### ENGINE

**Make:** FPT  
**Model:** F4HE413NB  
**Emissions Certification:** Tier 4 Final  
**Emissions Technology:** SCR/DOC  
**Type:** 4-stroke, turbocharged  
**Cylinders:** 4-cylinder in-line  
**Displacement:** 275 in³ (4.5 L)  
**Fuel:** #2 Diesel, #1 and #2 mixture permitted for cold temperatures  
**Fuel injection:** Direct injection – electronic  
**Fuel filter:** Replaceable, full flow spin-on cartridge  
**Air filter:** 2-element dry type w/ warning restriction indicator  
**Mid-mount cooling module:** Mid-mount air/water  
**Fan – hydraulic driven:** 8 blade puller  
**Water pump:** Integral  
**Engine oil pump operating angle ratings:**  
- Side-to-side: 35°  
- Fore and aft: 35°  
**Engine speeds RPM:**  
- Rated – full load: 2000  

**Torque – peak:**  
- **Maximum Power Mode:**  
  - Gross @ 1600 RPM: 448 lb·ft (608 N·m)  
  - Net @ 1600 RPM: 424 lb·ft (575 N·m)  
- **Standard Power Mode:**  
  - Gross @ 1300 RPM: 407 lb·ft (552 N·m)  
  - Net @ 1300 RPM: 391 lb·ft (530 N·m)  
- **Economy Power Mode:**  
  - Gross @ 1200 RPM: 403 lb·ft (547 N·m)  
  - Net @ 1200 RPM: 389 lb·ft (528 N·m)  

**Economy Power Mode:**  
- Peak net @ 1800 RPM: 123 hp (91 kW)  
- Net rated @ 2000 RPM: 106 hp (79 kW)  
- Peak gross @ 1800 RPM: 133 hp (99 kW)  

**Standard Power Mode:**  
- Peak net @ 1800 RPM: 131 hp (98 kW)  
- Net rated @ 2000 RPM: 129 hp (96 kW)  
- Peak gross @ 1800 RPM: 142 hp (106 kW)  

**Maximum Power Mode:**  
- Peak net @ 1800 RPM: 148 hp (109 kW)  
- Net rated @ 2000 RPM: 129 hp (96 kW)  
- Peak gross @ 1800 RPM: 148 hp (109 kW)  

**NOTE:** Gross horsepower and torque per SAE J1995. Net horsepower and torque per SAE J1349.  

### DRIVETRAIN

**Transmission:**  
- **4F/3R Proportional w/ Electronic Control**  
- Module torque sensing autoshift/manual shift and modulation  

**Gears:**  
- Helical cut  
- Gear ratios – 4-speed:  
  - Forward/Reverse:  
    - 1st: 4.012/3.804  
    - 2nd: 2.174/2.061  
    - 3rd: 1.088/1.031  
    - 4th: 0.619/—  

**Torque converter:**  
- Stall ratio – 4-speed: 2.30:1  

**Differential:**  
- Limited slip w/ 34% transfer on front and rear axles  

**Rear axle oscillation:** 24° total  
- Front and rear axles:  
  - Differential ratio: 3.364  
  - Planetary ratio: 6.4  
  - Final axle ratio: 21.53  

**Planetarys:** Outboard  

**Service brakes:**  
- Hydraulically actuated, maintenance-free, multiple wet disc w/ accumulator to all four wheels  

**Brake surface area:**  
- Front hub – each: 480 in² (0.31 m²)  
- Rear hub – each: 480 in² (0.31 m²)  

**Parking brakes:**  
- Spring-applied hydraulic release disc on transmission output shaft neutralizes power flow to wheels when engaged  

**Travel speeds – 4-speed transmission:**  
<table>
<thead>
<tr>
<th>Gear</th>
<th>Forward (mph)</th>
<th>Reverse (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>3.8 (6.1)</td>
<td>4.0 (6.4)</td>
</tr>
<tr>
<td>2nd</td>
<td>6.9 (11.1)</td>
<td>7.3 (11.7)</td>
</tr>
<tr>
<td>3rd</td>
<td>13.4 (21.6)</td>
<td>14.1 (22.8)</td>
</tr>
<tr>
<td>4th</td>
<td>22.3 (35.9)</td>
<td>—</td>
</tr>
</tbody>
</table>

**NOTE:** Travel speeds at full engine throttle w/ 17.5 x 25 L2/L3 tires.  

### ELECTRICAL

**Voltage:** 24 Volts, negative ground  
**Alternator:** 70 amp  
**Batteries (2):** 12-volt  

### OPERATOR ENVIRONMENT

**ROPS cab AC w/ heat; Key start; Articulated power steering w/ tilt column; Fully adjustable, suspension seat; Foot throttle; Single lever loader control w/ fully adjustable wrist rest; 2 cup holders; 2 interior rear view mirrors; 2-inch (51 mm) retractable seat belt; Multiple storage trays; Single brake pedal; F/N/R shuttle switch; External rearview mirrors; Pressurized air filtering; Anti-glare window strip; Front and Rear Defroster; Side window, partial/fully open; 2 Dome lights; Wipers, rear and intermittent front; Windshield washers, front and rear; Rubber floor mat; Horn.  

**Dispays/Gauges:**  
- Digital: Transmission oil temperature; Engine coolant temperature; Fuel level; DEF level.  
- LCD screen: Hour meter; Time; FNR indicator; Trip computer A/B; Differential lock; Engine speed; Automatic transmission indicator; DeClutch indicator; Fuel consumption; Engine diagnostics; Error reporting; Travel speed; Gear selection; Engine mode indicator; Transmission diagnostics; DEF – Diesel Exhaust Fluid gauge.  

