

SPECIFICATIONS

ENGINE	310E	
Type.....	John Deere 4045D – Naturally Aspirated	
Rated power @ 2,200 rpm.....	76 SAE gross hp (57 kW) 71 SAE net hp (53 kW)	
John Deere 4045T with altitude-compensating turbocharger.....	76 SAE gross hp (57 kW) 71 SAE net hp (53 kW)	
Cylinders.....	4	
Displacement.....	276 cu. in. (4.524 L)	
Fuel consumption, typical.....	1.1 to 1.9 gal./hr. (4.2 to 7.2 L/h)	
Torque rise.....	29 percent With altitude-compensating turbocharger..... 37 percent	
Maximum net torque	218 lb.-ft. (296 Nm) With altitude-compensating turbocharger..... 233 lb.-ft. (316 Nm)	
Lubrication.....	pressure system with spin-on filter and cooler	
Air cleaner	dual stage dry type with safety element, evacuator valve, and prescreener	
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	11 in. (280 mm)	
Travel speeds with 19.5L-24 rear tires	<i>Forward</i> Gear 1..... 3.6 mph (5.8 km/h) Gear 2..... 5.9 mph (9.5 km/h) Gear 3..... 14.4 mph (23.2 km/h) Gear 4..... 24.4 mph (39.3 km/h)	<i>Reverse</i> 4.0 mph (6.4 km/h) 6.6 mph (10.6 km/h) 16.1 mph (25.9 km/h) 27.2 mph (43.8 km/h)
FINAL DRIVES	heavy-duty, inboard planetary final drives evenly distribute shock loads over three gears	
BRAKES	hydraulic wet disk, 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	22 degrees	
Axle ratings (SAE J43)		
Front	17,340 lb. (7865 kg)	
Rear	12,610 lb. (5720 kg)	
HYDRAULIC SYSTEM		
System.....	open center	
Pressure		
Backhoe.....	3,625 psi (25 000 kPa)	
Loader	2,750 psi (19 000 kPa)	
Pump	gear type	
Flow @ 2,200 rpm	28 gpm (106 L/min.)	
Filter, return oil	10-micron, spin-on enclosed replaceable element	

CYLINDERS**310E**

	<i>Bore</i>	<i>Stroke</i>	<i>Rod</i>
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)	4.33 in. (110 mm)	32.3 in. (821 mm)	2.20 in. (56 mm)
Backhoe crowd (1)	4.33 in. (110 mm)	22.3 in. (566 mm)	2.20 in. (56 mm)
Backhoe bucket (1)	3.15 in. (80 mm)	35.1 in. (892 mm)	1.97 in. (50 mm)
Backhoe swing (2)	3.15 in. (80 mm)	12.2 in. (310 mm)	1.77 in. (45 mm)
Backhoe extendable dipperstick (1)	2.48 in. (63 mm)	42.0 in. (1067 mm)	1.26 in. (32 mm)
Backhoe stabilizer (2)	3.15 in. (80 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 17.5L-24, 10 PR R4 19.5L-24, 8 PR R4	11L-15, 8 PR F3 11L-15, 8 PR F3 11L-16, 12 PR F3
With mechanical-front-wheel-drive	16.9-24, 8 PR R4 19.5L-24, 8 PR R4	12-16.5, 8 PR NHS 12-16.5, 8 PR NHS

SAE OPERATING WEIGHTS

Standard	12,800 lb. (5806 kg)
Cab adds	580 lb. (263 kg)
Mechanical-front-wheel-drive with tires adds	370 lb. (168 kg)
Extendable dipperstick excluding required counter-weight adds	440 lb. (200 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	130 lb. (59 kg)

See backhoe and loader performance data for bucket weights.

LOADER BUCKETS*Width**Heaped Capacity**Weight*

Heavy-duty long lip* .....	.86 in. (2180 mm)	1.00 cu. yd. (0.76 m ³)	710 lb. (322 kg)
Heavy-duty long lip** .....	.86 in. (2180 mm)	1.12 cu. yd. (0.86 m ³)	940 lb. (426 kg)
Heavy-duty long lip .....	.86 in. (2180 mm)	1.25 cu. yd. (0.96 m ³)	875 lb. (397 kg)
Multipurpose** .....	.86 in. (2180 mm)	1.12 cu. yd. (0.86 m ³)	1,450 lb. (658 kg)

*Pre-drilled for auxiliary cutting edge.

