	
Backhoe	36 gpm (136 L/min.)
Loader	28 gpm (106 L/min.)
Filter, return oil	10-micron, spin-on enclosed replaceable element

Cylinders

	Bore	Stroke	Rod
Loader boom (2)	3.15 in. (80 mm)	31.1 in. (790 mm)	1.97 in. (50 mm)
Loader bucket (1)	3.15 in. (80 mm)	33.7 in. (856 mm)	1.77 in. (45 mm)
Backhoe boom (1)	4.72 in. (120 mm)	31.3 in. (795 mm)	2.20 in. (56 mm)
Backhoe crowd (1)	4.53 in. (115 mm)	23.9 in. (607 mm)	2.48 in. (63 mm)
Backhoe bucket (1)	3.54 in. (90 mm)	31.9 in. (810 mm)	2.20 in. (56 mm)
Backhoe swing (2)	3.54 in. (90 mm)	10.9 in. (278 mm)	1.97 in. (50 mm)
Backhoe extendable dipperstick (1)	2.76 in. (70 mm)	42.0 in. (1067 mm)	1.77 in. (45 mm)
Backhoe stabilizer (2)	3.54 in. (90 mm)	19.7 in. (500 mm)	1.97 in. (50 mm)
Steering (1) non-powered axle	1.97 in. (50 mm)	9.49 in. (241 mm)	0.98 in. (25 mm)
Steering (1) MFWD	2.56 in. (65 mm)	8.27 in. (210 mm)	1.42 in. (36 mm)

Tires

	Rear	Front
With non-powered front axle	16.9-24, 8 PR R4	11L-15, 8 PR F3
	16.9-28, 10 PR R4	11L-16, 12 PR F3
	19.5L-24, 8 PR R4	11L-16, 12 PR F3
With mechanical-front-wheel-drive	16.9-28, 10 PR R4	12.5/80-18, 10 PR
	19.5L-24, 8 PR R4	12.5/80-18, 10 PR

SAE Operating Weights

Standard	14,700 lb. (6670 kg)
Cab adds	580 lb. (263 kg)
Mechanical-front-wheel-drive with tires adds	485 lb. (220 kg)
Extendable dipperstick excluding required counterweight adds	490 lb. (222 kg)
Optional 400-lb. counterweight adds	400 lb. (181 kg)
Optional 650-lb. counterweight adds	650 lb. (295 kg)
Optional 250-lb. bolt-on counterweight adds	250 lb. (113 kg)
Backhoe bucket coupler adds	138 lb. (63 kg)

See backhoe and loader performance data for bucket weights.

Loader Buckets

	Width	Heaped Capacity	Weight
Heavy-duty long lip	92 in. (2340 mm)	1.30 cu. yd. (1.00 m ³)	1,050 lb. (476 kg)
Multipurpose	82 in. (2080 mm)	1.18 cu. yd. (0.91 m ³)	1,450 lb. (658 kg)
	86 in. (2180 mm)	1.25 cu. yd. (0.96 m ³)	1,450 lb. (658 kg)
	92 in. (2340 mm)	1.32 cu. yd. (1.01 m ³)	1,550 lb. (703 kg)

Auxiliary cutting edge and skid shoes are standard on all buckets.

Backhoe Performance

	With Standard Backhoe*	With Extendable Dipperstick*	
		Retracted	Extended
Digging force, bucket cylinder	11,990 lb. (53.3 kN)	12,158 b. (54.1 kN)	12,158 lb. (54.1 kN)
Digging force, crowd cylinder	8,090 lb. (36.0 kN)	7,796 lb. (34.7 kN)	5,628 lb. (25.0 kN)
Swing arc	180 degrees	180 degrees	180 degrees
Operator control	two levers	right foot treadle	right foot treadle
Bucket rotation	190 degrees	190 degrees	190 degrees
Leveling angle	8 degrees	8 degrees	8 degrees

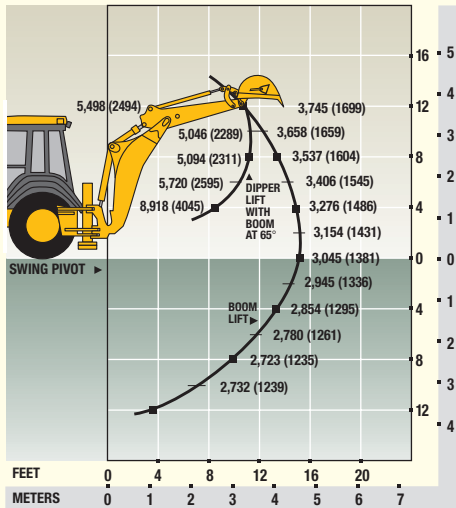
*Backhoe specifications are with 24-in. x 7.5-cu. ft. (610 mm x 0.21 m³) bucket.

