

# 644K

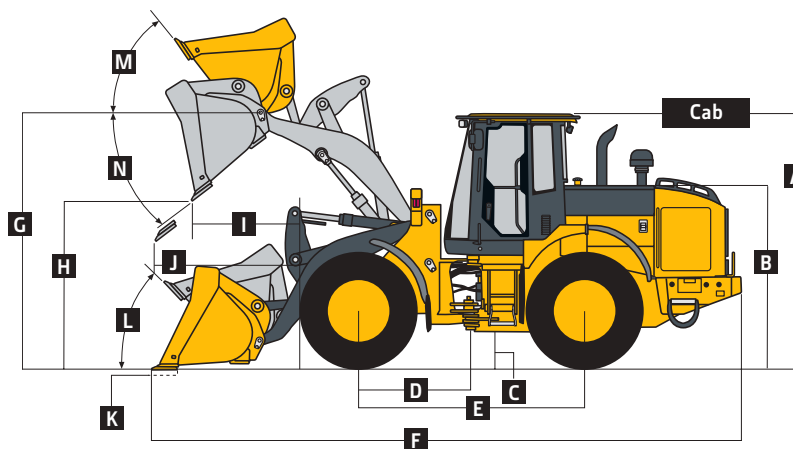


Engine		644K Z-BAR / HIGH-LIFT		
Manufacturer and Model	John Deere PowerTech™ 6068H	John Deere PowerTech™ Plus 6068H		
Non-Road Emission Standard	EPA Tier 2/EU Stage II	EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions		
Cylinders	6	6		
Valves Per Cylinder	4	4		
Displacement	6.8 L (414 cu. in.)	6.8 L (414 cu. in.)		
Peak Power (ISO 9249)				
Net	167 kW (224 hp) at 1,700 rpm	167 kW (224 hp) at 1,700 rpm		
Gross	175 kW (234 hp) at 1,700 rpm	175 kW (234 hp) at 1,700 rpm		
Peak Torque (ISO 9249)				
Net	985 Nm (726 lb.-ft.) at 1,400 rpm	985 Nm (726 lb.-ft.) at 1,400 rpm		
Gross	1024 Nm (755 lb.-ft.) at 1,400 rpm	1024 Nm (755 lb.-ft.) at 1,400 rpm		
Net Torque Rise	44%	44%		
Fuel System (electronically controlled)	High-pressure common rail	High-pressure common rail		
Lubrication	Full-flow spin-on filter and integral cooler	Full-flow spin-on filter and integral cooler		
Aspiration	Turbocharged, charge air cooled	Turbocharged, charge air cooled		
Air Cleaner	Under-hood, dual-element dry type, restriction indicator in cab monitor for service			
<b>Cooling</b>				
Fan Drive	Hydraulically driven, proportionally controlled, fan aft of coolers			
<b>Electrical</b>				
Electrical System	24 volt with 80-amp alternator (optional 100-amp alternator)			
Batteries (2 – 12 volt)	750 CCA (each)			
Lights	Driving lights with guard, turn signals, and flashers; stop- and taillight; work lights: front (2) and rear (2); halogen engine-compartment light and switch (option)			
<b>Transmission System</b>				
Type	Countershaft-type PowerShift™			
Torque Converter	Single stage, single phase			
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–D or 2nd–D); Quick-Shift button with 2 selectable modes: kick-down or kick-up/down; and 1 clutch cutoff setting			
	<i>Standard 5-Speed with Lockup Torque Converter</i>		<i>Optional 4-Speed</i>	
Maximum Travel Speeds (with 23.5 R 25 tires)	<i>Forward</i>	<i>Reverse</i>	<i>Forward</i>	<i>Reverse</i>
Range 1	6.8 km/h (4.2 mph)	7.2 km/h (4.5 mph)	6.9 km/h (4.3 mph)	7.3 km/h (4.5 mph)
Range 2	12.4 km/h (7.7 mph)	13.1 km/h (8.1 mph)	11.3 km/h (7.0 mph)	11.9 km/h (7.4 mph)
Range 3	20.9 km/h (13.0 mph)	26.6 km/h (16.5 mph)	21.7 km/h (13.5 mph)	22.7 km/h (14.1 mph)
Range 4	25.3 km/h (15.7 mph)	N/A	33.1 km/h (20.6 mph)	N/A
Range 5	40.0 km/h (24.9 mph)	N/A	N/A	N/A
<b>Axles/Brakes</b>				
Final Drives	Heavy-duty inboard-mounted planetary			
Differentials	Hydraulic locking front with conventional rear – standard; dual locking front and rear – optional			
Rear Axle Oscillation, Stop to Stop (with 23.5 R 25 tires)	26 deg. (13 deg. each direction)			
Brakes (conform to ISO 3450)				
Service	Hydraulically actuated, spring-retracted, self-adjusting, inboard sun-shaft mounted, oil cooled, single disc			
Parking	Automatic spring applied, hydraulically released, driveline mounted, oil cooled, multi disc			
<b>Tires/Wheels (see page 16 for complete tire adjustments)</b>				
	<i>Tread Width</i>	<i>Width Over Tires</i>		
Michelin 23.5 R 25, 1 Star L-3	2170 mm (85.4 in.)	2875 mm (113.2 in.)		
<b>Serviceability</b>				
Refill Capacities	EPA Tier 2/EU Stage II and EPA Tier 3/EU Stage IIIA			
Fuel Tank with Lockable Cap	352 L (93 gal.)			
Engine Cooling System	29.5 L (31.2 qt.)			
Engine Oil with Vertical Spin-On Filter	24.5 L (26 qt.)			
Transmission Reservoir with Vertical Filter	27 L (28.5 qt.)			
Axle Oil (front and rear, each)	22 L (23 qt.)			
Hydraulic Reservoir and Filter	110 L (29 gal.)			
Park Brake Oil (wet disc)	0.6 L (20 oz.)			
<b>Hydraulic System/Steering</b>				
Pump (loader and steering)	Variable-displacement, axial-piston pump; closed-center, pressure-compensating system			
Maximum Rated Flow at 6895 kPa (1,000 psi) and 2,250 rpm	297 L/m (78 gpm)			
System Relief Pressure (loader and steering)	25 166 kPa (3,650 psi)			
Loader Controls	2-function valve, joystick control or fingertip controls, hydraulic-function enable/disable, optional 3rd- and 4th-function valve with auxiliary lever			



