

# 650H

CRAWLER DOZERS

SPECIFICATIONS



## Engine 650H LT / 650H XLT / 650H LGP

Type .....	John Deere 4045T with altitude-compensating turbocharger
Rated power @ 2,200 rpm .....	90 SAE net hp (67 kW)
Cylinders, wet sleeve .....	4
Displacement .....	276 cu. in. (4.52 L)
Fuel consumption, typical .....	1.9 to 3.0 gal./hr. (7.2 to 11.9 L/h)
Maximum net torque .....	316 lb.-ft. (405 Nm) @ 1,200 rpm
Lubrication .....	pressure system with full-flow spin-on filter and oil-to-water cooler
Air cleaner .....	dual stage dry type with safety element, precleaner, and dash-mounted restriction indicator
Electrical system .....	12 volt with 65-amp alternator
Cooling fan .....	blower

## Transmission

Dual-path, electronic-controlled, hydrostatic drive; load-sensing feature automatically adjusts speed and power to match changing load conditions; each individual track is powered by a variable-displacement piston pump and two-speed motor combination; decelerator controls speed from holding to 5.0 mph (8.0 km/h)

Travel speeds (infinitely variable)

Forward and reverse .....0 to 5.0 mph (0 to 8.0 km/h)

## Final Drives

Heavy-duty triple-reduction final drives attach directly to the mainframe and are isolated from track frame and dozer frame loads

## Steering

Single-lever steering, direction control, and counterrotation; full power turns and infinitely variable track speeds provide unlimited maneuverability and optimum control; hydrostatic steering eliminates steering clutches and brakes

## Brakes

Hydrostatic (dynamic) braking stops the machine whenever the direction-control lever is moved to neutral, whenever the decelerator is depressed to the end of travel, or whenever the brake pedal is depressed

## Automatic Park Brake

Exclusive safety feature engages wet, multiple-disc brakes automatically whenever the engine stops, whenever the operator applies the brake pedal, or whenever the neutral start lever lock is in the stop position; machine cannot be driven with brake applied, reducing wear out or need for adjustment

## Hydraulic System

System .....	open center
Pressure, main relief .....	3,000 psi (20 685 kPa)
Pump .....	gear
Flow .....	15 gpm (56.8 L/min.) @ 2,200 rpm
Filter, return oil .....	10 micron
Control .....	T-bar three function
Cylinders .....	heat-treated, chrome-plated, polished cylinder rods, hardened steel (replaceable bushings) pivot pins

## Capacities (U.S.)

Fuel tank with lockable cap .....	47 gal. (178 L)
Cooling system with coolant recovery tank .....	17 qt. (16 L)
Engine oil including spin-on filter .....	15 qt. (14 L)
Transmission reservoir refill with filter change .....	11.3 gal. (42.7 L)
Final drive (each) .....	7 qt. (6.6 L)
Hydraulic reservoir refill with filter change .....	8.5 gal. (32.2 L)

All power train and hydraulic systems allow 45-degree maximum operation.

**Undercarriage****650H LT****650H XLT****650H LGP**

John Deere Dura-Trax™ features large deep-heat-treated components; pins and bushings are sealed for life; rollers and idlers are permanently sealed and lubricated; full-length track frame covers reduce material buildup and ease cleaning

Grouser width (closed center, single bar).....	18 in. (457 mm)	18 in. (457 mm)	28 in. (711 mm)
Track shoes, each side.....	38	40	38
Ground contact area.....	3,132 sq. in. (20 206 cm <sup>2</sup> )	3,312 sq. in. (21 368 cm <sup>2</sup> )	4,872 sq. in. (31 432 cm <sup>2</sup> )
Ground pressure.....	5.9 psi (40.6 kPa)	5.6 psi (38.5 kPa)	3.9 psi (27.0 kPa)
Ground clearance with single-bar grouser (excluding grouser height).....	14.3 in. (363 mm)	14.3 in. (363 mm)	14.3 in. (363 mm)
Length of track on ground.....	87 in. (2210 mm)	92 in. (2337 mm)	87 in. (2210 mm)
Track gauge, standard.....	61 in. (1550 mm)	61 in. (1550 mm)	69 in. (1753 mm)
Track rollers, each side.....	6	7	6
Track pitch.....	6.73 in. (171 mm)	6.73 in. (171 mm)	6.73 in. (171 mm)

**SAE Operating Weights**

Base weights were computed for units with standard equipment, rollover protective structures, full fuel tanks, and 175-lb. (79 kg) operators.

