



## ENGINE

Make	FPT
Model	F4HFE413NB
Emissions Certification	Tier 4 Final
Type	4-stroke, turbocharged
Cylinders	4-cylinder in-line
Bore/Stroke	4.09 x 5.20 in (104 x 132 mm)
Displacement	275 in <sup>3</sup> (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	32 in (813 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	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/ 45% transfer on front and rear axles	
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 <sup>2</sup> (0.31 m <sup>2</sup> )
Rear hub – each	480 in <sup>2</sup> (0.31 m <sup>2</sup> )
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 L3 tires.

## ELECTRICAL

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

## OPERATOR ENVIRONMENT

ROPS cab w/ heat; Key start; Articulated power steering w/ tilt column; Fully adjustable, suspension seat; Foot throttle; Single lever loader control w/ wrist rest; Cup holder; Coat hook; 1 Interior rearview mirror; 2 in (51 mm) retractable seat belt; Storage tray behind seat; Cooled lunch box; Single brake pedal; F/N/R shuttle switch; External rearview mirrors; Lock box; Pressurized air filtering; Anti-glare window strip; Defroster; Side window, partial/fully open; Dome light; Wipers, rear and intermittent front; Windshield washers, front and rear; Rubber floor mat; Electronic Information Center; Horn.

LCD screen:  
Hour meter; Time; FNR indicator; Trip computer; 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 alarm  
Critical alarm  
Backup alarm

NOTE: \*If equipped w/ option.

## OPERATING WEIGHT

Z-Bar  
Unit equipped w/ ROPS cab w/ heater and A/C; Standard counterweight; 17.5 x 25 XTLA Michelin tires; 2.1 yd<sup>3</sup> (1.61 m<sup>3</sup>) pin-on w/ bolt on edge; Full fuel; 175 lb (79 kg) operator:  
22,855 lb (10 367 kg)

XT  
Unit equipped w/ ROPS cab w/ heater and A/C; Full counterweight; 17.5 x 25 XTLA Michelin tires; 2.1 yd<sup>3</sup> (1.61 m<sup>3</sup>) ACS loader bucket; Standard batteries; Full fuel; 175 lb (79 kg) operator:  
24,586 lb (11 152 kg)

XR  
Unit equipped w/ ROPS cab w/ heater and A/C; Full counterweight; 17.5 x 25 XTLA Michelin tires; Front and rear fenders; 2.1 yd<sup>3</sup> (1.61 m<sup>3</sup>) general purpose loader bucket w/ edge; Full fuel; 175 lb (79 kg) operator:  
23,229 lb (10 536 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/ pilot control for lift, tilt and auxiliary  
hydraulics, electromagnetic detents in float,  
raise and rollback

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 30.0 gal (113.6 L)

Transmission:

Service w/ filter 5.0 gal (18.9 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 5.8 gal (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:

