

Specifications



Engine **824K Z-BAR / HIGH-LIFT**

Manufacturer and Model	John Deere PowerTech™ Plus 6135H
Non-Road Emission Standards	certified to EPA Tier 3 emissions
Cylinders	6
Valves Per Cylinder	4
Displacement	824 cu. in. (13.5 L)
Net Peak Power @ 1,600 rpm	333 hp (248 kW)
Net Peak Torque @ 900 rpm	1,194 lb.-ft. (1619 Nm)
Net Torque Rise	59%
Fuel System	mechanically actuated electronic unit injectors
Lubrication	full-flow spin-on filter and integral cooler
Aspiration	turbocharged, charge air cooled
Air Cleaner	dual-element dry type, restriction indicator in cab monitor for service
Fan Drive	hydraulically driven, proportionally controlled, fan aft of coolers
Electrical System	24 volt with 80-amp alternator (100-amp alternator optional)
Batteries (two 12 volt)	1,400 CCA (each)

Transmission

Type	countershaft-type PowerShift™			
Torque Converter	single stage, dual phase with freewheeling stator			
Shift Control	electronically modulated, adaptive, load and speed dependent			
Operator Interface	steering-column or joystick-mounted F-N-R and gear-select lever; quick-shift button on hydraulic lever			
Shift Modes	manual/auto (1st–4th or 2nd–4th); quick-shift button with two selectable modes: kick-down or kick-up/down; and three clutch-cutoff settings adjustable on switch pad			
	<i>Standard 4-Speed Transmission</i>		<i>5-Speed Transmission with Lockup Torque Converter</i>	
Travel Speeds (with 26.5 R 25, 1 Star L3 tires)	<i>Forward Maximum</i>	<i>Reverse Maximum</i>	<i>Forward Maximum</i>	<i>Reverse Maximum</i>
Gear 1	4.6 mph (7.4 km/h)	4.6 mph (7.4 km/h)	5.2 mph (8.3 km/h)	5.2 mph (8.3 km/h)
Gear 2	8.6 mph (13.8 km/h)	8.6 mph (13.8 km/h)	9.3 mph (14.9 km/h)	8.7 mph (14.0 km/h)
Gear 3	13.1 mph (21.0 km/h)	18.7 mph (30.1 km/h)	14.4 mph (23.1 km/h)	21.1 mph (33.9 km/h)
Gear 4	24.9 mph (40.0 km/h)	N/A	21.1 mph (33.9 km/h)	N/A
Gear 5	N/A	N/A	24.9 mph (40.0 km/h)	N/A

Axles/Brakes

Final Drives	heavy-duty inboard planetary
Differentials	hydraulic locking front with conventional rear — standard; dual locking front and rear — optional
Rear Axle Oscillation, Stop to Stop (with 26.5 R 25, 1 Star L3 tires)	26 deg.
Brakes (conform to ISO 3450)	
Service Brakes	hydraulically actuated, inboard, sun-gear mounted, pressure oil cooled, self adjusting, single disc
Parking Brake	automatic spring applied, hydraulically released, oil cooled, multi disc

Tires

Choice of (with Titan rims)*	<i>Tread Width</i>	<i>Width Over Tires</i>	<i>Change In Vertical Height</i>
26.5 R 25, 1 Star L-3	90.5 in. (2298 mm)	120.7 in. (3065 mm)	standard
26.5-25, 1 Star L-5, 20 ply [§]	90.5 in. (2298 mm)	120.5 in. (3060 mm)	+ 1.2 in. (+ 31 mm)
26.5-25, 20 PR L-3	90.5 in. (2298 mm)	120.5 in. (3060 mm)	+ 2.6 in. (+ 67 mm)

*Based on Z-bar machine configuration; may change based on vehicle configuration, weight, or tire-pressure adjustments.

[§]Requires 8-deg. rear axle stops, close-mounted steps, and no fenders.

Refill Capacities (U.S.)

