



JD

CONSTRUCTION EQUIPMENT DIVISION

HIGH LIFT LOADERS



MODEL NO.

644H 744H



HIGH LIFT

# 644H 744H

HIGH LIFT LOADERS

SPECIFICATIONS



## Engine

	644H	744H
Type.....	John Deere POWERTECH® 6081H with altitude-compensating turbocharger and aftercooler; meets North American EPA and CARB non-road diesel engine emission regulations effective January 1, 1997; also is certifiable to proposed E.U. (European Union) regulations, which are not yet effective	John Deere POWERTECH 6125A dual horsepower, turbocharged and after-cooled; meets North American EPA and CARB non-road diesel engine regulations effective January 1, 1997; also is certifiable to proposed E.U. (European Union) regulations, which are not yet effective
Rated power.....	180 SAE net hp (134 kW), 205 SAE gross hp (153 kW) @ 2,200 rpm	@ 2,000 rpm: 240 SAE net hp (179 kW), 263 SAE gross hp (196 kW) in gear 1; 260 SAE net hp (194 kW), 283 SAE gross hp (211 kW) in gears 2-4
Cylinders.....	6	6
Displacement.....	496 cu. in. (8.1 L)	766 cu. in. (12.5 L)
Maximum net torque.....	745 lb.-ft. (1010 Nm) @ 1,300 rpm	@ 1,500 rpm: 943 lb.-ft. (1280 Nm) in gear 1 (45% torque rise) and in gears 2-4 (35% torque rise)
Lubrication.....	pressure system with full-flow spin-on filter and cooler	pressure system with full-flow spin-on filter and cooler
Fuel consumption, typical.....	2.9 to 5.0 gal./hr. (10.9 to 18.8 L/h)	4.0 to 10.0 gal./hr. (15.0 to 38.0 L/h)
Cooling fan.....	blower type, hydraulically driven	blower type
Electrical system.....	24 volt with 55-amp alternator	24 volt with 55-amp alternator
Batteries (two 12 volt).....	750 CCA; reserve capacity: 150 min. - standard / 950 CCA; reserve capacity: 200 min. - optional	950 CCA; reserve capacity: 200 min.
Air cleaner.....	dual safety element dry type; restriction indicator for service	dual safety element dry type; restriction indicator for service

## Transmission

Type.....	single stage, single phase torque converter; countershaft-type power shift with computer control	single stage, single phase torque converter with freewheeling stator; countershaft, computer-controlled power shift
Controls.....	smooth shifts under any power condition provided by computer-controlled electronic shift with individual electronic control over each clutch pack, one low-effort twist-grip shift lever, quick-shift button on hydraulic lever, automatic shift feature is selectable to shift between gears 1-4 or 2-4	smooth shifts under any power condition provided by computer-controlled electronic shift with individual electronic control over each clutch pack, one low-effort twist-grip shift lever, quick-shift button on hydraulic lever, automatic shift feature is selectable to shift between gears 1-4 or 2-4
Travel speeds*.....	<i>Forward</i> Gear 1.....4.9 mph (7.9 km/h) Gear 2.....8.4 mph (13.6 km/h) Gear 3.....15.7 mph (25.4 km/h) Gear 4.....24.0 mph (39.0 km/h)	<i>Reverse</i> 5.1 mph (8.3 km/h) 8.8 mph (14.2 km/h) 16.4 mph (26.7 km/h)
	<i>Forward</i> Gear 1.....4.6 mph (7.4 km/h) Gear 2.....8.6 mph (13.9 km/h) Gear 3.....13.1 mph (21.2 km/h) Gear 4.....24.5 mph (39.5 km/h)	<i>Reverse</i> 4.6 mph (7.4 km/h) 8.6 mph (13.9 km/h) 19.3 mph (31.0 km/h)

\*644H equipped with 23.5-25 tires, 744H equipped with 26.5-25 tires.

