



644E

LOADER



Model shown may include options

**SAE Net
Horsepower**

160 hp
(119 kW)

**Buckets
Range to**

4.0 cu. yd.
(3.1 m³)

**Operating
Weights to**

34,776 lb.
(15,774 kg)

ENGINE

John Deere engineered and manufactured. Replaceable wet type cylinder liners provide superior heat dissipation, longer life. High strength alloy heads have replaceable valve inserts. The forged steel, 5-main bearing crankshaft is statically and dynamically balanced for smooth operation. Cast aluminum pistons provide good heat transfer and pistons are sprayed with cooling oil for longer life.

Engine: John Deere 6466T
 Rated power @ 2200 rpm 160 SAE net hp (119 kW)
 168 SAE gross hp (125 kW)

Cylinders 6
 Displacement 466 cu. in. (7.636 L)
 Fuel consumption, typical 3.0 to 5.9 gal/hr (11.3 to 22.3 L/h)
 Maximum net torque at 1400 rpm 510 lb-ft (691 Nm)
 Air cleaner dual stage dry type with restriction indicator
 Electrical system 12 volt with 65-amp alternator
 Battery (one 12 volt)
 25 amps at 80°F (27°C) reserve capacity 160 min.
 BCI group 27 cold cranking capacity
 at 0°F (-18°C) 925 amps

TRANSMISSION

A full power shift torque-converter-type transmission provides four speeds forward and three reverse speeds. A single-stage, single phase torque converter and countershaft style power shift transmission are paired for smooth and modulated shifts.

TRAVEL SPEEDS

| Gear | Forward | | Reverse | |
|------|---------|--------|---------|--------|
| | mph | (km/h) | mph | (km/h) |
| 1 | 4.8 | 7.7 | 4.8 | 7.7 |
| 2 | 7.6 | 12.2 | 7.6 | 12.2 |
| 3 | 16.4 | 26.4 | 16.4 | 26.4 |
| 4 | 25.5 | 41.0 | | |

FINAL DRIVES

Large, heavy-duty, planetary final drive gears are mounted inboard where size is not restricted by wheel diameter. They distribute axle shock loads evenly over three gears and run in a cooling oil bath for long life and trouble-free service.

DIFFERENTIALS

Conventional front and rear differentials are standard. John Deere's exclusive hydraulic differential lock is the superior traction alternative. It can be ordered on the front, with a conventional differential in the rear. Or you can order the hydraulic lock front and rear. In either case the operator is in complete control, engaging and disengaging the differential lock as needed. When engaged the affected wheels are 100 percent locked up; turning at the same speed, giving maximum traction for faster loading, pulling you through slippery spots. Differentials available:

| | |
|---|----------|
| Conventional front and rear | standard |
| Hydraulic lock front, conventional rear | optional |
| NoSPIN front, conventional rear | optional |
| Hydraulic lock front and rear | optional |
| Front axle disconnect | optional |

BRAKES

Hydraulic actuated, wet disk brakes are mounted inboard. They are bathed in cooling oil for long life, self-adjusting, self-equalizing, and require no periodic service. The foot-operated parking brake is an expanding shoe attached to the transmission output shaft. An optional front axle disconnect is available for loaders that might be driven long distances.

STEERING

The steering system in the 644E provides low effort, smooth control at any engine rpm. High torque steering cylinder geometry and large cylinders permit full power steering at all speeds through the 80 degree steering arc (40 degrees each direction).

| | |
|--|--------------------------|
| Turning radius | 17 ft. 9 in. (5.42 m) |
| (measured to centerline of outside tire) | |
| Rear axle oscillation | 26 degrees, stop to stop |
| Vertical travel at center of tire | 36.1 in. (916 mm) |

HYDRAULICS

Loader functions and steering:

A gear pump delivers 65.5 gpm (248 L/min) at 600 psi (4137 kPa) and 2200 engine rpm. The loader function relief valve pressure setting is 2850 psi (19 651 kPa). The maximum steering pressure is 2600 psi (17 927 kPa).

Controls:

Dual pilot hydraulic valves with one or two levers. An optional triple valve is available for forks and attachments.

