



## ENGINE

Model	FPT F5H FL463 A*G001
Emissions Certification	Tier 4 Final
Type	Diesel, Turbo – Direct Injection
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/ external EGR
Exhaust aftertreatment	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	74 hp (55 kW)
Net	68 hp (51 kW)
Peak torque @ 1400 RPM	232 lb-ft (314 N-m)
Radiator:	
Core type	All aluminum
Core size area	2.05 ft <sup>2</sup> (0.191 m <sup>2</sup> )
Rows of tubes x columns	31 x 4
Cap pressure	13 +/- 2 psi (0.90 +/- 0.14 bar)
Fan:	
Diameter	20.4 in (518 mm)
Ratio	0.96:1 standard, 1.1:1 high flow
Water pump:	
Style	Centrifugal
Flow	29 gpm (110 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	Servo-assist mechanical
Pump to engine ratio	1:1
Displacement	2.81 in <sup>3</sup> (46 cm <sup>3</sup> )
Flow @ rated engine RPM:	
@ 97% efficiency	29.4 gpm (111 L/min)
Charge pressure	360 psi (24.5 bar)
System relief pressure	5,220 psi (360 bar)
Drive pump controls	Electro-hydraulic
Pump to engine ratio	1:1
Displacement	2.75 in <sup>3</sup> (45 cm <sup>3</sup> )
Flow @ rated engine RPM:	
@ 97% efficiency	28.8 gpm (109 L/min)
Charge pressure	362 psi (25 bar)
System relief pressure	5,220 psi (360 bar)
Drive motors:	
Max. displacement	28.7 in <sup>3</sup> (470 cm <sup>3</sup> )
Displacement:	
High speed	17.2 in <sup>3</sup> (282 cm <sup>3</sup> )
Motor RPM @ high idle and 97% efficiency:	
2-speed	355
Motor torque @ max. displacement and relief pressure, calculated @ 5,220 psi (360 bar):	1,987 lb-ft (2 694 N-m)
Travel speed:	
Low range	7.0 mph (11.3 kph)
High range	10.5 mph (16.9 kph)
Final drive	Single-reduction chain drive
Drive chain:	
Size	ASA #100
Tensile strength	30,000 lb (133.4 kN)
Axles:	
Torque @ max. displacement and relief pressure	5,957 lb-ft (8 077 N-m)
Diameter	2.44 in (62 mm)
Length	15.6 in (396 mm)
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	120 amp
Starter	4.29 hp (3.2 kW)
Battery	12-volt low-maintenance 950 cold-cranking amps @ 0° F (-18° C°)

## OPERATOR ENVIRONMENT

ROPS/FOPS Level 1 canopy w/ side screens;  
Keyed start ignition; Tilt ROPS/FOPS; Rear  
window w/ emergency escape; Deluxe cloth,  
suspension seat vinyl, w/ 2 in (51 mm) retractable 3  
point lap seat belt, w/ heater and lumbar support;  
Hand and foot throttle; 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 and security lockout.

Warning lights with 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/ open cab; 165 lb operator;	
72 in Low Profile bucket; full of fuel;	
12 x 16.5 tires:	8,000 lb (3 630 kg)
Shipping weight	7,665 lb (3 475 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)
Suspension seat	22 lb (10.0 kg)
Additional counterweight	300 lb (136.0 kg)

## HYDRAULICS

Implement pump type	Gear
Displacement:	
Standard aux.	2.23 in <sup>3</sup> (36.6 cm <sup>3</sup> )
High-flow aux.	1.24 in <sup>3</sup> (20.4 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	37.6 gpm (142.5 L/min)
Loader control valve:	
Type	3 spool/open center/series - series
Relief pressure	3,046 psi (210 bar)
Port relief pressures:	
Loader raise	3,263 psi (225 bar)
Bucket curl	3,770 psi (260 bar)
Bucket dump	1,160 psi (80 bar)
Hydraulic lines:	
Tubing	37° JIC Flare
Loop hoses	SAE 100 R19

## HYDRAULICS CONT.

### Hydraulic oil cooler:

Number of fins	10 per inch (3.94 per cm)
Number of tube rows x columns	11 x 2
Area	130.7 in <sup>2</sup> (843.2 cm <sup>2</sup> )

Hydraulic filter	Beta (4) = 75/spin-on
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### Lift cylinders:

Bore diameter	2.75 in (69.9 mm)
Rod diameter	1.75 in (44.5 mm)
Stroke	33.4 in (847.9 mm)
Closed length	47.1 in (1 196 mm)

