



## ENGINE

Model	FPT F5B FL413 D*C005
Emissions Certification	Tier 4 Final
Type	Diesel 4-stroke, Turbo, D.I.
Cylinders	4
Bore/Stroke	3.9 x 4.3 in (99 x 110 mm)
Displacement	207 in <sup>3</sup> (3.4 L)
Fuel injection	Direct, high pressure common rail – HPCR
Fuel	#2 Diesel
Fuel filter:	
Pre-filter	Beta (30) = 200/spin-on
Main filter	Beta (4) = 20/spin-on
Air intake	Turbocharged w/ waste gate and external cooled EGR
Exhaust aftertreatment	Selective Catalytic Reduction (SCR) Diesel Oxidation Catalyst (DOC)
Cooling	Liquid
Engine speeds	RPM
High idle – no load	2500 +/- 25
Rated – full load	2500
Low idle	1150 +/- 25
Horsepower @ 2500 RPM – SAE J1349:	
Gross	114 hp (85 kW)
Net	114 hp (85 kW)
Peak torque @ 1400 RPM	339 lb-ft (460 N·m)
Radiator:	
Core type	Aluminum bar and plate
Core size area	253 in <sup>2</sup> (0.163 m <sup>2</sup> )
Rows of tubes x columns	19 rows
Cap pressure	16 +/- 2 psi (1.10 +/- 0.14 bar)
Fan:	
Diameter	22 in (560 mm)
Ratio	0.96:1 standard, 1.1:1 high-flow
Water pump:	
Style	Centrifugal
Flow	47.8 gpm (181 L/min)
Engine lubrication pump:	
Rotor pump w/ deep sump pan, plate cooler and pressurized under-piston nozzles	
Pump operating angle ratings:	
Side to side	45°
Bucket up	35°
Bucket Down	45°

## LIFT GEOMETRY

Vertical Lift

## DRIVETRAIN

Drive pump controls	Electro-hydraulic
Pump to engine ratio	1:1
Displacement	3.7 in <sup>3</sup> (60 cm <sup>3</sup> )
Flow @ rated engine RPM:	
@ 96% efficiency	37.9 gpm (143.5 L/min)
Charge pressure	377 psi (26 bar)
System relief pressure	5,800 psi (400 bar)

Drive Motors – Rubber Undercarriage:	
Max. displacement	3.0 in <sup>3</sup> (49.1 cm <sup>3</sup> )
Flow @ rated engine RPM @ 96% efficiency:	
	1.83 in <sup>3</sup> (30.0 cm <sup>3</sup> )
Motor torque @ max. displacement and relief pressure, calculated @ 5,800 psi (400 bar):	4,840 lb-ft (6 562 N·m)

Travel speed – Rubber Track:	
Low range	5.0 mph (8.0 kph)
High range	8.7 mph (14.0 kph)

Travel speed – Steel Track:	
Low range	3.1 mph (5.0 kph)
High range	5.9 mph (9.5 kph)

Final drive:	
Planetary gearbox w/ 2-speed motor	

Tractive effort	10,995 lb (4 998 kg)
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Parking brake:	
Type	Spring-applied, hydraulic release multiple disc.
Engagement	Depress on/off brake button on handle or instrument panel, raise seat bar, get off seat or stop engine.

## ELECTRICAL

Alternator	145 amp
Starter	4.29 hp (3.2 kW)
Battery	12-volt low-maintenance 950 cold-cranking amps @ 0° F (-18° C°)

## OPERATOR ENVIRONMENT

Enclosed cab (ROPS/FOPS Level 1): Fully sealed and pressurized – FSP Glass door w/ wiper and washer, Sliding side windows – removable, Ventilation system w/ integrated heater, Heater and air conditioner, AM/FM Bluetooth radio w/ 2 speakers and USB port; Keyless start ignition; 8 in Color LCD Display; Economy Mode (auto idle shutdown); Auto Engine Protection Shutdown; Deluxe cloth, air suspension seat, w/ heater and lumbar support; 2 in (51 mm) retractable 3 pt lap seat belt; Ignition Timeout; Machine Settings; User Access Levels; Operator Security Codes; Hand and foot throttles; Alarm package – back-up and horn; Rearview mirror; Headliner; Dome Light; Top window; Cup holder; 12V Power plug socket; Foot rest; Seat pocket; Padded seat bar w/ integral armrests; Loader control lockout system; Electric parking brake control; Operator's compartment floor cleanout; Proportional auxiliary hydraulic control – on joystick; Advanced Instrument Cluster w/ digital hour meter,

tachometer, Fuel level LCD bar graph w/ alarm, diagnostic features; Electro-hydraulic controls: For drive/steering, loader functions, Switchable between H and ISO patterns, Adjustable sensitivity of controls.