## Axles/Brakes

Final drives.....	heavy-duty planetary, mounted inboard	heavy-duty planetary, mounted inboard
Differentials.....	conventional front and rear - standard; hydraulic locking front, conventional rear - optional; dual locking front and rear - optional; limited slip front and rear - optional	conventional front and rear - standard; hydraulic locking front - optional; dual locking front and rear - optional
Rear axle oscillation, stop to stop.....	26 degrees	26 degrees
Maximum rise and fall, single wheel.....	19.2 in. (488 mm)	19.5 in. (495 mm)
Brakes (conform to SAE J1473, ISO3450)		
Service brakes.....	inboard-mounted hydraulic wet-disc, bathed in cooling oil, long life self-adjusting	inboard-mounted hydraulic wet-disc, bathed in cooling oil, long life self-adjusting
Parking brake.....	automatically spring applied, hydraulically released, wet disc bathed in cooling oil	automatically spring applied, hydraulically released, wet disc bathed in cooling oil

## Hydraulic System/Steering

Pump (loader and steering).....	variable-displacement, axial piston pump; closed-center, pressure-compensating system	two variable-displacement, load-sensing piston pumps; closed-center system
Maximum flow.....	68 gpm (257 L/min.) @ 1,000 psi (6895 kPa) and 2,200 rpm	104 gpm (393 L/min.) @ 1,000 psi (6900 kPa) and 2,250 rpm
Pressure.....	loader and steering relief 3,600 psi (24 850 kPa)	loader and steering relief 3,200 psi (22 000 kPa)
Loader controls.....	two-function valve; single or dual lever controls; control lever lockout feature; optional third- and fourth-function valve with auxiliary lever	two-function valve; single or dual lever controls; control lever lockout feature; optional third-function valve with auxiliary lever
Hydraulic cycle times		
Raise.....	6.2 sec.	6.6 sec.
Dump.....	1.4 sec.	1.5 sec.
Lower.....	3.0 sec. (float down) / 3.5 sec. (power down)	3.0 sec. (float down) / 3.0 sec. (power down)
Total.....	10.6 sec.	11.1 sec.
Maximum lift capacity.....	with 3.5 cu. yd. (2.7 m <sup>3</sup> ) excavating bucket	with 4.5 cu. yd. (3.4 m <sup>3</sup> ) excavating bucket
Lift at ground level.....	31,555 lb. (14 313 kg)	39,472 lb. (17 904 kg)
Lift at maximum height.....	18,805 lb. (8530 kg)	23,188 lb. (10 518 kg)
Steering (conforms to SAE J1511)		
Type.....	power, fully hydraulic	power, fully hydraulic
Pressure.....	3,600 psi (24 850 kPa) relief	3,200 psi (22 000 kPa) relief
Articulation angle.....	80-degree arc (40 degrees each direction)	80-degree arc (40 degrees each direction)
Turning radius (measured to centerline of outside tire).....	18 ft. 0 in. (5500 mm)	20 ft. 2 in. (6140 mm)

## Tires

Choice of	Tread Width	Width Over Tires	Change In Vertical Height	Tread Width	Width Over Tires	Change In Vertical Height
20.5-25, 12 PR L2.....	85.4 in. (2170 mm)	109.3 in. (2777 mm)	- 1.0 in. (- 25 mm)			
20.5-25, 12 PR L3.....	85.4 in. (2170 mm)	109.3 in. (2777 mm)	- 1.0 in. (- 25 mm)			
20.5-25, 16 PR L3.....	85.4 in. (2170 mm)	109.3 in. (2777 mm)	- 1.0 in. (- 25 mm)			
20.5 R 25, XTLA Michelin Radial (L2 type).....	85.4 in. (2170 mm)	106.4 in. (2702 mm)	- 2.7 in. (- 68 mm)			