105-in. (2667 mm) blade and 18-in. (457 mm) track shoes.....	18,500 lb. (8390 kg)	18,600 lb. (8437 kg)	
128-in. (3251 mm) blade and 28-in. (711 mm) track shoes.....			19,100 lb. (8660 kg)

**Optional or Special Equipment**

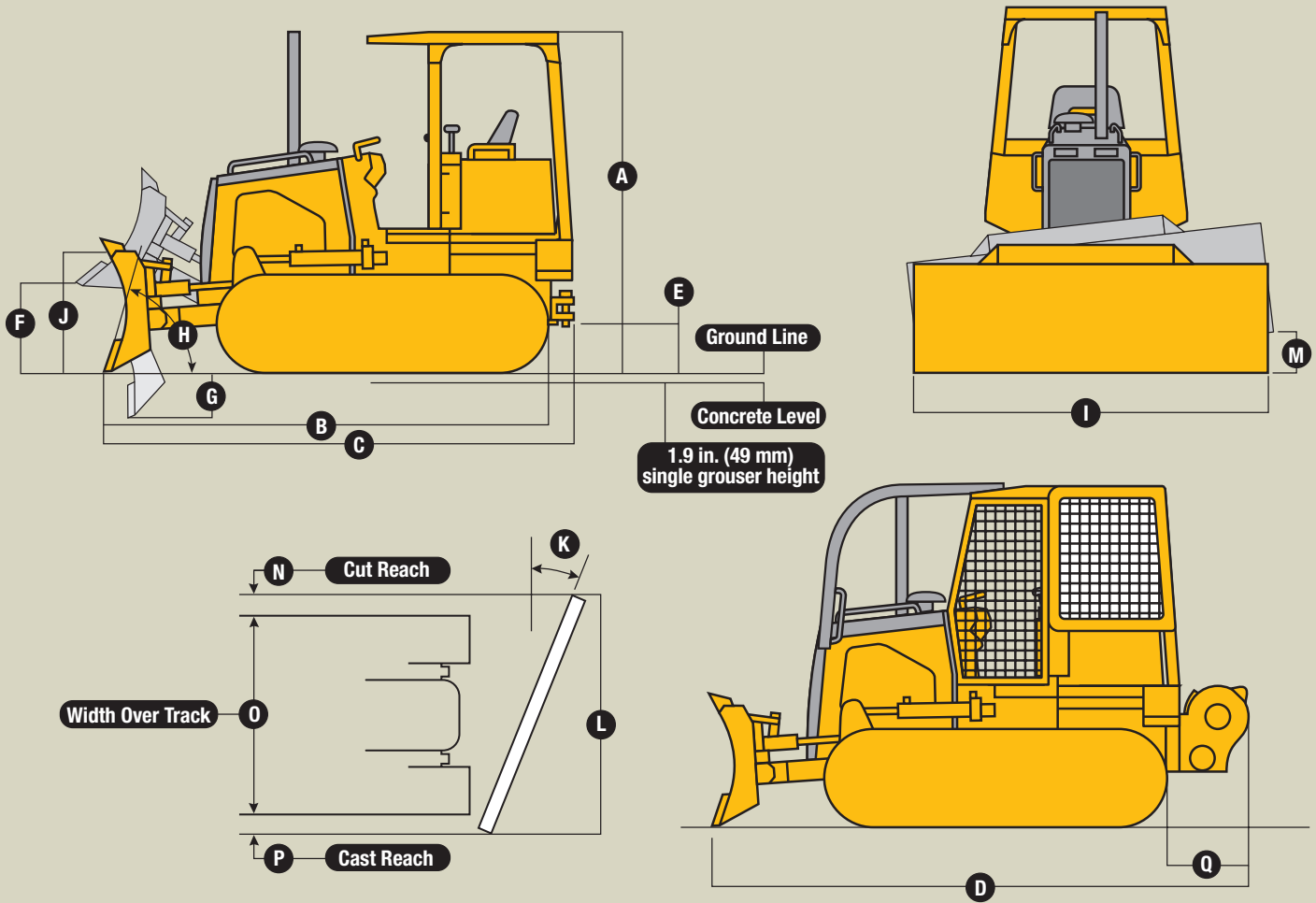
Add (+) or deduct (-) lb. (kg) as indicated to base weight for units with