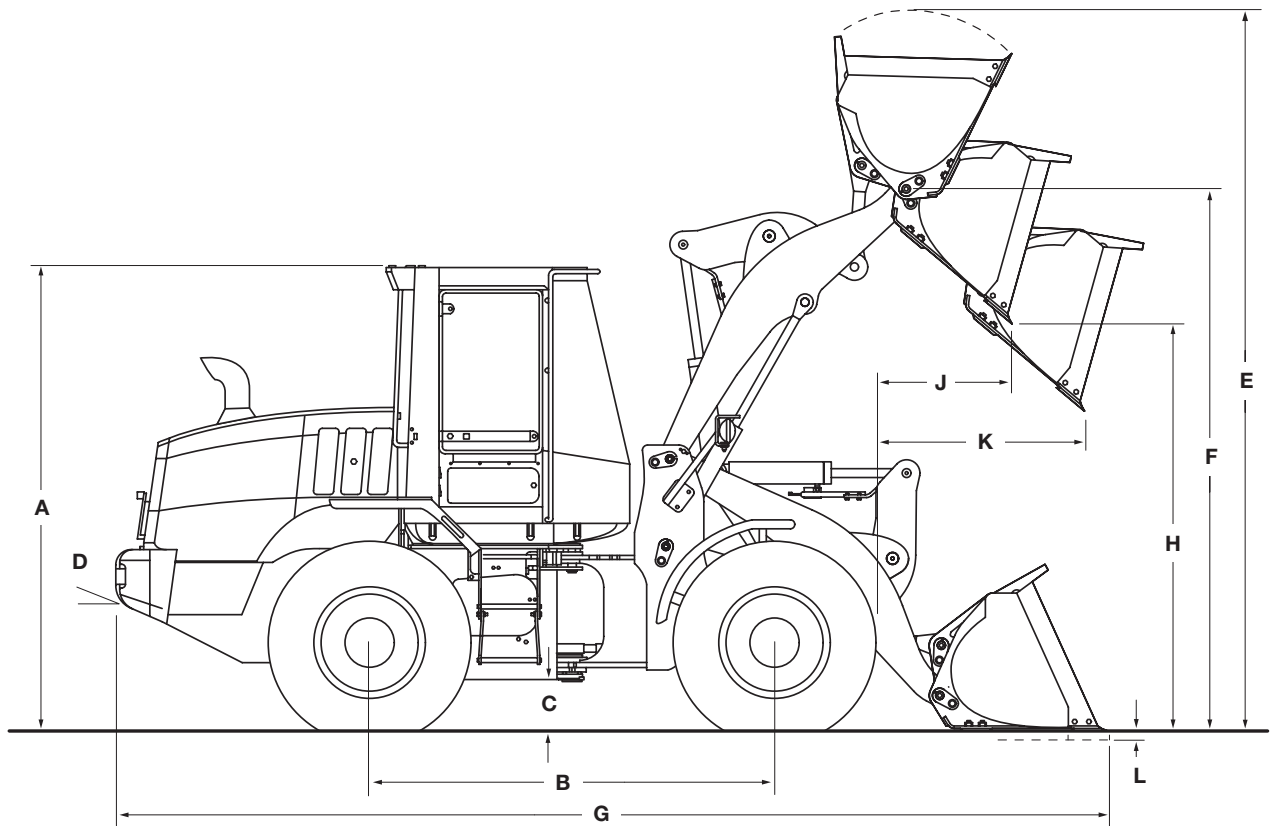
Bore diameter 4.00 in (101.6 mm)  
Rod diameter 2.25 in (57.2 mm)  
Stroke 29.85 in (783.0 mm)

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 1.2 sec  
Power down 3.9 sec  
Float down 3.9 sec



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

## DIMENSIONS

<b>A.</b> Height to top of ROPS cab	129.0 in (3 277 mm)
Height to drawbar	37.6 in (954 mm)
<b>B.</b> Wheelbase	108.3 in (2 750 mm)
<b>C.</b> Ground clearance	14.84 in (377 mm)
<b>D.</b> Angle of departure	34°
Width:	
Overall* without bucket	98.0 in (2 489 mm)
Centerline tread	78.7 in (2 000 mm)
Turning radius* – outside	197.7 in (5 022 mm)
Turning angle:	
From center	40°
Total angle	80°
Rear axle oscillation – total	24°

NOTE: \*Dimensions taken with 17.5 x 25 XTLA TL tires. Additional dimensions on pages 4 through 6.

## WEIGHT ADJUSTMENTS

Select Options	Weight Adjustment	Tipping Load Adjustment Straight	Tipping Load Adjustment 40° Turn
17.5 x 25 12 ply L2 tires	-256 lb (-116 kg)	-181 lb (-82 kg)	-159 lb (-72 kg)
17.5 x 25 12 ply L3 tires	-48 lb (-22 kg)	-34 lb (-16 kg)	-29 lb (-13 kg)
17.5-R25 XHA TL tires	+108 lb (+49 kg)	+76 lb (+34 kg)	+68 lb (+31 kg)
20.5-R25 XHA TL tires	+992 lb (+450 kg)	+701 lb (+318 kg)	+619 lb (+281 kg)
Base counterweight	-1,050 lb (-477 kg)	-2,352 lb (-1 067 kg)	-1,977 lb (-897 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 yd<sup>3</sup> (1.61 m<sup>3</sup>) general purpose pin on bucket with bolt-on edge, 17.5-R25 XTLA Michelin tires, ROPS cab with heater and air conditioner, full counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (79 kg) operator. Adjust select options from rated weight.

