



ENGINE

Make	FPT
Model	F4HFE413NB
Emissions Certification	Tier 4 Final
Emissions Technology	SCR/DOC
Type	4-stroke, turbocharged
Cylinders	4-cylinder in-line
Bore/Stroke	4.09 x 5.20 in (104 x 132 mm)
Displacement	275 in ³ (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:	
Style	8 blade puller
Diameter	28 in (711 mm)
Water pump	Integral
Engine oil pump operating angle ratings:	
Side-to-side	35°
Fore and aft	35°
Oil filtration	Replaceable, full flow spin-on cartridge
Engine speeds	RPM
Rated – full load	2000
Horsepower:	
Maximum Power Mode:	
Peak gross @ 1800 RPM	142 hp (106 kW)
Net rated @ 2000 RPM	129 hp (96 kW)
Peak net @ 1800 RPM	131 hp (98 kW)
Standard Power Mode:	
Peak gross @ 1800 RPM	133 hp (99 kW)
Net rated @ 2000 RPM	106 hp (79 kW)
Peak net @ 1800 RPM	123 hp (91 kW)
Economy Power Mode:	
Peak gross @ 1700 RPM	110 hp (82 kW)
Net rated @ 2000 RPM	76 hp (57 kW)
Peak net @ 1700 RPM	101 hp (75 kW)

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)

Torque rise:	
Maximum power range	21%

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
Planetaries	Outboard
Service brakes:	
Hydraulically actuated, maintenance-free, multiple wet disc w/ accumulator to all four wheels	
Brake surface area:	
Front hub – each	480 in ² (0.31 m ²)
Rear hub – each	480 in ² (0.31 m ²)
Parking brakes:	
Spring-applied hydraulic release disc on transmission output shaft neutralizes power flow to wheels when engaged	
Travel speeds – 4-speed transmission:	
	Forward Reverse
	mph (kph) mph (kph)
1st	3.8 (6.1) 4.0 (6.4)
2nd	6.9 (11.1) 7.3 (11.7)
3rd	13.4 (21.6) 14.1 (22.8)
4th	22.3 (35.9) —

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.

Displays/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)

HYDRAULICS

Pump – steering/implement:
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

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)

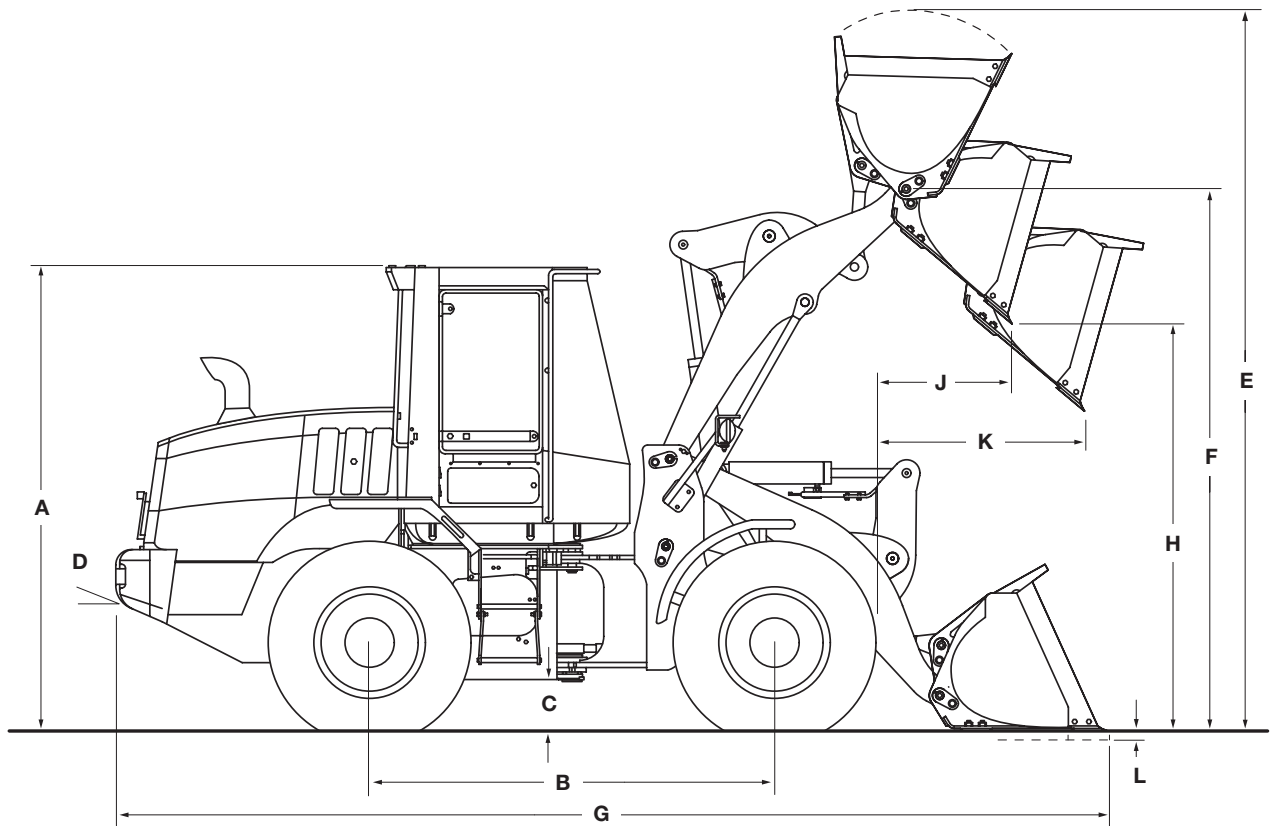
Dump cylinders – XT:
Bore diameter 4.00 in (101.6 mm)
Rod diameter 2.25 in (57.2 mm)
Stroke 29.85 in (758.2 mm)