Warning lights w/ alarms:  
Engine coolant temperature; Engine oil pressure; Engine malfunction; Hydraulic charge pressure; Hydraulic filter restriction; Hydraulic oil temperature: Critical system stop, Engine system, Hydraulic system, Electrical and diagnostic system.

Warning alarms:  
Battery voltage – plus display; Oil service.

Indicator light:  
Engine preheat; Parking brake;  
Seat bar reminder.

## OPERATING WEIGHT

Unit equipped w/ closed cab; 165 lb operator;  
84 in Heavy Duty bucket; full of fuel:  
16,300 lb (7 409 kg)

Shipping weight 16,000 lb (7 273 kg)

Add-on weights:	
Side cab glass	47 lb (21.3 kg)
Polycarbonate cab door	75 lb (34.0 kg)
Glass cab door w/ wiper	75 lb (34.0 kg)
Air Ride	20 lb (9.1 kg)
Additional counterweight	Not Available

## HYDRAULICS

Implement pump type Axial Piston

Displacement:  
Enhanced high-flow aux. 3.8 in<sup>3</sup> (63.0 cm<sup>3</sup>)

Standard flow @ rated engine RPM:  
@ 100% efficiency 24.2 gpm (91.5 L/min)

Optional high-flow @ rated engine RPM:  
@ 100% efficiency 41.6 gpm (157 L/min)

Enhanced high-flow @ rated engine RPM:  
@ 100% efficiency 41.6 gpm (157 L/min)

Loader control valve:  
Type 3 spool/open center/series - series  
Relief pressure 3,450 psi (238 bar)

Port relief pressures:  
Loader raise 4,351 psi (300 bar)  
Bucket curl 4,351 psi (300 bar)  
Bucket dump 4,351 psi (300 bar)

Hydraulic lines:  
Tubing ORFS + 37° JIC Flare  
Loop hoses SAE 100 R19

Hydraulic oil cooler:  
Number of fins 10 per inch (4 per cm)  
Number of tube rows x columns 21 bar/plate  
Area 298.2 in<sup>2</sup> (1 920 cm<sup>2</sup>)

## HYDRAULICS CONT.

Hydraulic filter	Beta (4) = 75/spin-on
Lift cylinders:	
Bore diameter	3.25 in (82.5 mm)
Rod diameter	2.25 in (57.1 mm)
Stroke	38.8 in (985 mm)
Closed length	59.6 in (1 515 mm)

Bucket cylinders:	
Bore diameter	3.25 in (82.5 mm)
Rod diameter	1.75 in (44.5 mm)
Stroke	19.7 in (500 mm)
Closed length	31.5 in (800 mm)

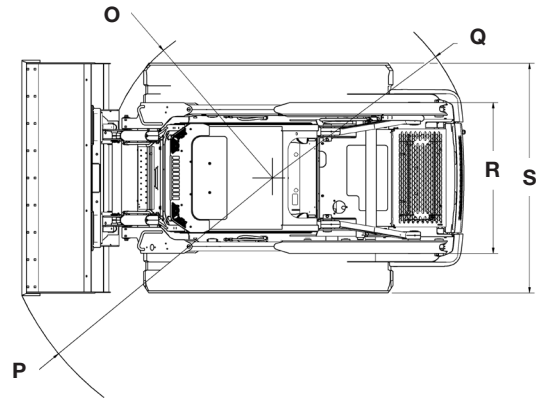
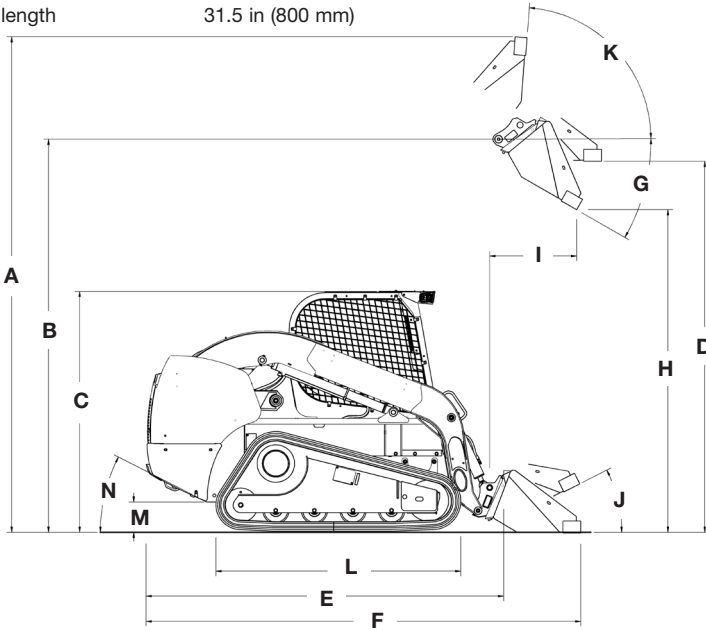
## SERVICE CAPACITIES

