
# Specifications

## Engine — 744K Z-BAR / HIGH-LIFT

| | |
|---|---|
| Manufacturer and Model | John Deere PowerTech™ Plus 6090H |
| Non-Road Emission Standards | certified to EPA Tier 3 emissions |
| Cylinders | 6 |
| Valves Per Cylinder | 4 |
| Displacement | 548 cu. in. (9.0 L) |
| Net Peak Power @ 1,500 rpm | 304 hp (227 kW) |
| Net Peak Torque @ 1,400 rpm | 1,074 lb.-ft. (1456 Nm) |
| Net Torque Rise | 47% |
| Fuel System (electronically controlled) | high-pressure common rail |
| Lubrication | full-flow spin-on filter and integral cooler |
| Aspiration | turbocharged, charge air cooled |
| Air Cleaner | under-hood, 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–D or 2nd–D); quick-shift button with two selectable modes: kick-down or kick-up/down; and three adjustable clutch-cutoff settings |

| | *Standard 4-Speed Transmission* | | *5-Speed Transmission with Lockup Torque Converter* | |
|---|---|---|---|---|
| Travel Speeds (with 26.5 R 25, 1 Star L3 tires) | *Forward Maximum* | *Reverse Maximum* | *Forward Maximum* | *Reverse Maximum* |
| Gear 1 | 4.6 mph (7.4 km/h) | 4.6 mph (7.4 km/h) | 5.2 mph (8.4 km/h) | 5.2 mph (8.4 km/h) |
| Gear 2 | 8.6 mph (13.8 km/h) | 8.6 mph (13.8 km/h) | 9.4 mph (15.2 km/h) | 8.7 mph (14.0 km/h) |
| Gear 3 | 13.1 mph (21.1 km/h) | 18.8 mph (30.2 km/h) | 14.7 mph (23.6 km/h) | 21.5 mph (34.6 km/h) |
| Gear 4 | 24.9 mph (40.0 km/h) | N/A | 21.5 mph (34.6 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, oil cooled, self adjusting, single disc |
| Parking Brake | automatic spring applied, hydraulically released, oil cooled, multi disc |

## Tires

| Choice of (with five-piece rims)* | *Tread Width* | *Width Over Tires* | *Change In Vertical Height* |
|---|---|---|---|
| 26.5 R 25, 1 Star L-3 | 86.5 in. (2196 mm) | 116.4 in. (2957 mm) | standard |
| 26.5-25, 20 PR L-3 | 86.5 in. (2196 mm) | 116.3 in. (2954 mm) | + 1.1 in. (+ 29 mm) |
| 26.5-25, 20 PR L-5§ | 86.5 in. (2196 mm) | 116.3 in. (2954 mm) | + 2.6 in. (+ 66 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.)

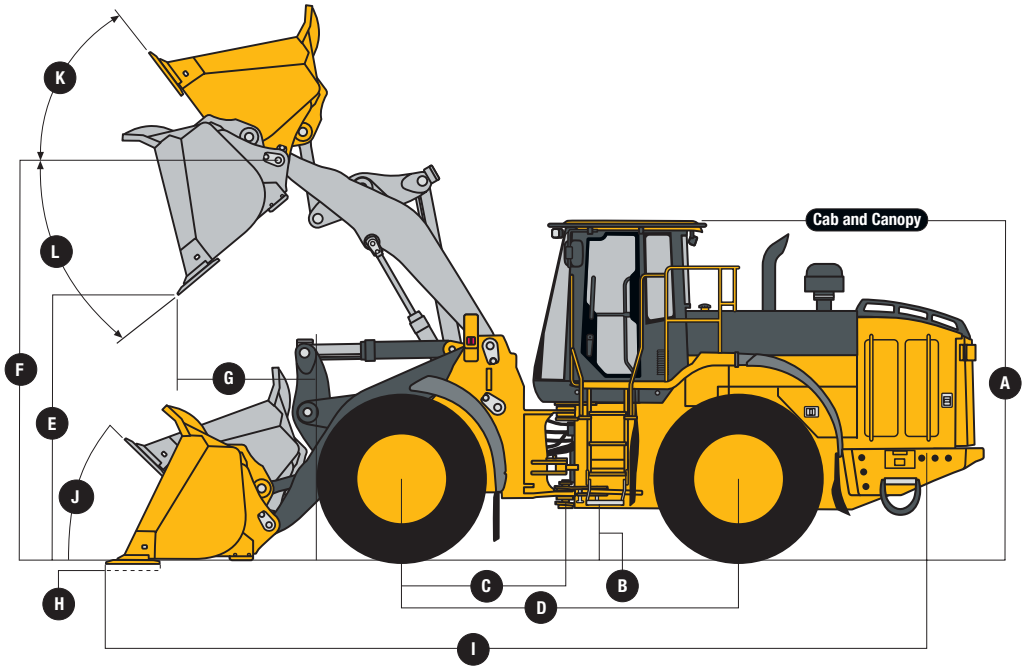
| | 744K Z-BAR / HIGH-LIFT |
|---|---|
| Fuel Tank (with ground-level fueling) | 124 gal. (469 L) |
| Cooling System | 47 qt. (45 L) |
| Engine Oil with Vertical Spin-On Filter | 36 qt. (34 L) |
| Transmission Fluid with Vertical Filter | 29.5 qt. (27.9 L) |
| Axle Oil (front and rear) | 49 qt. (46 L) |
| 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 (515 L/m) | |
| System Relief Pressure (loader and steering) | 3,288 psi (22 670 kPa) | |
| Loader Controls | two-function valve; single- or dual-lever controls; control lever lockout feature; optional third- and fourth-function valve with auxiliary levers | |
| 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 | 5.9 sec. | 6.2 sec. |
| Dump | 1.4 sec. | 1.4 sec. |
| Lower (float down) | 2.8 sec. | 2.8 sec. |
| Total | 10.1 sec. | 10.4 sec. |
| Turning Radius (measured to centerline of outside tire) | 20 ft. 7 in. (6.28 m) | |

