

# 644K

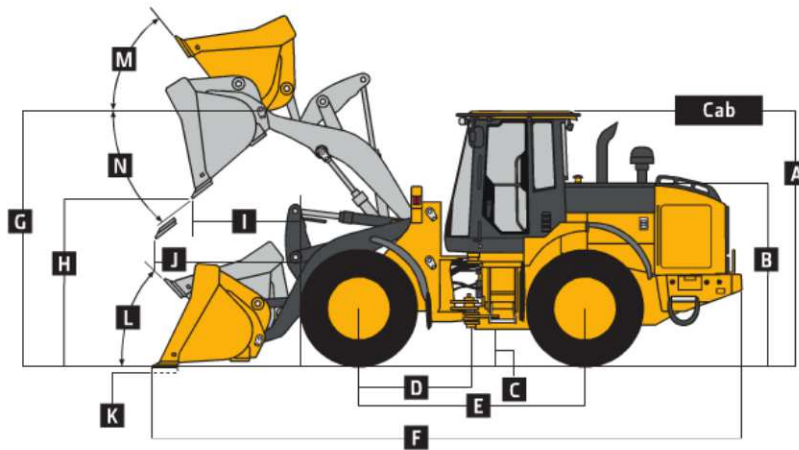
644K

Engine		644K Z-BAR / HIGH-LIFT / POWERLEL™				
Manufacturer and Model	John Deere PowerTech™ PSX 6090	John Deere PowerTech™ Plus 6068H	John Deere PowerTech™ 6068H	John Deere PowerTech PSX 6068	John Deere PowerTech PSX 6068	
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV	EPA Tier 3/EU Stage IIIA	EPA Tier 2/EU Stage II	EPA Interim Tier 4/EU Stage IIIB with Hybrid-Electric Drive		
Cylinders	6	6	6	6		
Valves Per Cylinder	4	4	4	4		
Displacement	9.0 L (548 cu. in.)	6.8 L (414 cu. in.)	6.8 L (414 cu. in.)	6.8 L (414 cu. in.)		
Net Peak Power (ISO 9249)	173 kW (232 hp) at 1,700 rpm	173 kW (232 hp) at 1,700 rpm	173 kW (232 hp) at 1,700 rpm	171 kW (229 hp) at 1,700 rpm		
Net Peak Torque (ISO 9249)	1062 Nm (783 lb.-ft.) at 1,400 rpm	1016 Nm (749 lb.-ft.) at 1,400 rpm	1016 Nm (749 lb.-ft.) at 1,400 rpm	991 Nm (730 lb.-ft.) at 1,400 rpm		
Net Torque Rise	56%	55%	55%	19%		
Fuel System (electronically controlled)	High-pressure common rail	High-pressure common rail	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	Series turbocharged, charge air cooled	Turbocharged, charge air cooled	Turbocharged, charge air cooled	Turbocharged, charge air cooled		
Air Cleaner	Under-hood, dual-element dry type, restriction indicator in cab monitor for service		Under-hood, dual-element dry type, restriction indicator in cab monitor for service			
Fan Drive	Hydraulically driven, proportionally controlled, fan aft of coolers		Hydraulically driven, proportionally controlled, fan aft of coolers			
Electrical System	24 volt with 130-amp alternator	24 volt with 80-amp (100-amp optional) alternator		24 volt with 100-amp (130-amp optional alternator)		
Batteries (2 – 12 volt)	950 CCA (each)	950 CCA (each)	950 CCA (each)	950 CCA (each)		
Transmission System		EPA FT4/EU Stage IV / EPA Tier 3/EU Stage IIIA / EPA Tier 2/EU Stage II		EPA IT4/EU Stage IIIB with Hybrid-Electric Drive		
	<i>Standard 5-Speed with Lockup Torque Converter</i>	<i>Optional 4-Speed</i>		<i>Standard 3-Speed Hybrid-Electric Drive</i>		
Type	Countershaft-type PowerShift™	Countershaft-type PowerShift		Countershaft-type PowerShift		
Torque Converter	Single stage, single phase	Single stage, single phase		N/A		
Motor/Generator	N/A	N/A		Brushless A/C		
Inverter	N/A	N/A		Solid-state power		
Shift Control	Electronically modulated, adaptive, load and speed dependent	Electronically modulated, adaptive, load and speed dependent		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 3 adjustable clutch-cut-off settings					
Maximum Travel Speeds (with 23.5 R 25 tires)	<i>Forward</i>	<i>Reverse</i>	<i>Forward</i>	<i>Reverse</i>	<i>Forward</i>	<i>Reverse</i>
Range 1	7.8 km/h (4.8 mph)	8.2 km/h (5.1 mph)	7.6 km/h (4.7 mph)	7.9 km/h (4.9 mph)	7.5 km/h (4.5 mph)	7.5 km/h (4.5 mph)
Range 2	13.4 km/h (8.3 mph)	13.6 km/h (8.5 mph)	12.6 km/h (7.8 mph)	12.9 km/h (8.0 mph)	14.0 km/h (8.7 mph)	14.0 km/h (8.7 mph)
Range 3	22.6 km/h (14.0 mph)	28.8 km/h (17.9 mph)	24.7 km/h (15.3 mph)	24.9 km/h (15.5 mph)	25.0 km/h (15.5 mph)	25.0 km/h (15.5 mph)
Range 4	27.4 km/h (17.0 mph)	N/A	36.6 km/h (22.7 mph)	N/A	40.0 km/h (24.9 mph)	40.0 km/h (24.9 mph)
Range 5	40.0 km/h (24.9 mph)	N/A	N/A	N/A	N/A	N/A
Axles/Brakes		EPA FT4/EU Stage IV / EPA Tier 3/EU Stage IIIA / EPA Tier 2/EU Stage II		EPA IT4/EU Stage IIIB with Hybrid-Electric Drive		
Final Drives	Heavy-duty inboard-mounted planetary		Heavy-duty inboard-mounted planetary			
Differentials	Hydraulic locking front with conventional rear – standard; dual locking front and rear – optional		Hydraulic locking front and rear – optional			
Rear Axle Oscillation, Stop to Stop (with 23.5 R 25 tires)	26 deg. (13 deg. each direction)		26 deg. (13 deg. each direction)			
Service Brakes (conform to ISO 3450)	Hydraulically actuated, spring-retracted, self-adjusting, inboard sun-shaft mounted, oil-cooled, single disc		Hydraulically actuated, inboard sun-shaft mounted, oil-cooled, self-adjusting, single disc			
Parking Brakes (conform to ISO 3450)	Automatic spring-applied, hydraulically released, driveline-mounted, oil-cooled, multi disc		Automatic spring-applied, hydraulically released, transmission-integrated, oil-cooled, multi disc			
Tires/Wheels (see page 28 for complete tire adjustments)		EPA FT4/EU Stage IV / EPA Tier 3/EU Stage IIIA / EPA Tier 2/EU Stage II / EPA IT4/EU Stage IIIB with Hybrid-Electric Drive				
	<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.)				
Serviceability		EPA FT4/EU Stage IV		EPA Tier 3/EU Stage IIIA / EPA Tier 2/EU Stage II		
Refill Capacities				EPA IT4/EU Stage IIIB with Hybrid-Electric Drive		
Fuel Tank with Lockable Cap	397 L (105 gal.)	352 L (93 gal.)		397 L (105 gal.)		
Diesel Exhaust Fluid (DEF)	32 L (34 qt.)	N/A		N/A		
Engine Cooling System	45.5 L (48.1 qt.)	29.5 L (31.2 qt.)		54.9 L (58 qt.)		
Inverter Cooling System	N/A	N/A		5.7 L (6 qt.)		
Engine Oil with Vertical Spin-On Filter	28 L (29.5 qt.)	24.5 L (26 qt.)		27 L (28.5 qt.)		
Transmission Reservoir with Vertical Filter	23 L (24 qt.)	27 L (28.5 qt.)		37.9 L (40 qt.)		
Axle Oil (front and rear, each)	22 L (23 qt.)	22 L (23 qt.)		22 L (23 qt.)		
Hydraulic Reservoir and Filter	105.2 L (27.8 gal.)	110 L (29 gal.)		106 L (28 gal.)		
Park Brake Oil (wet disc)	0.6 L (20 oz.)	0.6 L (20 oz.)		0		