Fuel Tank	30.8 gal (116.5 L)
Engine oil w/ filter	8.9 qt (8.5 L)
Hydraulic system	10.7 gal (40.5 L)
Diesel Exhaust Fluid (DEF) Tank	3.3 gal (12.4 L)

## PERFORMANCE SPECS

Rated operating capacity – ROC*:	
35% of tipping load	4,340 lb (1 969 kg)
50% of tipping load	6,200 lb (2 812 kg)
Tipping load*	12,400 lb (5 625 kg)
Breakout forces @ 3,150 psi (217 bar)*:	
Bucket Cylinders	12,907 lb (57.4 kN)
Lift cylinders	12,084 lb (53.8 kN)
Cycle times:	
Raise	4.2 sec
Lower	2.2 sec
Dump	2.3 sec
Roll back	1.6 sec

NOTE: \*Measured using 78 in (1.98 m) heavy-duty bucket.



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

## DIMENSIONS

A. Overall operating height:	
with heavy duty bucket	176.5 in (4.48 m)
with XHD bucket	189.6 in (4.82 m)
Height to:	
B. Bucket hinge pin	140.2 in (3.56 m)
C. Top of ROPS	84.6 in (2.15 m)
D. Bottom of level bucket, fully raised	133.3 in (3.39 m)
Overall length:	
E. without attachment with coupler	129.5 in (3.29 m)
F. with heavy duty bucket on ground with XHD bucket	159.1 in (4.04 m)
G. Maximum dump angle	46.1°
H. Dump height:	
with heavy duty bucket	109.0 in (2.77 m) @ 46.1°
with XHD bucket	99.2 in (2.52 m) @ 46.1°
I. Dump reach at maximum height with heavy duty bucket	39.0 in (0.99 m) @ 46.1°
Maximum attachment rollback:	
J. Bucket on ground	30°
K. Bucket at full height	84°
L. Track on ground rubber	74 in (1.88 m)
L. Track on ground steel	66 in (1.7 m)
M. Ground clearance – bottom of belly pan	12.6 in (0.32 m)
N. Angle of departure	37.7°
Clearance circle:	
O. without bucket – Rubber Track	67.4 in (1.71 m)
P. with 84 in (2.13 m) heavy duty bucket on ground – Rubber Track	102.3 in (2.60 m)
Q. Clearance circle rear – Rubber Track	69.5 in (1.77 m)
R. Track gauge	60.6 in (1.54 m)
S. Over the track width – Rubber Track	78.3 in (1.99 m)
S. Over the track width – Steel Track:	
14 in (356 mm) tracks	74.6 in (1.894 m)
18 in (457 mm) tracks	78.6 in (1.995 m)

**TRACK SELECTION**

Type	Area	Ground Pressure	Width to Outside Track
17.7 in (450 mm) – Rubber Track	2,286 in <sup>2</sup> (1.48 m <sup>2</sup> )	6.1 psi (42.2 kPa)	78.3 in (1.99 m)
14 in (356 mm) – Steel Track	1,851 in <sup>2</sup> (1.2 m <sup>2</sup> )	9.1 psi (62.6 kPa)	74.6 in (1.894 m)
18 in (457 mm) – Steel Track	2,377 in <sup>2</sup> (1.5 m <sup>2</sup> )	7.3 psi (50.2 kPa)	78.6 in (1.995 m)