Brakes and pilot system:

The axial-piston pump delivers 8.1 gpm (31 L/min) at 600 psi (4137 kPa) and 2200 engine rpm. Maximum system pressure is 2300 psi (15 859 kPa).

Loader operating cycle times at full throttle with rated load in the bucket:

| | |
|-------|------------------|
| Raise | 6.2 sec. |
| Dump | 1.8 sec. |
| Lower | 3.5 sec. (float) |
| | 4.5 sec. (power) |

Maximum lift capacity with 3.25 cu. yd. (2.5 m³) excavating bucket:

| | |
|----------------|------------------------|
| Maximum height | 17,437 lb. (7908 kg) |
| Ground level | 27,655 lb. (12 542 kg) |

TIRES

Choice of:

| | |
|--------------------|---|
| 16.00-24, 12 PR G2 | 20.5-25, Radial, One Star L3 equivalent |
| 20.5-25, 12 PR L2 | 20.5-25, Radial, One Star L2 equivalent |
| 20.5-25, 16 PR L2 | 23.5-25, 12 PR L2 |
| 20.5-25, 16 PR L3 | 23.5-25, 20 PR L3 |
| | 23.5-25, Radial, One Star L3 equivalent |

CAPACITIES

| | U.S. | |
|-------------------------------|---------|----------|
| Fuel tank | 75 gal. | (284 L) |
| Cooling system | 30 qt. | (28.5 L) |
| Crankcase | 23 qt. | (22 L) |
| Crankcase, including filter | 25 qt. | (24 L) |
| Transmission case and filters | 15 qt. | (14 L) |
| Front differential | 24 qt. | (23 L) |
| Rear differential | 24 qt. | (23 L) |
| Loader hydraulic sump | 120 qt. | (115 L) |

OPERATING WEIGHT

See 644E Loader Operating Information and various charts.

644E LOADER OPERATING INFORMATION

| OPERATING INFORMATION | Bucket Type/Size | Excavating | Excav. w/ Bolt-on Edge | Excav. w/Aux. Spillguard* | Excav. w/Edge + Spillguard* | Stockpiling | Stockpile. w/ Bolt-On Edge | Stockpile. w/ Aux. Spillguard* | Stockpile. w/Edge + Spillguard* | Multi-purpose** |
|--|---------------------------|------------------|------------------------|---------------------------|-----------------------------|------------------|----------------------------|--------------------------------|---------------------------------|------------------|
| Capacity, heaped SAE | cu. yd. m ³ | 3.25 2.5 | 3.38 2.6 | 3.5 2.7 | 3.75 2.8 | 3.75 2.8 | 3.88 3.0 | 3.88 3.0 | 4.0 3.1 | 2.75 2.1 |
| Capacity, struck, SAE | cu. yd. m ³ | 2.78 2.13 | 2.88 2.20 | 3.15 2.41 | 3.25 2.49 | 3.16 2.42 | 3.24 2.48 | 3.50 2.70 | 3.65 2.78 | 2.31 1.77 |
| Bucket width | in. m | 109.45 2.78 | 109.45 2.78 | 109.45 2.78 | 109.45 2.78 | 109.45 2.78 | 109.45 2.78 | 109.45 2.78 | 109.45 2.78 | 109.45 2.78 |
| Breakout force, SAE J732C | lb. kN | 37,073 164.9 | 35,173 156.5 | 36,980 164.5 | 35,084 156.1 | 34,251 152.4 | 32,567 144.9 | 34,161 152.0 | 32,478 144.5 | 38,488 171.2 |
| Tipping load, straight | lb. kg | 27,181 12,329 | 26,550 12,043 | 26,157 12,318 | 26,552 12,030 | 26,810 12,161 | 26,178 11,874 | 26,782 12,148 | 26,147 11,860 | 25,586 12,059 |
| Tipping load, 40-deg. full turn, SAE | lb. kg | 23,038 10,450 | 22,441 10,179 | 23,005 10,435 | 22,408 10,164 | 22,703 10,298 | 22,106 10,027 | 22,668 10,282 | 22,068 10,010 | 22,476 10,195 |
| Tipping load, 35-deg. turn | lb. kg | 23,845 10,816 | 23,243 10,543 | 23,817 10,803 | 23,212 10,529 | 23,503 10,661 | 22,902 10,388 | 23,470 10,646 | 22,866 10,372 | 23,279 10,559 |
| Reach, 45 deg. dump, 7 ft. (2.13 m) clearance | in. mm | 60.51 1537 | 60.43 1535 | 60.51 1537 | 60.43 1535 | 61.81 1570 | 61.69 1567 | 61.81 1570 | 61.69 1567 | 54.96 1396 |
| Reach, 45 deg. dump, full height | in. mm | 37.00 940 | 37.87 962 | 37.00 940 | 37.87 962 | 39.49 1003 | 40.39 1026 | 39.49 1003 | 40.39 1026 | 32.05 814 |
| Dump clearance, 45 deg., full height | in. mm | 117.12 2975 | 115.08 2923 | 117.2 2975 | 115.08 2923 | 114.61 2911 | 112.56 2859 | 114.61 2911 | 112.56 2859 | 115.87 2943 |
| Overall length | ft.-in. m | 25-2.2 7.68 | 25-4.9 7.75 | 25-2.2 7.68 | 25-4.9 7.75 | 25-5.9 7.77 | 25-8.7 7.84 | 25-5.9 7.77 | 25-8.7 7.84 | 25-0.4 7.63 |
| Loader clearance circle, bucket carry position | ft.-in. m | 41-5 12.63 | 41-6.8 12.63 | 41-5 12.63 | 41-6.8 12.67 | 41-7.3 12.68 | 41-9.0 12.73 | 41-7.3 12.68 | 41-9.0 12.73 | 41-4.1 12.60 |
| Operating weight | lb. kg | 34,108 15,471 | 34,502 15,650 | 34,227 15,525 | 34,621 15,704 | 34,262 15,541 | 34,657 15,720 | 34,381 15,595 | 34,776 15,774 | 34,600 15,694 |