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.



Line drawings are for illustrative purpose only and may not be exact representation of unit.

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	
		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*	2.1 yd³ (1.61 m³) Bucket with Bolt-On Edge - Pin On	2.0 yd³ (1.53 m³) Bucket with Teeth - Pin On	2.3 yd³ (1.76 m³) Bucket with Bolt-On Edge - Pin On
Operating weight	24,203 lb (10 978 kg)	24,128 lb (10 944 kg)	24,290 lb (11 018 kg)
E. Operating height – fully raised with spillguard	181.6 in (4 613 mm)	181.6 in (4 614 mm)	184.3 in (4 682 mm)
F. Hinge pin height – fully raised	142.0 in (3 606 mm)	142.0 in (3 606 mm)	142.0 in (3 606 mm)
G. Overall length – bucket level on ground	260.3 in (6 612 mm)	266.0 in (6 755 mm)	263.3 in (6 687 mm)
Dump angle – fully raised	55°	55°	55°
H. Dump height – fully raised, 45° dump	108.7 in (2 760 mm)	105.0 in (2 668 mm)	106.7 in (2 711 mm)
J. Bucket reach – fully raised, 45° dump	37.9 in (962 mm)	42.0 in (1 067 mm)	39.8 in (1 012 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	55.8 in (1 418 mm)	58.0 in (1 474 mm)	56.8 in (1 443 mm)
L. Dig depth	2.7 in (67 mm)	2.8 in (71 mm)	2.9 in (73 mm)
Operating load – ISO Rigid Tires	8,960 lb (4 064 kg)	9,083 lb (4 120 kg)	8,842 lb (4 011 kg)
Operating load – ISO Deflected Tires	8,131 lb (3 688 kg)	8,243 lb (3 739 kg)	8,015 lb (3 636 kg)
Maximum material density – ISO Rigid Tires	4,267 lb/yd ³ (2 532 kg/m ³)	4,542 lb/yd ³ (2 695 kg/m ³)	3,844 lb/yd ³ (2 281 kg/m ³)
Maximum material density – ISO Deflected Tires	3,872 lb/yd ³ (2 297 kg/m ³)	4,121 lb/yd ³ (2 446 kg/m ³)	3,485 lb/yd ³ (2 068 kg/m ³)
Tipping load – ISO Rigid Tires:			
Straight	20,357 lb (9 234 kg)	20,623 lb (9 355 kg)	20,102 lb (9 118 kg)
40° turn	17,920 lb (8 128 kg)	18,166 lb (8 240 kg)	17,684 lb (8 021 kg)
Tipping load – ISO Deflected Tires:			
Straight	18,911 lb (8 578 kg)	19,157 lb (8 690 kg)	18,661 lb (8 464 kg)
40° turn	16,262 lb (7 376 kg)	16,486 lb (7 478 kg)	16,030 lb (7 271 kg)
Lift capacity:			
Full height	12,249 lb (5 556 kg)	12,326 lb (5 591 kg)	12,161 lb (5 516 kg)
Ground	23,635 lb (10 721 kg)	24,540 lb (11 131 kg)	22,083 lb (10 017 kg)
Breakout force with tilt cylinder	20,934 lb (9 495 kg)	22,593 lb (10 248 kg)	19,370 lb (8 786 kg)
Loader clearance circle with bucket	431.7 in (10 966 mm)	435.4 in (11 059 mm)	433.4 in (11 008 mm)