Choice of	Tread Width	Width Over Tires	Change In Vertical Height	Tread Width	Width Over Tires	Change In Vertical Height
20.5 R 25, XHAT Michelin Radial (L3 type).....	85.4 in. (2170 mm)	106.2 in. (2697 mm)	- 2.3 in. (- 59 mm)			
23.5-25, 12 PR L2.....	85.4 in. (2170 mm)	113.1 in. (2874 mm)	0 in. (0 mm)			
23.5-25, 20 PR L3.....	85.4 in. (2170 mm)	113.4 in. (2881 mm)	0.2 in. (5 mm)			
23.5 R 25, GP-2B Goodyear Radial (L2 type).....	85.4 in. (2170 mm)	113.2 in. (2875 mm)	0.5 in. (12 mm)			
23.5 R 25, XHAT Michelin Radial (L3 type).....	85.4 in. (2170 mm)	109.1 in. (2772 mm)	0.7 in. (18 mm)			
23.5-25, XHAT L3 Michelin Radial.....				86.6 in. (2200 mm)	113.2 in. (2875 mm)	- 3.1 in. (- 78 mm)
26.5-25, 16 PR L2.....				86.6 in. (2200 mm)	115.8 in. (2940 mm)	- 1.1 in. (- 28 mm)
26.5-25, 20 PR L3.....				86.6 in. (2200 mm)	116.0 in. (2947 mm)	0
26.5-25, 20 PR L5*.....				86.6 in. (2200 mm)	115.8 in. (2940 mm)	+ 1.4 in. (+ 35 mm)
26.5-25, GP-2B L2 Goodyear Radial.....				86.6 in. (2200 mm)	115.5 in. (2935 mm)	0
26.5-25, XHAT L3 Michelin Radial.....				86.6 in. (2200 mm)	115.6 in. (2937 mm)	- 0.6 in. (- 15 mm)
26.5-25, X-MINE Michelin Radial*.....				86.6 in. (2200 mm)	116.2 in. (2952 mm)	+ 1.5 in. (+ 39 mm)

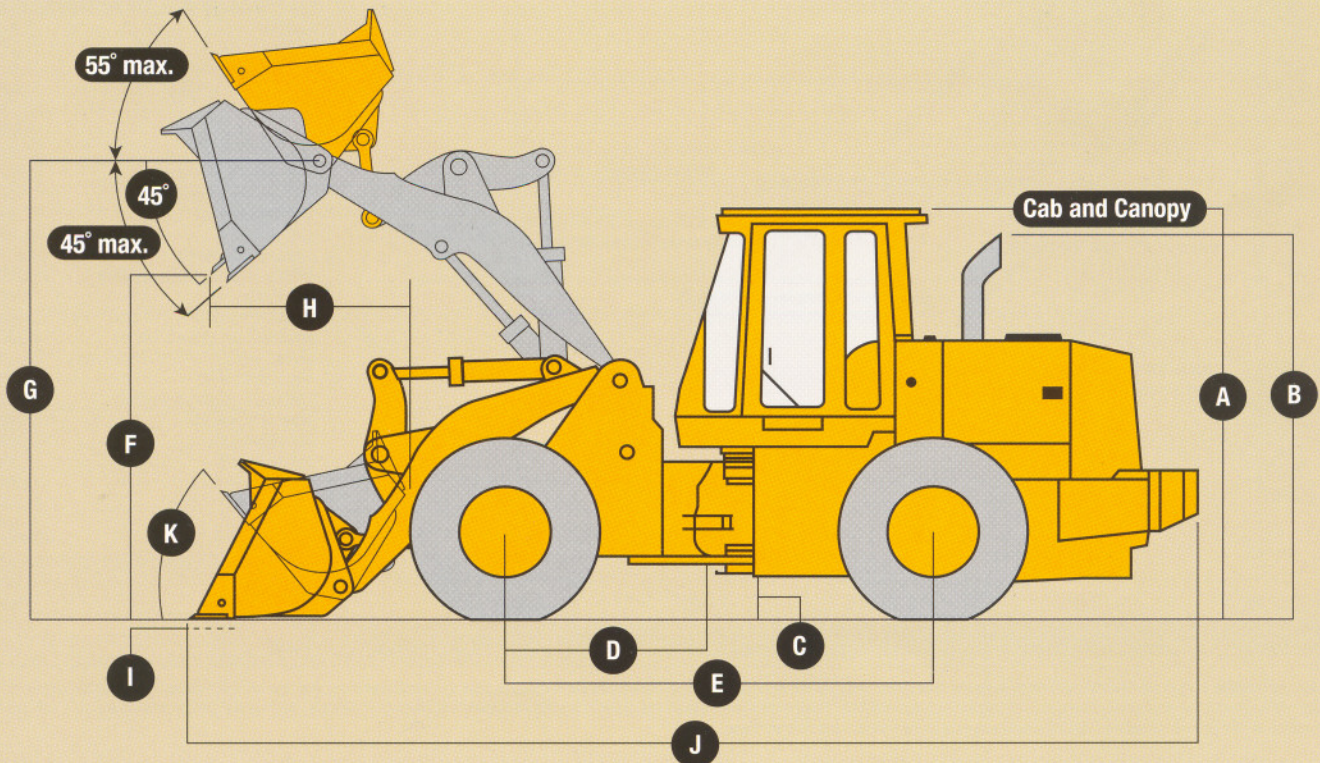
\*Requires ± 8-degree axle stops.