**PERFORMANCE SPECS**

<b>521F Z-Bar*</b>	<b>2.6 yd<sup>3</sup> GP (1.99 m<sup>3</sup>) Bucket with Bolt-on Edge</b>	<b>2.3 yd<sup>3</sup> GP (1.76 m<sup>3</sup>) Bucket with Bolt-on Edge</b>	<b>2.3 yd<sup>3</sup> GP (1.76 m<sup>3</sup>) Bucket with Teeth Only</b>
SAE bucket capacity – struck	2.21 yd <sup>3</sup> (1.69 m <sup>3</sup> )	1.98 yd <sup>3</sup> (1.51 m <sup>3</sup> )	1.90 yd <sup>3</sup> (1.45 m <sup>3</sup> )
Heaped	2.60 yd <sup>3</sup> (1.99 m <sup>3</sup> )	2.30 yd <sup>3</sup> (1.76 m <sup>3</sup> )	2.21 yd <sup>3</sup> (1.69 m <sup>3</sup> )
Bucket width – outside	100.4 in (2 550 mm)	100.4 in (2 550 mm)	101.1 in (2 567 mm)
Bucket weight	1,728 lb (784 kg)	1,804 lb (818 kg)	1,722 lb (781 kg)
<b>E.</b> Operating height – fully raised with spillguard	186.4 in (4 736 mm)	184.0 in (4 673 mm)	184.0 in (4 673 mm)
<b>F.</b> Hinge pin height – fully raised	142.1 in (3 609 mm)	142.1 in (3 609 mm)	142.1 in (3 609 mm)
<b>G.</b> Overall length – bucket level on ground	265.9 in (6 754 mm)	263.2 in (6 684 mm)	269.0 in (6 833 mm)
Dump angle – fully raised	55°	55°	55°
<b>H.</b> Dump height – fully raised, 45° dump	105.0 in (2 667 mm)	106.8 in (2 714 mm)	103.0 in (2 616 mm)
<b>J.</b> Bucket reach – fully raised, 45° dump	41.6 in (1 056 mm)	39.9 in (1 013 mm)	43.8 in (1 114 mm)
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	57.6 in (1 462 mm)	56.9 in (1 444 mm)	58.7 in (1 490 mm)
Operating load – ISO	7,835 lb (3 554 kg)	7,883 lb (3 576 kg)	8,000 lb (3 629 kg)
Operating load – SAE	7,179 lb (3 256 kg)	7,222 lb (3 276 kg)	7,330 lb (3 325 kg)
Maximum material density – ISO	3,013 lb/yd <sup>3</sup> (1 788 kg/m <sup>3</sup> )	3,427 lb/yd <sup>3</sup> (2 034 kg/m <sup>3</sup> )	3,619 lb/yd <sup>3</sup> (2 147 kg/m <sup>3</sup> )
Maximum material density – SAE	2,761 lb/yd <sup>3</sup> (1 638 kg/m <sup>3</sup> )	3,140 lb/yd <sup>3</sup> (1 863 kg/m <sup>3</sup> )	3,316 lb/yd <sup>3</sup> (1 968 kg/m <sup>3</sup> )
Tipping load – ISO:			
Straight	18,321 lb (8 310 kg)	18,443 lb (8 365 kg)	18,698 lb (8 481 kg)
40° turn	15,669 lb (7 107 kg)	15,765 lb (7 151 kg)	15,999 lb (7 257 kg)
Tipping load – SAE:			
Straight	17,258 lb (7 828 kg)	17,371 lb (7 879 kg)	17,611 lb (7 988 kg)
40° turn	14,358 lb (6 513 kg)	14,444 lb (6 552 kg)	14,660 lb (6 650 kg)
Lift capacity:			
Full height	12,237 lb (5 550 kg)	12,163 lb (5 517 kg)	12,246 lb (5 555 kg)
Maximum reach	16,900 lb (7 666 kg)	16,841 lb (7 639 kg)	16,937 lb (7 682 kg)
Ground	21,021 lb (9 535 kg)	22,411 lb (10 165 kg)	23,860 lb (10 823 kg)
Breakout force with tilt cylinder	18,118 lb (8 218 kg)	19,303 lb (8 756 kg)	20,733 lb (9 404 kg)
Maximum rollback:			
Ground	40°	40°	40°
Carry position	43°	43°	43°
@ Maximum reach	52°	52°	52°
@ Full height	54°	54°	54°
<b>L.</b> Dig depth	3.1 in (78 mm)	2.8 in (70 mm)	3.1 in (80 mm)
Maximum grading angle with bucket – back dragging	60°	60°	61°
Loader clearance circle with bucket	434.3 in (11 032 mm)	432.7 in (10 991 mm)	436.8 in (11 094 mm)