521G XR	2.1 yd³ (1.61 m³) Bucket with Bolt-On Edge - Pin On	2.0 yd³ (1.53 m³) Bucket with Teeth - Pin On	2.3 yd³ (1.76 m³) Bucket with Bolt-On Edge - Pin On
Operating weight	24,485 lb (11 106 kg)	24,409 lb (11 072 kg)	24,572 lb (11 146 kg)
E. Operating height – fully raised with spillguard	196.6 in (4 993 mm)	196.6 in (4 993 mm)	199.3 in (5 061 mm)
F. Hinge pin height – fully raised	156.9 in (3 985 mm)	156.9 in (3 986 mm)	156.9 in (3 985 mm)
G. Overall length – bucket level on ground	273.9 in (6 958 mm)	279.6 in (7 101 mm)	276.9 in (7 033 mm)
Dump angle – fully raised	51°	51°	51°
H. Dump height – fully raised, 45° dump	123.6 in (3 140 mm)	120.0 in (3 047 mm)	121.7 in (3 091 mm)
J. Bucket reach – fully raised, 45° dump	36.9 in (937 mm)	41.0 in (1 042 mm)	38.8 in (987 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	67.5 in (1 714 mm)	69.9 in (1 775 mm)	68.6 in (1 741 mm)
L. Dig depth	4.0 in (102 mm)	4.2 in (106 mm)	4.3 in (108 mm)
Operating load – ISO Rigid Tires	7,621 lb (3 457 kg)	7,724 lb (3 504 kg)	7,521 lb (3 411 kg)
Operating load – ISO Deflected Tires	6,972 lb (3 163 kg)	7,068 lb (3 206 kg)	6,872 lb (3 117 kg)
Maximum material density – ISO Rigid Tires	3,629 lb/yd ³ (2 153 kg/m ³)	3,862 lb/yd ³ (2 292 kg/m ³)	3,270 lb/yd ³ (1 940 kg/m ³)
Maximum material density – ISO Deflected Tires	3,320 lb/yd ³ (1 970 kg/m ³)	3,534 lb/yd ³ (2 097 kg/m ³)	2,988 lb/yd ³ (1 773 kg/m ³)
Tipping load – ISO Rigid Tires:			
Straight	17,381 lb (7 884 kg)	17,603 lb (7 984 kg)	17,166 lb (7 787 kg)
40° turn	15,242 lb (6 914 kg)	15,448 lb (7 007 kg)	15,042 lb (6 823 kg)
Tipping load – ISO Deflected Tires:			
Straight	16,268 lb (7 379 kg)	16,475 lb (7 473 kg)	16,053 lb (7 282 kg)
40° turn	13,944 lb (6 325 kg)	14,135 lb (6 412 kg)	13,745 lb (6 235 kg)
Lift capacity:			
Full height	11,128 lb (5 047 kg)	11,203 lb (5 082 kg)	11,041 lb (5 008 kg)
Ground	20,122 lb (9 127 kg)	20,291 lb (9 204 kg)	19,915 lb (9 033 kg)
Breakout force with tilt cylinder	21,010 lb (9 530 kg)	22,672 lb (10 284 kg)	19,438 lb (8 817 kg)
Loader clearance circle with bucket	444.2 in (11 282 mm)	448.2 in (11 385 mm)	446.1 in (11 330 mm)