### Capacities (U.S.)

Fuel tank (with ground level fueling).....	90 gal. (341 L)	114 gal. (432 L)
Cooling system.....	31 qt. (29 L)	45 qt. (43 L)
Engine lubrication, including full-flow spin-on filter.....	26 qt. (25 L)	40 qt. (38 L)
Power shift transmission, including vertical cartridge filter.....	27 qt. (26 L)	30 qt. (28 L)
Differential (each axle) - front and rear.....	29 qt. (27 L)	49 qt. (46 L)
Loader hydraulic reservoir and filters.....	31 gal. (117 L)	38 gal. (144 L)
Parking brake.....	0.63 qt. (0.6 L)	0.53 qt. (0.5 L)

### Dimensions with Pin-on Type Bucket

<b>A</b> Height to top of cab and canopy.....	11 ft. 2 in. (3400 mm)	11 ft. 7 in. (3520 mm)
<b>B</b> Height to top of exhaust.....	11 ft. 0 in. (3350 mm)	10 ft. 2 in. (3100 mm)
<b>C</b> Ground clearance.....	18.1 in. (461 mm)	18.3 in. (465 mm)
<b>D</b> Length from centerline to front axle.....	63.0 in. (1600 mm)	67.0 in. (1700 mm)
<b>E</b> Wheelbase.....	126.0 in. (3200 mm)	134.0 in. (3400 mm)
<b>F</b> Dump height.....	▲ (see page 6)	▲ (see page 7)
<b>G</b> Height to hinge pin, fully raised.....	15 ft. 0 in. (4569 mm)	15 ft. 11 in. (4849 mm)
<b>H</b> Dump reach.....	▲▲ (see page 6)	▲▲ (see page 7)
<b>I</b> Maximum digging depth.....	6.4 in. (163 mm)	8.1 in. (207 mm)
<b>J</b> Overall length.....	▲▲▲ (see page 6)	▲▲▲ (see page 7)
<b>K</b> Maximum rollback at ground level.....	40 degrees	41 degrees