## Dimensions with Standard Configuration

| | | ***Z-Bar*** *5.25-cu.-yd. (4.0 $m^3$) pin-on bucket* | ***High-Lift*** *5.25-cu.-yd. (4.0 $m^3$) 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 30) | ▲ (see page 30) |
| **F** | Height to Hinge Pin, Fully Raised | 14 ft. 1 in. (4.28 m) | 15 ft. 11 in. (4.80 m) |
| **G** | Dump Reach | ▲▲ (see page 30) | ▲▲ (see page 30) |
| **H** | Maximum Digging Depth | 3.2 in. (80 mm) | 8.4 in. (214 mm) |
| **I** | Overall Length | ▲▲▲ (see page 30) | ▲▲▲ (see page 30) |
| **J** | Maximum Rollback at Ground Level | 40 deg. | 41 deg. |
| **K** | Maximum Rollback, Boom Fully Raised | 55 deg. | 53 deg. |
| **L** | Maximum Bucket Angle, Fully Raised | 49 deg. | 39 deg. |




744K Z-BAR AND HIGH-LIFT LOADERS

## 744K Z-Bar with Pin-On-Type Bucket

| Bucket Type/Size | *General-Purpose with Bolt-On Edge* | *Light Material with Bolt-On Edge* |
|---|---|---|
| Capacity, Heaped | 5.25 cu. yd. (4.0 $m^3$) | 5.75 cu. yd. (4.4 $m^3$) |
| Capacity, Struck | 4.5 cu. yd. (3.4 $m^3$) | 5.0 cu. yd. (3.8 $m^3$) |
| Bucket Weight | 5,549 lb. (2517 kg) | 5,721 lb. (2595 kg) |
| Bucket Width | 10 ft. 9 in. (3.27 m) | 10 ft. 9 in. (3.27 m) |
| Breakout Force | 42,805 lb. (19 416 kg) | 40,292 lb. (18 276 kg) |
| Tipping Load, Straight | 43,923 lb. (19 923 kg) | 43,487 lb. (19 726 kg) |
| Tipping Load, 35-Deg. Full Turn | 39,152 lb. (17 759 kg) | 38,740 lb. (17 572 kg) |
| Tipping Load, 40-Deg. Full Turn | 37,750 lb. (17 123 kg) | 37,347 lb. (16 940 kg) |
| Reach, 45-Deg. Dump, 7-ft. (2.13 m) Clearance | 6 ft. 1 in. (1.85 m) | 6 ft. 2 in. (1.88 m) |
| ▲▲ Reach, 45-Deg. Dump, Full Height | 4 ft. 0 in. (1.23 m) | 4 ft. 3 in. (1.29 m) |
| ▲ Dump Clearance, 45 Deg., Full Height | 10 ft. 0 in. (3.04 m) | 9 ft. 9 in. (2.98 m) |
| ▲▲▲ Overall Length, Bucket on Ground | 29 ft. 7 in. (9.01 m) | 29 ft. 10 in. (9.09 m) |
| Loader Clearance Circle, Bucket Carry Position | 47 ft. 2 in. (14.38 m) | 47 ft. 4 in. (14.43 m) |
| Operating Weight | 53,312 lb. (24 182 kg) | 53,484 lb. (24 260 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.*