824K Z-BAR / HIGH-LIFT

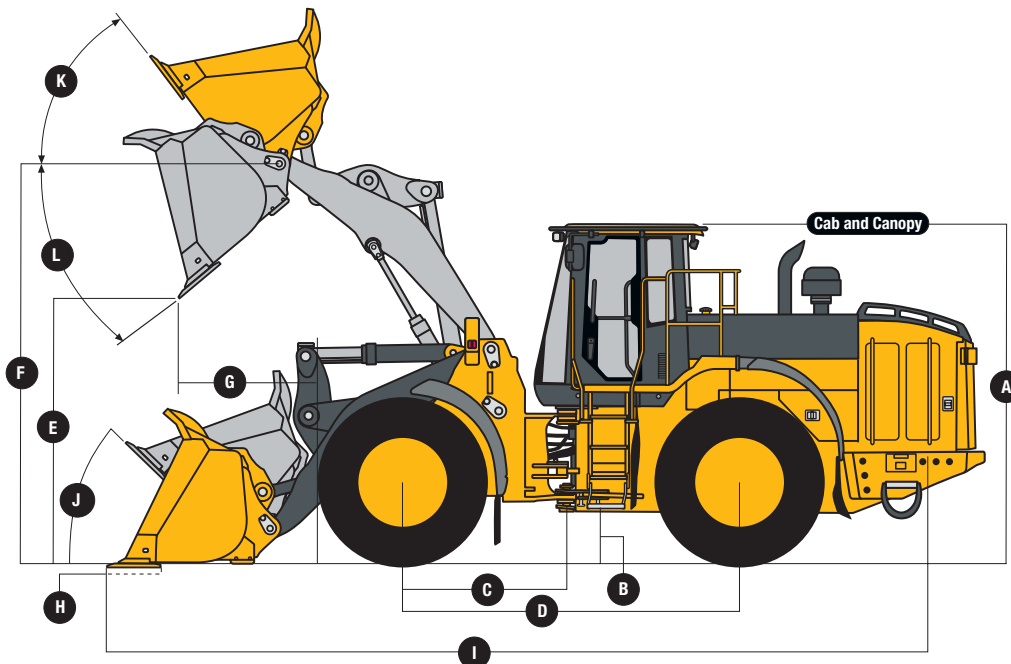
Fuel Tank (with ground-level fueling)	124 gal. (469.4 L)
Cooling System	50.1 qt. (47.4 L)
Engine Oil with Vertical Spin-On Filter	40 qt. (37.9 L)
Transmission Fluid with Vertical Filter	29.5 qt. (27.9 L)
Axle Oil (front and rear)	48.5 qt. (45.9 L)
Hydraulic Reservoir and Filters	42 gal. (159 L)
Park Brake Oil (wet disc)	24 oz. (0.7 L)

Hydraulic System/Steering

Pump (loader and steering)	two variable-displacement, load-sensing, axial-piston pumps; closed-center system	
Maximum Rated Flow @ 1,000 psi (6895 kPa) and 2,250 rpm	136 gpm (513 L/m)	
System Relief Pressure (loader and steering)	3,650 psi (25 166 kPa)	
Loader Controls	two-function valve; single- or dual-lever controls; control lever lockout feature; optional third- and fourth-function valve with auxiliary lever	
Steering (conforms to ISO 5010)		
Type	power, fully hydraulic	
Articulation Angle	80-deg. arc (40 deg. each direction)	
Hydraulic Cycle Times	Z-Bar	High-Lift
Raise	5.7 sec.	6.0 sec.
Dump	1.3 sec.	1.3 sec.
Lower (float down)	2.5 sec.	2.6 sec.
Total	9.5 sec.	9.9 sec.
Turning Radius (measured to centerline of outside tire)	19 ft. 5 in. (5.92 m)	