521G	Z-Bar/XR	Z-Bar/XR	Z-Bar/XR
Maximum rollback:			
Ground	40°/39°	40°/39°	40°/39°
Carry position	44°/46°	44°/46°	44°/46°
@ Full height	54°/55°	54°/55°	54°/55°
Maximum grading angle with bucket – back dragging	60°/60°	60°/60°	60°/60°
SAE bucket capacity – struck	1.77 yd ³ (1.35 m ³)	1.67 yd ³ (1.28 m ³)	2.00 yd ³ (1.53 m ³)
Heaped	2.10 yd ³ (1.61 m ³)	2.00 yd ³ (1.53 m ³)	2.30 yd ³ (1.76 m ³)
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*	2.20 yd³ (1.68 m³) Bucket with Teeth - Pin On	2.60 yd³ (1.99 m³) Bucket with Bolt-On Edge - Pin On	2.10 yd³ (1.61 m³) Bucket with Bolt-On Edge - ACS Coupler
Operating weight	24,214 lb (10 983 kg)	24,222 lb (10 987 kg)	25,117 lb (11 393 kg)
E. Operating height – fully raised with spillguard	184.3 in (4 682 mm)	186.7 in (4 743 mm)	184.7 in (4 692 mm)
F. Hinge pin height – fully raised	142.0 in (3 606 mm)	142.0 in (3 606 mm)	141.9 in (3 604 mm)
G. Overall length – bucket level on ground	269.0 in (6 832 mm)	266.0 in (6 757 mm)	265.3 in (6 739 mm)
Dump angle – fully raised	55°	55°	55°
H. Dump height – fully raised, 45° dump	103.0 in (2 617 mm)	104.9 in (2 664 mm)	105.4 in (2 678 mm)
J. Bucket reach – fully raised, 45° dump	44.0 in (1 118 mm)	41.5 in (1 055 mm)	41.7 in (1 058 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	58.9 in (1 495 mm)	57.5 in (1 460 mm)	57.9 in (1 471 mm)
L. Dig depth	3.0 in (77 mm)	3.2 in (81 mm)	2.7 in (69 mm)
Operating load – ISO Rigid Tires	8,963 lb (4 065 kg)	8,793 lb (3 988 kg)	8,199 lb (3 719 kg)
Operating load – ISO Deflected Tires	8,125 lb (3 685 kg)	7,968 lb (3 614 kg)	7,404 lb (3 359 kg)
Maximum material density – ISO Rigid Tires	4,074 lb/yd ³ (2 417 kg/m ³)	3,382 lb/yd ³ (2 007 kg/m ³)	3,904 lb/yd ³ (2 317 kg/m ³)
Maximum material density – ISO Deflected Tires	3,693 lb/yd ³ (2 191 kg/m ³)	3,065 lb/yd ³ (1 818 kg/m ³)	3,526 lb/yd ³ (2 092 kg/m ³)
Tipping load – ISO Rigid Tires:			
Straight	20,363 lb (9 236 kg)	19,983 lb (9 064 kg)	18,740 lb (8 500 kg)
40° turn	17,925 lb (8 131 kg)	17,585 lb (7 977 kg)	16,398 lb (7 438 kg)
Tipping load – ISO Deflected Tires:			
Straight	18,901 lb (8 573 kg)	18,546 lb (8 412 kg)	17,358 lb (7 873 kg)
40° turn	16,249 lb (7 371 kg)	15,936 lb (7 228 kg)	14,809 lb (6 717 kg)
Lift capacity:			
Full height	12,238 lb (5 551 kg)	12,228 lb (5 547 kg)	11,330 lb (5 139 kg)
Ground	23,379 lb (10 605 kg)	20,727 lb (9 401 kg)	18,132 lb (8 224 kg)
Breakout force with tilt cylinder	20,775 lb (9 423 kg)	18,181 lb (8 247 kg)	18,096 lb (8 208 kg)
Loader clearance circle with bucket	437.2 in (11 104 mm)	435.0 in (11 049 mm)	434.5 in (11 037 mm)