**Audible/Visual alarms:**  
- Warning lights:  
  - Parking brake; Coolant temperature; Hydraulic oil temperature; Transmission oil temperature; Air filter; Transmission filter; Alternator; Low fuel; Grid heater*; Brake pressure; Engine oil pressure; Steering pressure.  
- Caution warnings:  
  - Parking brake; Coolant temperature; Hydraulic oil temperature; Transmission oil temperature; Air filter; Transmission filter; Hydraulic filter; Alternator; Low fuel.  
- Critical warnings:  
  - Engine oil pressure; Brake pressure; Steering pressure w/ aux. steering*; Coolant temperature; Hydraulic oil temperature; Transmission oil temperature.  

**Backup alarm**  
- Maintenance reminders:  
  - Cab air filter; Engine oil filter; Fuel pre-filter; DEF tank vent filter; SCR supply filter; Hydraulic oil and filter; Engine air filter; Engine coolant drive belt; Cab recirculation filter; Engine breather filter; Transmission breather; Front and rear axle fluid; SCR supply module filter.  
  - NOTE: *If equipped w/ option.
OPERATING WEIGHT

Z-Bar
Unit equipped w/ ROPS cab w/ heater and A/C; Standard counterweight; 17.5-R25 L3 Radial tires; 2.3 yd³ (1.8 m³) pin-on w/ bolt on edge; Full fuel; 165 lb (75 kg) operator:
24,290 lb (11,018 kg)

XT
Unit equipped w/ ROPS cab w/ heater and A/C; Full counterweight; 17.5-R25 L3 Radial tires; 2.1 yd³ (1.6 m³) ACS loader bucket w/ bolt on edge; Standard batteries; Full fuel; 165 lb (75 kg) operator:
25,834 lb (11,718 kg)

XR
Unit equipped w/ ROPS cab w/ heater and A/C; Full counterweight; 17.5-R25 L3 Radial tires; Front and rear fenders; 2.3 yd³ (1.8 m³) general purpose loader bucket w/ edge; Full fuel; 165 lb (75 kg) operator:
24,572 lb (11,146 kg)

SERVICE CAPACITIES

Fuel tank 50.0 gal (189.0 L)
DEF tank – Diesel Exhaust Fluid:
Usable capacity 7.1 gal (26.7 L)
Total 11.7 gal (44.2 L)

Hydraulic system:
Reservoir 15.0 gal (56.8 L)
Total 23.8 gal (90.1 L)

Transmission:
Service w/ filter 6.87 gal (26 L)

Front and rear axle:
Front axle 23.2 qt (22.0 L)
Rear axle 23.2 qt (22.0 L)

Engine oil w/ filter 12.5 qt (11.8 L)

Cooling system 23.2 qt (22.0 L)

OTHER SPECIFICATIONS

Lift cylinder:
Bore diameter 4.00 in (101.6 mm)
Rod diameter 2.25 in (57.2 mm)
Stroke 30.82 in (783.0 mm)

Dump cylinder – Z-Bar and XR:
Bore diameter 4.50 in (114.3 mm)
Rod diameter 2.50 in (63.5 mm)
Stroke 20.84 in (529.3 mm)

Dump cylinders – XT:
Bore diameter 4.00 in (101.6 mm)
Rod diameter 2.25 in (57.2 mm)
Stroke 29.85 in (768.2 mm)

Loader:
Z-Bar loader linkage; Single control for lift and tilt; Positive hold float; Automatic return-to-dig; Automatic height control; Automatic return-to-travel; Brake pedal transmission disconnect; Bucket position indicator on bucket.

Cycle time:
Raise w/ rated bucket load 5.4 sec
Dump w/ rated bucket load:
Z-Bar/XR 1.2 sec
XT 2.4 sec
Float down 3.9 sec

Sound level in Cab (LpA) 68 dB(A)
Exterior sound level (LwA) 102 dB(A)

NOTE: Sound level data tested in accordance with ISO6395, 6396, 3744.

HYDRAULICS

Pump – steering/implementation:
Closed center pressure/flow compensated

Variable displacement – load-sensing:
35.4 gpm @ 2000 RPM
(134 L/min @ 2000 RPM)

Loader control valve:
Closed-center, sectional 2, 3 or 4-function
w/ control for lift, tilt and auxiliary hydraulics

Loader auxiliary steering:
Hydraulic orbital center-pivot articulating
w/ on-demand oil flow

High pressure standby 3,625 psi (24 993 kPa)

Filtration:
Filtered vent w/ relief on hydraulic reservoir, maintains 2-8 psi on reservoir, 10-micron, return filter furnishes only clean oil to all components of the system

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DIMENSIONS

A. Height to top of ROPS cab 128.9 in (3,275 mm)
Height to drawbar 37.5 in (952 mm)
B. Wheelbase 108.3 in (2,750 mm)
C. Ground clearance 13.4 in (341 mm)
D. Angle of departure 30°

Width:
Overall* without bucket 96.4 in (2,448 mm)
Centerline tread 78.7 in (2,000 mm)
Turning radius* – outside 196.9 in (5,002 mm)

Turning angle:
From center 40°
Total angle 80°
Rear axle oscillation – total 24°

NOTE: *Dimensions taken with 17.5x25 L2 Radial tires. Additional dimensions on pages 4 through 7.

WEIGHT ADJUSTMENTS

Select Options         Weight Adjustment | Tipping Load Adjustment  | Tipping Load Adjustment
                        Straight: Deflected | 40° Turn: Deflected

17.5 x 25 L2 Bias tires -632 lb (-287 kg) | -588 lb (-267 kg) | -834 lb (-378 kg)
17.5 x 25 L3 Bias tires -344 lb (-156 kg) | -318 lb (-144 kg) | -527 lb (-239 kg)
17.5-R25 XHA TL (L2 Radial) tires -168 lb (-76 kg) | -188 lb (-85 kg) | -179 lb (-81 kg)
20.5-R25 L2 Bias tires +220 lb (+100 kg) | +142 lb (+64 kg) | -72 lb (-33 kg)
20.5-R25 L2 Radial tires +556 lb (+252 kg) | +366 lb (+166 kg) | +290 lb (+132 kg)
20.5-R25 L3 Radial tires +812 lb (+368 kg) | +609 lb (+276 kg) | +517 lb (+234 kg)
20.5-R25 Snow Radial tires +680 lb (+308 kg) | +447 lb (+203 kg) | +362 lb (+164 kg)
Light counterweight -1,069 lb (-485 kg) | -2,196 lb (-996 kg) | -1,781 lb (-808 kg)