Backhoe Buckets

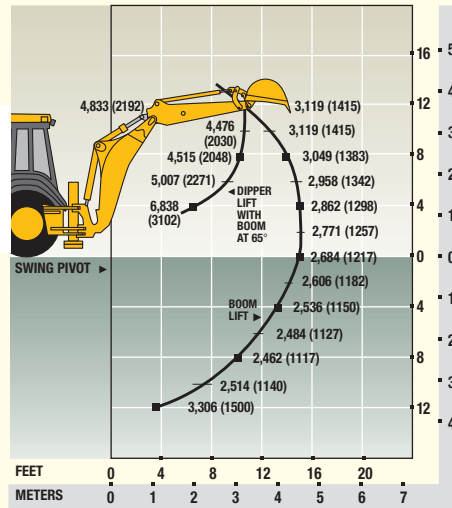
	Width	Capacity	Weight	
Standard duty	24 in. (610 mm)	7.5 cu. ft. (0.21 m ³)	350 lb. (159 kg)	
	12 in. (305 mm)	3.3 cu. ft. (0.09 m ³)	295 lb. (134 kg)	
Heavy duty with lift loop	18 in. (457 mm)	5.1 cu. ft. (0.14 m ³)	335 lb. (152 kg)	
	24 in. (610 mm)	7.5 cu. ft. (0.21 m ³)	400 lb. (181 kg)	
	24 in. (610 mm)	8.8 cu. ft. (0.25 m ³)	420 lb. (191 kg)	
	30 in. (762 mm)	10.0 cu. ft. (0.28 m ³)	445 lb. (202 kg)	
	36 in. (914 mm)	12.5 cu. ft. (0.35 m ³)	510 lb. (231 kg)	
	Severe duty with lift loop	18 in. (457 mm)	5.1 cu. ft. (0.14 m ³)	362 lb. (164 kg)
		24 in. (610 mm)	7.5 cu. ft. (0.21 m ³)	425 lb. (193 kg)
24 in. (610 mm)		8.8 cu. ft. (0.25 m ³)	455 lb. (206 kg)	
Ditch cleaning	30 in. (762 mm)	10.0 cu. ft. (0.28 m ³)	475 lb. (215 kg)	
	36 in. (914 mm)	12.5 cu. ft. (0.35 m ³)	510 lb. (231 kg)	

*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.