521G XR	2.20 yd³ (1.68 m³) Bucket with Teeth - Pin On	2.60 yd³ (1.99 m³) Bucket with Bolt-On Edge - Pin On	2.10 yd³ (1.61 m³) Bucket with Bolt-On Edge - ACS Coupler
Operating weight	24,496 lb (11 111 kg)	24,504 lb (11 115 kg)	25,399 lb (11 521 kg)
E. Operating height – fully raised with spillguard	199.3 in (5 061 mm)	201.7 in (5 123 mm)	199.7 in (5 071 mm)
F. Hinge pin height – fully raised	156.9 in (3 985 mm)	156.9 in (3 985 mm)	156.9 in (3 984 mm)
G. Overall length – bucket level on ground	282.5 in (7 177 mm)	279.6 in (7 102 mm)	278.9 in (7 085 mm)
Dump angle – fully raised	51°	51°	51°
H. Dump height – fully raised, 45° dump	118.0 in (2 997 mm)	119.8 in (3 044 mm)	120.4 in (3 058 mm)
J. Bucket reach – fully raised, 45° dump	43.0 in (1 092 mm)	40.5 in (1 030 mm)	40.7 in (1 033 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	70.9 in (1 801 mm)	69.4 in (1 762 mm)	69.7 in (1 772 mm)
L. Dig depth	4.4 in (112 mm)	4.6 in (116 mm)	4.1 in (104 mm)
Operating load – ISO Rigid Tires	7,622 lb (3 457 kg)	7,491 lb (3 398 kg)	6,941 lb (3 148 kg)
Operating load – ISO Deflected Tires	6,967 lb (3 160 kg)	6,844 lb (3 104 kg)	6,315 lb (2 864 kg)
Maximum material density - ISO Rigid Tires	3,465 lb/yd ³ (2 056 kg/m ³)	2,881 lb/yd ³ (1 710 kg/m ³)	3,305 lb/yd ³ (1 961 kg/m ³)
Maximum material density - ISO Deflected Tires	3,167 lb/yd ³ (1 879 kg/m ³)	2,632 lb/yd ³ (1 562 kg/m ³)	3,007 lb/yd ³ (1 784 kg/m ³)
Tipping load – ISO Rigid Tires:			
Straight	17,383 lb (7 885 kg)	17,091 lb (7 752 kg)	15,948 lb (7 234 kg)
40° turn	15,244 lb (6 914 kg)	14,982 lb (6 796 kg)	13,882 lb (6 297 kg)
Tipping load – ISO Deflected Tires:			
Straight	16,259 lb (7 375 kg)	15,980 lb (7 248 kg)	14,875 lb (6 747 kg)
40° turn	13,934 lb (6 320 kg)	13,687 lb (6 208 kg)	12,630 lb (5 729 kg)
Lift capacity:			
Full height	11,116 lb (5 042 kg)	11,110 lb (5 039 kg)	10,215 lb (4 633 kg)
Ground	20,081 lb (9 109 kg)	19,856 lb (9 006 kg)	18,802 lb (8 528 kg)
Breakout force with tilt cylinder	20,846 lb (9 456 kg)	18,242 lb (8 274 kg)	18,162 lb (8 238 kg)
Loader clearance circle with bucket	450.2 in (11 435 mm)	447.8 in (11 375 mm)	447.3 in (11 362 mm)

521G	Z-Bar/XR	Z-Bar/XR	Z-Bar/XR
Maximum rollback:			
Ground	40°/39°	40°/39°	40°/39°
Carry position	44°/46°	44°/46°	44°/46°
@ Full height	54°/55°	54°/55°	54°/55°
Maximum grading angle with bucket – back dragging	61°/61°	60°/60°	60°/60°
SAE bucket capacity – struck	1.90 yd ³ (1.45 m ³)	2.21 yd ³ (1.69 m ³)	1.77 yd ³ (1.35 m ³)
Heaped	2.20 yd ³ (1.68 m ³)	2.60 yd ³ (1.99 m ³)	2.10 yd ³ (1.61 m ³)
Bucket width – outside	100.9 in (2 563 mm)	100.4 in (2 550 mm)	100.4 in (2 550 mm)
Bucket weight	1,614 lb (732 kg)	1,622 lb (736 kg)	2,517 lb (1 141 kg)