NOTE: Tires inflated to 50 psi (345 kPa) in the front and 40 psi (275 kPa) in the rear.
**Unit equipped with Z-Bar loader arms, 2.1 yd³ (1.61 m³) general purpose pin on bucket with bolt-on edge, 17.5x25 L3 Radial tires, ROPS cab with heater and air conditioner, heavy counterweight, standard batteries, front and rear fenders, full fuel and 165 lb (75 kg) operator. Adjust select options from rated weight.
# PERFORMANCE SPECS

## 521G Z-Bar*

<table>
<thead>
<tr>
<th>Bucket size</th>
<th>2.1 yd³ (1.61 m³) Bucket with Bolt-On Edge - Pin On</th>
<th>2.0 yd³ (1.53 m³) Bucket with Teeth - Pin On</th>
<th>2.3 yd³ (1.76 m³) Bucket with Bolt-On Edge - Pin On</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating weight</td>
<td>24,203 lb (10,978 kg)</td>
<td>24,128 lb (10,944 kg)</td>
<td>24,290 lb (11,018 kg)</td>
</tr>
<tr>
<td>E. Operating height – fully raised with spillguard</td>
<td>181.6 in (4,613 mm)</td>
<td>181.6 in (4,614 mm)</td>
<td>184.3 in (4,682 mm)</td>
</tr>
<tr>
<td>F. Hinge pin height – fully raised</td>
<td>142.0 in (3,606 mm)</td>
<td>142.0 in (3,606 mm)</td>
<td>142.0 in (3,606 mm)</td>
</tr>
<tr>
<td>G. Overall length – bucket level on ground</td>
<td>260.3 in (6,612 mm)</td>
<td>266.0 in (6,755 mm)</td>
<td>263.3 in (6,687 mm)</td>
</tr>
<tr>
<td>D. Dump angle – fully raised</td>
<td>55°</td>
<td>55°</td>
<td>55°</td>
</tr>
<tr>
<td>H. Dump height – fully raised, 45° dump</td>
<td>108.7 in (2,760 mm)</td>
<td>105.0 in (2,668 mm)</td>
<td>106.7 in (2,711 mm)</td>
</tr>
<tr>
<td>J. Bucket reach – fully raised, 45° dump</td>
<td>37.9 in (962 mm)</td>
<td>42.0 in (1,067 mm)</td>
<td>39.8 in (1,012 mm)</td>
</tr>
<tr>
<td>K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump</td>
<td>55.8 in (1,418 mm)</td>
<td>58.0 in (1,474 mm)</td>
<td>56.8 in (1,443 mm)</td>
</tr>
<tr>
<td>L. Dig depth</td>
<td>2.7 in (67 mm)</td>
<td>2.8 in (71 mm)</td>
<td>2.9 in (73 mm)</td>
</tr>
<tr>
<td>Operating load – ISO Rigid Tires</td>
<td>8,960 lb (4,064 kg)</td>
<td>9,083 lb (4,120 kg)</td>
<td>8,842 lb (4,011 kg)</td>
</tr>
<tr>
<td>Operating load – ISO Deflected Tires</td>
<td>8,131 lb (3,688 kg)</td>
<td>8,243 lb (3,739 kg)</td>
<td>8,015 lb (3,636 kg)</td>
</tr>
<tr>
<td>Maximum material density – ISO Rigid Tires</td>
<td>4,267 lb/yd³ (2.523 kg/m³)</td>
<td>4,542 lb/yd³ (2.955 kg/m³)</td>
<td>3,844 lb/yd³ (2.281 kg/m³)</td>
</tr>
<tr>
<td>Maximum material density – ISO Deflected Tires</td>
<td>3,872 lb/yd³ (2.297 kg/m³)</td>
<td>4,121 lb/yd³ (2.446 kg/m³)</td>
<td>3,485 lb/yd³ (2.068 kg/m³)</td>
</tr>
</tbody>
</table>

## 521G XR

<table>
<thead>
<tr>
<th>Bucket size</th>
<th>2.1 yd³ (1.61 m³) Bucket with Bolt-On Edge - Pin On</th>
<th>2.0 yd³ (1.53 m³) Bucket with Teeth - Pin On</th>
<th>2.3 yd³ (1.76 m³) Bucket with Bolt-On Edge - Pin On</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating weight</td>
<td>24,485 lb (11,106 kg)</td>
<td>24,409 lb (11,072 kg)</td>
<td>24,572 lb (11,146 kg)</td>
</tr>
<tr>
<td>E. Operating height – fully raised with spillguard</td>
<td>196.6 in (4,993 mm)</td>
<td>196.6 in (4,993 mm)</td>
<td>199.3 in (5,061 mm)</td>
</tr>
<tr>
<td>F. Hinge pin height – fully raised</td>
<td>156.9 in (3,985 mm)</td>
<td>156.9 in (3,985 mm)</td>
<td>156.9 in (3,985 mm)</td>
</tr>
<tr>
<td>G. Overall length – bucket level on ground</td>
<td>273.9 in (6,958 mm)</td>
<td>279.6 in (7,101 mm)</td>
<td>276.9 in (7,033 mm)</td>
</tr>
<tr>
<td>Dump angle – fully raised</td>
<td>51°</td>
<td>51°</td>
<td>51°</td>
</tr>
<tr>
<td>H. Dump height – fully raised, 45° dump</td>
<td>123.6 in (3,140 mm)</td>
<td>120.0 in (3,047 mm)</td>
<td>121.7 in (3,091 mm)</td>
</tr>
<tr>
<td>J. Bucket reach – fully raised, 45° dump</td>
<td>36.9 in (937 mm)</td>
<td>41.0 in (1,042 mm)</td>
<td>38.8 in (987 mm)</td>
</tr>
<tr>
<td>K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump</td>
<td>67.5 in (1,714 mm)</td>
<td>69.9 in (1,775 mm)</td>
<td>68.6 in (1,741 mm)</td>
</tr>
<tr>
<td>L. Dig depth</td>
<td>4.0 in (102 mm)</td>
<td>4.2 in (106 mm)</td>
<td>4.3 in (108 mm)</td>
</tr>
<tr>
<td>Operating load – ISO Rigid Tires</td>
<td>7,621 lb (3,457 kg)</td>
<td>7,724 lb (3,504 kg)</td>
<td>7,521 lb (3,411 kg)</td>
</tr>
<tr>
<td>Operating load – ISO Deflected Tires</td>
<td>6,972 lb (3,163 kg)</td>
<td>7,068 lb (3,206 kg)</td>
<td>6,872 lb (3,117 kg)</td>
</tr>
<tr>
<td>Maximum material density – ISO Rigid Tires</td>
<td>3,629 lb/yd³ (2.153 kg/m³)</td>
<td>3,862 lb/yd³ (2.292 kg/m³)</td>
<td>3,270 lb/yd³ (1.940 kg/m³)</td>
</tr>
<tr>
<td>Maximum material density – ISO Deflected Tires</td>
<td>3,320 lb/yd³ (1.970 kg/m³)</td>
<td>3,534 lb/yd³ (2.097 kg/m³)</td>
<td>2,988 lb/yd³ (1.773 kg/m³)</td>
</tr>
</tbody>
</table>