*Auxiliary spillguard is dealer installed. The spillguard is primarily intended to prevent spillage of loose material. However, it does increase bucket capacity which can be utilized in loose materials.

**Allied equipment ordered through John Deere dealer.

Loader operating information is based on machine with all standard equipment 23.5-25, 12 PR L2 tires, one rear counterweight, ROPS cab, full fuel tank, 175-lb. (79 kg) operator. Operating information is affected by tire size, ballast and attachments. For selected items, add or subtract the following:

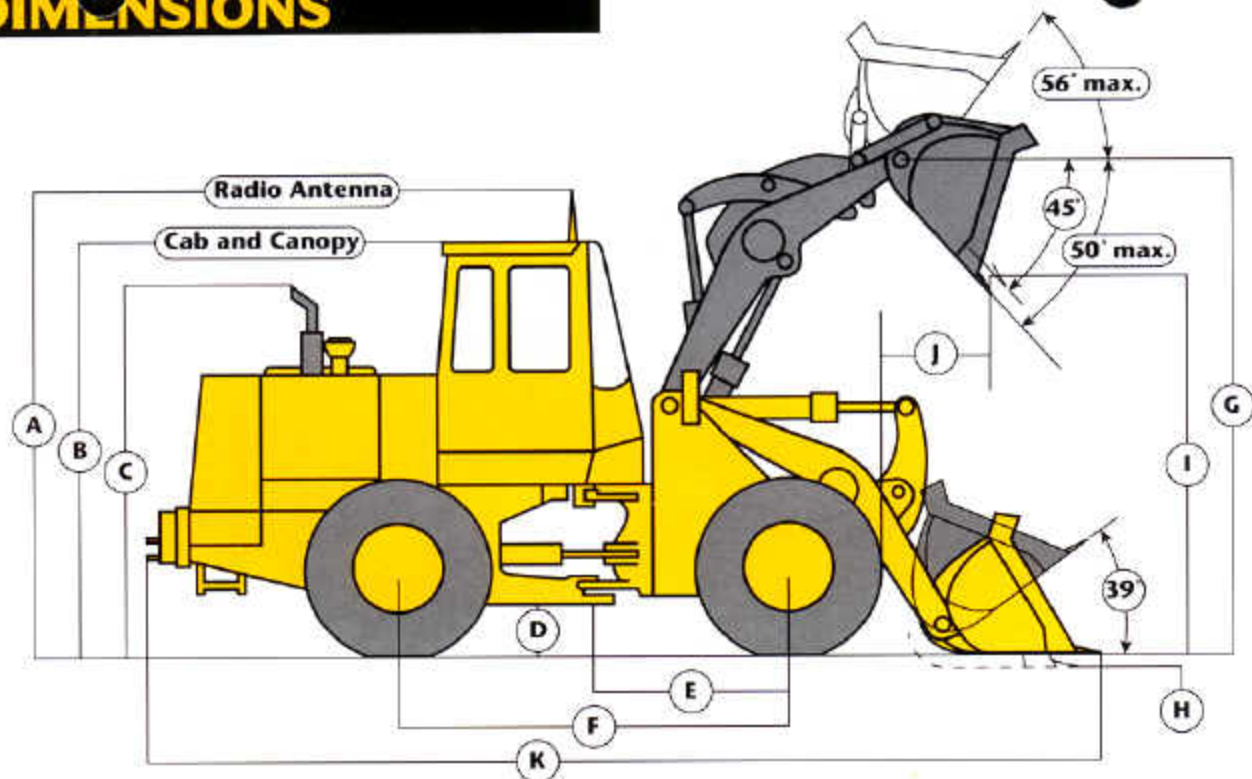
Adjustments to operating weights and tipping load for 3.25 cu. yd. (2.5 m³) excavating bucket.