## 644H Pin-On Type Bucket Information

Bucket Type/Size	Stockpiling and General Purpose with Bolt-on Edge	Excavating with Bolt-on Edge
Capacity, heaped SAE	4.25 cu. yd. (3.3 m <sup>3</sup> )	3.5 cu. yd. (2.7 m <sup>3</sup> )
Capacity, struck SAE	3.7 cu. yd. (2.8 m <sup>3</sup> )	3.0 cu. yd. (2.3 m <sup>3</sup> )
Bucket width	114.2 in. (2900 mm)	114.2 in. (2900 mm)
Breakout force, SAE J732C	30,574 lb. (13 868 kg)	34,834 lb. (15 801 kg)
Tipping load, straight	24,798 lb. (11 248 kg)	25,422 lb. (11 531 kg)
Tipping load, 40-degree full turn, SAE	20,765 lb. (9419 kg)	21,328 lb. (9674 kg)
Reach, 45-degree dump, 7-ft. (2.13 m) clearance	82.4 in. (2093 mm)	79.8 in. (2027 mm)
▲▲ Reach, 45-degree dump, full height	46.3 in. (1175 mm)	41.9 in. (1065 mm)
▲ Dump clearance, 45 degree, full height	132.9 in. (3375 mm)	137.2 in. (3485 mm)
▲▲▲ Overall length, bucket on ground	28 ft. 0 in. (8525 mm)	27 ft. 5 in. (8362 mm)
Loader clearance circle, bucket in carry position	21 ft. 10 in. (6660 mm)	21 ft. 8 in. (6605 mm)
Operating weight	39,000 lb. (17 690 kg)	38,729 lb. (17 567 kg)

Loader operating information is based on machine with all standard equipment; 23.5-25, 12 PR L2 tires; 1,739-lb. (789 kg) optional counterweight; ROPS cab; differential lock front axle with standard rear axle; two-spool valve with two-lever control; heater and defroster; 175-lb. (79 kg) operator; and full fuel tank. This information is affected by tire size, ballast, and different attachments.

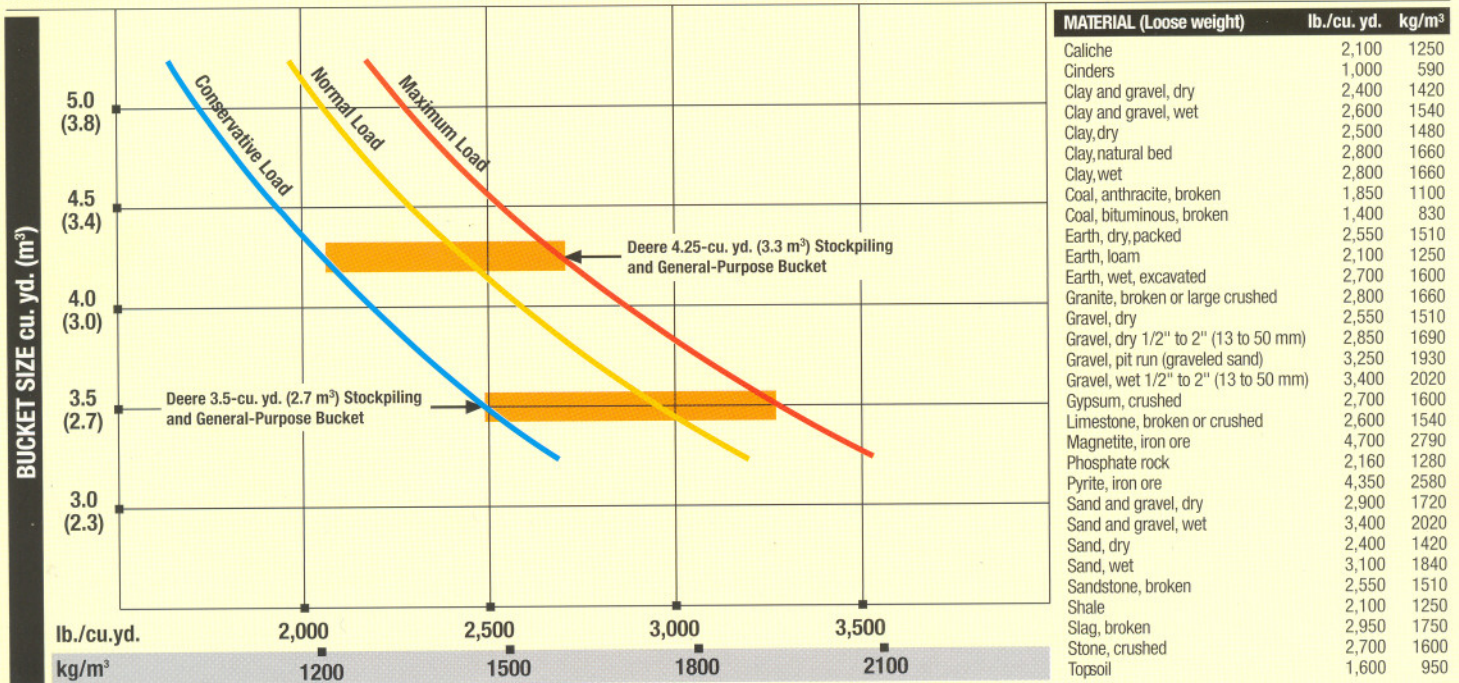
## 644H Adjustments To Operating Weights with Pin-On Buckets