## Maximum rollback:

- **Ground**: 40°/39°
- **Carry position**: 44°/46°
- **@ Full height**: 54°/55°

## Maximum grading angle with bucket – back dragging:

- **8°/6°
- **10°/6°

## SAE bucket capacity – struck:

- **1.77 yd³ (1.35 m³)**
- **1.67 yd³ (1.28 m³)**
- **2.00 yd³ (1.53 m³)**

## Heaped:

- **2.10 yd³ (1.61 m³)**
- **2.00 yd³ (1.53 m³)**
- **2.30 yd³ (1.76 m³)**

## Bucket width – outside:

- **100.4 in (2,550 mm)**
- **100.9 in (2,563 mm)**
- **100.4 in (2,550 mm)**

## Bucket weight:

- **1,603 lb (727 kg)**
- **1,527 lb (693 kg)**
- **1,690 lb (766 kg)**
### PERFORMANCE SPECS

#### 521G Z-Bar

<table>
<thead>
<tr>
<th></th>
<th>2.20 yd³ (1.68 m³) Bucket with Teeth - Pin On</th>
<th>2.60 yd³ (1.99 m³) Bucket with Bolt-On Edge - Pin On</th>
<th>2.10 yd³ (1.61 m³) Bucket with Bolt-On Edge - ACS Coupler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating weight</td>
<td>24,214 lb (10 983 kg)</td>
<td>24,222 lb (10 987 kg)</td>
<td>25,117 lb (11 393 kg)</td>
</tr>
<tr>
<td>E. Operating height – fully raised with spillguard</td>
<td>184.3 in (4 682 mm)</td>
<td>186.7 in (4 743 mm)</td>
<td>184.7 in (4 692 mm)</td>
</tr>
<tr>
<td>F. Hinge pin height – fully raised</td>
<td>142.0 in (3 606 mm)</td>
<td>142.0 in (3 606 mm)</td>
<td>141.9 in (3 604 mm)</td>
</tr>
<tr>
<td>G. Overall length – bucket level on ground</td>
<td>269.0 in (6 832 mm)</td>
<td>266.0 in (6 757 mm)</td>
<td>265.3 in (6 739 mm)</td>
</tr>
<tr>
<td>Bucket reach – fully raised, 45° dump</td>
<td>55°</td>
<td>55°</td>
<td>55°</td>
</tr>
<tr>
<td>H. Bucket reach – fully raised, 45° dump</td>
<td>41.5 in (1 055 mm)</td>
<td>41.7 in (1 058 mm)</td>
<td>41.7 in (1 058 mm)</td>
</tr>
<tr>
<td>J. Bucket reach – fully raised, 45° dump</td>
<td>10.4 in (2 656 mm)</td>
<td>10.4 in (2 664 mm)</td>
<td>10.5 in (2 678 mm)</td>
</tr>
<tr>
<td>K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump</td>
<td>57.5 in (1 460 mm)</td>
<td>57.9 in (1 471 mm)</td>
<td>57.9 in (1 471 mm)</td>
</tr>
<tr>
<td>L. Dip depth</td>
<td>3.0 in (77 mm)</td>
<td>3.2 in (81 mm)</td>
<td>2.7 in (69 mm)</td>
</tr>
<tr>
<td>Operating load – ISO Deflected Tires</td>
<td>8,963 lb (4 065 kg)</td>
<td>8,793 lb (3 988 kg)</td>
<td>8,199 lb (3 719 kg)</td>
</tr>
<tr>
<td>Operating load – ISO Rigid Tires</td>
<td>8,125 lb (3 685 kg)</td>
<td>7,968 lb (3 514 kg)</td>
<td>7,404 lb (3 359 kg)</td>
</tr>
<tr>
<td>Maximum material density – ISO Deflected Tires</td>
<td>3,074 lb/yd³ (2 171 kg/m³)</td>
<td>3,382 lb/yd³ (2 007 kg/m³)</td>
<td>3,904 lb/yd³ (2 317 kg/m³)</td>
</tr>
<tr>
<td>Maximum material density – ISO Rigid Tires</td>
<td>3,693 lb/yd³ (2 515 kg/m³)</td>
<td>3,065 lb/yd³ (2 181 kg/m³)</td>
<td>3,526 lb/yd³ (2 092 kg/m³)</td>
</tr>
<tr>
<td>Tipping load – ISO Deflected Tires: Straight</td>
<td>19,983 lb (9 064 kg)</td>
<td>18,740 lb (8 500 kg)</td>
<td>16,939 lb (7 634 kg)</td>
</tr>
<tr>
<td>Tipping load – ISO Rigid Tires: Straight</td>
<td>18,758 lb (8 772 kg)</td>
<td>17,358 lb (7 873 kg)</td>
<td>14,809 lb (6 717 kg)</td>
</tr>
<tr>
<td>Lift capacity: Full height</td>
<td>12,228 lb (5 547 kg)</td>
<td>11,330 lb (5 139 kg)</td>
<td>10,520 lb (4 770 kg)</td>
</tr>
<tr>
<td>Lift capacity: Ground</td>
<td>23,739 lb (10 705 kg)</td>
<td>20,727 lb (9 401 kg)</td>
<td>18,132 lb (8 224 kg)</td>
</tr>
<tr>
<td>Breakout force with tilt cylinder</td>
<td>20,775 lb (9 423 kg)</td>
<td>18,181 lb (8 247 kg)</td>
<td>18,096 lb (8 208 kg)</td>
</tr>
<tr>
<td>Loader clearance circle with bucket</td>
<td>437.2 in (11 104 mm)</td>
<td>435.0 in (11 049 mm)</td>
<td>434.5 in (11 037 mm)</td>
</tr>
</tbody>
</table>