ADJUSTMENTS TO OPERATING WEIGHTS

| Add (+) or deduct (-) lb. (kg) as indicated for loaders with: | | Operating Weight | Tipping Load Straight | Tipping Load 35 Deg. Full Turn, SAE | Tipping Load 40 Deg. Full Turn, SAE |
|---|-----------|------------------|-----------------------|-------------------------------------|-------------------------------------|
| 16.00-24, 12 PR G2 tires w/o CaCl ₂ | lb. kg | -2160 980 | -1563 709 | -1391 631 | -1351 613 |
| 16.00-24, 12 PR G2 tires w/CaCl ₂ | lb. kg | -811 368 | -388 176 | -346 157 | -335 152 |
| 20.5-25, 12 PR L2 tires w/o CaCl ₂ | lb. kg | -1587 720 | -1149 521 | -1021 463 | -992 450 |
| 20.5-25, 12 PR L2 tires w/CaCl ₂ | lb. kg | +234 106 | +1486 674 | +1323 600 | +1283 582 |
| 20.5-25, 16 PR L2 tires w/o CaCl ₂ | lb. kg | -1499 680 | -1085 492 | -966 438 | -937 425 |
| 20.5-25, 16 PR L2 tires w/CaCl ₂ | lb. kg | +322 146 | +1550 703 | +1380 626 | -1338 607 |
| 20.5-25, 16 PR L3 tires w/o CaCl ₂ | lb. kg | -1235 560 | -893 405 | -794 360 | -772 350 |
| 20.5-25, 16 PR L3 tires w/CaCl ₂ | lb. kg | +586 266 | +1739 789 | +1550 703 | +1504 682 |
| 20.5-R25, One Star, L2 tires equivalent w/o CaCl ₂ | lb. kg | -1120 508 | -809 367 | -721 327 | -701 318 |
| 20.5-R25, One Star, L2 tires equivalent w/CaCl ₂ | lb. kg | +701 318 | +1823 827 | +1623 736 | +1574 714 |
| 23.5-25, 12 PR L2 tires w/CaCl ₂ | lb. kg | +2396 1087 | +3466 1572 | +3084 1399 | +2994 1358 |
| 23.5-25, 20 PR L3 tires w/o CaCl ₂ | lb. kg | +494 224 | +357 162 | +317 144 | +309 140 |
| 23.5-25, 20 PR L3 tires w/CaCl ₂ | lb. kg | +2890 1311 | +3823 1734 | +3402 1543 | +3303 1498 |
| ROPS canopy in lieu of ROPS cab | lb. kg | -320 145 | -304 138 | -284 129 | -280 127 |
| Bucket teeth | lb. kg | +262 119 | -309 140 | -304 138 | -302 137 |
| Deduct one rear counterweight | lb. kg | -910 413 | -2104 954 | -1801 817 | -1727 783 |
| *Add second rear counterweight | lb. kg | +1138 516 | +2641 1198 | +2262 1026 | +2169 984 |

*Not to be used with CaCl₂.

