

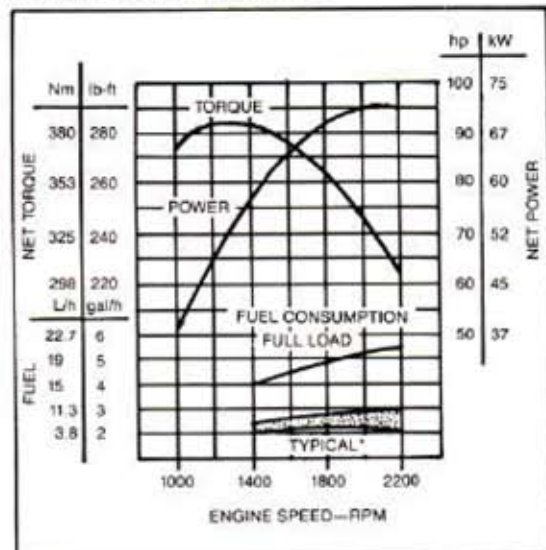


# 610C BACKHOE LOADER



Model shown may include options

## ENGINE PERFORMANCE



\* Depending on operating variables

## FEATURES

95 SAE net hp (71 kW) turbocharged John Deere diesel engine

Backhoe digging depth (SAE) 16 ft. 3 in. (4.95 m)

Unitized frame

Isolated engine and operator's station

Walk-in front entry

Designed-in quietness

Closed-center hydraulic system

O-ring face seal hydraulic plumbing

Weight distributed for working stability

Self-adjusting hydraulic wet-disk brakes

Inboard planetary final drives

Power-shift transmission w/8 speeds forward, 4 reverse

Full-power-shift reverser

Single-lever loader control

Two-lever backhoe control

Two-lever stabilizer control

Stabilizer lockouts—raise and lower

Multi-adjustable swing-around seat w/high backrest and armrests

Hydrostatic power steering

Soundproofed cab w/integral ROPS/FOPS

Vandal protection w/built-in locks

## ADD VERSATILITY WITH:

Mechanical front-wheel drive with:  
Wet clutch—engage on the go  
Offset driveshaft for better ground clearance  
Extendable dipperstick

# 610C BACKHOE LOADER SPECIFICATIONS

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 19.5L-24, 12 PR, R4 rear tires, 11L-16, 12 PR, F3 front tires, 1.25 cu. yd. (1.0 m<sup>3</sup>) loader bucket, 24-in. (610 mm) standard-duty backhoe bucket, ROPS/FOPS, full fuel tank and 175-lb. (80 kg) operator.

Rated Power @ 2200 rpm:	SAE	DIN 70 020
Net	95 hp (71 kW)	71 kW
Gross	100 hp (75 kW)	

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.

## Engine: John Deere 4-276T

Type	4-stroke cycle, turbocharged diesel
Bore and stroke	4.19 x 5.00 in. (106.5 x 127 mm)
No. of cylinders	4
Displacement	276 cu. in. (4,524 L)
Maximum net torque @ 1300 rpm	284 lb-ft (385 Nm) (39.3 kg-m)
	25 percent torque rise
Cooling fan	Suction
Compression ratio	16.8 to 1
Lubrication	Pressure system w/full-flow filter and cooler
Main bearings	5
Air cleaner	Dry
Electrical system	12 volt
Alternator	51 amps

## Transmission:

Full power shift, 8 speeds forward, 4 reverse. Modulated, full power shift between forward and reverse in first through fourth speeds. Reverser operating lever left of steering wheel. Single speed-change lever in right console.

Travel Speeds:	Gear	Forward		Reverse	
		mph	(km/h)	mph	(km/h)
With standard 19.5L-24 rear and 11L-16 front tires	1	1.8	2.9	2.2	3.5
	2	2.5	4.0	3.1	5.0
	3	3.9	6.3	4.8	7.7
	4	5.0	8.1	6.1	9.9
	5	6.6	10.6		
	6	8.5	13.7		
	7	11.2	18.0		
	8	18.8	30.3		
With MFWD and 21L-24 (required) rear and 12-16.5 front tires	1	1.8	2.9	2.2	3.6
	2	2.6	4.2	3.2	5.1
	3	4.0	6.5	4.9	7.9
	4	5.2	8.4	6.4	10.3
	5	6.8	11.0		
	6	8.8	14.2		
	7	11.5	18.6		
	8	19.5	31.3		

Final Drives ..... Planetary, inboard

Service Brakes: Hydraulic, power actuated, fully enclosed wet-disk. Foot-operated individually or simultaneously.