#### 521G XR

<table>
<thead>
<tr>
<th></th>
<th>2.20 yd³ (1.68 m³) Bucket with Teeth - Pin On</th>
<th>2.60 yd³ (1.99 m³) Bucket with Bolt-On Edge - Pin On</th>
<th>2.10 yd³ (1.61 m³) Bucket with Bolt-On Edge - ACS Coupler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating weight</td>
<td>24,496 lb (11 111 kg)</td>
<td>24,504 lb (11 115 kg)</td>
<td>25,399 lb (11 521 kg)</td>
</tr>
<tr>
<td>E. Operating height – fully raised with spillguard</td>
<td>199.3 in (5 061 mm)</td>
<td>201.7 in (5 123 mm)</td>
<td>199.7 in (5 071 mm)</td>
</tr>
<tr>
<td>F. Hinge pin height – fully raised</td>
<td>156.9 in (3 988 mm)</td>
<td>156.9 in (3 988 mm)</td>
<td>156.9 in (3 984 mm)</td>
</tr>
<tr>
<td>G. Overall length – bucket level on ground</td>
<td>282.5 in (7 177 mm)</td>
<td>279.6 in (7 102 mm)</td>
<td>278.9 in (7 085 mm)</td>
</tr>
<tr>
<td>Dump angle – fully raised</td>
<td>51°</td>
<td>51°</td>
<td>51°</td>
</tr>
<tr>
<td>H. Bucket reach – fully raised, 45° dump</td>
<td>119.8 in (3 044 mm)</td>
<td>120.4 in (3 058 mm)</td>
<td>120.4 in (3 058 mm)</td>
</tr>
<tr>
<td>J. Bucket reach – fully raised, 45° dump</td>
<td>40.5 in (1 030 mm)</td>
<td>40.7 in (1 033 mm)</td>
<td>40.7 in (1 033 mm)</td>
</tr>
<tr>
<td>K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump</td>
<td>69.4 in (1 762 mm)</td>
<td>69.7 in (1 772 mm)</td>
<td>69.7 in (1 772 mm)</td>
</tr>
<tr>
<td>L. Dip depth</td>
<td>4.6 in (112 mm)</td>
<td>4.6 in (116 mm)</td>
<td>4.1 in (104 mm)</td>
</tr>
<tr>
<td>Operating load – ISO Rigid Tires</td>
<td>7,622 lb (3 457 kg)</td>
<td>7,491 lb (3 398 kg)</td>
<td>6,941 lb (3 148 kg)</td>
</tr>
<tr>
<td>Operating load – ISO Deflected Tires</td>
<td>6,967 lb (3 160 kg)</td>
<td>6,844 lb (3 104 kg)</td>
<td>6,315 lb (2 864 kg)</td>
</tr>
<tr>
<td>Maximum material density – ISO Rigid Tires</td>
<td>3,465 lb/yd³ (2 505 kg/m³)</td>
<td>3,881 lb/yd³ (2 510 kg/m³)</td>
<td>3,305 lb/yd³ (2 161 kg/m³)</td>
</tr>
<tr>
<td>Maximum material density – ISO Deflected Tires</td>
<td>3,167 lb/yd³ (2 179 kg/m³)</td>
<td>2,632 lb/yd³ (1 784 kg/m³)</td>
<td>3,007 lb/yd³ (2 185 kg/m³)</td>
</tr>
<tr>
<td>Tipping load – ISO Deflected Tires: Straight</td>
<td>17,383 lb (7 885 kg)</td>
<td>17,091 lb (7 525 kg)</td>
<td>15,948 lb (7 234 kg)</td>
</tr>
<tr>
<td>Tipping load – ISO Rigid Tires: Straight</td>
<td>15,482 lb (7 096 kg)</td>
<td>14,875 lb (6 747 kg)</td>
<td>13,882 lb (6 297 kg)</td>
</tr>
<tr>
<td>Lift capacity: Full height</td>
<td>11,116 lb (5 042 kg)</td>
<td>11,110 lb (5 039 kg)</td>
<td>10,215 lb (4 633 kg)</td>
</tr>
<tr>
<td>Lift capacity: Ground</td>
<td>20,081 lb (9 109 kg)</td>
<td>19,856 lb (9 006 kg)</td>
<td>18,802 lb (8 528 kg)</td>
</tr>
<tr>
<td>Breakout force with tilt cylinder</td>
<td>20,775 lb (9 423 kg)</td>
<td>18,242 lb (8 274 kg)</td>
<td>18,162 lb (8 238 kg)</td>
</tr>
<tr>
<td>Loader clearance circle with bucket</td>
<td>450.2 in (11 435 mm)</td>
<td>447.8 in (11 375 mm)</td>
<td>447.3 in (11 362 mm)</td>
</tr>
</tbody>
</table>