<b>521F XR</b>	<b>2.6 yd<sup>3</sup> GP (1.99 m<sup>3</sup>) Bucket with Bolt-on Edge</b>	<b>2.3 yd<sup>3</sup> GP (1.76 m<sup>3</sup>) Bucket with Bolt-on Edge</b>	<b>2.3 yd<sup>3</sup> GP (1.76 m<sup>3</sup>) Bucket with Teeth Only</b>
<b>E.</b> Operating height – fully raised with spillguard	201.4 in (5 115 mm)	198.9 in (5 052 mm)	198.9 in (5 052 mm)
<b>F.</b> Hinge pin height – fully raised	157.0 in (3 987 mm)	157.0 in (3 987 mm)	157.0 in (3 987 mm)
<b>G.</b> Overall length – bucket level on ground	279.5 in (7 099 mm)	276.8 in (7 030 mm)	282.6 in (7 178 mm)
Dump angle – fully raised	51°	51°	51°
<b>H.</b> Dump height – fully raised, 45° dump	119.9 in (3 046 mm)	121.8 in (3 092 mm)	117.9 in (2 995 mm)
<b>J.</b> Bucket reach – fully raised, 45° dump	40.6 in (1 032 mm)	38.9 in (988 mm)	42.9 in (1 089 mm)
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	69.4 in (1 763 mm)	68.6 in (1 743 mm)	70.7 in (1 795 mm)
Operating load – ISO	6,622 lb (3 004 kg)	6,650 lb (3 016 kg)	6,749 lb (3 061 kg)
Operating load – SAE	6,110 lb (2 771 kg)	6,135 lb (2 783 kg)	6,228 lb (2 825 kg)
Maximum material density – ISO	2,547 lb/yd <sup>3</sup> (1 511 kg/m <sup>3</sup> )	2,891 lb/yd <sup>3</sup> (1 716 kg/m <sup>3</sup> )	3,053 lb/yd <sup>3</sup> (1 812 kg/m <sup>3</sup> )
Maximum material density – SAE	2,350 lb/yd <sup>3</sup> (1 394 kg/m <sup>3</sup> )	2,667 lb/yd <sup>3</sup> (1 583 kg/m <sup>3</sup> )	2,708 lb/yd <sup>3</sup> (1 607 kg/m <sup>3</sup> )
Tipping load – ISO:			
Straight	15,574 lb (7 064 kg)	15,650 lb (7 099 kg)	15,865 lb (7 196 kg)
40° turn	13,243 lb (6 007 kg)	13,299 lb (6 033 kg)	13,497 lb (6 122 kg)
Tipping load – SAE:			
Straight	14,763 lb (6 696 kg)	14,833 lb (6 728 kg)	15,038 lb (6 821 kg)
40° turn	12,219 lb (5 543 kg)	12,269 lb (5 565 kg)	12,456 lb (5 650 kg)
Lift capacity:			
Full height	11,094 lb (5 032 kg)	11,018 lb (4 998 kg)	11,100 lb (5 035 kg)
Maximum reach	14,979 lb (6 794 kg)	14,921 lb (6 768 kg)	15,017 lb (6 811 kg)
Ground	19,560 lb (8 872 kg)	19,615 lb (8 897 kg)	19,788 lb (8 976 kg)
Breakout force with tilt cylinder	18,117 lb (8 218 kg)	19,305 lb (8 757 kg)	20,732 lb (9 404 kg)
Loader clearance circle with bucket	447.3 in (11 361 mm)	445.5 in (11 315 mm)	449.9 in (11 428 mm)