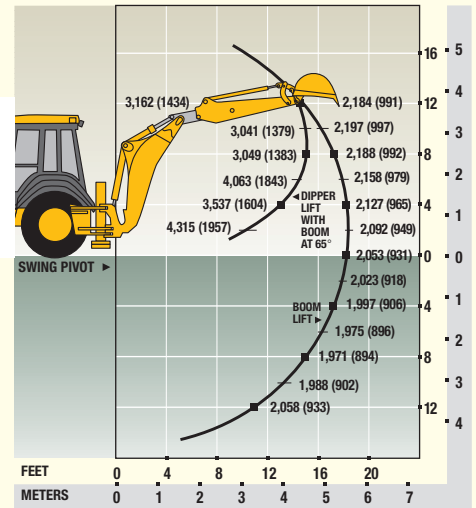
315SG BACKHOE WITH STANDARD DIPPERSTICK



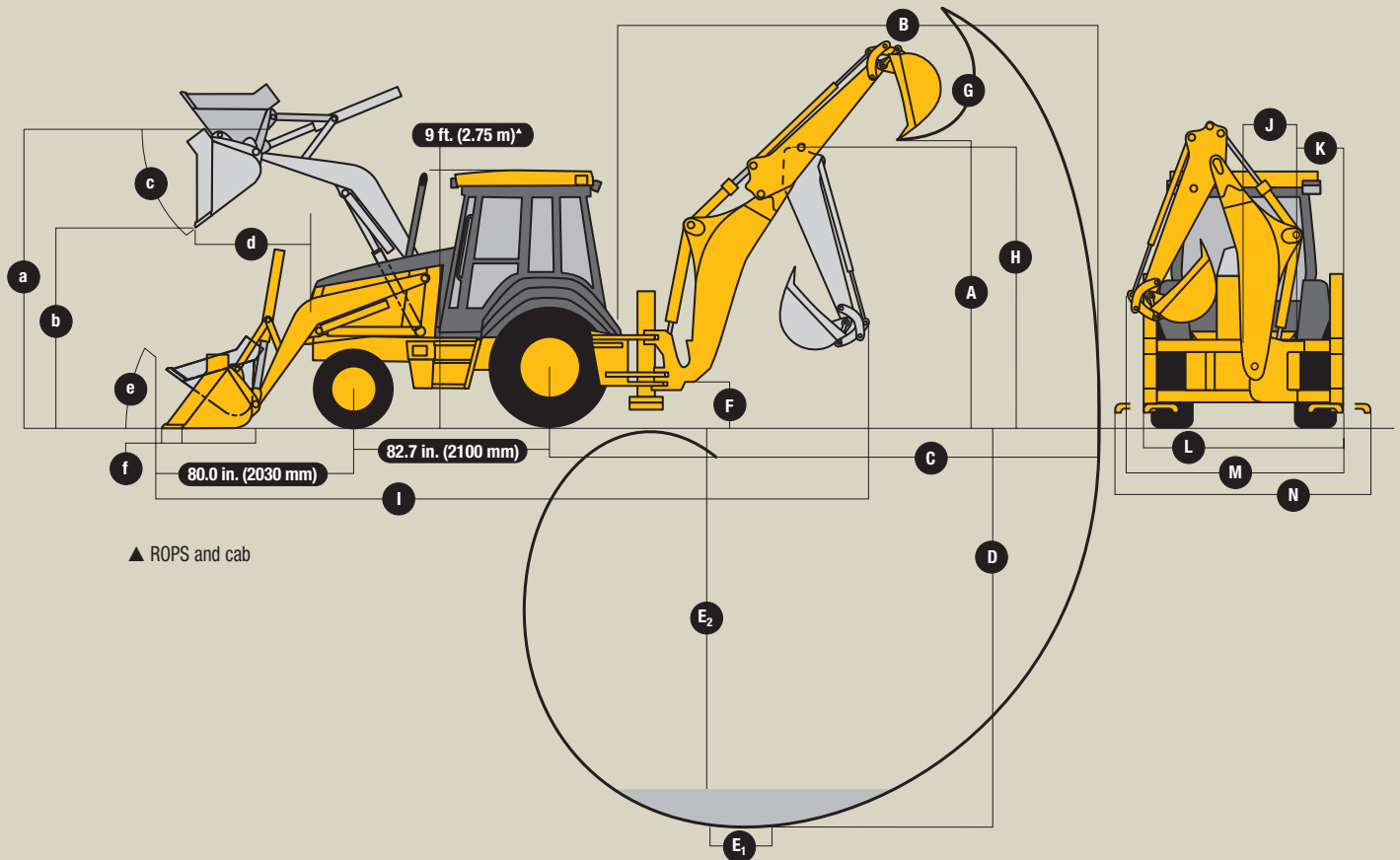
315SG BACKHOE WITH 3-FT. 6-IN. (1.07 M) EXTENDABLE DIPPERSTICK, RETRACTED



315SG BACKHOE WITH 3-FT. 6-IN. (1.07 M) EXTENDABLE DIPPERSTICK, EXTENDED



DIMENSIONS (SEE PAGE 7.)



Backhoe

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	With Standard Backhoe*	With Extendable Dipperstick*	
		Retracted	Extended
A Loading height, truck loading position	11 ft. 8 in. (3.56 m)	11 ft. 9 in. (3.58 m)	14 ft. 3 in. (4.34 m)
B Reach from center of swing pivot	18 ft. 1 in. (5.56 m)	18 ft. 5 in. (5.61 m)	21 ft. 9 in. (6.63 m)
C Reach from center of rear axle	22 ft. 8 in. (6.91 m)	23 ft. (7.01 m)	26 ft. 4 in. (8.03 m)
D Maximum digging depth	14 ft. 1 in. (4.29 m)	14 ft. 7 in. (4.42 m)	18 ft. (5.49 m)
E Digging depth (SAE):			
(1) 2-ft. (610 mm) flat bottom	13 ft. 11 in. (4.24 m)	14 ft. 5 in. (4.40 m)	17 ft. 10 in. (5.44 m)
(2) 8-ft. (2440 mm) flat bottom	12 ft. 11 in. (3.94 m)	13 ft. 5 in. (4.09 m)	17 ft. 1 in. (5.21 m)
F Ground clearance, minimum	13.8 in. (350 mm)	13.8 in. (350 mm)	13.8 in. (350 mm)
G Bucket rotation	190 degrees	190 degrees	190 degrees
H Transport height	12 ft. (3.67 m)	11 ft. 11 in. (3.48 m)	11 ft. 11 in. (3.48 m)
I Overall length, transport	17 ft. 3 in. (5.26 m)	17 ft. 3 in. (5.26 m)	17 ft. 3 in. (5.26 m)
J Side-shift from tractor centerline	22.9 in. (582 mm)	22.9 in. (582 mm)	22.9 in. (582 mm)
K Wall to swing centerline	22.8 in. (580 mm)	22.8 in. (580 mm)	22.8 in. (580 mm)
L Stabilizer width – transport with ROPS	7 ft. 7 in. (2.32 m)	7 ft. 7 in. (2.32 m)	7 ft. 7 in. (2.32 m)
M Overall width (less loader bucket)	91 in. (2.32 m)	93 in. (2.36 m)	93 in. (2.36 m)
N Stabilizer overall width – operating	7 ft. 7 in. (2.32 m)	7 ft. 7 in. (2.32 m)	7 ft. 7 in. (2.32 m)