#### 521G

<table>
<thead>
<tr>
<th></th>
<th>Z-Bar/XR</th>
<th>Z-Bar/XR</th>
<th>Z-Bar/XR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum rollback: Ground</td>
<td>40°/39°</td>
<td>40°/39°</td>
<td>40°/39°</td>
</tr>
<tr>
<td>Carry position</td>
<td>44°/46°</td>
<td>44°/46°</td>
<td>44°/46°</td>
</tr>
<tr>
<td>@ Full height</td>
<td>54°/55°</td>
<td>54°/55°</td>
<td>54°/55°</td>
</tr>
<tr>
<td>Maximum grading angle with bucket – back dragging</td>
<td>61°/61°</td>
<td>60°/60°</td>
<td>60°/60°</td>
</tr>
<tr>
<td>SAE bucket capacity – struck</td>
<td>1.90 yd³ (1.45 m³)</td>
<td>2.21 yd³ (1.69 m³)</td>
<td>1.77 yd³ (1.35 m³)</td>
</tr>
<tr>
<td>Heaped</td>
<td>2.20 yd³ (1.68 m³)</td>
<td>2.60 yd³ (1.99 m³)</td>
<td>2.10 yd³ (1.61 m³)</td>
</tr>
<tr>
<td>Bucket width – outside</td>
<td>100.9 in (2 563 mm)</td>
<td>100.4 in (2 550 mm)</td>
<td>100.4 in (2 550 mm)</td>
</tr>
<tr>
<td>Bucket weight</td>
<td>1,614 lb (732 kg)</td>
<td>1,622 lb (736 kg)</td>
<td>2,517 lb (1 141 kg)</td>
</tr>
</tbody>
</table>
### 521G Z-Bar*

<table>
<thead>
<tr>
<th><strong>Loader clearance circle with bucket</strong></th>
<th><strong>Breakout force with tilt cylinder</strong></th>
<th><strong>Ground</strong></th>
<th><strong>Lift capacity: Full height</strong></th>
<th><strong>40° turn</strong></th>
<th><strong>Tipping load – ISO Deflected Tires:</strong> <strong>Straight</strong></th>
<th><strong>40° turn</strong></th>
<th><strong>Tipping load – ISO Rigid Tires:</strong> <strong>Straight</strong></th>
<th><strong>Maximum material density – ISO Rigid Tires</strong></th>
<th><strong>Bucket weight</strong></th>
<th><strong>Bucket width – outside</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>438.3 in (11 133 mm)</td>
<td>19,364 lb (8 783 kg)</td>
<td>18,780 lb (8 519 kg)</td>
<td>11,407 lb (5 174 kg)</td>
<td>14,956 lb (6 784 kg)</td>
<td>17,514 lb (7 944 kg)</td>
<td></td>
<td>14,017 lb (6 358 kg)</td>
<td>16,549 lb (7 493 kg)</td>
<td>3,739 lb/yd³ (2 219 kg/m³)</td>
<td>2,441 lb (1 107 kg)</td>
</tr>
<tr>
<td>436.8 in (11 094 mm)</td>
<td>16,839 lb (7 662 kg)</td>
<td>15,664 lb (7 105 kg)</td>
<td>11,435 lb (5 174 kg)</td>
<td>12,337 lb (5 596 kg)</td>
<td>16,873 lb (7 654 kg)</td>
<td></td>
<td>13,542 lb (6 143 kg)</td>
<td>17,022 lb (7 267 kg)</td>
<td>3,429 lb/yd³ (2 035 kg/m³)</td>
<td>2,406 lb (1 091 kg)</td>
</tr>
<tr>
<td>435.8 in (11 070 mm)</td>
<td>21,530 lb (9 766 kg)</td>
<td>15,898 lb (7 211 kg)</td>
<td>58.0 lb (0.264 kg)</td>
<td>17,403 lb (7 891 kg)</td>
<td>11,435 lb (5 187 kg)</td>
<td></td>
<td>16,664 lb (7 510 kg)</td>
<td>21,767 lb (9 811 kg)</td>
<td>3,634 lb/yd³ (2 156 kg/m³)</td>
<td>2,330 lb (1 057 kg)</td>
</tr>
</tbody>
</table>

### 521G XR

<table>
<thead>
<tr>
<th><strong>Loader clearance circle with bucket</strong></th>
<th><strong>Breakout force with tilt cylinder</strong></th>
<th><strong>Ground</strong></th>
<th><strong>Lift capacity: Full height</strong></th>
<th><strong>40° turn</strong></th>
<th><strong>Tipping load – ISO Deflected Tires:</strong> <strong>Straight</strong></th>
<th><strong>40° turn</strong></th>
<th><strong>Tipping load – ISO Rigid Tires:</strong> <strong>Straight</strong></th>
<th><strong>Maximum material density – ISO Rigid Tires</strong></th>
<th><strong>Bucket weight</strong></th>
<th><strong>Bucket width – outside</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>451.4 in (11 467 mm)</td>
<td>19,433 lb (8 815 kg)</td>
<td>19,347 lb (8 786 kg)</td>
<td>10,290 lb (4 648 kg)</td>
<td>12,762 lb (5 789 kg)</td>
<td>15,014 lb (6 810 kg)</td>
<td></td>
<td>14,017 lb (6 358 kg)</td>
<td>18,937 lb (8 591 kg)</td>
<td>3,791 lb/yd³ (2 249 kg/m³)</td>
<td>2.00 yd³ (1.53 m³)</td>
</tr>
<tr>
<td>449.8 in (11 426 mm)</td>
<td>16,893 lb (7 662 kg)</td>
<td>17,021 lb (7 654 kg)</td>
<td>91.0 lb (0.409 kg)</td>
<td>14,956 lb (6 874 kg)</td>
<td>17,514 lb (7 944 kg)</td>
<td></td>
<td>13,542 lb (6 143 kg)</td>
<td>17,080 lb (7 697 kg)</td>
<td>4,024 lb/yd³ (2 388 kg/m³)</td>
<td>1.77 yd³ (1.35 m³)</td>
</tr>
<tr>
<td>448.7 in (11 398 mm)</td>
<td>21,599 lb (9 797 kg)</td>
<td>17,288 lb (7 842 kg)</td>
<td>58.0 lb (0.264 kg)</td>
<td>14,403 lb (6 533 kg)</td>
<td>16,873 lb (7 654 kg)</td>
<td></td>
<td>16,664 lb (7 510 kg)</td>
<td>21,767 lb (9 811 kg)</td>
<td>3,866 lb/yd³ (2 315 kg/m³)</td>
<td>1.67 yd³ (1.28 m³)</td>
</tr>
</tbody>
</table>