Hydraulic System/Steering		644K Z-BAR / HIGH-LIFT / POWERLIFT				
Pump (loader and steering)	Variable-displacement, axial-piston pump; closed-center, pressure-compensating system					
Maximum Rated Flow at 6895 kPa (1,000 psi) and 2,350 rpm	310 L/m (82 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					
Steering (conforms to ISO 5010)						
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.)					
		EPA FT4/EU Stage IV / EPA Tier 3/EU Stage IIIA / EPA Tier 2/EU Stage II		EPA IT4/EU Stage IIIB with Hybrid-Electric Drive		
Hydraulic Cycle Times	Z-Bar	High-Lift	Powerlift	Z-Bar	High-Lift	Powerlift
Raise	6.4 sec.	6.4 sec.	6.4 sec.	8.2 sec.	8.2 sec.	8.2 sec.
Dump	1.6 sec.	1.6 sec.	2.1 sec.	2.3 sec.	2.3 sec.	2.8 sec.
Lower (float down)	3.0 sec.	3.0 sec.	2.8 sec.	3.0 sec.	3.0 sec.	2.8 sec.
Total	11.0 sec.	11.0 sec.	11.3 sec.	13.5 sec.	13.5 sec.	13.8 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	8.10 m (26 ft. 6.8 in.)	8.10 m (26 ft. 6.8 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	14 771 kg (32,565 lb.)	12 249 kg (27,004 lb.)
Tipping Load, 40-deg. Full Turn	12 798 kg (28,214 lb.)	10 546 kg (23,250 lb.)
Rated Operating Load, 50% Full-Turn Tipping Load (conforms to ISO 14397-1)*	6398 kg (14,107 lb.)	6124 kg (13,502 lb.)
Operating Weight	18 682 kg (41,188 lb.)	19 091 kg (42,088 lb.)

*Loader operating information is based on machine with identified linkage and standard equipment, PowerTech PSX 6090 (EPA Final Tier 4/EU Stage IV) 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.