## 744K High-Lift with Pin-On-Type Bucket

| Bucket Type/Size | *General-Purpose with Bolt-On Edge* |
|---|---|
| Capacity, Heaped | 5.25 cu. yd. (4.0 $m^3$) |
| Capacity, Struck | 4.5 cu. yd. (3.4 $m^3$) |
| Bucket Weight | 5,549 lb. (2517 kg) |
| Bucket Width | 10 ft. 9 in. (3.27 m) |
| Breakout Force | 38,433 lb. (17 433 kg) |
| Tipping Load, Straight | 34,784 lb. (15 778 kg) |
| Tipping Load, 35-Deg. Full Turn | 30,830 lb. (13 984 kg) |
| Tipping Load, 40-Deg. Full Turn | 29,669 lb. (13 458 kg) |
| Reach, 45-Deg. Dump, 7-ft. (2.13 m) Clearance | 7 ft. 11 in. (2.41 m) |
| ▲▲ Reach, 45-Deg. Dump, Full Height | 4 ft. 6 in. (1.38 m) |
| ▲ Dump Clearance, 45 Deg., Full Height | 11 ft. 10 in. (3.61 m) |
| ▲▲▲ Overall Length, Bucket on Ground | 31 ft. 8 in. (9.64 m) |
| Loader Clearance Circle, Bucket Carry Position | 49 ft. 2 in. (14.98 m) |
| Operating Weight | 54,527 lb. (24 733 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

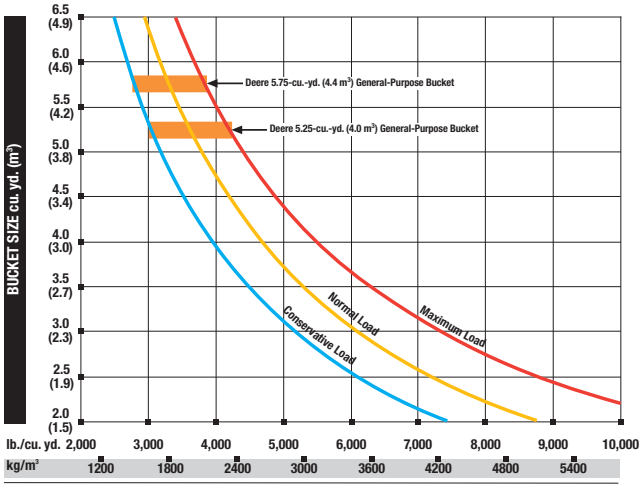
**Adjustments to operating weights and tipping loads are based on Z-bar machine and pin-on 5.25-cu.-yd. (4.0 $m^3$) general-purpose bucket with bolt-on cutting edge, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 175-lb. (79 kg) operator***

| Add (+) or deduct (–) lb. (kg) as indicated for loaders with five-piece 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, 20 PR L-3 | + 587 lb. (+ 266 kg) | + 440 lb. (+ 200 kg) | + 399 lb. (181 kg) | + 388 lb. (+ 176 kg) |
| 26.5-25, 20 PR L-5§ | + 728 lb. (+ 330 kg) | + 547 lb. (+ 248 kg) | + 496 lb. (+ 225 kg) | + 481 lb. (+ 218 kg) |

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

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

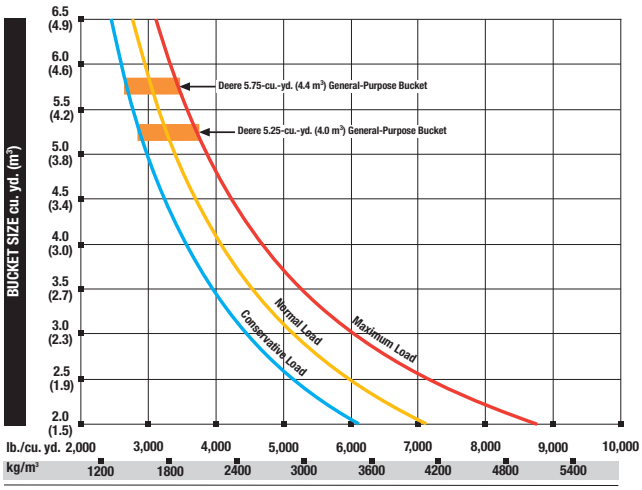
## Bucket Selection Guides*




### 744K Z-BAR LOADER WITH PIN-ON BUCKET

| MATERIAL (Loose weight) | lb./cu. yd. | kg/m³ |
|---|---|---|
| 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 unlevel surfaces. The "maximum load" condition on this guide is sometimes utilized when operating on firm ground and level surfaces.




### 744K HIGH-LIFT LOADER WITH PIN-ON BUCKET

| MATERIAL (Loose weight) | lb./cu. yd. | kg/m³ |
|---|---|---|
| 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 unlevel surfaces. The "maximum load" condition on this guide is sometimes utilized when operating on firm ground and level surfaces.