Secondary Brake: Mechanical caliper disk located on differential input shaft.

## Steering: Hydrostatic power

Steering axle, regular:	
Turning radius (brake applied)	9 ft. 11 in. (3.02 m)
Clearance circle (brake applied)	29 ft. 6 in. (9.00 m)
Steering wheel turns, left to right	2.9
right to left	3.9
Axle oscillation stop to stop	22 deg.
Mechanical front-wheel drive (engaged):	
Turning radius (brake applied)	10 ft. 7 in. (3.23 m)
Clearance circle (brake applied)	30 ft. 4 in. (9.25 m)
Steering wheel turns, left to right	3.2
right to left	4.2
Axle oscillation stop to stop	22 deg.

## Hydraulic System: Closed-center (variable flow, constant pressure)

Pressure	2755 psi (19 000 kPa) (193.7 kg/cm <sup>2</sup> )
Pump	8 radial pistons, variable flow
Flow @ 2500 psi (17 238 kPa) (175.8 kg/cm <sup>2</sup> )	35 gpm (2.21 L/s)
Filter, return oil	10 micron, steel-enclosed replaceable paper element
Screen, pressure oil	50/in. (20 cm) mesh

Hydraulic Cylinders:	Bore		Stroke		Rod	
	In.	(mm)	In.	(mm)	In.	(mm)
Loader boom (2)	3.54	90	29.8	757	1.77	45
Loader bucket (1)	3.44	100	28.2	716	1.97	50
Backhoe boom (1)	5.0	127	42.7	1085	2.5	64
Backhoe crowd (1)	4.53	115	34.5	876	2.48	63
Backhoe bucket	3.54	90	31.0	787	1.97	50
Backhoe swing (2)	4.0	102	9.5	241	2.0	51
Backhoe extendable dipper (1)	2.5	64	60.0	1524	1.25	32
Backhoe stabilizers (2)	3.94	100	20.3	516	1.97	50
Steering (1) regular axle	2.0	51	9.5	241	1.0	25
Steering (1) MFWD	2.0	51	12.6	320	1.0	25

Tires:	Front	Rear
	11L-16, 12 PR, F3	19.5L-24, 10 PR, R4
14.5/75-16.1, 10 PR, F3	19.5L-24, 12 PR, R4	
	21L-24, 10 PR, R4	
MFWD	21L-24, 12 PR, R4	
	12.00-16.5, 8 PR, R4	
	12.00-16.5, 8 PR, R4 (w/calcium chloride)	

## Wheel Treads:

Front	68 in. (1730 mm)
Rear	66 in. (1675 mm)
MFWD—Front	68 in. (1730 mm)
—Rear	68 in. (1730 mm)

Wheelbase ..... 83 in. (2110 mm)

Axle Ratings:	Static Rating	Dynamic Rating	SAE J43
Front	56,000 lb. (25 500 kg)	56,000 lb. (25 500 kg)	11,700 lb. (5300 kg)
Rear	74,000 lb. (33 600 kg)	98,800 lb. (44 900 kg)	16,700 lb. (7600 kg)

## Capacities:

	U.S.	Liters
Fuel tank	23 gal.	87
(Optional fuel tank)	38 gal.	144
Engine coolant	17 qt.	16
Engine oil including filter	15 qt.	14
Transmission and hydraulic system	20 gal.	76
Rear axle	4.5 gal.	17