Rock guards (4).....	260 lb. (118 kg)	295 lb. (134 kg)	260 lb. (118 kg)
20-in. (508 mm) track shoes.....	174 lb. (79 kg)	183 lb. (83 kg)	- 980 lb. (- 450 kg)
24-in. (610 mm) track shoes.....			- 380 lb. (- 172 kg)
28-in. (711 mm) swamp shoes.....			158 lb. (71 kg)
Deluxe seat group.....	20 lb. (9 kg)	20 lb. (9 kg)	20 lb. (9 kg)
Cab with heater.....	630 lb. (285 kg)	630 lb. (285 kg)	630 lb. (285 kg)
Cab with air conditioning.....	660 lb. (299 kg)	660 lb. (299 kg)	660 lb. (299 kg)
Under-seat ROPS heater.....	26 lb. (12 kg)	26 lb. (12 kg)	26 lb. (12 kg)
Counterweight, rear (each).....	in base	330 lb. (150 kg)	330 lb. (150 kg)
Counterweight, front (each).....	in base	240 lb. (109 kg)	240 lb. (109 kg)
Lights, driving.....	3 lb. (1 kg)	3 lb. (1 kg)	3 lb. (1 kg)
Work lights, high intensity.....	9 lb. (4 kg)	9 lb. (4 kg)	9 lb. (4 kg)
Front tow hook.....	in base	in base	in base
Retrieval hitch.....	50 lb. (23 kg)	50 lb. (23 kg)	50 lb. (23 kg)
Extended drawbar.....	72 lb. (33 kg)	72 lb. (33 kg)	72 lb. (33 kg)
Limb risers.....	229 lb. (104 kg)	229 lb. (104 kg)	229 lb. (104 kg)
Rear screen.....	76 lb. (35 kg)	76 lb. (35 kg)	76 lb. (35 kg)
Side screens.....	94 lb. (43 kg)	94 lb. (43 kg)	94 lb. (43 kg)
Screens, front and doors.....	179 lb. (81 kg)	179 lb. (81 kg)	179 lb. (81 kg)
4000S Winch.....	1,437 lb. (653 kg)	1,437 lb. (653 kg)	1,437 lb. (653 kg)
Winch fairlead, four roller.....	187 lb. (85 kg)	187 lb. (85 kg)	187 lb. (85 kg)
Parallelogram ripper.....	1,306 lb. (594 kg)	1,306 lb. (594 kg)	1,306 lb. (594 kg)
115-in. (2921 mm) blade, all-hydraulic heavy- duty C frame.....			- 134 lb. (- 61 kg)
121-in. (3073 mm) blade, all-hydraulic heavy- duty C frame.....			- 74 lb. (- 33 kg)
All-hydraulic heavy-duty C frame (less blade).....	- 1,384 lb. (- 628 kg)	- 1,384 lb. (- 628 kg)	- 1,470 lb. (- 667 kg)

<b>Dimensions</b> (drawing on page 27)	<b>650H LT</b>	<b>650H XLT</b>	<b>650H LGP</b>
<b>A</b> Overall height with ROPS or cab.....	109 in. (2768 mm)	109 in. (2768 mm)	109 in. (2768 mm)
<b>B</b> Overall length*.....	161 in. (4089 mm)	167 in. (4254 mm)	160 in. (4064 mm)
<b>C</b> Overall length with extended drawbar.....	166 in. (4216 mm) <sup>†</sup>	169 in. (4305 mm)	162 in. (4115 mm)
<b>D</b> Overall length with winch**.....	179 in. (4547 mm)	186 in. (4737 mm)	179 in. (4547 mm)
<b>E</b> Ground clearance, minimum			
Single-bar grouser.....	14.3 in. (363 mm)	14.3 in. (363 mm)	14.3 in. (363 mm)
Swamp shoes.....			15.1 in. (384 mm)
<b>F</b> Blade lift height.....	32.2 in. (819 mm)	32.2 in. (819 mm)	32.2 in. (819 mm)
<b>G</b> Blade digging depth.....	19.7 in. (500 mm)	19.7 in. (500 mm)	19.7 in. (500 mm)
<b>H</b> Blade cutting edge angle, three position adjustable.....	52, 56, or 60 degrees	52, 56, or 60 degrees	52, 56, or 60 degrees
*For the 650H LT and 650H LGP, there is no change to overall length with retrieval hitch.			
**See page 27 for forestry application.			
<sup>†</sup> Includes rear counterweight.			