Dimensions with Standard Configuration

	Z-Bar 6.0-cu.-yd. (4.6 m ³) pin-on bucket	High-Lift 6.0-cu.-yd. (4.6 m ³) pin-on bucket
A Height to Top of Cab and Canopy	11 ft. 6 in. (3.50 m)	11 ft. 6 in. (3.50 m)
B Ground Clearance	18.2 in. (0.46 m)	18.2 in. (0.46 m)
C Length from Centerline to Front Axle	5 ft. 7 in. (1.70 m)	5 ft. 7 in. (1.70 m)
D Wheelbase	11 ft. 4 in. (3.46 m)	11 ft. 4 in. (3.46 m)
E Dump Clearance	▲ (see page 34)	▲ (see page 34)
F Height to Hinge Pin, Fully Raised	14 ft. 9 in. (4.48 m)	15 ft. 11 in. (4.85 m)
G Dump Reach	▲▲ (see page 34)	▲▲ (see page 34)
H Maximum Digging Depth	4.5 in. (115 mm)	7.7 in. (196 mm)
I Overall Length	▲▲▲ (see page 34)	▲▲▲ (see page 34)
J Maximum Rollback at Ground Level	46 deg.	46 deg.
K Maximum Rollback, Boom Fully Raised	52 deg.	53 deg.
L Maximum Bucket Angle, Fully Raised	44 deg.	40 deg.



824K Z-BAR AND HIGH-LIFT LOADERS

824K Z-Bar with Pin-On-Type Bucket

Bucket Type/Size	General-Purpose with Bolt-On Edge	Light Material with Bolt-On Edge
Capacity, Heaped	6.0 cu. yd. (4.6 m ³)	6.75 cu. yd. (5.2 m ³)
Capacity, Struck	5.25 cu. yd. (4.0 m ³)	5.8 cu. yd. (4.4 m ³)
Bucket Weight	6,146 lb. (2788 kg)	6,411 lb. (2908 kg)
Bucket Width	10 ft. 9 in. (3.27 m)	10 ft. 9 in. (3.27 m)
Breakout Force	41,678 lb. (18 905 kg)	38,572 lb. (17 496 kg)
Tipping Load, Straight	45,213 lb. (20 508 kg)	44,590 lb. (20 226 kg)
Tipping Load, 35-Deg. Full Turn	40,236 lb. (18 251 kg)	39,649 lb. (17 984 kg)
Tipping Load, 40-Deg. Full Turn	38,775 lb. (17 588 kg)	38,195 lb. (17 325 kg)
Reach, 45-Deg. Dump, 7-ft. (2.13 m) Clearance	6 ft. 9 in. (2.05 m)	6 ft. 10 in. (2.09 m)
▲▲ Reach, Max. Dump, Full Height	4 ft. 2 in. (1.28 m)	4 ft. 6 in. (1.36 m)
▲ Dump Clearance, Max. Dump, Full Height	10 ft. 6 in. (3.19 m)	10 ft. 3 in. (3.12 m)
▲▲▲ Overall Length, Bucket on Ground	30 ft. 5 in. (9.26 m)	30 ft. 9 in. (9.38 m)
Loader Clearance Circle, Bucket Carry Position	46 ft. 9 in. (14.26 m)	46 ft. 8 in. (14.22 m)
Operating Weight	57,783 lb. (26 210 kg)	58,047 lb. (26 330 kg)

Loader operating information is based on machine with identified linkage and standard equipment, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 175-lb. (79 kg) operator. This information is affected by changes in tires, ballast, and different attachments.

