



ENGINE

Model	FPT F5H FL463 A*F001
Emissions Certification	Tier 4 Final
Type	4-stroke
Cylinders	4
Bore/Stroke	3.9 x 4.3 in (99 x 110 mm)
Displacement	207 in ³ (3.4 L)
Fuel injection	High pressure, common rail injection
Fuel	Diesel
Fuel filter	Spin on, Beta (4) = 20
Air filter	Dry type element w/ warning restriction indicator
Exhaust aftertreatment:	Particulate Matter Catalyst – PM Catalyst
Radiator:	
Core type	All aluminum
Fan:	
Style	Direct drive
Lubrication/cooling oil pump:	
Style	Integral
Engine oil:	
Pump:	
	Deep sump plate cooler w/ pressurized under-piston nozzles
Pump operating angle ratings:	
Side-to-side	Rated 35°
Fore and aft	Rated 35°
Oil filtration	Spin on, full flow
Engine speeds	RPM
Rated – full load	2500
Low idle	950
High idle – no load	2500
Horsepower @ 2500 RPM:	
Gross	74 hp (55 kW)
Net	70 hp (52 kW)
Peak torque @ 1400 RPM:	
Gross	233 lb-ft (316 N-m)
Net	227 lb-ft (308 N-m)

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

DRIVETRAIN

Transmission	Hydrostatic transmission	
Pump relief	6,092 psi (42 000 kPa)	
Pump flow @ 2500 RPM	37.0 gpm (140 L/min)	
Differential:	Open standard/limited slip or 100% lock opt.	
Front axles:		
Differential ratio	3.67	
Planetary ratio	6.00	
Final axle ratio	22.00	
Gear box:		
1st ratio	2.46	
Gear box HS:		
1st ratio	2.75	
2nd ratio	1.16	
Planetaries	Outboard	
Service brakes:	Master cylinder hydraulically actuated, wet disc on front axle	
Parking brake:	Mechanical, caliper on front axle	
Travel speeds	Forward	Reverse
	mph (kph)	mph (kph)
1st Low	3.7 (6.0)	3.7 (6.0)
2nd High	12.4 (20.0)	12.4 (20.0)
Travel speeds – HS	Forward	Reverse
	mph (kph)	mph (kph)
1st Low	3.3 (5.3)	3.3 (5.3)
2nd High	8.9 (14.4)	8.9 (14.4)
3rd High	20.6 (33.1)	20.6 (33.1)

NOTE: Travel speeds at full engine throttle
w/ 365/80 R29 tires.

ELECTRICAL

Voltage	12 Volts
Alternator	120 amp
Batteries	95 AHR, 900 CCA

OPERATOR ENVIRONMENT

Base and Deluxe Cab w/ heater; Key start; Articulated power steering w/ tilt column; Full adjustable, cloth suspension seat; Foot throttle; Single joystick w/ electronic speed shift control F/N/R switch and proportional loader control; Cup holder; Retractable seat belt; Storage tray on Deluxe Cab; Sun screen – front; Opening side window; Dome light; Wipers – front and rear; 12-volt auxiliary power; Lighter cigar and ashtray; Pocket cellular phone; Coat hook; External rearview mirrors; Loader control lockout.

Electronic information center
Displays/Gauges:
Vehicle speed; Hourmeter; Floating functionality on; High flow functionality on; Clock; Vehicle directions; Gear number engaged; PM Catalyst icons.

Indicator lights:

Diff. lock; Main hydraulic enabled; Turn light – left and right; Rear work lamps; Work lamps; Main high beam; Side lights; Stop; Warning signal; Rabbit; Hand brake; Brake fluid level; Quick coupler on; Ride Control on; Creep speed; PM Catalyst; Low fuel level; Clogging air filter; Engine oil pressure; Glow plug; Alternator changing.

Audible alarms:

Caution alarm; Critical alarm; Backup alarm.

Horn

NOTE: If equipped w/ option.