**With auxiliary cutting edge and skid shoes standard.

BACKHOE PERFORMANCE*With Standard Backhoe***With Extendable Dipperstick***Retracted**Extended*

Digging force, bucket cylinder	11,106 lb. (49.4 kN)	11,211 b. (49.9 kN)	11,211 lb. (49.9 kN)
Digging force, crowd cylinder	7,006 lb. (31.2 kN)	6,782 lb. (30.2 kN)	4,844 lb. (21.5 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
Stabilizer angle rearward	18 degrees	18 degrees	18 degrees
Leveling angle	14 degrees	14 degrees	14 degrees

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

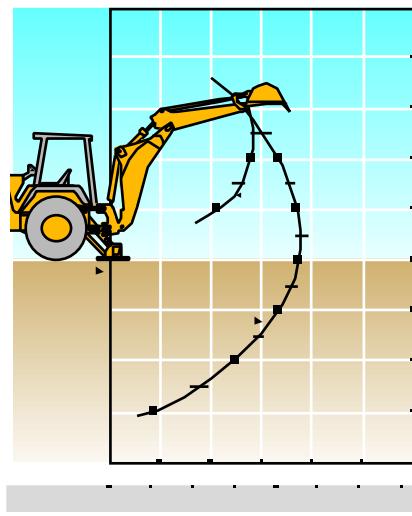
BACKHOE BUCKETS*Width**Capacity**Weight*

Standard duty	18 in. (457 mm) 24 in. (610 mm)	4.6 cu. ft. (0.13 m ³) 6.5 cu. ft. (0.18 m ³)	260 lb. (118 kg) 300 lb. (136 kg)
Heavy duty with lift loop	12 in. (305 mm) 18 in. (457 mm) 24 in. (610 mm) 30 in. (762 mm)	2.8 cu. ft. (0.11 m ³) 5.1 cu. ft. (0.14 m ³) 7.5 cu. ft. (0.21 m ³) 10.0 cu. ft. (0.28 m ³)	240 lb. (109 kg) 335 lb. (152 kg) 400 lb. (181 kg) 445 lb. (202 kg)

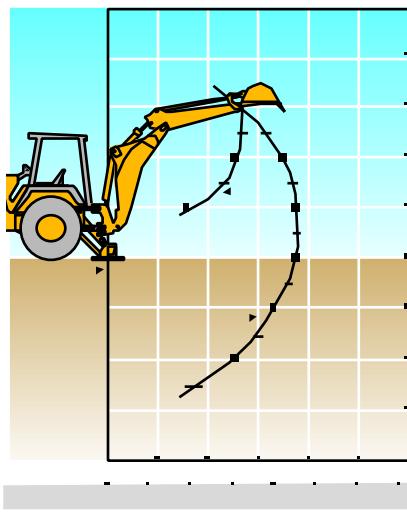
LIFT CAPACITIES* / DIMENSIONS

*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.