Adjustments to operating weights and tipping loads for 4.25 cu. yd. (3.3 m<sup>3</sup>) material-handling bucket with bolt-on cutting edge

Add (+) or deduct (-) lb. (kg) as indicated for loaders with	Operating Weight	Tipping Load, Straight	Tipping Load, 40-Degree Full Turn, SAE
20.5-25, 12 PR L2 tires	- 1,693 lb. (- 768 kg)	- 972 lb. (- 441 kg)	- 840 lb. (- 381 kg)
20.5-25, 12 PR L3 tires	- 1,307 lb. (- 593 kg)	- 752 lb. (- 341 kg)	- 648 lb. (- 294 kg)
20.5-25, 16 PR L3 tires	- 1,193 lb. (- 541 kg)	- 686 lb. (- 311 kg)	- 591 lb. (- 268 kg)
20.5 R 25, XTLA L2 Michelin Radial	- 1,539 lb. (- 698 kg)	- 884 lb. (- 401 kg)	- 765 lb. (- 347 kg)
20.5 R 25, XHAT L3 Michelin Radial	- 1,221 lb. (- 554 kg)	- 701 lb. (- 318 kg)	- 606 lb. (- 275 kg)
23.5-25, 20 PR L3 tires	+ 384 lb. (+ 174 kg)	+ 220 lb. (+ 100 kg)	+ 190 lb. (+ 86 kg)
23.5 R 25, GP-2B L2 Goodyear Radial	+ 525 lb. (+ 238 kg)	+ 302 lb. (+ 137 kg)	+ 260 lb. (+ 118 kg)
23.5 R 25, XHAT L3 Michelin Radial	+ 747 lb. (+ 339 kg)	+ 430 lb. (+ 195 kg)	+ 370 lb. (+ 168 kg)
625/70 R 25, XLD	- 747 lb. (- 339 kg)	- 430 lb. (- 195 kg)	- 370 lb. (- 168 kg)
CaCl <sub>2</sub> in 23.5-25 rear tires*	+ 2,396 lb. (+ 1087 kg)	- 2,754 lb. (- 1249 kg)	- 2,379 lb. (- 1079 kg)
Optional counterweight removed*	- 1,737 lb. (- 788 kg)	- 3,208 lb. (- 1455 kg)	- 2,635 lb. (- 1195 kg)

\*Optional counterweight not to be used when CaCl<sub>2</sub> or other ballast is used in rear tires.

## 644H Bucket Selection Guide\*



\* This guide, representing bucket sizes not necessarily manufactured by Deere, will help you in selecting proper bucket size for material density, loader configuration, and operating conditions. Optimum bucket size is determined after adding or subtracting all tipping load changes due to optional equipment. The "conservative load" line on this guide is recommended when operating in conditions such as soft ground and unlevel surfaces. The "maximum load" condition on this guide is sometimes utilized when operating on firm ground and level surfaces.