### 650H Blade Specs

<b>I</b> Width.....	<b>105 in. (2667 mm)</b>	<b>105 in. (2667 mm)</b>	
<b>J</b> Height.....	36.7 in. (933 mm)	36.7 in. (933 mm)	
SAE capacity.....	2.6 cu. yd. (2.0 m <sup>3</sup> )	2.6 cu. yd. (2.0 m <sup>3</sup> )	
<b>K</b> Blade angle.....	22.2 degrees	22.2 degrees	
<b>L</b> Angled width.....	98.7 in. (2507 mm)	98.7 in. (2507 mm)	
<b>M</b> Tilt.....	14.3 in. (364 mm)	14.3 in. (364 mm)	
<b>N</b> Cut reach.....	4.7 in. (119 mm)	4.7 in. (119 mm)	
<b>O</b> Width over track.....	79 in. (2006 mm)	79 in. (2006 mm)	
<b>P</b> Cast reach.....	15 in. (381 mm)	15 in. (381 mm)	
<b>I</b> Width.....	<b>115 in. (2921 mm)</b>	<b>115 in. (2921 mm)</b>	<b>115 in. (2921 mm)</b>
<b>J</b> Height.....	32.5 in. (826 mm)	32.5 in. (826 mm)	32.5 in. (826 mm)
SAE capacity.....	2.29 cu. yd. (1.75 m <sup>3</sup> )	2.29 cu. yd. (1.75 m <sup>3</sup> )	2.29 cu. yd. (1.75 m <sup>3</sup> )
<b>K</b> Blade angle.....	22.2 degrees	22.2 degrees	22.2 degrees
<b>L</b> Angled width.....	107.9 in. (2742 mm)	107.9 in. (2742 mm)	107.9 in. (2742 mm)
<b>M</b> Tilt.....	15.7 in. (399 mm)	15.7 in. (399 mm)	15.7 in. (399 mm)
<b>N</b> Cut reach.....	0.4 in. (10 mm)	0.4 in. (10 mm)	0.4 in. (10 mm)
<b>O</b> Width over track.....	97 in. (2464 mm)	97 in. (2464 mm)	97 in. (2464 mm)
<b>P</b> Cast reach.....	10.5 in. (267 mm)	10.5 in. (267 mm)	10.5 in. (267 mm)
<b>I</b> Width.....	<b>121 in. (3073 mm)</b>		
<b>J</b> Height.....	32.5 in. (826 mm)		
SAE capacity.....	2.4 cu. yd. (1.83 m <sup>3</sup> )		
<b>K</b> Blade angle.....	22.2 degrees		
<b>L</b> Angled width.....	114.4 in. (2906 mm)		
<b>M</b> Tilt.....	16.5 in. (420 mm)		
<b>N</b> Cut reach.....	3.7 in. (94 mm)		
<b>O</b> Width over track.....	97 in. (2464 mm)		
<b>P</b> Cast reach.....	13.7 in. (348 mm)		
<b>I</b> Width.....	<b>128 in. (3251 mm)</b>		
<b>J</b> Height.....	32.5 in. (826 mm)		
SAE capacity.....	2.52 cu. yd. (1.93 m <sup>3</sup> )		
<b>K</b> Blade angle.....	22.2 degrees		
<b>L</b> Angled width.....	120.9 in. (3070 mm)		
<b>M</b> Tilt.....	17.5 in. (444 mm)		
<b>N</b> Cut reach.....	6.9 in. (195 mm)		
<b>O</b> Width over track.....	97 in. (2464 mm)		
<b>P</b> Cast reach.....	17 in. (432 mm)		