### Bucket cylinders:

Bore diameter	3.0 in (76.2 mm)
Rod diameter	1.5 in (38.1 mm)
Stroke	16.4 in (410 mm)
Closed length	24.0 in (610 mm)

## SERVICE CAPACITIES

Fuel tank	25.5 gal (96.5 L)
Engine oil w/ filter	8.9 qt (8.5 L)

### Hydraulic system:

Reservoir	6.0 gal (22.7 L)
Total	11.99 gal (45.46 L)
Chain tanks – per side	5.8 gal (22.2 L)

## PERFORMANCE SPECS

### Rated operating capacity – ROC\*:

50% of tipping load	2,800 lb (1 270 kg)
w/ additional counterweight	2,900 lb (1 315 kg)

Tipping load*	5,600 lb (2 540 kg)
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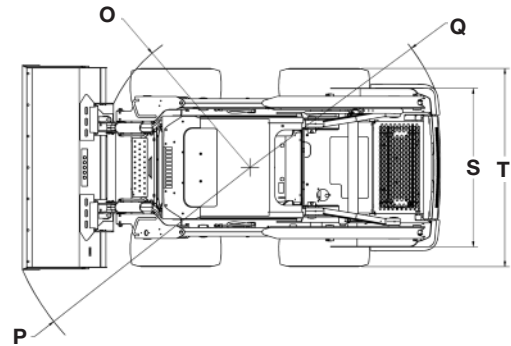
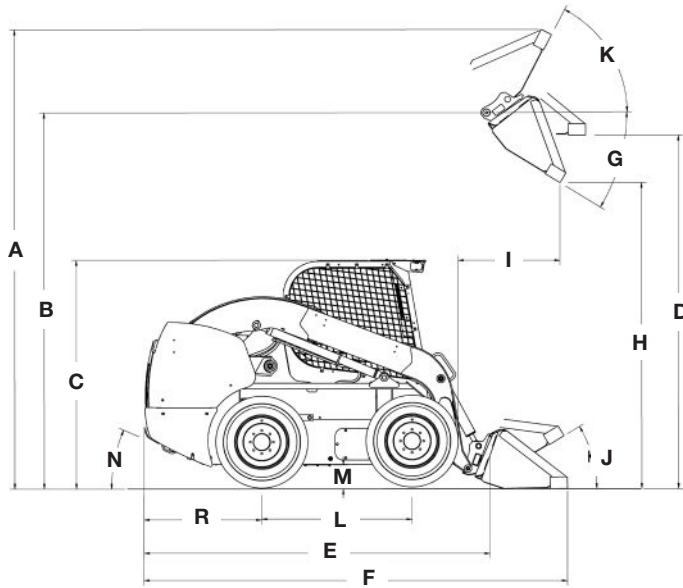
### Breakout forces @ 3,150 psi (217 bar)\*:

Bucket cylinders	8,620 lb (38.3 kN)
Lift cylinders – tip limit	6,030 lb (27.3 kN)

### Cycle times:

Raise	4.5 sec
Lower	2.6 sec
Dump	2.6 sec
Roll back	2.0 sec

NOTE: \*Measured using 72 in (1.83 m) foundry/ excavating bucket.



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

## DIMENSIONS

### A. Overall operating height:

with foundry/excavating bucket	159.7 in (4.06 m)
with low profile extended bucket	168.8 in (4.29 m)

### Height to:

B. Bucket hinge pin	129.5 in (3.29 m)
C. Top of ROPS	78.8 in (2.00 m)
D. Bottom of level bucket, fully raised	122.6 in (3.12 m)

### Overall length:

E. without attachment with coupler	117.6 in (2.99 m)
F. with foundry/excavating bucket on ground	142.8 in (3.63 m)
with low profile extended bucket	151.9 in (3.86 m)

G. Maximum dump angle	54.7°
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### H. Dump height:

with foundry/excavating bucket	103.1 in (2.62 m) @ 45°
with low profile extended bucket	96.6 in (2.45 m) @ 45°

I. Dump reach at maximum height with low profile extended bucket	38.3 in (0.97 m) @ 45°
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### Maximum attachment rollback:

J. Bucket on ground	33.6°
K. Bucket at full height	84.8°

L. Wheelbase	52.0 in (1.32 m)
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M. Ground clearance – bottom of belly pan	8.0 in (0.20 m)
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N. Angle of departure	23.5°
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### Clearance circle:

O. without bucket	54.2 in (1.38 m)
P. with 72 in (1.83 m) foundry/excavating bucket in carry position	84.0 in (2.14 m)
with 72 in (1.83 m) extended low profile on ground	92.4 in (2.35 m)