## Additional Standard Equipment:

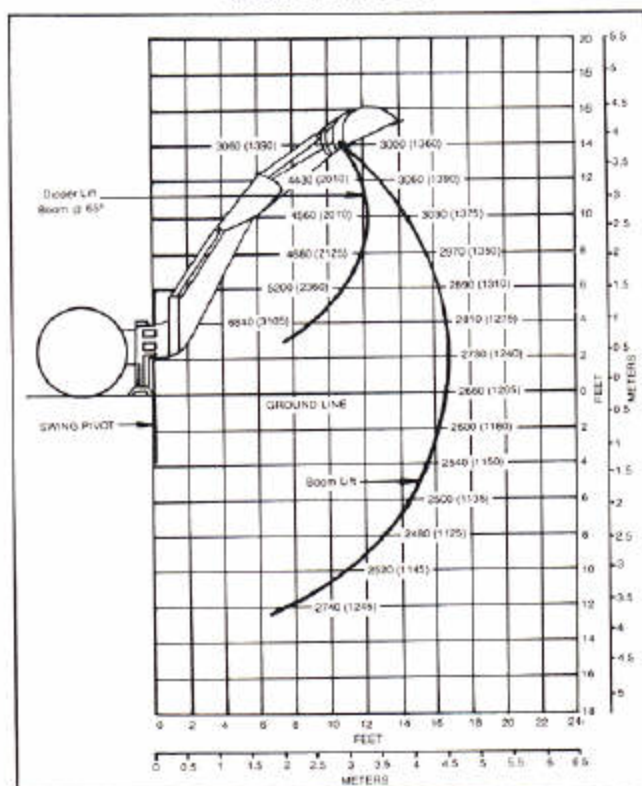
Air cleaner restriction indicator	Lights:
Air cleaner, dry type w/safety element and precleaner	Flashing hazard lights
Alternator, 51-amp w/transistorized voltage regulator	Halogen driving lights
Altitude-compensating engine turbocharger	Halogen work lights
Antifreeze to -34°F (-37°C)	Tail and brake lights
Automatic return to dig	Turn signal lights
Auxiliary fuel tank	Loader bucket level indicator
Backhoe transport lock	Monitor for:
Battery, 180-minute reserve capacity	Alternator
Differential lock	Engine coolant temperature
Electric automatic destroke for hydraulic pump	Engine oil pressure
Electric combination tachometer/hourmeter	Hydraulic filter
Electric fuel shutoff	Parking brake
Emergency/parking brake	Torque converter temperature
Engine sideshields w/built-in locks	Muffler, under hood w/vertical exhaust and rain cap
Foot and hand throttles	Multiple fuse protected electrical system—12 volt
Fuel gauge	Oil-to-air cooler for hydraulic system and transaxle
Fuel tank sump w/easy access drain	Oil-to-air cooler for reverser/torque converter system
Headliner	Rear fenders
Horn	Rear reflectors
Hydraulic self-leveling loader	ROPS/FOPS with roof and seat belt
Key start switch	Steps and handholds
	Turnaround vinyl seat, fully adjustable
	Vandal protection w/built-in locks

SAE Operating Weight ..... 16,300 lb. (7400 kg)

## 610C BACKHOE LOADER LIFTING CAPACITIES

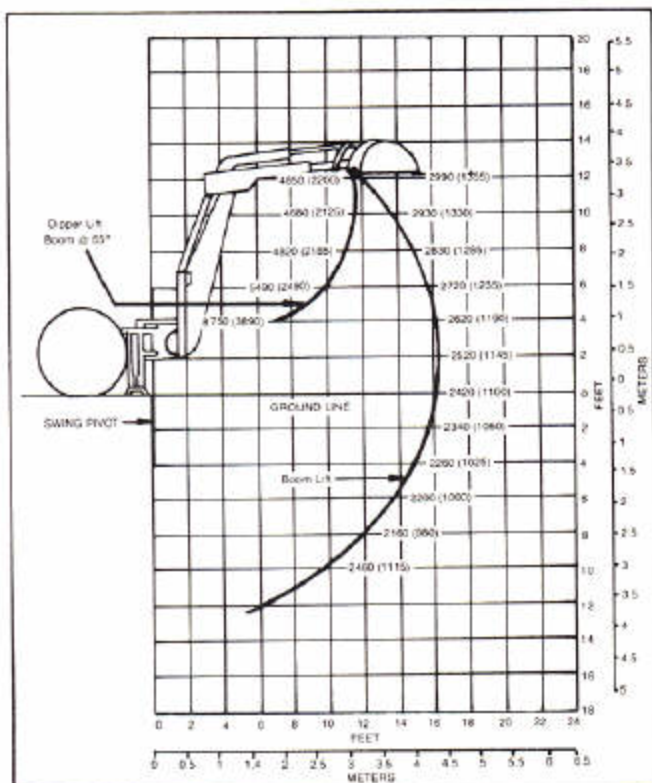
Lifting Capacity Ratings made from bucket hinge pin, loader bucket and stabilizer on firm, level ground. Lifting capacities are 87 percent of the maximum lift over any point on the swing arc and do not exceed 75 percent of the tipping load. Angle between boom and ground at 65 degrees. Machine equipped with 24-in. (610 mm) trenching bucket, standard or optional dipperstick (as indicated below) and standard equipment.