## 744H Pin-On Type Bucket Information

Bucket Type/Size	Stockpiling and General Purpose with Bolt-on Cutting Edge	Excavating and Heavy Material with Bolt-on Cutting Edge
Capacity, heaped SAE	5.25 cu. yd. (4.0 m <sup>3</sup> )	4.50 cu. yd. (3.4 m <sup>3</sup> )
Capacity, struck SAE	5.00 cu. yd. (3.8 m <sup>3</sup> )	4.25 cu. yd. (3.2 m <sup>3</sup> )
Bucket width	119.7 in. (3040 mm)	119.7 in. (3040 mm)
Breakout force, SAE J732C	37,821 lb. (17 155 kg)	42,320 lb. (19 196 kg)
Tipping load, straight	29,829 lb. (13 530 kg)	30,362 lb. (13 772 kg)
Tipping load, 35-degree full turn, SAE	25,893 lb. (11 745 kg)	25,671 lb. (11 644 kg)
Tipping load, 40-degree full turn, SAE	24,928 lb. (11 307 kg)	24,485 lb. (11 106 kg)
Reach, 45-degree dump, 7-ft. (2.13 m) clearance	96.5 in. (2452 mm)	94.0 in. (2387 mm)
▲▲ Reach, 45-degree dump, full height	55.9 in. (1421 mm)	52.0 in. (1321 mm)
▲ Dump clearance, 45 degree, full height	142.2 in. (3611 mm)	146.1 in. (3710 mm)
▲▲▲ Overall length, bucket on ground	30 ft. 3 in. (9226 mm)	29 ft. 9 in. (9079 mm)
Loader clearance circle, bucket in carry position	23 ft. 4 in. (7119 mm)	23 ft. 2 in. (7070 mm)
Operating weight	51,275 lb. (23 258 kg)	50,989 lb. (23 128 kg)

Loader operating information is based on machine with all standard equipment; 26.5-25, 20 PR L3 tires; 1,226-lb. (566 kg) optional counterweight; ROPS cab; differential lock front axle with standard rear axle; two-spool valve with two-lever control; heater and defroster; 175-lb. (79 kg) operator; and full fuel tank. This information is affected by tire size, ballast, and different attachments.

## 744H Adjustments To Operating Weights with Pin-On Buckets

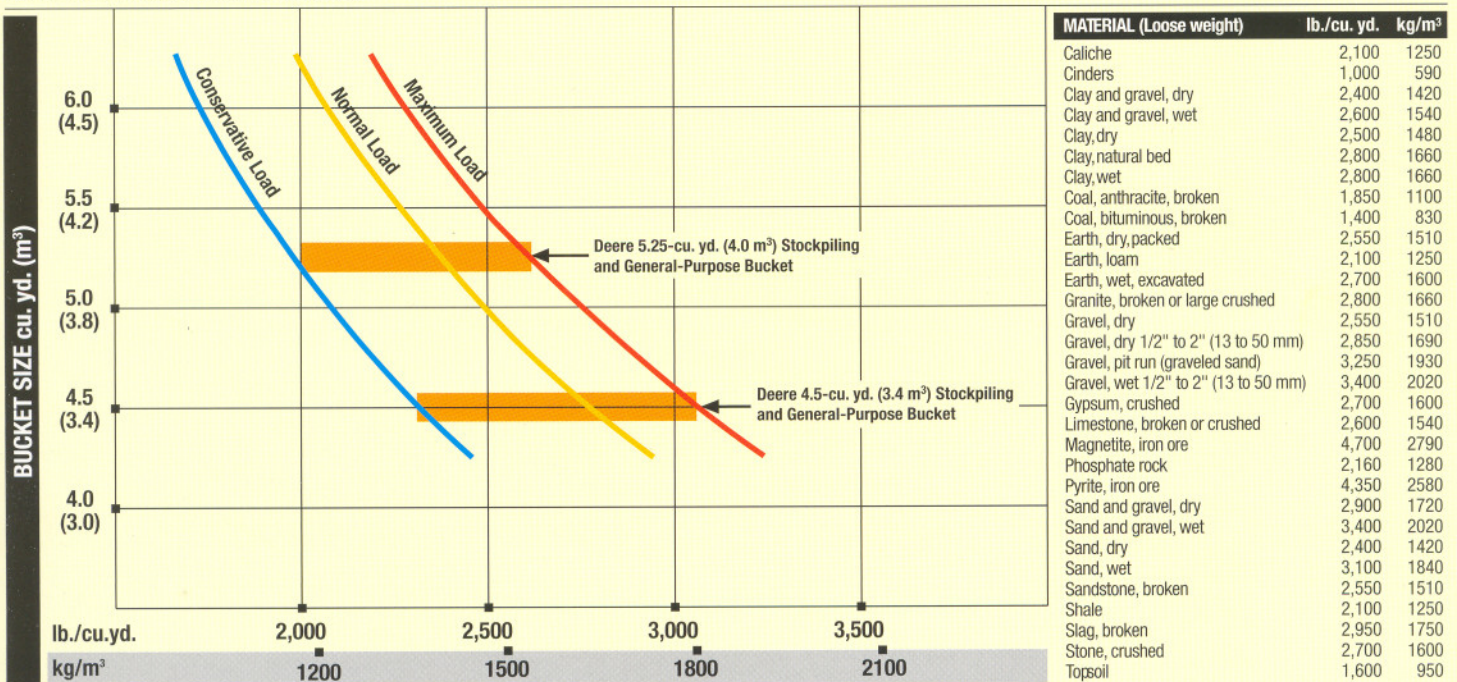
Adjustments to operating weights and tipping loads for 5.25 cu. yd. (4.0 m<sup>3</sup>) stockpiling bucket with bolt-on cutting edge