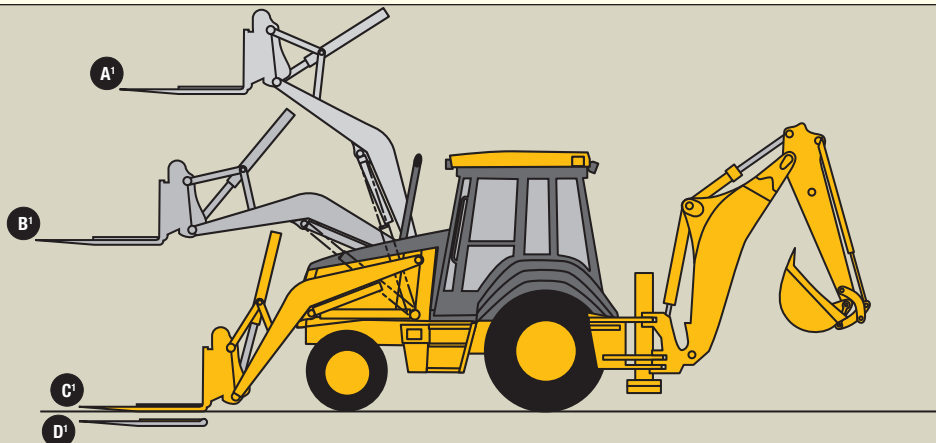
*Backhoe specifications are with 24-in. x 7.5-cu. ft. (610 mm x 0.21 m³) bucket.

Loader Performance with Bucket Options

	1.30-cu. yd. (1.00 m ³) Heavy-Duty Long Lip	1.18-cu. yd. (0.91 m ³) Multipurpose	1.25-cu. yd. (0.96 m ³) Multipurpose	1.32-cu. yd. (1.01 m ³) Multipurpose
Operator control	single lever	single lever	single lever	single lever
Breakout force	8,900 lb. (39.6 kN)	8,375 lb. (37.2 kN)	8,325 lb. (37.0 kN)	8,300 lb. (36.9 kN)
Lifting capacity, full height	7,200 lb. (3266 kg)	5,950 lb. (2700 kg)	5,900 lb. (2676 kg)	6,700 lb. (3040 kg)
a Height to bucket hinge pin, maximum	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)
b Dump clearance, bucket at 45 degrees	8 ft. 8 in. (2.64 m)	8 ft. 7 in. (2.62 m)	8 ft. 7 in. (2.62 m)	8 ft. 7 in. (2.62 m)
c Bucket dump angle, maximum	45 degrees	45 degrees	45 degrees	45 degrees
d Reach at full height, bucket at 45 degrees	30.1 in. (765 mm)	32.2 in. (818 mm)	32.2 in. (818 mm)	32.2 in. (818 mm)
e Rollback angle at ground level	40 degrees	40 degrees	40 degrees	40 degrees
f Digging depth below ground, bucket level	8.1 in. (206 mm)	7.3 in. (185 mm)	7.3 in. (185 mm)	7.3 in. (185 mm)
Raising time to full height	4.9 sec.	4.9 sec.	4.9 sec.	4.9 sec.
Bucket dump time	1.1 sec.	1.1 sec.	1.1 sec.	1.1 sec.
Bucket lowering time (power down)	1.9 sec.	1.9 sec.	1.9 sec.	1.9 sec.