## 650H Forestry Application

Available limb risers and screens for the rollover protective structure, John Deere-built, self-contained 4000S Winch\* for versatile skidding and clearing operations

### D Overall length with winch\*\*

LT and LGP .....179 in. (4547 mm)  
 XLT .....186 in. (4737 mm)

### Q 4000S Winch length .....29.6 in. (752 mm)

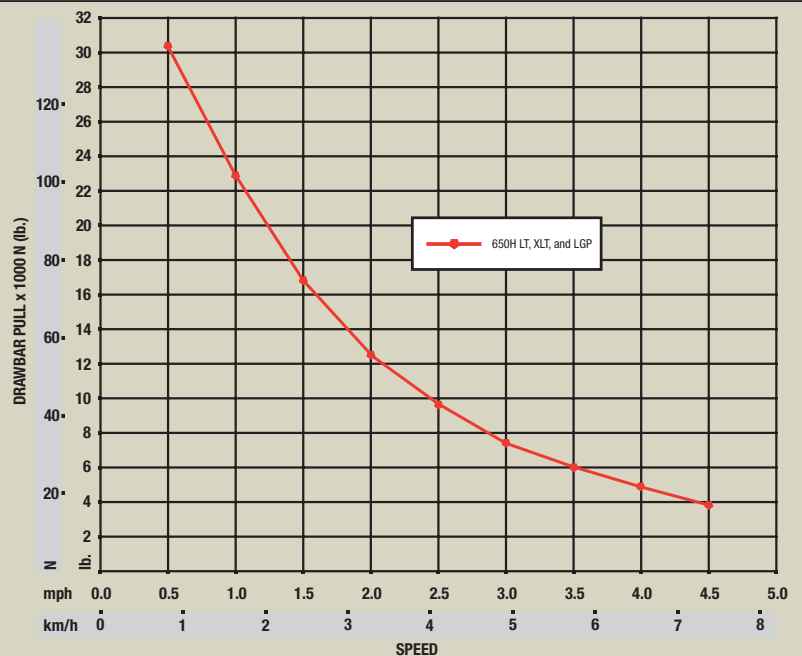
### R Overall height with limb risers .....111.5 in. (2832 mm)

\*Reference 4000S Winch spec sheet.

\*\*See page 26 for related dimensions.

## Drawbar Pull

Crawler speed vs ground pull .....usable pull will depend on traction and weight of tractor



# 450H / 550H / 650H Crawler Dozers

**Key:** ● Standard equipment ▲ Optional or special equipment

\*See your John Deere dealer for further information.

## 450 550 650 Engine

- ● ● Electric fuel shutoff, key start switch
- ● ● Oil-to-water engine oil cooler
- ● ● Vertical spin-on oil filter
- ● ● Vertical spin-on primary fuel filter with water separator
- ● ● Vertical spin-on final fuel filter
- ● ● Dual-element dry air cleaner, built-in precleaner, and evacuator valve
- ● ● Above-hood pre-screener/raincap
- ▲ ▲ ▲ External primary precleaner\*
- ● ● Enclosed safety fan guard
- ● ● Coolant recovery tank
- ● ● Engine coolant to -34°F (-37°C)
- ● ● Blower-type cooling fan
- ● ● Trash-resistant seven-fin in-line radiator
- ▲ ▲ ▲ Radiator sand screen (steel)
- ● ● Under-hood muffler, vertical exhaust stack
- ● ● Pre-wired for ether start aid
- ▲ ▲ ▲ Electric ether start aid
- ▲ ▲ ▲ Coolant heater, 1,000 watts, 110 volts
- ▲ ▲ ▲ Coolant heater, fuel fired
- Powertrain and Controls**
- ● ● Dual-path hydrostatic transmission
- ● ● Single-lever steering, F-N-R direction control
- ● ● Decelerator pedal, automatic retardation
- ● ● Engine-speed selection lever
- ● ● Infinite ground speed selection lever
- ▲ ▲ ▲ Ground speed in grip with speed ratio
- ● ● Automatic straight-ahead tracking
- ● ● Dynamic braking (anti-free wheel)
- ● ● Counterrotation
- ● ● Service-brake pedal
- ● ● Transmission neutral lock, safety start switch
- ● ● Automatic spring-applied, hydraulic-released parking brake
- ● ● Independent transmission oil reservoir with sight gauge
- ● ● Onboard diagnostics with visual display
- ● ● Oil-to-air transmission oil cooler
- ● ● Built-in final drive seal guards
- ● ● Triple-reduction final drives with wet multi-disc brakes
- ▲ ▲ ▲ Remote diagnostic test ports
- ● ● Maximum forward/reverse speed 5.0 mph (8.0 km/h)
- ● ● Automatic 15% increase in reverse speed from set forward speed