### 521G

<table>
<thead>
<tr>
<th><strong>Z-Bar/AC Coupler</strong></th>
<th><strong>Z-Bar/RC Coupler</strong></th>
<th><strong>Z-Bar/RC Coupler</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum rollback:</td>
<td>Ground: 40°/39°</td>
<td>Ground: 40°/40°</td>
</tr>
<tr>
<td>Carry position:</td>
<td>44°/46°</td>
<td>44°/46°</td>
</tr>
<tr>
<td>@ Full height:</td>
<td>54°/55°</td>
<td>54°/55°</td>
</tr>
<tr>
<td>Maximum grading angle</td>
<td>62°/61°</td>
<td>61°/60°</td>
</tr>
<tr>
<td>SAE bucket capacity:</td>
<td>1.67 yd³ (1.28 m³)</td>
<td>1.77 yd³ (1.35 m³)</td>
</tr>
<tr>
<td>Heaped:</td>
<td>2.00 yd³ (1.53 m³)</td>
<td>2.10 yd³ (1.61 m³)</td>
</tr>
<tr>
<td>Bucket width – outside</td>
<td>100.9 in (2 563 mm)</td>
<td>100.9 in (2 563 mm)</td>
</tr>
<tr>
<td>Bucket weight:</td>
<td>2,441 lb (1 107 kg)</td>
<td>2,406 lb (1 091 kg)</td>
</tr>
<tr>
<td>521G XT</td>
<td>2.1 yd³ (1.61 m³)</td>
<td>2.0 yd³ (1.53 m³)</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Operating weight</strong></td>
<td>25,834 lb (11 718 kg)</td>
<td>25,765 lb (11 687 kg)</td>
</tr>
<tr>
<td><strong>E. Operating height – fully raised with spillguard</strong></td>
<td>196.2 in (4 984 mm)</td>
<td>193.8 in (4 923 mm)</td>
</tr>
<tr>
<td><strong>F. Hinge pin height – fully raised</strong></td>
<td>147.3 in (3 742 mm)</td>
<td>147.3 in (3 742 mm)</td>
</tr>
<tr>
<td><strong>G. Overall length – bucket level on ground</strong></td>
<td>269.6 in (6 848 mm)</td>
<td>275.2 in (6 991 mm)</td>
</tr>
<tr>
<td><strong>Dump angle – fully raised</strong></td>
<td>57°</td>
<td>57°</td>
</tr>
<tr>
<td><strong>H. Dump height – fully raised, 45° dump</strong></td>
<td>106.1 in (2 695 mm)</td>
<td>102.5 in (2 603 mm)</td>
</tr>
<tr>
<td><strong>J. Bucket reach – fully raised, 45° dump</strong></td>
<td>46.1 in (1 171 mm)</td>
<td>50.3 in (1 277 mm)</td>
</tr>
<tr>
<td><strong>K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump</strong></td>
<td>62.9 in (1 598 mm)</td>
<td>64.9 in (1 650 mm)</td>
</tr>
<tr>
<td><strong>L. Dig depth</strong></td>
<td>3.3 in (84 mm)</td>
<td>3.4 in (87 mm)</td>
</tr>
<tr>
<td><strong>Operating load – ISO Rigid Tires</strong></td>
<td>8,658 lb (3 117 kg)</td>
<td>8,692 lb (3 141 kg)</td>
</tr>
<tr>
<td><strong>Maximum material density – ISO Rigid Tires</strong></td>
<td>3,844 lb/yd³ (2 162 kg/m³)</td>
<td>3,860 lb/yd³ (2 290 kg/m³)</td>
</tr>
<tr>
<td><strong>Maximum material density – ISO Deflected Tires</strong></td>
<td>3,266 lb/yd³ (1 938 kg/m³)</td>
<td>3,462 lb/yd³ (2 054 kg/m³)</td>
</tr>
<tr>
<td><strong>Tipping load – ISO Rigid Tires:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straight</td>
<td>17,509 lb (7 942 kg)</td>
<td>17,650 lb (8 006 kg)</td>
</tr>
<tr>
<td>40° turn</td>
<td>15,304 lb (6 942 kg)</td>
<td>15,439 lb (7 003 kg)</td>
</tr>
<tr>
<td><strong>Tipping load – ISO Deflected Tires:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straight</td>
<td>16,130 lb (7 317 kg)</td>
<td>16,269 lb (7 380 kg)</td>
</tr>
<tr>
<td>40° turn</td>
<td>13,716 lb (6 221 kg)</td>
<td>13,848 lb (6 281 kg)</td>
</tr>
<tr>
<td><strong>Lift capacity:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full height</td>
<td>10,560 lb (4 790 kg)</td>
<td>10,653 lb (4 832 kg)</td>
</tr>
<tr>
<td>Ground</td>
<td>24,924 lb (11 305 kg)</td>
<td>24,908 lb (11 298 kg)</td>
</tr>
<tr>
<td><strong>Breakout force – dump cylinder</strong></td>
<td>20,302 lb (9 209 kg)</td>
<td>21,531 lb (9 766 kg)</td>
</tr>
<tr>
<td><strong>Loader clearance circle with bucket</strong></td>
<td>428.4 in (10 880 mm)</td>
<td>431.5 in (10 960 mm)</td>
</tr>
</tbody>
</table>