DIMENSIONS



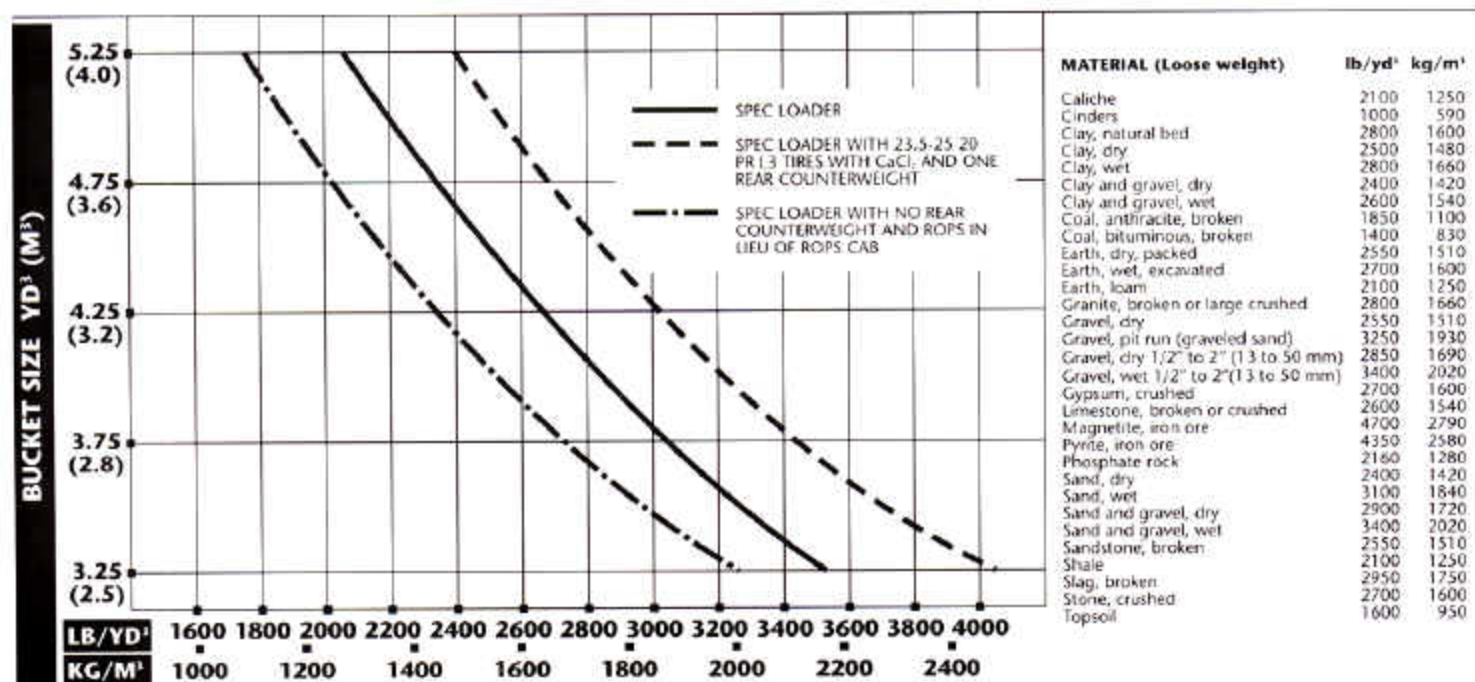
Key:

| | |
|--|---------------------------|
| A Overall height | 14 ft. 2 in. (4.33 m) |
| B Height to top of cab and canopy | 11 ft. 1.7 in. (3.4 m) |
| C Height to top of exhaust | 10 ft. 4.4 in. (3.16 m) |
| D Ground clearance | 19.7 in. (500 mm) |
| E Length from centerline to front axle | 63 in. (1600 mm) |
| F Wheelbase | 126 in. (3200 mm) |
| G Height to hinge pin—fully raised | 13 ft. 1.9 in. (4.0 m) |
| H Digging depth | 2.01 in. (51 mm) |
| J Dump height | See Operating Information |
| K Overall length | |