PERFORMANCE SPECS

521G Z-Bar*	2.00 yd³ (1.53 m³) Bucket with Teeth - ACS Coupler	2.10 yd³ (1.61 m³) Bucket with Bolt-On Edge - JRB Coupler	2.00 yd³ (1.53 m³) Bucket with Teeth - JRB Coupler
Operating weight	25,041 lb (11 359 kg)	25,006 lb (11 343 kg)	24,931 lb (11 308 kg)
E. Operating height – fully raised with spillguard	184.7 in (4 692 mm)	186.0 in (4 724 mm)	186.0 in (4 724 mm)
F. Hinge pin height – fully raised	141.9 in (3 605 mm)	141.9 in (3 605 mm)	141.9 in (3 605 mm)
G. Overall length – bucket level on ground	270.9 in (6 882 mm)	269.1 in (6 834 mm)	266.6 in (6 773 mm)
Dump angle – fully raised	55°	55°	55°
H. Dump height – fully raised, 45° dump	101.8 in (2 586 mm)	102.8 in (2 612 mm)	104.4 in (2 651 mm)
J. Bucket reach – fully raised, 45° dump	45.8 in (1 163 mm)	43.2 in (1 098 mm)	41.2 in (1 046 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	59.9 in (1 521 mm)	58.0 in (1 472 mm)	56.8 in (1 443 mm)
L. Dig depth	2.9 in (72 mm)	3.7 in (94 mm)	3.8 in (98 mm)
Operating load – ISO Rigid Tires	8,275 lb (3 753 kg)	7,960 lb (3 611 kg)	8,048 lb (3 650 kg)
Operating load – ISO Deflected Tires	7,478 lb (3 392 kg)	7,202 lb (3 267 kg)	7,267 lb (3 296 kg)
Maximum material density – ISO Rigid Tires	4,137 lb/yd ³ (2 455 kg/m ³)	3,791 lb/yd ³ (2 249 kg/m ³)	4,024 lb/yd ³ (2 388 kg/m ³)
Maximum material density – ISO Deflected Tires	3,739 lb/yd ³ (2 219 kg/m ³)	3,429 lb/yd ³ (2 035 kg/m ³)	3,634 lb/yd ³ (2 156 kg/m ³)
Tipping load – ISO Rigid Tires:			
Straight	18,899 lb (8 573 kg)	18,188 lb (8 250 kg)	18,393 lb (8 343 kg)
40° turn	16,549 lb (7 507 kg)	15,920 lb (7 221 kg)	16,095 lb (7 301 kg)
Tipping load – ISO Deflected Tires:			
Straight	17,514 lb (7 944 kg)	16,873 lb (7 654 kg)	17,040 lb (7 729 kg)
40° turn	14,956 lb (6 784 kg)	14,403 lb (6 533 kg)	14,535 lb (6 593 kg)
Lift capacity:			
Full height	11,407 lb (5 174 kg)	11,435 lb (5 187 kg)	11,513 lb (5 222 kg)
Ground	18,780 lb (8 519 kg)	15,664 lb (7 105 kg)	15,898 lb (7 211 kg)
Breakout force with tilt cylinder	19,364 lb (8 783 kg)	16,839 lb (7 638 kg)	21,530 lb (9 766 kg)
Loader clearance circle with bucket	438.3 in (11 133 mm)	436.8 in (11 094 mm)	435.8 in (11 070 mm)