Lift Capacity with Quick-Coupler/Forks

A¹ Maximum height	5,038 lb. (2287 kg)
B¹ Maximum reach	7,462 lb. (3388 kg)
C¹ At ground line	9,853 lb. (4473 kg)
D¹ Below ground line	4.4 in. (112.7 mm) to bottom of tine / 2.7 in. (68.3 mm) to top of tine



315SG Backhoe Loader

Key: ● Standard equipment ▲ Optional or special equipment

*See your John Deere dealer for further information.

Engine

- John Deere Model 4045T – 4.5 liter, 84 SAE net hp turbocharged, isolation mounted
- Vertical spin-on engine oil filter
- Vertical spin-on John Deere fuel filter with water separator
- Oil-to-water engine oil cooler
- Antifreeze, -34°F (-37°C)
- Coolant recovery tank
- Serpentine belt with automatic belt tensioner
- Sucker-type cooling fan
- Enclosed safety fan guard
- ▲ High ambient temperature engine cooling
- ▲ Dual-element dry-type air cleaner
- Muffler, underhood with curved-end exhaust stack
- ▲ Chrome exhaust extension
- ▲ Electric ether starting aid
- ▲ Engine coolant heater, 1,000 watts

Power Train

- Powershift transmission with torque converter: Four forward, three reverse speeds / Isolation mounted to mainframe
- ▲ Transmission with powershift reverser and torque converter: Fully synchronized four forward, four reverse speeds / Isolation mounted to mainframe
- Transmission oil cooler
- Vertical spin-on transmission filter
- Electric forward-neutral-reverse control lever with neutral safety switch interlock
- Electric clutch cutoff on gearshift and loader levers
- Differential lock, electric foot-actuated
- Planetary final drives
- Power-assisted hydraulic service brakes (conform to SAE J1473): Inboard, wet multi-disc, self adjusting and self equalizing
- Parking/emergency brake with electric switch control (conforms to SAE J1473): Spring applied, hydraulically released wet multi-disc / Independent of service brakes
- Hydrostatic power steering with emergency manual mode
- Non-powered front axle
- ▲ Mechanical-front-wheel-drive with limited-slip differential: Electric on/off control / Drive-shaft guard / Sealed axle
- 11L-15 F3 front tires
- ▲ 11L-16 F3 front tires
- ▲ 12.5/80-18 traction front tires
- ▲ 16.9-24 R4 rear tires
- ▲ 19.5L-24 R4 rear tires
- ▲ Rear wheel spacers for use with chains

Backhoe

- Backhoe with standard dipperstick, 14-ft. 6-in. digging depth
- Two-lever (Deere) backhoe controls
- ▲ Three-lever (Case) backhoe controls
- ▲ Four-lever (Ford) backhoe controls
- ▲ SAE excavator two-lever backhoe controls
- Backhoe transport lock lever
- Swing lock pin stored in operator's station
- Stabilizer valve with two-direction anti-drift valves
- Pivoting stabilizers with dirt pads
- ▲ Pivoting stabilizers with reversible pads
- ▲ Extended stabilizers
- ▲ Stabilizer cylinder guards
- Less bucket, with bucket pins
- ▲ Standard-duty backhoe bucket with lift loops

Backhoe (continued)

- ▲ Heavy-duty backhoe bucket with lift loops
- ▲ Severe-duty backhoe bucket with lift loops
- ▲ Backhoe coupler for "C," "D," "E," and "G" Series John Deere buckets, Case buckets, and Cat buckets
- ▲ Extendable dipperstick, 3-ft. 6-in. extension
- ▲ Auxiliary backhoe valve for swingers, thumbs, etc.
- ▲ Auxiliary backhoe valve for hammers, compactors
- ▲ Auxiliary backhoe plumbing for hammers, compactors
- ▲ Auxiliary backhoe plumbing for swingers, thumbs, etc.
- ▲ SAE-controlled load-lowering device valves
- ▲ Extended stabilizers

Loader

- Hydraulic self leveling
- Return-to-dig feature
- Single-lever control with electric clutch cutoff switch
- Bucket-level indicator
- Loader boom service lock
- ▲ Ride control
- ▲ Auxiliary loader hydraulics with two-lever control
- ▲ Hydraulic coupler for buckets, forks, etc.
- Less bucket, with bucket pins
- ▲ Heavy-duty loader buckets with bolt-on cutting edges, skid plates, and lift loops
- ▲ Multipurpose loader buckets with bolt-on cutting edges, skid plates, and lift loops