**PERFORMANCE SPECS**

<b>521F Z-Bar*</b>	<b>2.1 yd<sup>3</sup> GP (1.61 m<sup>3</sup>) Bucket with Bolt-on Edge</b>	<b>2.1 yd<sup>3</sup> GP (1.61 m<sup>3</sup>) Bucket with Teeth Only</b>
SAE bucket capacity – struck	1.77 yd <sup>3</sup> (1.35 m <sup>3</sup> )	1.67 yd <sup>3</sup> (1.28 m <sup>3</sup> )
Heaped	2.10 yd <sup>3</sup> (1.61 m <sup>3</sup> )	1.96 yd <sup>3</sup> (1.50 m <sup>3</sup> )
Bucket width – outside	100.4 in (2 550 mm)	101.1 in (2 567 mm)
Bucket weight	1,711 lb (776 kg)	1,629 lb (739 kg)
<b>E.</b> Operating height – fully raised with spillguard	181.3 in (4 604 mm)	181.3 in (4 605 mm)
<b>F.</b> Hinge pin height – fully raised	142.1 in (3 609 mm)	142.1 in (3 609 mm)
<b>G.</b> Overall length – bucket level on ground	260.2 in (6 609 mm)	266.1 in (6 758 mm)
Dump angle – fully raised	55°	55°
<b>H.</b> Dump height – fully raised, 45° dump	108.8 in (2 763 mm)	104.9 in (2 665 mm)
<b>J.</b> Bucket reach – fully raised, 45° dump	37.9 in (963 mm)	41.9 in (1 063 mm)
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	55.9 in (1 420 mm)	57.8 in (1 469 mm)
Operating load – ISO	7,997 lb (3 627 kg)	8,116 lb (3 681 kg)
Operating load – SAE	7,333 lb (3 326 kg)	7,444 lb (3 377 kg)
Maximum material density – ISO	3,808 lb/yd <sup>3</sup> (2 259 kg/m <sup>3</sup> )	4,137 lb/yd <sup>3</sup> (2 455 kg/m <sup>3</sup> )
Maximum material density – SAE	3,492 lb/yd <sup>3</sup> (2 072 kg/m <sup>3</sup> )	3,794 lb/yd <sup>3</sup> (2 251 kg/m <sup>3</sup> )
Tipping load – ISO:		
Straight	18,691 lb (8 478 kg)	18,952 lb (8 597 kg)
40° turn	15,993 lb (7 254 kg)	16,232 lb (7 363 kg)
Tipping load – SAE:		
Straight	17,614 lb (7 990 kg)	17,860 lb (8 101 kg)
40° turn	14,667 lb (6 653 kg)	14,888 lb (6 753 kg)
Lift capacity:		
Full height	12,257 lb (5 559 kg)	12,341 lb (5 598 kg)
Maximum reach	16,947 lb (7 687 kg)	17,043 lb (7 731 kg)
Ground	23,991 lb (10 882 kg)	24,257 lb (11 003 kg)
Breakout force with tilt cylinder	20,868 lb (9466 kg)	22,528 lb (10 219 kg)
Maximum rollback:		
Ground	40°	40°
Carry position	43°	43°
@ Maximum reach	52°	52°
@ Full height	54°	54°
<b>L.</b> Dig depth	2.5 in (64 mm)	2.9 in (74 mm)
Maximum grading angle with bucket – back dragging	60°	60°
Loader clearance circle with bucket	431.0 in (10 948 mm)	435.0 in (11 050 mm)