### Lift Capacity Backhoe with standard dipperstick. Based on SAE J31.



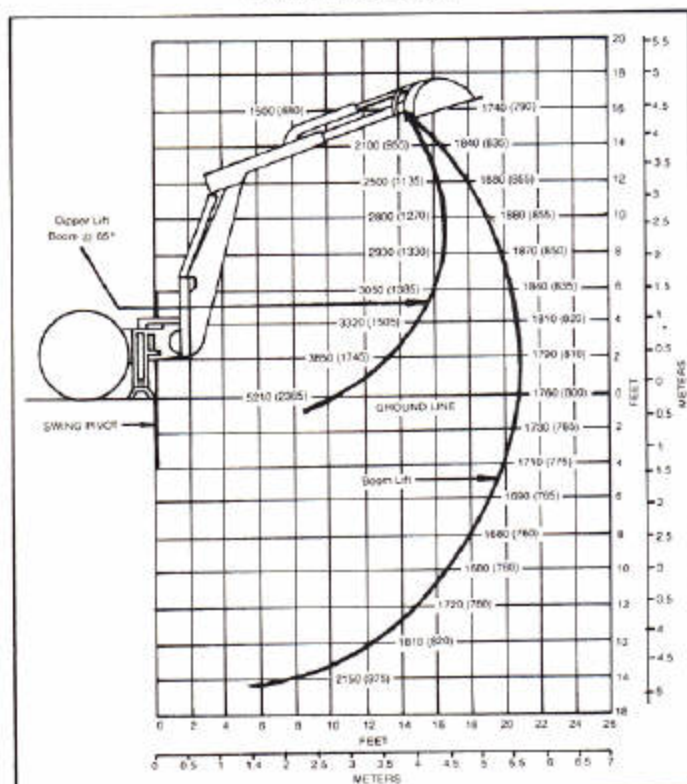
Rated lift capacities are in lb. (kg)  
Lift capacities are hydraulically limited.

### Lift Capacity Backhoe with extendable dipstick, retracted. Based on SAE J31.



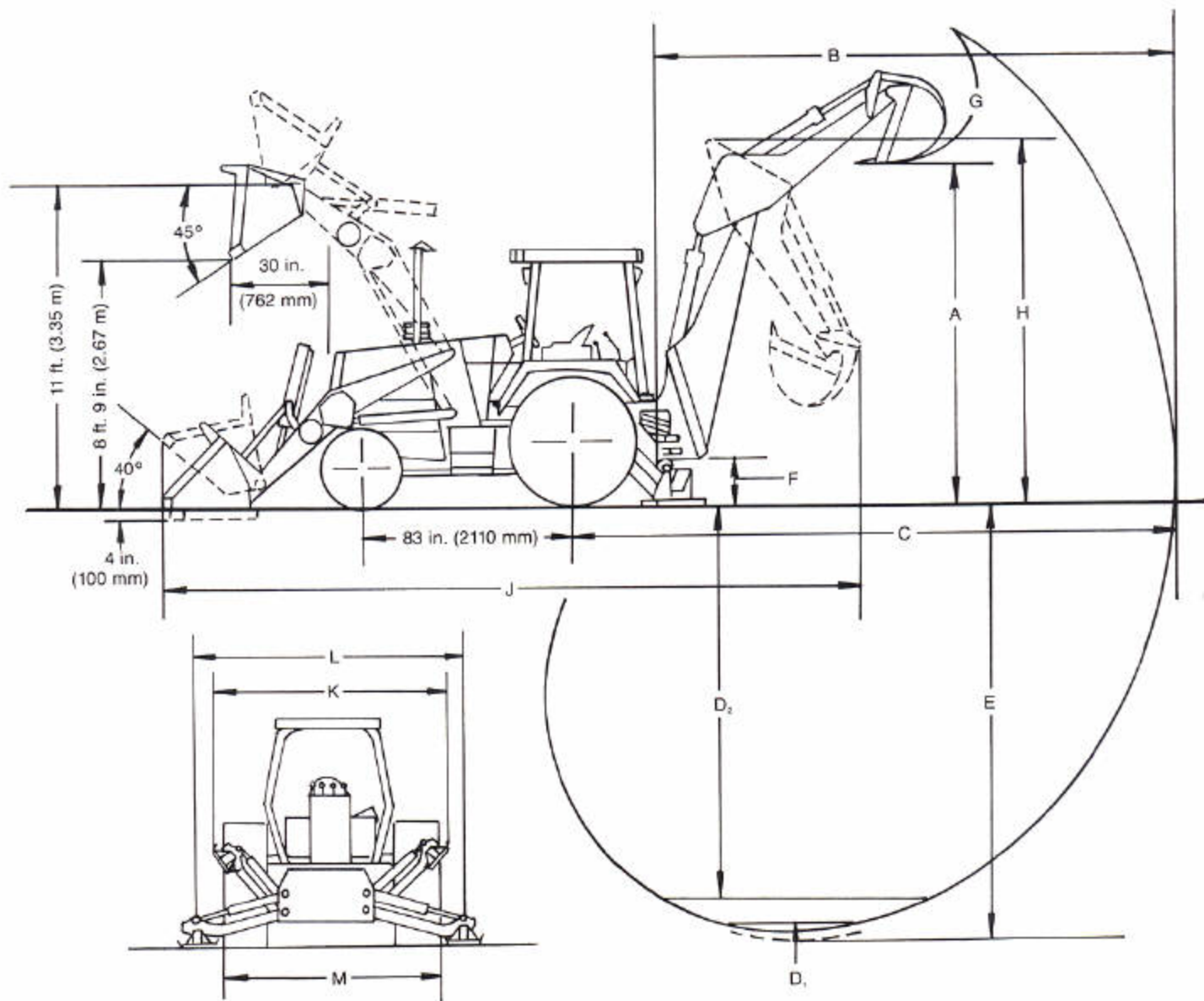
Rated lift capacities are in lb. (kg)  
Lift capacities are hydraulically limited.