**OPTIONAL BUCKETS**

Type	Width	Weight	Heaped Capacity
Dirt & Foundry	78 in (1.98 m)	440 lb (200 kg)	17.7 ft <sup>3</sup> (0.50 m <sup>3</sup> )
Low Profile Extended	78 in (1.98 m)	540 lb (245 kg)	19.1 ft <sup>3</sup> (0.54 m <sup>3</sup> )
	84 in (2.13 m)	575 lb (262 kg)	20.5 ft <sup>3</sup> (0.58 m <sup>3</sup> )
Light Material	84 in (2.13 m)	540 lb (245 kg)	27.5 ft <sup>3</sup> (0.78 m <sup>3</sup> )
Heavy-Duty	78 in (1.98 m)	530 lb (240 kg)	15.5 ft <sup>3</sup> (0.44 m <sup>3</sup> )
	84 in (2.13 m)	550 lb (250 kg)	17.0 ft <sup>3</sup> (0.48 m <sup>3</sup> )
Heavy-Duty Extended with SmartFit Teeth	78 in (1.98 m)	697 lb (316 kg)	18.9 ft <sup>3</sup> (0.54 m <sup>3</sup> )
	84 in (2.13 m)	728 lb (330 kg)	20.5 ft <sup>3</sup> (0.58 m <sup>3</sup> )
XHD (Extra Heavy Duty)	84 in (2.13 m)	900 lb (410 kg)	33.8 ft <sup>3</sup> (0.96 m <sup>3</sup> )
XHD (Extra Heavy Duty) with SmartFit Teeth	84 in (2.13 m)	990 lb (450 kg)	33.8 ft <sup>3</sup> (0.96 m <sup>3</sup> )

## STANDARD EQUIPMENT

### OPERATOR ENVIRONMENT

See page 1

### ENGINE

Charge Air Cooler (CAC)  
Dual element air cleaner  
Organic Acid Technology (OAT)  
Anti-freeze solution to -34° F  
Over and under radiator and oil cooler  
3-stack after cooler/radiator/oil cooler configuration  
Glow plugs  
Integral engine oil cooler  
Fuel filter with water trap  
Master electrical disconnect  
Jump start terminal  
Hydraulically driven reversible fan

### DRIVETRAIN

2-speed hydrostatic four wheel drive  
SAHR disc parking brake  
Foot pedal modes - Accelerate, Trans and Decelerate

## OPTIONAL EQUIPMENT

### OPERATOR ENVIRONMENT

Open Cab (ROPS/FOPS Level 1) w/ side screens; Keyed Start  
Mechanical Suspension Seat - Vinyl  
Demolition cab door with polycarbonate

### HYDRAULICS

Enhanced High-Flow auxiliary hydraulics – EHF:  
@ 4,100 psi (283 bar) – 41.6 gpm (157 L/min)  
Second auxiliary hydraulics

### HYDRAULICS

Auxiliary hydraulics:  
@ 3,450 psi (238 bar) – 24.2 gpm (91.5 L/min)  
High-flow auxiliary hydraulics:  
@ 3,450 psi (238 bar) – 41.6 gpm (157 L/min)  
6 micron oil filtration system  
3-spool loader control valve  
Auxiliary hydraulic disconnects, ISO flat-face – connect-under-pressure with case drain  
Hydraulic circuit pedal lock  
Auxiliary function lockout override  
Loader lift lockout override  
Heavy-duty hydraulic oil cooler  
Loader arm float position  
Loader function lockout system  
Auxiliary front electric control  
Hydraulic one-way self leveling  
Auto Ride Control  
Creep Speed Mode  
Auxiliary flow control within cab

### TRACKS

14 in (356 mm) – Steel Tracks  
18 in (457 mm) – Steel Tracks

### OTHER

Language decals  
Buckets – see page 3  
Bolt-on bucket cutting edges  
Special paint

### LOADER

Hydraulic attachment coupler  
Vertical lift geometry  
Loader lift arm support pin

### TRACKS

Heavy Duty Rubber Tracks

### OTHER STANDARD FEATURES

LED lights - 2 front, 2 side, 2 rear flood  
Pre-wired for rotating beacon  
Lockable service access hood  
Single-point daily servicing  
Rear tail lights  
Remote oil and fuel filters  
Block heater  
Debris ingress sealing

### TELEMATICS

CASE SiteWatch™ Telematics – includes hardware and a 1-yr data subscription  
SiteConnect Module providing remote diagnostics capability

### SERVICE PARTS

Road lights  
Four-corner LED strobe  
Precleaner  
FOPS Level 2  
3 inch (76.2 mm) retractable seat belt  
Bolt-on heavy-duty bucket teeth  
Rotating beacon  
Four point lift hook  
Class III 48 in (1.22 m) pallet forks  
1150 CCA battery for high altitude  
Fire Extinguisher  
Tamper resistant front door bracket  
Attachment Hose Kit  
Drawbar  
Extra counterweights not offered for this model

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