Hydraulic System/Steering (continued)		644K Z-BAR / HIGH-LIFT	
Steering (conforms to ISO 5010)		Steering-column-mounted, twist-grip shift lever; Quick-Shift button on hydraulic lever	
Type		Power, fully hydraulic	
Articulation Angle		80-deg. arc (40-deg. each direction)	
Turning Radius (measured to centerline of outside tire)		5.57 m (18 ft. 3 in.)	
Hydraulic Cycle Times			
Raise		6.4 sec.	
Dump		1.6 sec.	
Lower (float down)		3.0 sec.	
Total		11.0 sec.	

**Dimensions and Specifications with Pin-On Bucket**



**644K Z-BAR AND HIGH-LIFT LOADERS WITH PIN-ON BUCKET**

	Z-Bar	High-Lift
<b>Dimensions with Bucket</b>	<i>3.2-m<sup>3</sup> (4.25 cu. yd.) general-purpose with bolt-on edge</i>	<i>3.2-m<sup>3</sup> (4.25 cu. yd.) general-purpose with bolt-on edge</i>
A Height to Top of Cab	3.43 m (11 ft. 3 in.)	3.43 m (11 ft. 3 in.)
B Hood Height	2.53 m (8 ft. 4 in.)	2.53 m (8 ft. 4 in.)
C Ground Clearance	461 mm (18.1 in.)	461 mm (18.1 in.)
D Length from Centerline to Front Axle	1.60 m (5 ft. 3 in.)	1.60 m (5 ft. 3 in.)
E Wheelbase	3.26 m (10 ft. 8 in.)	3.26 m (10 ft. 8 in.)
F Overall Length, Bucket on Ground	8.30 m (27 ft. 3 in.)	8.77 m (28 ft. 9 in.)
G Height to Hinge Pin, Fully Raised	4.12 m (13 ft. 6 in.)	4.54 m (14 ft. 11 in.)
H Dump Clearance, 45 deg., Full Height	2.91 m (9 ft. 6.5 in.)	3.33 m (10 ft. 11.1 in.)
I Reach, 45-deg. Dump, Full Height	1.06 m (3 ft. 5.7 in.)	1.19 m (3 ft. 10.9 in.)
J Reach, 45-deg. Dump, 2.13-m (7 ft. 0 in.) Clearance	1.61 m (5 ft. 3.4 in.)	2.06 m (6 ft. 9.1 in.)
K Maximum Digging Depth	106 mm (4.2 in.)	200 mm (7.9 in.)
L Maximum Rollback at Ground Level	42 deg.	41 deg.
M Maximum Rollback, Boom Fully Raised	55 deg.	47 deg.
N Maximum Bucket Dump Angle, Fully Raised	50 deg.	45 deg.
Loader Clearance Circle, Bucket Carry Position	13.19 m (43 ft. 3.1 in.)	13.62 m (44 ft. 8.2 in.)
<b>Specifications with Bucket</b>		
Capacity, Heaped	3.2 m <sup>3</sup> (4.25 cu. yd.)	3.2 m <sup>3</sup> (4.25 cu. yd.)
Capacity, Struck	2.8 m <sup>3</sup> (3.7 cu. yd.)	2.8 m <sup>3</sup> (3.7 cu. yd.)
Bucket Weight with Bolt-On Cutting Edge	1735 kg (3,826 lb.)	1736 kg (3,827 lb.)
Bucket Width	3.04 m (10 ft. 0 in.)	3.04 m (10 ft. 0 in.)
Breakout Force	15 378 kg (33,903 lb.)	13 782 kg (30,384 lb.)
Tipping Load, Straight, No Tire Deflection	14 906 kg (32,862 lb.)	12 237 kg (26,978 lb.)
Tipping Load, Straight, with Tire Deflection	14 250 kg (31,416 lb.)	11 829 kg (26,078 lb.)