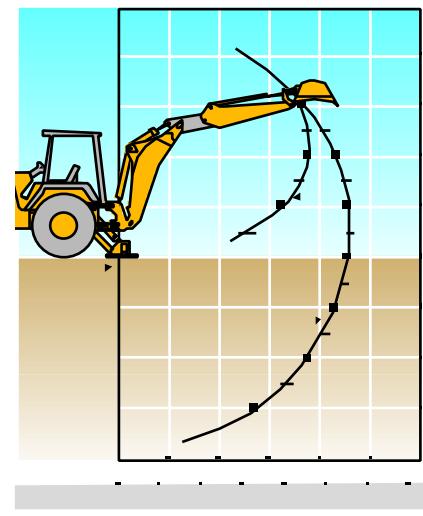
310E BACKHOE WITH
STANDARD DIPPERSTICK



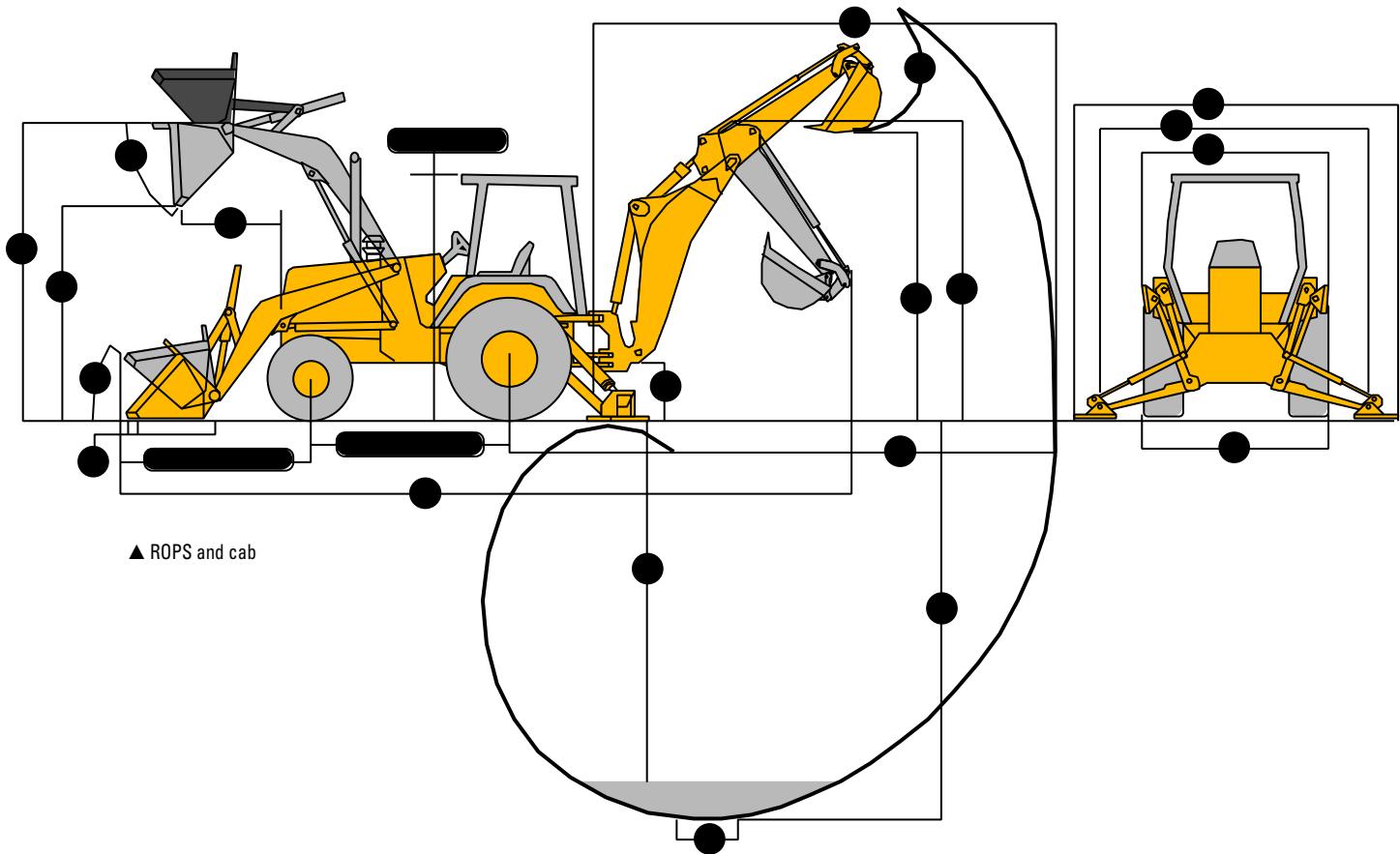
310E BACKHOE WITH 3-FT. 6-IN. (1.07 M)
EXTENDABLE DIPPERSTICK, RETRACTED



310E BACKHOE WITH 3-FT. 6-IN. (1.07 M)
EXTENDABLE DIPPERSTICK, EXTENDED



DIMENSIONS (SEE PAGE 19.)



▲ ROPS and cab

BACKHOE**310E***With Standard
Backhoe***With Extendable Dipperstick**
Retracted *Extended*