OPERATING WEIGHT

Z-Bar:

Unit equipped w/ ROPS/FOPS cab w/ heater, standard counterweight, 365/80 R20 Dunlop tires, front and rear fenders, 1.3 yd³ (1.0 m³) general purpose bucket w/ edge, full fuel, 165 lb (75 kg) operator:

13,303 lb (6 034 kg)

Including optional counterweight:

13,633 lb (6 184 kg)

HYDRAULICS

Pump – steering/implement:

Open-centered pressure/flow compensated

Fixed gear type:

Standard flow:

Max. 22.5 gpm @ 2500 RPM @ 3,626 psi
(Max. 85 L/min @ 2500 RPM @ 25 000 kPa)

Optional high flow:

Max. 34.3 gpm @ 2500 RPM @ 2,901 psi
(Max. 130 L/min @ 2500 RPM @ 20 000 kPa)

Loader control valve:

Open-center, Hydraulic Loader Control w/ single lever includes: Forward/Neutral/Reverse switch, Floating switch, Low/High Travel mode switch, Auxiliary Function Roller

Loader auxiliary steering

Main relief pressure 3,336 psi (23 000 kPa)

Filtration:

15-micron, full flow replaceable cartridges on return line

SERVICE CAPACITIES

Fuel tank	22.7 gal (86.0 L)
Hydraulic system:	
Reservoir	10.6 gal (40.0 L)
Total	14.0 gal (53.0 L)
Front and rear axle:	
Front axle	2.3 gal (8.7 L)
Rear axle	2.6 gal (10.0 L)
Rear axle HS	2.5 gal (9.5 L)
Engine oil w/ filter	1.8 gal (7.0 L)
Cooling*	3.4 gal (13.0 L)

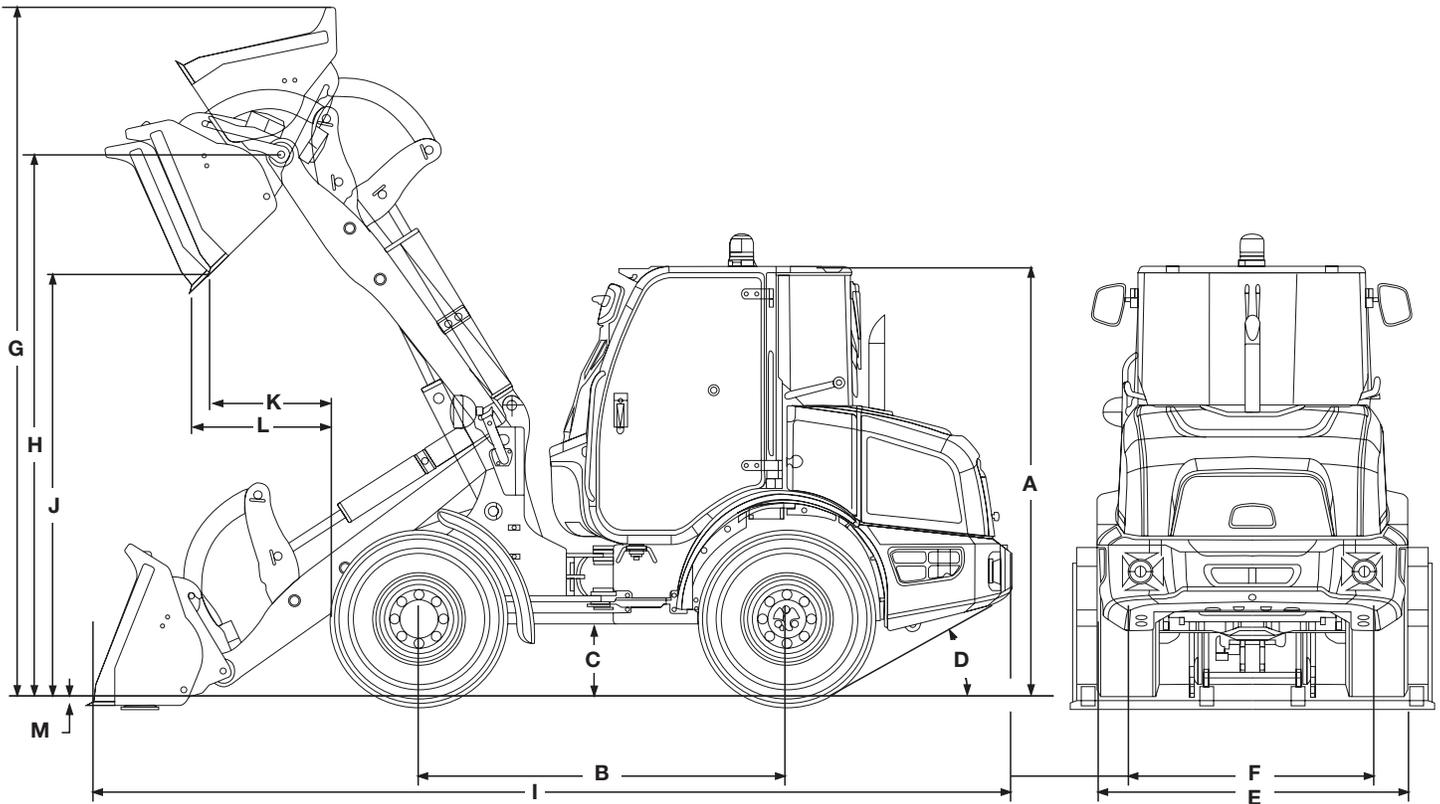
NOTE: *1.72 gal (6.5 L) antifreeze + 1.72 gal (6.5 L) water.