Tipping Load, 40-deg. Full Turn, No Tire Deflection	12 879 kg (28,393 lb.)	10 508 kg (23,165 lb.)
Tipping Load, 40-deg. Full Turn, with Tire Deflection	11 967 kg (26,383 lb.)	9882 kg (21,786 lb.)
Rated Operating Load, 50% Full Turn Tipping Load, No Tire Deflection (conforms to ISO 14397-1)*	6440 kg (14,197 lb.)	5254 kg (11,583 lb.)
Rated Operating Load, 50% Full Turn Tipping Load, with Tire Deflection (conforms to ISO 14397-1)*	5984 kg (13,191 lb.)	4941 kg (10,893 lb.)
Operating Weight	18 333 kg (40,417 lb.)	18 700 kg (41,226 lb.)

*Loader operating information is based on machine with identified linkage and standard equipment, PowerTech Plus 6068H (EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions) engine, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator. This information is affected by changes in tires, ballast, and different attachments, and assumes no tire deflection per the standard ISO 14397-1 section 5.*

*\*Rated operating capacity based on Deere attachments only.*

**Adjustments to Operating Weights and Tipping Loads with Buckets**

**644K Z-BAR / HIGH-LIFT**

Adjustments to operating weights, tipping loads, and tires are based on Z-Bar machine and standard equipment with pin-on 3.2-m<sup>3</sup> (4.25 cu. yd.) general-purpose bucket with bolt-on cutting edge, ROPS cab, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator\*

Add (+) or deduct (-) kg (lb.) as indicated for loaders with 3-piece rims	Operating Weight	Tipping Load, Straight	Tipping Load, 40-deg. Full Turn	Tread Width	Width Over Tires	Vertical Height
John Deere PowerTech Plus 6068H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
John Deere PowerTech 6068H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
Michelin 23.5 R 25, 1 Star L-3	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	0 mm (0 in.)	0 mm (0 in.)	0 mm (0 in.)
Firestone 23.5-25 L3 20 PR	-50 kg (-110 lb.)	-37 kg (-81.5 lb.)	-33 kg (-73 lb.)	-220 mm (-8.7 in.)	+8 mm (+0.3 in.)	+8 mm (+0.3 in.)
Michelin 23.5 R 25 L3 XLDN	-6 kg (-13.2 lb.)	-4 kg (-9 lb.)	-4 kg (-9 lb.)	0 mm (0 in.)	0 mm (0 in.)	-3 mm (-0.1 in.)
Bridgestone Radial 23.5 R 25, 1 Star L3 GP	-22 kg (-48.5 lb.)	-16 kg (-35.3 lb.)	-14 kg (-30.9 lb.)	-220 mm (-8.7 in.)	+18 mm (+0.7 in.)	-6 mm (-0.2 in.)
Firestone 23.5-25 L5 20 PR	+82 kg (+180.8 lb.)	+61 kg (+134.5 lb.)	+54 kg (+119 lb.)	0 mm (0 in.)	+16 mm (+0.6 in.)	+29 mm (+1.1 in.)

\*May change based on vehicle configuration, weight, or tire-pressure adjustments.