### Lift Capacity Backhoe with extendable dipperstick, extended. Based on SAE J31.



Rated lift capacities are in lb. (kg)  
Lift capacities are hydraulically limited.

# 610C BACKHOE LOADER SPECIFICATIONS AND DIMENSIONS



## Key:

	Backhoe*
A. Loading height, truck loading position	13 ft. (3.96 m)
B. Reach from center of swing mast	19 ft. 11 in. (6.07 m)
C. Reach from center of rear axle	23 ft. 8 in. (7.21 m)
D. Digging depth (SAE):	
(1) 2-ft. (610 mm) flat bottom	16 ft. 2 in. (4.93 m)
(2) 8-ft. (2440 mm) flat bottom	15 ft. 2 in. (4.62 m)
E. Maximum digging depth	16 ft. 3 in. (4.95 m)
F. Ground clearance, minimum	15 in. (380 mm)
G. Bucket rotation	160 or 180 degrees
H. Transport height	12 ft. 3 in. (3.73 m)
J. Overall length, transport	23 ft. 4 in. (7.11 m)
K. Stabilizer width—transport	7 ft. 8 in. (2.34 m)
L. Stabilizer spread—operating	9 ft. 10 in. (3.00 m)
M. Overall width (less loader bucket)	86 in. (2185 mm)

## Extendable Dipperstick

	Retracted	Extended
A. Loading height, truck loading position	12 ft. 6 in. (3.81 m)	15 ft. 5 in. (4.70 m)
B. Reach from center of swing mast	19 ft. 3 in. (5.87 m)	23 ft. 11 in. (7.29 m)
C. Reach from center of rear axle	23 ft. (7.01 m)	27 ft. 8 in. (8.43 m)
D. Digging depth (SAE):		
(1) 2-ft. (610 mm) flat bottom	15 ft. 5 in. (4.70 m)	20 ft. 4 in. (6.20 m)
(2) 8-ft. (2440 mm) flat bottom	14 ft. 5 in. (4.40 m)	19 ft. 7 in. (5.97 m)
E. Maximum digging depth	15 ft. 7 in. (4.75 m)	20 ft. 5 in. (6.22 m)
F. Ground clearance, minimum	15 in. (380 mm)	15 in. (380 mm)
G. Bucket rotation	160 or 180 degrees	160 or 180 degrees
H. Transport height	12 ft. 10 in. (3.91 m)	12 ft. 10 in. (3.91 m)
J. Overall length, transport	22 ft. 11 in. (6.99 m)	22 ft. 11 in. (6.99 m)
K. Stabilizer width—transport	7 ft. 8 in. (2.34 m)	7 ft. 8 in. (2.34 m)
L. Stabilizer spread—operating	9 ft. 10 in. (3.00 m)	9 ft. 10 in. (3.00 m)
M. Overall width (less loader bucket)	86 in. (2185 mm)	86 in. (2185 mm)
Digging force, bucket cylinder (power dig position)	11,000 lb. (48.9 kN) (4990 kg)	11,000 lb. (48.9 kN) (4990 kg)
Digging force, crowd cylinder	8100 lb. (36.0 kN) (3675 kg)	5300 lb. (23.6 kN) (2405 kg)
Swing arc	180 degrees	180 degrees
Operator control	Two levers	Right foot treadle
Bucket positions	8 or 17 deg. rollback	12 or 21 deg. rollback
Stabilizer angle rearward	14.5 degrees	14.5 degrees
Lifting capacity, maximum boom @ 65°	5200 lb. (2360 kg)	2400 lb. (1090 kg)
Leveling angle	13 degrees	13 degrees