<b>521F XR</b>	<b>2.1 yd<sup>3</sup> GP (1.61 m<sup>3</sup>) Bucket with Bolt-on Edge</b>	<b>2.1 yd<sup>3</sup> GP (1.61 m<sup>3</sup>) Bucket with Teeth Only</b>
<b>E.</b> Operating height – fully raised with spillguard	196.2 in (4 983 mm)	196.2 in (4 984 mm)
<b>F.</b> Hinge pin height – fully raised	157.0 in (3 988 mm)	157.0 in (3 988 mm)
<b>G.</b> Overall length – bucket level on ground	273.9 in (6 956 mm)	279.7 in (7 104 mm)
Dump angle – fully raised	51°	51°
<b>H.</b> Dump height – fully raised, 45° dump	123.7 in (3 142 mm)	119.9 in (3 044 mm)
<b>J.</b> Bucket reach – fully raised, 45° dump	36.9 in (938 mm)	40.9 in (1 039 mm)
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	67.5 in (1 715 mm)	69.7 in (1 770 mm)
Operating load – ISO	6,748 lb (3 061 kg)	6,848 lb (3 106 kg)
Operating load – SAE	6,231 lb (2 826 kg)	6,326 lb (2 870 kg)
Maximum material density – ISO	3,213 lb/yd <sup>3</sup> (1 907 kg/m <sup>3</sup> )	3,491 lb/yd <sup>3</sup> (2 071 kg/m <sup>3</sup> )
Maximum material density – SAE	2,967 lb/yd <sup>3</sup> (1 761 kg/m <sup>3</sup> )	3,225 lb/yd <sup>3</sup> (1 913 kg/m <sup>3</sup> )
Tipping load – ISO:		
Straight	15,862 lb (7 195 kg)	16,081 lb (7 294 kg)
40° turn	13,495 lb (6 121 kg)	13,697 lb (6 213 kg)
Tipping load – SAE:		
Straight	15,043 lb (6 823 kg)	15,252 lb (6 918 kg)
40° turn	12,463 lb (5 653 kg)	12,653 lb (5 739 kg)
Lift capacity:		
Full height	11,110 lb (5 040 kg)	11,192 lb (5 077 kg)
Maximum reach	15,027 lb (6 816 kg)	15,124 lb (6 860 kg)
Ground	19,826 lb (8 993 kg)	19,999 lb (9 072 kg)
Breakout force with tilt cylinder	20,874 lb (9 468 kg)	22,529 lb (10 219 kg)
Loader clearance circle with bucket	443.6 in (11 267 mm)	448.0 in (11 378 mm)

**PERFORMANCE SPECS**

<b>521F XT</b>	2.1 yd <sup>3</sup> GP (1.61 m <sup>3</sup> ) ACS Bucket with Edge**	2.1 yd <sup>3</sup> GP (1.61 m <sup>3</sup> ) ACS Bucket with Teeth and Segment**	2.1 yd <sup>3</sup> GP (1.61 m <sup>3</sup> ) Case Bucket with Edge***	2.1 yd <sup>3</sup> GP (1.61 m <sup>3</sup> ) Case Bucket with Teeth***
<b>E.</b> Operating height – fully raised with spillguard	194.0 in (4 927 mm)	194.0 in (4 927 mm)	188.5 in (4 789 mm)	188.5 in (4 789 mm)
<b>F.</b> Hinge pin height – fully raised	147.4 in (3 745 mm)	147.4 in (3 745 mm)	147.4 in (3 745 mm)	147.5 in (3 746 mm)
<b>G.</b> Overall length – bucket level on ground	266.8 in (6 776 mm)	272.6 in (6 923 mm)	271.2 in (6 888 mm)	276.9 in (7 034 mm)
Dump angle – fully raised	57°	57°	57°	57°
<b>H.</b> Dump height – fully raised, 45° dump	106.2 in (2 697 mm)	102.4 in (2 602 mm)	102.1 in (2 592 mm)	98.3 in (2 497 mm)
<b>J.</b> Bucket reach – fully raised, 45° dump	46.2 in (1 173 mm)	50.2 in (1 276 mm)	40.6 in (1 031 mm)	44.7 in (1 135 mm)
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	63.0 in (1 601 mm)	64.9 in (1 648 mm)	55.0 in (1 398 mm)	56.7 in (1 439 mm)
Operating load – ISO	6,861 lb (3 112 kg)	6,934 lb (3 145 kg)	6,706 lb (3 042 kg)	6,738 lb (3 057 kg)
Operating load – SAE	6,199 lb (2 812 kg)	6,272 lb (2 845 kg)	6,119 lb (2 776 kg)	6,153 lb (2 791 kg)
Maximum material density – ISO	3,341 lb/yd <sup>3</sup> (1 982 kg/m <sup>3</sup> )	3,534 lb/yd <sup>3</sup> (2 097 kg/m <sup>3</sup> )	3,193 lb/yd <sup>3</sup> (1 895 kg/m <sup>3</sup> )	3,435 lb/yd <sup>3</sup> (2 038 kg/m <sup>3</sup> )
Maximum material density – SAE	3,020 lb/yd <sup>3</sup> (1 792 kg/m <sup>3</sup> )	3,197 lb/yd <sup>3</sup> (1 897 kg/m <sup>3</sup> )	2,914 lb/yd <sup>3</sup> (1 729 kg/m <sup>3</sup> )	3,136 lb/yd <sup>3</sup> (1 861 kg/m <sup>3</sup> )
Tipping load – ISO:				
Straight	16,189 lb (7 343 kg)	16,346 lb (7 414 kg)	15,755 lb (7 147 kg)	15,839 lb (7 185 kg)
40° turn	13,719 lb (6 223 kg)	13,868 lb (6 290 kg)	13,412 lb (6 084 kg)	13,477 lb (6 113 kg)
Tipping load – SAE:				
Straight	15,138 lb (6 866 kg)	15,289 lb (6 935 kg)	14,831 lb (6 727 kg)	14,916 lb (6 766 kg)
40° turn	12,401 lb (5 625 kg)	12,543 lb (5 689 kg)	12,239 lb (5 551 kg)	12,306 lb (5 582 kg)
Lift capacity:				
Full height	10,509 lb (4 767 kg)	10,617 lb (4 816 kg)	10,483 lb (4 755 kg)	10,518 lb (4 771 kg)
Maximum reach	14,361 lb (6 514 kg)	14,455 lb (6 557 kg)	14,650 lb (6 645 kg)	14,736 lb (6 684 kg)
Ground	24,357 lb (11 048 kg)	24,332 lb (11 037 kg)	22,260 lb (10 097 kg)	22,257 lb (10 095 kg)
Breakout force – dump cylinder	20,571 lb (9 331 kg)	21,821 lb (9 898 kg)	21,563 lb (9 781 kg)	22,913 lb (10 393 kg)
Loader clearance circle with bucket	432.0 in (10 972 mm)	435.5 in (11 061 mm)	435.8 in (11 069 mm)	439.3 in (11 159 mm)