Add (+) or deduct (-) lb. (kg) as indicated for

loaders with	Operating Weight	Tipping Load, Straight	Tipping Load, 35-Degree Full Turn, SAE	Tipping Load, 40-Degree Full Turn, SAE
23.5-25, XHAT L3 Michelin Radial	- 556 lb. (- 252 kg)	- 313 lb. (- 142 kg)	- 278 lb. (- 126 kg)	- 271 lb. (- 123 kg)
26.5-25, 16 PR L2	- 375 lb. (- 170 kg)	- 215 lb. (- 98 kg)	- 186 lb. (- 84 kg)	- 184 lb. (- 83 kg)
26.5-25, GP-2B L2 Goodyear Radial	+ 397 lb. (+ 180 kg)	+ 223 lb. (+ 101 kg)	+ 198 lb. (+ 90 kg)	+ 194 lb. (+ 88 kg)
26.5-25, XHAT L3 Michelin Radial	+ 397 lb. (+ 180 kg)	+ 223 lb. (+ 101 kg)	+ 90 lb. (+ 90 kg)	+ 194 lb. (+ 88 kg)
26.5-25, X-MINE D2 Michelin Radial	+ 2,857 lb. (+ 1296 kg)	+ 1,612 lb. (+ 731 kg)	+ 1,433 lb. (+ 650 kg)	+ 1,391 lb. (+ 631 kg)
CaCl <sub>2</sub> in 26.5-25 rear tires	+ 2,877 lb. (+ 1305 kg)	+ 3,243 lb. (+ 1471 kg)	+ 2,886 lb. (+ 1309 kg)	+ 2,802 lb. (+ 1271 kg)
Optional counterweight removed*	- 1,257 lb. (- 570 kg)	- 2,275 lb. (- 1032 kg)	- 1,947 lb. (- 883 kg)	- 1,867 lb. (- 847 kg)

\*Optional counterweight not to be used when CaCl<sub>2</sub> or other ballast is used in rear tires.

## 744H Bucket Selection Guide\*



\*This guide, representing bucket sizes not necessarily manufactured by Deere, will help you in selecting proper bucket size for material density, loader configuration, and operating conditions. Optimum bucket size is determined after adding or subtracting all tipping load changes due to optional equipment. The "conservative load" line on this guide is recommended when operating in conditions such as soft ground and unlevel surfaces. The "maximum load" condition on this guide is sometimes utilized when operating on firm ground and level surfaces.