## 450 550 650 C-Frames and Blades

- ● ● Six-way all-hydraulic C-frame with adjustable blade pitch
- ● ● Remote C-frame pivot grease banks
- ● ● Cordura-covered hoses, conveniently replaceable lengths
- ● ● Straight end bits
- ● ● Pitch link, pitched mid-range
- ▲ ▲ ▲ Alternate pitch link, pitched forward
- ▲ ▲ ▲ Alternate pitch link, pitched back
- Electrical**
- ● ● 12-volt system
- ● ● Fuse panel, blade-style multi-fused circuit breakers
- ● ● Electric horn
- ● ● Reverse warning alarm
- ● ● Electric fuel gauge
- ● ● Electric hourmeter
- ● ● Transmission oil pressure gauge
- ● ● Master electrical disconnect
- ● ● Positive battery terminal covers
- ● ● By-pass start safety cover at starter
- ● ● Electronic monitor, visual and audible warning
- ▲ ▲ ▲ Electronic monitor with additional gauges
- ● ● Ground-speed selection display
- ● ● Single 12-volt low-maintenance battery, 190-min. reserve capacity, 950 CCA
- ▲ ▲ ▲ Dual 12-volt low-maintenance batteries, 380-min. reserve capacity, 1,900 CCA
- ● ● 65-amp sealed alternator with ROPS
- ▲ ▲ ▲ 20-amp power port, for phone and radio
- Hydraulic System**
- ● ● 15-gpm fixed-displacement gear pump
- ▲ ▲ ▲ Pump, through-drive for winch or auxiliary pump
- ● ● Low-effort T-bar blade control
- ● ● Independent reservoir with sight gauge
- ● ● Vertical spin-on filter
- ● ● O-ring face seal connectors
- ● ● Three-function valve
- ▲ ▲ ▲ Four- and five-function valves with levers, with or without float\*
- ▲ ▲ ▲ Rear auxiliary plumbing
- Undercarriage**
- ● ● Single-flange rollers
- ▲ ▲ ▲ Double-flange rollers\*
- ● ● Full-length track frame covers
- ● ● Chain guides, front and rear (bolt-on)
- ● ● Fully protected track-tension adjusters
- ● ● Solid sprockets
- ● ● Sprocket rock guards (bolt-on)
- ▲ ▲ ▲ Bolt-on full-length track-roller rock guards

## 450 550 650 Undercarriage (cont.)

- ▲ ▲ ▲ Sealed track chains
- ▲ ▲ ▲ Sealed and lubricated track chains
- ▲ ▲ ▲ Self-cleaning pyramid swamp shoes\*
- Lights**
- ▲ ▲ ▲ Grille-mounted driving lights (2), rear light (1), halogen, 2,000 candlepower each
- ▲ ▲ ▲ High-intensity work lights, front (2) and rear (2), with steel guards, 65 watts each\*
- Operator's Station**
- ● ● Modular ROPS/FOPS canopy, isolation mounted (conforms to SAE J1040)
- ▲ ▲ ▲ Under-seat ROPS heater, 30,000 Btu/hr
- ▲ ▲ ▲ Modular ROPS/FOPS cab, isolation mounted (conforms to SAE J1040): Fresh air intake cab heater/defroster/pressurizer, 18,000 Btu/hr with air pre-cleaner / Dome light / Deluxe headliner with molded air ducts for heater, defroster, and air conditioner / 30,000 Btu/hr underseat heater / Front windshield and doors, wipers and washers / Tinted safety glass / Antenna for radio / 95-amp alternator
- ▲ ▲ ▲ Air conditioning, 24,000 Btu/hr
- ● ● Right and left access
- ● ● Slip-resistant front-mounting steps
- ● ● Ergonomically located hand-holds
- ● ● Headliner
- ● ● Floor mat
- ● ● Adjustable footrests
- ● ● Adjustable full-length armrests
- ● ● Built-in Operator's Manual storage
- ● ● Suspension vinyl seat (conforms to SAE J899): Fore and aft/weight and height combined adjustment / Adjustable leg support / Seat belt, 2 in. (51 mm), retractable with CRS (conforms to SAE J386)
- ▲ ▲ ▲ Deluxe suspension vinyl or cloth seat (conforms to SAE J899): Fore and aft/weight and height combined adjustment / Adjustable leg support / Adjustable backrest angle / Adjustable lumbar support / Adjustable seatback extension / Seat belt, 3 in. (76 mm), retractable with CRS (conforms to SAE J386)
- ▲ ▲ ▲ Seat belt, 3 in. (76 mm), retractable with CRS (conforms to SAE J386)
- ● ● Convex interior rearview mirror