Q. Clearance circle rear	70.4 in (1.79 m)
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R. Rear axle to bumper	40.7 in (1.03 m)
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S. Tread over gauge with spec tires	56.9 in (1.45 m)
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T. Over the tire width spec tires	69.8 in (1.77 m)
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## OPTIONAL BUCKETS

Type	Width	Weight	Heaped Capacity
Dirt & Foundry	72 in (1.83 m)	420 lb (190 kg)	16.2 ft <sup>3</sup> (0.46 m <sup>3</sup> )
	78 in (1.98 m)	440 lb (200 kg)	17.7 ft <sup>3</sup> (0.50 m <sup>3</sup> )
Low Profile	72 in (1.83 m)	480 lb (218 kg)	14.8 ft <sup>3</sup> (0.42 m <sup>3</sup> )
Low Profile Extended	72 in (1.83 m)	510 lb (232 kg)	17.7 ft <sup>3</sup> (0.50 m <sup>3</sup> )
	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	72 in (1.83 m)	475 lb (216 kg)	23.3 ft <sup>3</sup> (0.66 m <sup>3</sup> )
	84 in (2.13 m)	540 lb (245 kg)	27.5 ft <sup>3</sup> (0.78 m <sup>3</sup> )
Manure & Slurry	72 in (1.83 m)	480 lb (218 kg)	19.1 ft <sup>3</sup> (0.54 m <sup>3</sup> )
Heavy-Duty	72 in (1.83 m)	510 lb (230 kg)	14.1 ft <sup>3</sup> (0.40 m <sup>3</sup> )
	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	72 in (1.83 m)	667 lb (303 kg)	17.4 ft <sup>3</sup> (0.49 m <sup>3</sup> )
	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> )

## STANDARD EQUIPMENT

### OPERATOR ENVIRONMENT

See page 1

### ENGINE

Charge Air Cooler (CAC)  
Dual element air cooler  
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

### DRIVETRAIN

2-speed hydrostatic four wheel drive  
ASA #100HS drive chain  
SAHR disc parking brake

### HYDRAULICS

Auxiliary hydraulics:  
@ 3,050 psi (210 bar) – 24.2 gpm  
(91.5 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

### LOADER

Manual attachment coupler  
Auxiliary front electric control  
Vertical lift geometry  
Loader lift arm lock support pin

### TIRES

12 X 16.5 Heavy duty

### OTHER STANDARD FEATURES

Halogen lights – 2 front, 2 side, 2 rear flood  
Pre-wired for rotating beacon  
Lockable service access hood  
Single-point daily service  
Rear tail lights  
Remote oil drain  
Remote oil and fuel filters  
Block heater  
Debris ingress sealing  
Mounting points for add-on counterweights

## OPTIONAL EQUIPMENT

### OPERATOR ENVIRONMENT

Enclosed cab:  
Fully sealed and pressurized – FSP  
Glass door with wiper and washer  
Sliding side windows – removable  
Heater and air conditioner  
AM/FM Bluetooth radio with 2 speakers  
Keyless start ignition  
8 in Color LCD Display  
Economy Mode (auto idle shutdown)  
Auto Engine Protection Shutdown  
Electro-hydraulic controls:  
For drive/steering, loader functions  
Switchable between H and ISO patterns  
Adjustable sensitivity of controls  
Mechanical hand controls - H pattern  
Hand and foot controls:  
Hand controls the loader drive function  
and foot controls the bucket and boom  
Deluxe cloth, air suspension seat, with heater  
and lumbar support  
Demolition cab door with polycarbonate  
FOPS level 2

Ignition Timeout  
Machine Settings User Access Levels  
Operator Security Codes

### HYDRAULICS

High-flow auxiliary hydraulics – combined:  
@ 3,050 psi (210 bar) – 37.6 gpm  
(142.5 L/min)  
Second auxiliary hydraulics  
Hydraulic one-way self-leveling  
Ride Control (mechanical controls)  
Auto Ride Control (EH controls)  
Auxiliary flow control within cab

### LOADER

Hydraulic attachment coupler

### DRIVETRAIN

Creep Speed Mode (standard with  
EH Controls)

### OTHER

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

### SERVICE PARTS

3 inch (76.2 mm) retractable seat belt  
Bolt-on heavy-duty bucket teeth  
Add-on counterweights  
Road lights  
Rotating beacon  
Four-corner LED strobe  
Single point lift device  
Four point lift device  
Aspirator  
Precleaner

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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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**SV280B**

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