824K High-Lift with Pin-On-Type Bucket

Bucket Type/Size	General-Purpose with Bolt-On Edge	General-Purpose with Teeth and Segments
Capacity, Heaped	6.0 cu. yd. (4.6 m ³)	6.0 cu. yd. (4.6 m ³)
Capacity, Struck	5.25 cu. yd. (4.0 m ³)	5.25 cu. yd. (4.0 m ³)
Bucket Weight	6,146 lb. (2788 kg)	6,423 lb. (2914 kg)
Bucket Width	10 ft. 9 in. (3.27 m)	10 ft. 9 in. (3.27 m)
Breakout Force	39,570 lb. (17 949 kg)	39,570 lb. (17 949 kg)
Tipping Load, Straight	37,983 lb. (17 229 kg)	37,626 lb. (17 067 kg)
Tipping Load, 35-Deg. Full Turn	33,658 lb. (15 267 kg)	33,296 lb. (15 103 kg)
Tipping Load, 40-Deg. Full Turn	32,386 lb. (14 690 kg)	32,027 lb. (14 527 kg)
Reach, 45-Deg. Dump, 7-ft. (2.13 m) Clearance	8 ft. 2 in. (2.50 m)	8 ft. 5 in. (2.58 m)
▲▲ Reach, Max. Dump, Full Height	5 ft. 4 in. (1.63 m)	5 ft. 10 in. (1.77 m)
▲ Dump Clearance, Max. Dump, Full Height	11 ft. 11 in. (3.63 m)	11 ft. 7 in. (3.52 m)
▲▲▲ Overall Length, Bucket on Ground	32 ft. 1 in. (9.77 m)	32 ft. 8 in. (9.95 m)
Loader Clearance Circle, Bucket Carry Position	47 ft. 9 in. (14.54 m)	48 ft. 1 in. (14.65 m)
Operating Weight	58,618 lb. (25 689 kg)	58,894 lb. (26 714 kg)

Loader operating information is based on machine with identified linkage and standard equipment, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 175-lb. (79 kg) operator. This information is affected by changes in tires, ballast, and different attachments.

Adjustments to Operating Weights and Tipping Loads with Buckets

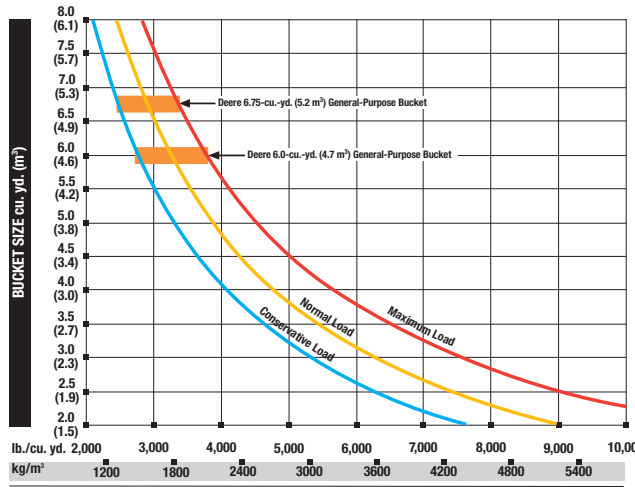
Adjustments to operating weights and tipping loads are based on Z-bar machine and pin-on 6.0-cu.-yd. (4.6 m³) general-purpose bucket with bolt-on cutting edge, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 175-lb. (79 kg) operator*

Add (+) or deduct (-) lb. (kg) as indicated for loaders with Titan rims and	Operating Weight	Tipping Load, Straight	Tipping Load, 37-Deg. Full Turn, SAE	Tipping Load, 40-Deg. Full Turn, SAE
26.5 R 25, 1 Star L-3	0 lb. (0 kg)	0 lb. (0 kg)	0 lb. (0 kg)	0 lb. (0 kg)
26.5-25, 1 Star L-5, 20 ply [§]	+ 688 lb. (+ 312 kg)	+ 489 lb. (+ 222 kg)	+ 448 lb. (+ 203 kg)	+ 432 lb. (+ 196 kg)
26.5-25, 20 PR L-3	+ 547 lb. (+ 248 kg)	+ 390 lb. (+ 177 kg)	+ 355 lb. (+ 161 kg)	+ 343 lb. (+ 156 kg)

*Based on Z-bar machine configuration; may change based on vehicle configuration, weight, or tire-pressure adjustments.

[§]Requires 8-deg. rear axle stops, close-mounted steps, and no fenders.