## 450 550 650 Operator's Station (cont.)

- ▲ ▲ ▲ Accessories: Convex wide-angle interior rearview mirror / Knee cushions (2) / Seat-side lockable storage box/lunch box/cup holder
- ▲ ▲ ▲ Rear window wiper and washer for cab
- ▲ ▲ ▲ AM/FM weatherband radio
- ▲ ▲ ▲ Complete enclosure ROPS-to-cab conversion panels
- ▲ ▲ ▲ Rear-and-side-only enclosures
- ▲ ▲ ▲ Front windshield and doors enclosure
- Overall Vehicle**
- ● ● One-piece unitized construction mainframe
- ● ● Front tow loop (bolt-on)
- ● ● Reinforced engine and mid-frame bottom guards
- ● ● Integral transmission guard
- ● ● Heavy-duty louvered grille
- ● ● Perforated engine side shields
- ● ● Vandal protection lock provisions for: Engine service access cover / Fuel fill / Hydraulic reservoir fill/check / Transmission reservoir fill/check / Instrument panel
- ● ● Lockable grease gun/tool storage compartment in right access door
- ▲ ▲ ▲ Environmental drains
- ▲ ▲ ▲ Chrome exhaust stack
- ▲ ▲ ▲ Trademarks/decals, French or Spanish
- ▲ ▲ ▲ Transport lift and tie-down rings\*
- Protection Packages**
- ▲ ▲ ▲ Extreme-duty louvered grille and hose protection
- ▲ ▲ ▲ Limb risers, arched or point-to-point
- ▲ ▲ ▲ Operator-protective rear screen
- ▲ ▲ ▲ Operator-protective side screens (ROPS)
- ▲ ▲ ▲ Operator-protective full-screen package
- ▲ ▲ ▲ Heavy-duty engine air-intake guard
- ▲ ▲ ▲ Air-conditioning module guard
- Attachments**
- ▲ ▲ ▲ Counterweight, rear, 330 lb. (150 kg) each
- ▲ ▲ ▲ Counterweight, front, 240 lb. (109 kg) each
- ▲ ▲ ▲ Retrieval hitch with pin
- ▲ ▲ ▲ Extended rigid drawbar with pin for pull-type implements
- ▲ ▲ ▲ Extended drawbar for winch
- ▲ ▲ ▲ Parallelogram ripper with five shank pockets and three teeth
- ▲ ▲ ▲ Standard or low-speed winch
- ▲ ▲ ▲ Power-in/out standard-speed winch
- ▲ ▲ ▲ Power-in/out low-speed winch
- ▲ ▲ ▲ Four-roller fairlead for winch
- ▲ ▲ ▲ Log arch for winch



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 6270B, using No. 2-D fuel at 35 API gravity. 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 units with standard equipment, rollover protective structures, full fuel tanks, and 175-lb. (79 kg) operators; 450H/LT units with 97-in. (2464 mm) blade and 16-in. (406 mm) track shoes; 450H LGP unit with 124-in. (3150 mm) blade; 450H LGP and 550H LGP units with 24-in. (610 mm) track shoes; 550H LT and 650H LT units with 105-in. (2667 mm) blade and 18-in. (457 mm) track shoes; 550H LGP and 650H LGP units with 128-in. (3251 mm) blade; and 650H LGP unit with 28-in. (711 mm) track shoes.