| 521G                                         |                   |                   |                   |                   |
| **Maximum rollback:**                        |                   |                   |                   |                   |
| Ground                                      | 57°               | 57°               | 57°               | 57°               |
| Carry position                              | 59°               | 59°               | 59°               | 59°               |
| @ Full height                                | 64°               | 64°               | 64°               | 64°               |
| **Maximum grading angle with bucket – back dragging** | 61°               | 62°               | 61°               | 63°               |
| **SAE bucket capacity – struck**             | 1.77 yd³ (1.35 m³) | 1.67 yd³ (1.28 m³) | 1.77 yd³ (1.35 m³) | 1.67 yd³ (1.28 m³) |
| Heaped                                       | 2.10 yd³ (1.61 m³) | 2.00 yd³ (1.53 m³) | 2.10 yd³ (1.61 m³) | 2.00 yd³ (1.53 m³) |
| **Bucket width – outside**                   | 100.4 in (2 550 mm) | 101.4 in (2 575 mm) | 100.4 in (2 550 mm) | 100.9 in (2 563 mm) |
| **Bucket weight**                            | 2,655 lb (1 204 kg) | 2,586 lb (1 173 kg) | 2,225 lb (1 009 kg) | 2,149 lb (975 kg) |

**NOTE:** *Z-Bar performance data shown with full counterweight
**XT lift arm with buckets for ACS Pro Series 2000® size 30 HD coupler.
***XT lift arm with bucket for Case coupler

Performance data unit equipped with 17.5x25 L2 Radial tires, ROPS cab with heater and air conditioner, full counterweight, standard batteries, front and rear fenders, full fuel and 165 lb (75 kg) operator. Specifications per SAE J732, J1234, J695, J742 and J818.
STANDARD EQUIPMENT

ENVIRONMENT
See page 1

ENGINE
Case/FPT F4HFE413NB
Tier 4 Final Certified
Selective Catalytic Reduction (SCR) with Diesel Oxidation Catalyst
Selectable work modes:
  - Maximum power
  - Auto power
  - Standard power
  - Economy power
Turbocharger
Charge air cooling
Automatic fan belt tensioner
Integral engine oil cooling
Fuel filter with water trap
Dual-element dry-type air cleaner
Air-cooled radiator
Mid-mounted cooling module
Common rail electronic fuel injection

LOADER
See page 2 – Operating weight, Other specifications

DRIVETRAIN
4-wheel drive
4F/3R Selectable autoshift/manual shift transmission
Electronic Control Module – programmable, computer controlled proportional shifting with programmable gear selection
Onboard diagnostics
Single lever electronic shift control
F/N/R switch in loader control handle
Downshift button
Torque converter
Outboard planetary axles
Limited-slip differentials
Transmission oil cooler
Brake pedal transmission disconnect
Hydraulic wet disc brakes
Spring-applied hydraulic release parking brake
Limp-Home Mode

HYDRAULICS
Electro-hydraulic (EH) joystick loader control
Low-effort steering
Hydraulic driven fan
8 Diagnostic quick couplers
Split flange hydraulic connections – 1 in or greater
Hydraulic oil cooler

ELECTRICAL
70 amp alternator and voltage regulator
Battery isolator/electrical disconnect
(2) 700 CCA 12-volt batteries
Lights:
  - 2 Front driving headlights – high/low beam
  - 2 Front flood
  - 2 LED stop and tail lights
  - 2 Rear flood
  - Front and rear turn signal/flash
Centrally located fuse box with all electrical circuits protected
Backup alarm
Remote jump posts

OTHER
Front and rear fenders, partial coverage
Heavy counterweight
Drawbar hitch
Articulation locking bar
Lift arm locking bar
Lift and tie-down points – front/rear
Grouped remote-mounted ecology drains:
  - Engine oil
  - Engine coolant
  - Hydraulic oil

TELEMATICS
CASE SiteWatch™ Telematics – includes hardware and a 3-yr Advanced data subscription
**OPTIONAL EQUIPMENT**

**OPERATOR ENVIRONMENT**

- Cloth-covered heated air-suspension seat
- Leather trimmed heated air seat with active suspension
- 3 in (76 mm) retractable seat belt
- Sound Shield noise suppression package
- Bluetooth radio, 12V AM/FM with auxiliary input
- Radio-ready – 12- or 24-volt with auxiliary power – 12-volt
- Cab convenience package: Rear sun shade, interior mirror, under the seat drawer, coat hook, 12V accessory port, and an ash tray
- In cab powered cooler box
- In cab accessory mount
- LED rotating beacon
- Joystick steering
- Rear view camera
- External rear view mirrors
- External heated rear view mirrors
- Front LED driving/headlights
- LED front and rear work lights
- Extra front-facing LED work lights

**DRIVETRAIN**

- Heavy-duty axles with locking front differential and open rear differential
- Cold weather package: Heavy-duty batteries (2x 950 CCA)
- Fuel heater
- Hydraulic oil cooler bypass
- Low temperature hydraulic oil
- Grid heater

**TIRES**

- 17.5 x 25 radial
- 20.5 R25 radial
- 20.5 R25 bias

**ADVANCED ENGINE AIR FILTRATION**

- Variable speed hydraulic reversing fan

**OTHER**

- Special paint
- Full coverage fenders
- Tool box
- Fire extinguisher
- Side guards for rear frame
- License plate brackets, front and rear
- 12 mph (20 kph) maximum speed control
- Skid Plate/Transmission guard
- Standard fenders with right and left hand steps
- Wide full coverage fenders with right and left hand steps

**HYDRAULICS**

- Auxiliary hydraulics
- Ride Control™
- Secondary steering
- 3- or 4-spool loader valves with 2- or 3-lever loader control

**LOADERS**

- Hydraulic attachment coupler systems
- Buckets – see pages 4 through 7
- Parallel lift XT
- Extended reach XR

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Always read the Operator’s Manual before operating any equipment. Inspect equipment before using it, and be sure it is operating properly. Follow the product safety signs and use any safety features provided.