TIRES

| | | | | |
|---------------------------|---------------------|----------------------|----------------------|----------------------|
| | 16.00-24 | 20.5-25 | 20.5 R25 | 23.5-25 |
| Tread width | 77.16 in. (1960 mm) | 82.28 in. (2090 mm) | 82.28 in. (2090 mm) | 80.31 in. (2040 mm) |
| Width over tires | 95.28 in. (2420 mm) | 104.41 in. (2652 mm) | 104.84 in. (2663 mm) | 105.71 in. (2685 mm) |
| Change in vertical height | -2.75 in. (70 mm) | -2.01 in. (51 mm) | -2.44 in. (62 mm) | 0 |

BUCKET SELECTION GUIDE*



* This guide, representing bucket sizes not necessarily manufactured by Deere, will help in selecting the proper bucket size for material density and loader configuration. Optimum bucket size is determined after adding or subtracting all tipping load changes due to optional equipment.



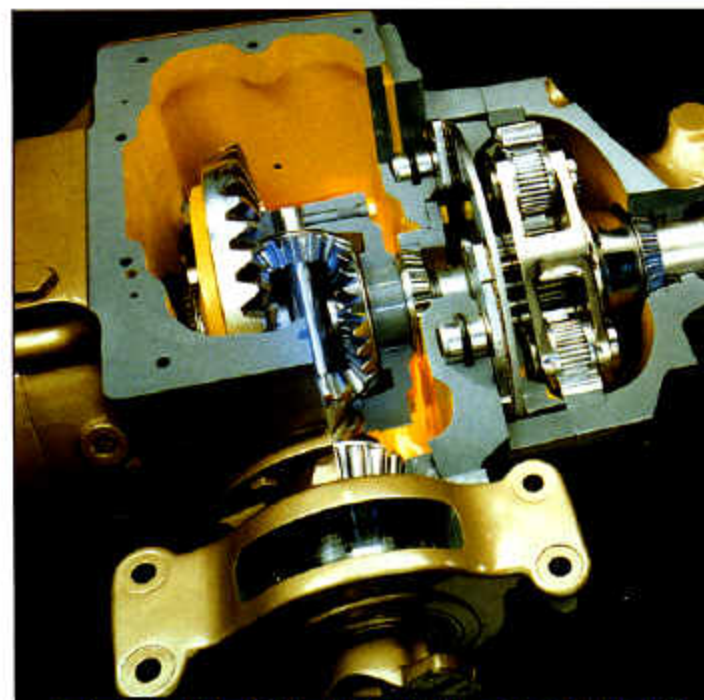
OPERATOR'S STATION

Superior visibility and a fully adjustable suspension seat are two of the first things you'll notice as you enter the 644E operator's station. Instrumentation and controls are well located, electronic monitoring system gives visible and audible warnings. A single lever controls all loader functions. Two-lever controls and a quiet cab option are also available.



SERVICEABILITY

Two huge doors provide access to the engine compartment. Open articulation area gives access to plumbing, steering components, and important lube points. Removable covers open up the side frames for access to the transmission, steering and hydraulic components. Electric and loader circuits are accessed through a door on the right side of the operator's station.



BRAKES/FINAL DRIVES

John Deere's large final drive planetaries and hydraulic wet disk brakes are inboard mounted. There are no exposed parts or troublesome air system. An optional differential lock in the front axle transmits extra tractive effort to both front wheels for better traction in slippery conditions.



LOADER

Z-bar linkage delivers the breakout needed for any loading condition, fast cycle times. Buckets have a C-shaped backwall design for excellent filling and are predrilled for bolt-on cutting edges or teeth. Automatic boom height control lets you preset maximum boom height when a job doesn't require full-height loading. The return to dig automatically sets up the start of the next cycle.