A 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)
B 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)
C 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)
D Maximum digging depth.....	14 ft. 3 in. (4.34 m)	14 ft. 5 in. (4.39 m)	17 ft. 11 in. (5.46 m)
E Digging depth (SAE):			
(1) 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)
(2) 8-ft. (2440 mm) flat bottom.....	13 ft. (3.96 m)	13 ft. 4 in. (4.06 m)	17 ft. (5.18 m)
F Ground clearance, minimum.....	12 in. (305 mm)	12 in. (305 mm)	12 in. (305 mm)
G Bucket rotation.....	190 degrees	190 degrees	190 degrees
H Transport height.....	11 ft. 3 in. (3.43 m)	11 ft. 2 in. (3.40 m)	11 ft. 2 in. (3.40 m)
I Overall length, transport.....	23 ft. 3 in. (7.09 m)	23 ft. 3 in. (7.09 m)	23 ft. 3 in. (7.09 m)
J Stabilizer width – transport with ROPS.....	7 ft. 2 in. (2.18 m)	7 ft. 2 in. (2.18 m)	7 ft. 2 in. (2.18 m)
K Stabilizer spread – operating.....	10 ft. 2 in. (3.10 m)	10 ft. 2 in. (3.10 m)	10 ft. 2 in. (3.10 m)
L 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)
M Width over tires.....	81.7 in. (2.07 m)	81.7 in. (2.07 m)	81.7 in. (2.07 m)

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

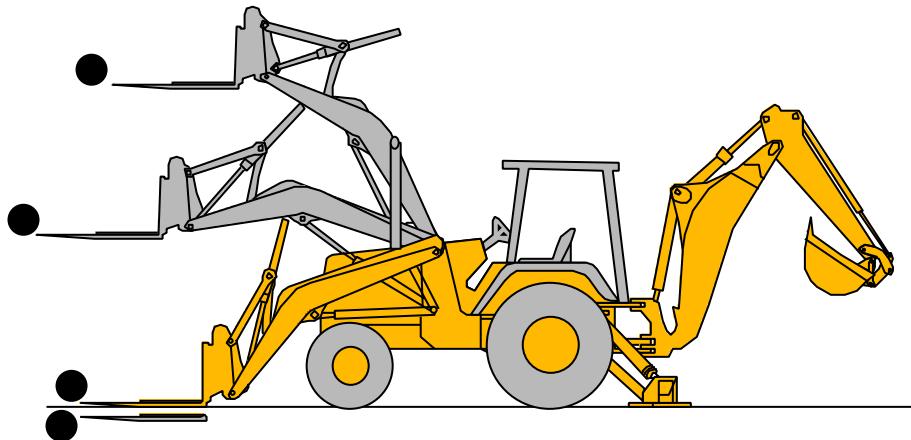
LOADER PERFORMANCE WITH BUCKET OPTIONS

	<i>1.00 cu. yd. (0.76 m³) Heavy- Duty Long Lip</i>	<i>1.12 cu. yd. (0.86 m³) Heavy- Duty Long Lip</i>	<i>1.25 cu. yd. (0.96 m³) Heavy- Duty Long Lip</i>	<i>1.12 cu. yd. (0.86 m³) Multipurpose</i>
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Operator control.....	single lever	single lever	single lever	single lever
Breakout force	8,100 lb. (36.0 kN)	7,950 lb. (35.4 kN)	7,603 lb. (33.8 kN)	7,125 lb. (31.7 kN)
Lifting capacity, full height.....	5,800 lb. (2631 kg)	5,600 lb. (2540 kg)	5,558 lb. (2523 kg)	5,100 lb. (2313 kg)
a 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)
b Dump clearance, bucket at 45 degrees	8 ft. 10 in. (2.69 m)	8 ft. 10 in. (2.69 m)	8 ft. 2 in. (2.59 m)	8 ft. 6 in. (2.59 m)
c Bucket dump angle, maximum	45 degrees	45 degrees	45 degrees	45 degrees
d Reach at full height, bucket at 45 degrees	30.9 in. (785 mm)	30.2 in. (767 mm)	31.9 in. (809 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.....	6.3 in. (160 mm)	6.9 in. (175 mm)	5.8 in. (147 mm)	7.8 in. (197 mm)
Raising time to full height	5.2 sec.	5.2 sec.	5.2 sec.	5.2 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

A Maximum height	3,685 lb. (1673 kg)
B Maximum reach	5,570 lb. (2528 kg)
C At ground line	7,310 lb. (3319 kg)
D Below ground line.....	4.4 in. (112.7 mm) to bottom of tine / 2.7 in. (68.3 mm) to top of tine