521G XR	2.00 yd³ (1.53 m³) Bucket with Teeth - ACS Coupler	2.10 yd³ (1.61 m³) Bucket with Bolt-On Edge - JRB Coupler	2.00 yd³ (1.53 m³) Bucket with Teeth - JRB Coupler
Operating weight	25,323 lb (11 486 kg)	25,288 lb (11 470 kg)	25,212 lb (11 436 kg)
E. Operating height – fully raised with spillguard	199.7 in (5 071 mm)	200.9 in (5 104 mm)	201.0 in (5 104 mm)
F. Hinge pin height – fully raised	156.9 in (3 984 mm)	156.9 in (3 984 mm)	156.9 in (3 984 mm)
G. Overall length – bucket level on ground	284.6 in (7 228 mm)	282.6 in (7 177 mm)	280.1 in (7 115 mm)
Dump angle – fully raised	51°	51°	51°
H. Dump height – fully raised, 45° dump	116.7 in (2 965 mm)	117.8 in (2 992 mm)	119.3 in (3 031 mm)
J. Bucket reach – fully raised, 45° dump	44.8 in (1 138 mm)	42.2 in (1 073 mm)	40.2 in (1 020 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	72.0 in (1 829 mm)	70.0 in (1 778 mm)	68.7 in (1 746 mm)
L. Dig depth	4.2 in (108 mm)	5.1 in (129 mm)	5.2 in (133 mm)
Operating load – ISO Rigid Tires	7,009 lb (3 179 kg)	6,771 lb (3 071 kg)	6,839 lb (3 102 kg)
Operating load – ISO Deflected Tires	6,381 lb (2 894 kg)	6,168 lb (2 798 kg)	6,220 lb (2 821 kg)
Maximum material density - ISO Rigid Tires	3,504 lb/yd ³ (2 079 kg/m ³)	3,224 lb/yd ³ (1 913 kg/m ³)	3,419 lb/yd ³ (2 029 kg/m ³)
Maximum material density - ISO Deflected Tires	3,191 lb/yd ³ (1 893 kg/m ³)	2,937 lb/yd ³ (1 743 kg/m ³)	3,110 lb/yd ³ (1 845 kg/m ³)
Tipping load – ISO Rigid Tires:			
Straight	16,089 lb (7 298 kg)	15,550 lb (7 053 kg)	15,708 lb (7 125 kg)
40° turn	14,017 lb (6 358 kg)	13,542 lb (6 143 kg)	13,677 lb (6 204 kg)
Tipping load – ISO Deflected Tires:			
Straight	15,014 lb (6 810 kg)	14,520 lb (6 586 kg)	14,651 lb (6 645 kg)
40° turn	12,762 lb (5 789 kg)	12,337 lb (5 596 kg)	12,440 lb (5 643 kg)
Lift capacity:			
Full height	10,290 lb (4 668 kg)	10,327 lb (4 684 kg)	10,403 lb (4 719 kg)
Ground	18,937 lb (8 590 kg)	17,021 lb (7 720 kg)	17,288 lb (7 842 kg)
Breakout force with tilt cylinder	19,433 lb (8 815 kg)	16,893 lb (7 662 kg)	21,599 lb (9 797 kg)
Loader clearance circle with bucket	451.4 in (11 467 mm)	449.8 in (11 426 mm)	448.7 in (11 398 mm)

521G	Z-Bar/XR	Z-Bar/XR	Z-Bar/XR
Maximum rollback:			
Ground	40°/39°	41°/40°	41°/40°
Carry position	44°/46°	44°/46°	44°/46°
@ Full height	54°/55°	54°/55°	54°/55°
Maximum grading angle with bucket – back dragging	62°/61°	61°/61°	61°/60°
SAE bucket capacity – struck	1.67 yd ³ (1.28 m ³)	1.77 yd ³ (1.35 m ³)	1.67 yd ³ (1.28 m ³)
Heaped	2.00 yd ³ (1.53 m ³)	2.10 yd ³ (1.61 m ³)	2.00 yd ³ (1.53 m ³)
Bucket width – outside	100.9 in (2 563 mm)	100.4 in (2 550 mm)	100.9 in (2 563 mm)
Bucket weight	2,441 lb (1 107 kg)	2,406 lb (1 091 kg)	2,330 lb (1 057 kg)