Hydraulic System

- 36-gpm (136 L/min.) tandem gear pump, open center system
- Independent hydraulic reservoir
- Swing-down hydraulic oil cooler
- "O"-ring face seal connectors
- 10-micron vertical spin-on filter

Electrical

- 12-volt system
- 65-amp alternator
- Single battery with 150-min. reserve capacity and 750 CCA
- ▲ Dual batteries with 300-min. reserve capacity and 1,500 CCA
- Positive terminal battery cover
- Blade-type multi-fused circuits
- By-pass start safety cover on starter

Lights

- Four halogen driving/work lights, 32,500 candlepower each (two front and two rear)
- ▲ Six additional halogen work lights, 32,500 candlepower each (two front, two rear, and two side)
- Two front and two rear turn signal/flashing
- Two rear stop and tail
- Two rear reflectors
- ▲ Rotating beacon
- ▲ Lift guards*

Operator's Station

- Modular-design ROPS/FOPS canopy with molded roof (conforms to SAE J1040): Isolation mounted
- Left and right access
- Slip-resistant steps and ergonomically located handholds
- Molded floor mat
- Headliner
- Coat hook
- 12-volt outlets (2)

Operator's Station (continued)

- Built-in beverage holders
- Built-in Operator's Manual storage compartment with manual
- Interior rearview mirror
- ▲ Outside rearview mirrors
- Hand throttle with fuel-economy setting at 2,100 rpm
- Suspended foot throttle
- ▲ Tilt steering
- Horn
- Key start switch with electric fuel shutoff
- Engine coolant temperature gauge, illuminated electronic, with audible warning
- Oil temperature gauge, illuminated electronic, with audible warning
- Fuel gauge, illuminated electronic
- Digital display of engine hours, engine rpm, and system voltage
- Monitor system with audible and visual warnings: Engine air restriction indicator / Engine oil pressure indicator with audible warning / Hydraulic filter restriction indicator / Parking brake on/off indicator with audible warning / Seat belt indicator / Low brake pressure
- Non-suspension vinyl swivel seat without armrests
- ▲ Air suspension fabric swivel seat with armrests, lumbar support, and adjustable backrest
- ▲ Suspension vinyl swivel seat with armrests, lumbar support, and adjustable backrest
- ▲ Suspension fabric swivel seat with armrests, lumbar support, and adjustable backrest
- 2-in. seat belt with retractors
- ▲ 3-in. seat belt with retractors
- ▲ Cab: Headliner, dome light, left and right cab doors, tinted safety glass, one rear and one front windshield wiper, fresh air intake heater/defroster/pressurizer (40,000-Btu/hr. [11.7 kW] heater), and 65-amp alternator standard / Front windshield washer, air conditioning (26,000-Btu/hr. [7.6 kW] output and CFC-free R134a refrigerant), 95-amp alternator, and AM/FM/weatherband radio optional / 12-volt outlets (3)
- ▲ Quarter cab

Overall Vehicle

- One-piece unitized construction mainframe
- Vehicle tie-downs, two front and one rear
- Remote grease bank for front axle
- Rigid-mounted front bumper
- ▲ 400-lb. (181 kg) front counterweight
- ▲ 650-lb. (295 kg) front counterweight
- ▲ 900-lb. (408 kg) front counterweight
- ▲ 1,150-lb. (522 kg) front counterweight
- ▲ 1,400-lb. (635 kg) front counterweight
- Fuel tank, 36 gal. (136 L), ground-level fueling
- Two-position easy-tilt hood
- ▲ Front grille screen
- Vandal protection for instrument panel, engine hood, toolbox, hydraulic reservoir, radiator, and fuel tank
- Reverse warning alarm: Switchable to 97 dB(A) or 111 dB(A)
- Dent-resistant full-coverage rear fenders
- ▲ Front fenders*
- ▲ SMV emblem
- ▲ Rental decal kit
- ▲ Special color paint*
- ▲ Bottom guard*



JOHN DEERE

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan, at standard conditions per SAE J1349 and DIN 70 020, using No. 2-D fuel at 35 API gravity. No derating is required up to 10,000-ft. (3050 m). Gross power is without cooling fan.

Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE standards. Except where otherwise noted, these specifications are based on a unit with 16.9-28, 8 PR R4 rear tires; 11L-16, 12 PR F3 front tires; 1.30-cu. yd. (1.00 m³) loader bucket; and 24-in. x 7.5-cu. ft. (610 mm x 0.21 m³) backhoe bucket.