ADDITIONAL STANDARD EQUIPMENT

Differential, front and rear conventional
Engine:
Air cleaner, dry-type with dust valve
Antifreeze
Fan guard
Fuel filter
Muffler
Frames:
Articulation transport lock
Drawbar
Lockable engine side shields and rear grille
Rear bottom guard
Service steps and handgrips

Hydraulics:
Hydraulic oil cooler
Two spool valve with single-lever control
Lights:
Driving with guards
Flashing and turn signal
Stop and tail
Operator's station:
Adjustable vinyl seat with armrests
Cigarette lighter with ashtray

Dual level monitor system:
Two level warnings
Parking brake on
Single level warnings
Air filter restricted
Engine coolant temperature
Hydraulic filter restricted
Low brake pressure
Low electrical voltage
Low engine oil pressure
Low transmission oil pressure
Indicator only:
Turn signals
Floor mat
Horn

Instruments:
Electric hourmeter
Fuel gauge
Key switch
Mirrors, dual inside, dual outside, rearview
ROPS canopy
Seat belt, two-inch (51 mm) with retractors
Reverse warning alarm
Transmission clutch disconnect
Transmission oil cooler

OPTIONAL OR SPECIAL EQUIPMENT

Buckets:
Auxiliary spill guard
Bolt-on cutting edges
Bucket teeth
Differentials:
Front axle disconnect
Front hydraulic differential lock
Front NoSPIN differential
Engine:
Additional battery
Alternator, 130 amp
Engine coolant heater
Radiator sand shield
Water separator, fuel

Frames:
Auxiliary bottom guards, transmission and front frame
Fenders, front and rear
Lift hooks
License plate bracket
Rear counterweights
Steps, frame mounted with access platform
SMV symbol
Transmission side frame guards
Hydraulics:
Two spool valve with two-lever control

Three spool valve, single-lever control with auxiliary control lever for third function
Three spool valve, two-lever control with auxiliary control lever for third function
Lights:
Front and rear work
Loader:
Automatic boom height control
Automatic return-to-dig
Operator's station:
Radio—AM/FM for cab

ROPS cab with heater/defroster/pressurizer, dome light, front and rear windshield wiper and washer, 90-amp alternator
ROPS cab with air conditioner, heater/defroster/pressurizer, dome light, front and rear windshield wiper and washer
Seats:
Adjustable deluxe suspension vinyl seat with armrests
Adjustable deluxe suspension cloth seat with armrests for cab
Secondary steering
Three-inch (76 mm) seat belt without retractors

JOHN DEERE 'BEST VALUE' EXTRAS

Best parts support—Twelve regional parts depots in North America and others around the world put parts support near your job no matter where in the world it is.

A computerized FLASH™ parts locating system linking these depots to dealerships can find out-of-stock parts in a hurry and get them into your hands fast. Usually within 24 hours.

Best service backup—Dealer service technicians are regularly schooled, at our modern facility in Davenport, Iowa, or by professionals in the field, to diagnose quickly and repair efficiently.

If they're stumped, a phone call to DTAC (Dealer Technical Assistance Center), puts them in touch with a staff of pros at the factory who help them find a solution quickly.

Best dealers—Your John Deere dealer has made a significant commitment to being the best equipment supplier you can work with.

This is a dollars and cents commitment in parts inventory, in service facilities, in field service trucks. It's a sweat and blood commitment in dedicated, skilled and highly trained and motivated personnel in each and every department at the dealership.

But what sets John Deere dealers apart from all the rest is something more, a factor somewhat difficult to measure . . . a caring attitude, and a sincere desire to be the best at meeting the needs of each individual customer he serves.

John Deere Finance Plans—Whether you rent, lease or buy John Deere equipment, your dealer can explain the John Deere options available. One-stop options that let you free up operating capital, keep other lines of credit open.

Best warranty protection—All John Deere construction equipment has a 6-month warranty on the entire machine and a full 24-month warranty on the power train. The SECURE™ program, a John Deere service product, is offered for repair coverage after the warranty concludes. Full machine or power train coverage is available for a variety of time periods to meet your needs. Your dealer will explain the details.

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 @ 35 API gravity. No derating is required up to 10,000 feet (3050 m) altitude. 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 all standard equipment, 25.5-25.12 PR L2 tires with one rear counterweight, ROPS cab, full fuel tank, and 175 lb. (79 kg) operator.