PERFORMANCE SPECS

521G XT	2.1 yd³ (1.61 m³) Bucket with Bolt-On Edge - ACS Coupler**	2.0 yd³ (1.53 m³) Bucket with Teeth ACS Coupler**	2.1 yd³ (1.61 m³) Bucket with Bolt-On Edge - JRB Coupler***	2.0 yd³ (1.53 m³) Bucket with Teeth JRB Coupler***
Operating weight	25,834 lb (11 718 kg)	25,765 lb (11 687 kg)	25,404 lb (11 523 kg)	25,328 lb (11 489 kg)
E. Operating height – fully raised with spillguard	196.2 in (4 984 mm)	193.8 in (4 923 mm)	188.4 in (4 786 mm)	188.4 in (4 786 mm)
F. Hinge pin height – fully raised	147.3 in (3 742 mm)	147.3 in (3 742 mm)	147.3 in (3 743 mm)	147.4 in (3 743 mm)
G. Overall length – bucket level on ground	269.6 in (6 848 mm)	275.2 in (6 991 mm)	274.0 in (6 960 mm)	279.7 in (7 103 mm)
Dump angle – fully raised	57°	57°	57°	57°
H. Dump height – fully raised, 45° dump	106.1 in (2 695 mm)	102.5 in (2 603 mm)	102.0 in (2 590 mm)	98.3 in (2 497 mm)
J. Bucket reach – fully raised, 45° dump	46.1 in (1 171 mm)	50.3 in (1 277 mm)	40.6 in (1 031 mm)	44.7 in (1 136 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	62.9 in (1 598 mm)	64.9 in (1 650 mm)	55.0 in (1 396 mm)	56.7 in (1 440 mm)
L. Dig depth	3.3 in (84 mm)	3.4 in (87 mm)	10.0 in (254 mm)	10.2 in (258 mm)
Operating load – ISO Rigid Tires	7,652 lb (3 471 kg)	7,719 lb (3 501 kg)	7,389 lb (3 351 kg)	7,488 lb (3 396 kg)
Operating load – ISO Deflected Tires	6,858 lb (3 111 kg)	6,924 lb (3 141 kg)	6,692 lb (3 035 kg)	6,784 lb (3 077 kg)
Maximum material density – ISO Rigid Tires	3,644 lb/yd ³ (2 162 kg/m ³)	3,860 lb/yd ³ (2 290 kg/m ³)	3,518 lb/yd ³ (2 088 kg/m ³)	3,744 lb/yd ³ (2 222 kg/m ³)
Maximum material density – ISO Deflected Tires	3,266 lb/yd ³ (1 938 kg/m ³)	3,462 lb/yd ³ (2 054 kg/m ³)	3,187 lb/yd ³ (1 891 kg/m ³)	3,392 lb/yd ³ (2 013 kg/m ³)
Tipping load – ISO Rigid Tires:				
Straight	17,509 lb (7 942 kg)	17,650 lb (8 006 kg)	16,870 lb (7 652 kg)	17,083 lb (7 749 kg)
40° turn	15,304 lb (6 942 kg)	15,439 lb (7 003 kg)	14,777 lb (6 703 kg)	14,976 lb (6 793 kg)
Tipping load – ISO Deflected Tires:				
Straight	16,130 lb (7 317 kg)	16,269 lb (7 380 kg)	15,671 lb (7 108 kg)	15,871 lb (7 199 kg)
40° turn	13,716 lb (6 221 kg)	13,848 lb (6 281 kg)	13,383 lb (6 071 kg)	13,568 lb (6 154 kg)
Lift capacity:				
Full height	10,560 lb (4 790 kg)	10,653 lb (4 832 kg)	10,433 lb (4 732 kg)	10,565 lb (4 792 kg)
Ground	24,924 lb (11 305 kg)	24,908 lb (11 298 kg)	22,734 lb (10 312 kg)	22,724 lb (10 307 kg)
Breakout force – dump cylinder	20,302 lb (9 209 kg)	21,531 lb (9 766 kg)	21,227 lb (9 629 kg)	22,556 lb (10 231 kg)
Loader clearance circle with bucket	428.4 in (10 880 mm)	431.5 in (10 960 mm)	432.2 in (10 977 mm)	435.0 in (11 049 mm)

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				
Heaped	1.77 yd ³ (1.35 m ³)	1.67 yd ³ (1.28 m ³)	1.77 yd ³ (1.35 m ³)	1.67 yd ³ (1.28 m ³)
	2.10 yd ³ (1.61 m ³)	2.00 yd ³ (1.53 m ³)	2.10 yd ³ (1.61 m ³)	2.00 yd ³ (1.53 m ³)
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

OPERATOR 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
Hydraulic-driven cooling fan
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
RH steps and platform
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

HYDRAULICS

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

LOADER

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

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

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CASE Construction Equipment is biodiesel-friendly. NOTE: All engines meet current EPA emissions regulations. All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.



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.

Form No. CCE201708521G
Replaces Form No. CCE201610521G

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