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 17.5 x 25 XTLA tires, ROPS cab with heater and air conditioner, full counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (79 kg) operator. Specifications per SAE J732, J1234, J695, J742 and J818.



## STANDARD EQUIPMENT

### OPERATOR ENVIRONMENT

See page 1

### ENGINE

FPT F4HFE413J  
Tier 4 Final Certified  
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 air cleaner  
Liquid-cooled radiator  
Non spark-arresting muffler  
Mid-mounted cooling module  
Common rail electronic fuel injection

### LOADER

See page 2

## OPTIONAL EQUIPMENT

### OPERATOR ENVIRONMENT

Cloth-covered air-suspension seat  
Sound Shield noise suppression package  
Cab air-conditioning with heater  
Radio  
Radio-ready – 12- or 24-volt  
Auxiliary power – 12-volt  
Cab convenience package  
RH steps and platform  
Rotating beacon  
Second brake pedal  
Open ROPS  
Joystick steering

### DRIVETRAIN

Cold weather package:  
Heavy-duty batteries  
Fuel heater  
Hydraulic oil cooler bypass  
Low temperature hydraulic oil  
Grid heater

### DRIVETRAIN

4-wheel drive  
4F/3R Selectable autoshift/manual shift transmission  
Electronic Control Module – programmable, computer controlled proportional shifting with rogrammable 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  
Lubed-for-life drive shaft

### HYDRAULICS

Single lever 2-spool loader control valve  
Low-effort steering  
Hydraulic driven fan  
8 Diagnostic quick couplers

### HYDRAULICS

Auxiliary hydraulics  
Ride Control  
Secondary steering  
3- or 4-spool loader valves with 2- or 3-lever loader control  
Hydraulic reversing fan  
Hydraulic cooler

### LOADER

Hydraulic attachment coupler systems  
Attachment auxiliary hydraulics  
Buckets – see pages 4 and 5  
Parallel lift XT  
Extended reach XR

### ELECTRICAL

70 amp alternator  
(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  
Backup alarm

### OTHER

Front and rear fenders  
Standard counterweight  
Drawbar hitch  
Articulation locking bar  
Lift arm locking bar  
Lift and tie-down points – front/rear  
Remote drain points

### TELEMATICS

CASE SiteWatch™ Telematics – includes hardware and a 3-yr Advanced data subscription

### TIRES

17.5 x 25 radial  
20.5 R25 radial  
20.5 R25 bias

### OTHER

Auxiliary hydraulics  
Ride Control  
Secondary steering  
3- or 4-spool loader valves with 2- or 3-lever loader control  
Hydraulic reversing fan  
Hydraulic cooler  
LED Work Lights

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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.

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