ADDITIONAL EQUIPMENT

	310E	310E	310E
ENGINE			
John Deere Model 4045D – 4.5 liter, 71 SAE net hp naturally aspirated, isolation mounted	●		
John Deere Model 4045T – 4.5 liter, 71 SAE net hp altitude-compensating turbocharged, isolation mounted	■		
Vertical spin-on engine oil filter	●		
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	●		
Dual element dry-type air cleaner with evacuator valve and prescreener	●		
Muffler, underhood with curved-end exhaust stack	●		
Electric ether starting aid	●		
Engine coolant heater, 1,000 watts	●		
POWER TRAIN			
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	●		
Hydraulic service brakes			
Inboard, wet multi-disc, self adjusting and self equalizing / Conforms to SAE J1473	●		
Parking/emergency brake with electric switch control	●		
Spring applied, hydraulically released wet multi-disc / Independent of service brakes / Conforms to SAE J1473	●		
Hydrostatic power steering with emergency manual mode	●		
Non-powered front axle	●		
Mechanical-front-wheel-drive	●		
Electric on/off control / Drive-shaft guard / Sealed axle	●		
Tires			
11L-15 F3 front tires	●		
11L-16 F3 front tires	■		
12-16.5 traction front tires	■		
16.9-24 R4 rear tires	●		
17.5L-24 R4 rear tires	■		
19.5L-24 R4 rear tires	■		
Rear wheel spacers for use with chains			
BACKHOE			
Backhoe with standard dipperstick, 14 ft. 3 in. digging depth			
Backhoe controls			
Two-lever (Deere) controls	●		
Three-lever (Case) controls	●		
Four-lever (Ford) controls	●		
SAE excavator two-lever 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	●		
With reversible pads	●		
Stabilizer cylinder guards	●		
Backhoe buckets			
Less bucket, with bucket pins	●		
Standard duty with lift loops	●		
Heavy duty with lift loops	●		
310E			
Backhoe bucket coupler for "C" and "D" 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	●		
SAE controlled load lowering device valves	●		
LOADER			
Hydraulic self leveling	●		
Return-to-dig feature	●		
Single-lever control with electric clutch cutoff switch	●		
Bucket-level indicator	●		
Loader boom service lock	●		
Auxiliary loader hydraulics with two-lever control	●		
Loader front coupler	●		
Loader buckets			
Less bucket, with bucket pins	●		
Heavy-duty bucket with lift loops, prepunched for bolt-on cutting edge	●		
Heavy-duty buckets with bolt-on cutting edge, skid plates, and lift loops	●		
Multipurpose buckets with bolt-on cutting edge, skid plates, and lift loops	●		
HYDRAULIC SYSTEM			
28 gpm (106 L/min.) gear pump, open center system			
Independent hydraulic reservoir	●		
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			
Two front halogen driving/work lights, 32,500 candlepower each	●		
Two additional front halogen work lights, 32,500 candlepower each	●		
Two rear halogen work lights, 32,500 candlepower each	●		
Two front and two rear turn signal/flashing	●		
Two rear stop and tail	●		
Two rear reflectors	●		
Rotating beacon	●		
OPERATOR'S STATION			
Modular-design ROPS/FOPS canopy with molded roof			
Isolation mounted / Conforms to SAE J1040			
Left and right front access	●		
Slip-resistant steps and ergonomically located handholds	●		
Coat hook	●		
Built-in beverage and Thermos® bottle 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	●		
Horn	●		
Key start switch with electric fuel shutoff	●		
Hourmeter, illuminated electric	●		
Tachometer/hourmeter, illuminated electric	●		
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	●		
Front counterweights			
400 lb. (181 kg)	●		
650 lb. (295 kg)	●		
900 lb. (408 kg)	●		
1,150 lb. (522 kg)	●		
1,400 lb. (635 kg)	●		
Fuel tank, 36 gal. (136 L), ground level fueling	●		
Engine sideshields with sliding service access door	●		
Front grille screen	●		
Vandal protection for instrument panel, engine access doors, and fuel tank	●		
Reverse warning alarm			
Switchable to 97 dB(A) or 111 dB(A)	●		
Dent-resistant rear fenders	●		
Rear fender extensions	●		
Front fenders*	●		
SMV emblem	●		
Rental decal kit	●		
Special color paint*	●		
Quarter cab*	●		

KEY: ● Standard equipment ■ Optional or special equipment

*See your John Deere dealer for further information.



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 5,000 feet (1500 m) altitude. With optional altitude compensating turbocharger 10,000 feet (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 17.5L-24, 10 PR R4 rear tires, 11L-15, 8 PR F3 front tires, 1.00 cu. yd. (0.76 m³) loader bucket, 24 in. x 6.5 cu. ft. (610 mm x 0.18 m³) backhoe bucket.