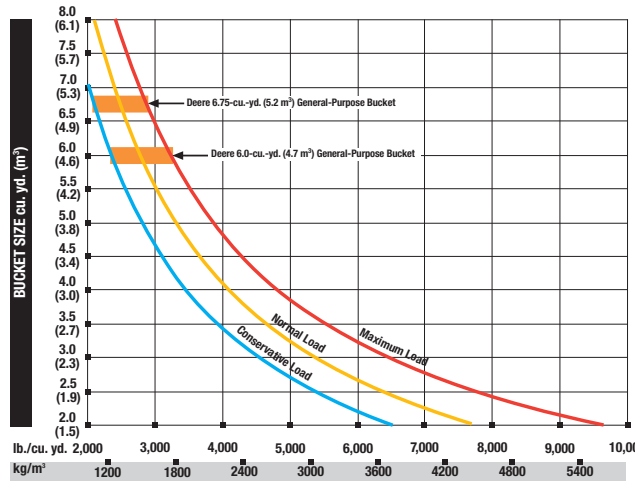
Bucket Selection Guides*



824K Z-BAR LOADER WITH PIN-ON BUCKET

MATERIAL (Loose weight)	lb./cu. yd.	kg/m ³
Caliche	2,100	1250
Cinders	1,000	590
Clay and gravel, dry	2,400	1420
Clay and gravel, wet	2,600	1540
Clay, dry	2,500	1480
Clay, natural bed	2,800	1660
Clay, wet	2,800	1660
Coal, anthracite, broken	1,850	1100
Coal, bituminous, broken	1,400	830
Earth, dry, packed	2,550	1510
Earth, loam	2,100	1250
Earth, wet, excavated	2,700	1600
Granite, broken or large crushed	2,800	1660
Gravel, dry	2,550	1510
Gravel, dry 1/2" to 2" (13 to 50 mm)	2,850	1690
Gravel, pit run (graveled sand)	3,250	1930
Gravel, wet 1/2" to 2" (13 to 50 mm)	3,400	2020
Gypsum, crushed	2,700	1600
Limestone, broken or crushed	2,600	1540
Magnetite, iron ore	4,700	2790
Phosphate rock	2,160	1280
Pyrite, iron ore	4,350	2580
Sand and gravel, dry	2,900	1720
Sand and gravel, wet	3,400	2020
Sand, dry	2,400	1420
Sand, wet	3,100	1840
Sandstone, broken	2,550	1510
Shale	2,100	1250
Slag, broken	2,950	1750
Stone, crushed	2,700	1600
Topsoil	1,600	950

*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 uneven surfaces. The "maximum load" condition on this guide is sometimes utilized when operating on firm ground and level surfaces.



824K HIGH-LIFT LOADER WITH PIN-ON BUCKET

MATERIAL (Loose weight)	lb./cu. yd.	kg/m ³
Caliche	2,100	1250
Cinders	1,000	590
Clay and gravel, dry	2,400	1420
Clay and gravel, wet	2,600	1540
Clay, dry	2,500	1480
Clay, natural bed	2,800	1660
Clay, wet	2,800	1660
Coal, anthracite, broken	1,850	1100
Coal, bituminous, broken	1,400	830
Earth, dry, packed	2,550	1510
Earth, loam	2,100	1250
Earth, wet, excavated	2,700	1600
Granite, broken or large crushed	2,800	1660
Gravel, dry	2,550	1510
Gravel, dry 1/2" to 2" (13 to 50 mm)	2,850	1690
Gravel, pit run (graveled sand)	3,250	1930
Gravel, wet 1/2" to 2" (13 to 50 mm)	3,400	2020
Gypsum, crushed	2,700	1600
Limestone, broken or crushed	2,600	1540
Magnetite, iron ore	4,700	2790
Phosphate rock	2,160	1280
Pyrite, iron ore	4,350	2580
Sand and gravel, dry	2,900	1720
Sand and gravel, wet	3,400	2020
Sand, dry	2,400	1420
Sand, wet	3,100	1840
Sandstone, broken	2,550	1510
Shale	2,100	1250
Slag, broken	2,950	1750
Stone, crushed	2,700	1600
Topsoil	1,600	950

*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 uneven surfaces. The "maximum load" condition on this guide is sometimes utilized when operating on firm ground and level surfaces.