\* Note: Backhoe specifications are with 24-in. (610 mm) 8.8 cu. ft. (.25 m) bucket.

With 24-in. (610 mm) standard-duty bucket, the digging forces increase and the depth and reach decrease.

## 610C BACKHOE LOADER

### LOADER:

Operator control	Single lever
Rollback at ground level	40 degrees
Breakout force	9700 lb. (43.1 kN) (4400 kg)
Digging depth below ground, bucket level	4 in. (100 mm)
Lifting capacity, full height	7200 lb. (3260 kg)
Height to bucket hinge pin, max.	11 ft. (3.35 m)
Bucket dump angle, max.	45 degrees
Dump clearance, bucket @ 45 degrees	8 ft. 9 in. (2.67 m)
Reach at full height, bucket @ 45 degrees	30 in. (762 mm)
Raising time to full height	4.4 sec.
Bucket dump time	1.0 sec.
Bucket lowering time (power down)	3.0 sec.

### BUCKETS

Loader:	Width		Heaped Capacity	
	In.	(mm)	Cu. Yd.	(m <sup>3</sup> )
General purpose	92	(2340)	1.25	(1.00)
Long lip	89.4	(2270)	1.25	(1.00)
<b>Backhoe:</b>			<b>Cu. Ft.</b>	<b>(m<sup>3</sup>)</b>
Standard-duty	12	(305)	3.0	(0.08)
	16	(406)	4.5	(0.13)
	18	(457)	5.1	(0.14)
	24	(610)	7.5	(0.21)
	24	(610)	8.8	(0.25)
	30	(762)	10.0	(0.28)
	36	(914)	10.0	(0.28)
	36	(914)	14.5	(0.41)
Heavy-duty	18	(457)	5.1	(0.14)
	24	(610)	7.5	(0.21)
	30	(762)	10.0	(0.28)
Ejector	24	(610)	5.7	(0.16)

### Optional or Special Equipment:

Backup alarm  
Cab pressurizer  
Cab with:  
Fabric-covered swivel seat, suspension or non-suspension  
Front defroster fan  
Front and rear wipers  
Integral ROPS/FOPS  
Standard heater—19,000 Btu (5.6 kW)  
Cold-weather starting aid, remote mounted  
Deluxe heater w/fresh air intake—40,000 Btu (11.7 kW)  
Economy seat, vinyl covered, suspension or rigid mounted  
Engine coolant heater  
Extendable dipperstick for backhoe  
Fire extinguisher  
Front counterweight  
Heavy-duty batteries  
Instrument panel vandal cover  
Mechanical front-wheel drive  
Rear defroster fan  
Rearview mirror, inside mounted, curved, heavy-duty  
Rear wheel spacers for tire chain clearance  
Reversible stabilizer pads  
Rotating beacon light  
SMV emblem  
3-in. (76 mm) seat belt  
Three- or four-lever, pedal-swing backhoe controls  
Toolbox

### Additional Available Equipment: \*

Auxiliary bolt-on cutting edge for loader buckets  
Auxiliary hydraulic valves and circuit for loader and backhoe  
Backhoe lift eye  
Bolt-on teeth for loader bucket  
Deluxe heater w/fresh air intake—40,000 Btu (11.7 kW)  
Air conditioning, 24,500 Btu (7.2 kW)  
Front windshield and door kit  
Grille guard  
Lateral slides for operator's seat  
Loader bucket chain hooks, outer  
Longer dippersticks  
Light materials/snow loader buckets  
Multipurpose loader buckets  
1½ cu. yd. (1.15 m<sup>3</sup>) bucket  
Radio or radio cassette

\*See your John Deere dealer for further information