OTHER SPECIFICATIONS

Lift cylinders	Two (2)
Bore diameter	3.3 in (82.5 mm)
Rod diameter	2.0 in (50.0 mm)
Stroke	29.6 in (751.0 mm)
Dump cylinder:	
Bore diameter	3.5 in (88.7 mm)
Rod diameter	2.3 in (57.1 mm)
Stroke	20.0 in (507.0 mm)

Loader:
 Z-Bar:
 Z-Bar loader linkage
 Single control for lift and tilt
 Positive hold float
 Hydraulic attachment coupler:
 Skid steer compatible/horizontal
 pin compatible

Cycle time:	
Z-Bar:	
Raise w/ rated bucket load	5.8 sec
Dump w/ rated bucket load	1.7 sec
Lower – empty	3.8 sec



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

DIMENSIONS

A. Height to top of ROPS cab	105.5 in (2 680 mm)
B. Wheelbase	87.6 in (2 225 mm)
C. Ground clearance under shaft	19.4 in (493 mm)
Ground clearance under axles	14.6 in (370 mm)
D. Angle of departure	32°
Width:	
E. Overall without bucket	73.2 in (1 860 mm)
F. Centerline tread	59.1 in (1 500 mm)
Turning radius – outside	157.0 in (3 987 mm)
Turning angle:	
From center	40°
Total angle	80°
Rear axle oscillation – total	20°

PERFORMANCE SPECS

321F Z-Bar	1.3 yd³ GP (1.0 m³) GP Bucket with Bolt-on Edge	1.7 yd³ GP (1.3 m³) LM Bucket with Bolt-on Edge
ISO bucket capacity – struck Heaped	1.05 yd ³ (0.8 m ³) 1.31 yd ³ (1.0 m ³)	1.44 yd ³ (1.1 m ³) 1.70 yd ³ (1.3 m ³)
Bucket width – outside	82.7 in (2 100 mm)	82.7 in (2 100 mm)
Bucket weight – includes coupler and added components	1,045 lb (474 kg)	1,142 lb (518 kg)
G. Operating height – fully raised with spillguard	176.0 in (4 471 mm)	182.1 in (4 626 mm)
H. Hinge pin height – fully raised	133.7 in (3 395 mm)	133.7 in (3 395 mm)
I. Overall length – bucket level on ground	234.3 in (5 952 mm)	237.6 in (6 036 mm)
Dump angle – fully raised	45°	47°
J. Dump height – fully raised, 45° dump	98.1 in (2 493 mm)	96.0 in (2 438 mm)
K. Bucket reach – fully raised, 45° dump	39.5 in (1 003 mm)	43.1 in (1 095 mm)
L. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	53.0 in (1 347 mm)	55.0 in (1 396 mm)
M. Dig depth	3.3 in (84 mm)	3.2 in (83 mm)
Operating load – ISO with optional counterweight	4,096 lb (1 858 kg) 4,265 lb (1 934 kg)	4,145 lb (1 880 kg) 4,316 lb (1 958 kg)
Maximum material density – ISO with optional counterweight	3,131 lb/yd ³ (1 858 kg/m ³) 3,261 lb/yd ³ (1 935 kg/m ³)	2,437 lb/yd ³ (1 446 kg/m ³) 2,538 lb/yd ³ (1 506 kg/m ³)
Tipping load – ISO:		
Straight	9,740 lb (4 418 kg)	9,877 lb (4 480 kg)
Straight with optional counterweight	10,301 lb (4 672 kg)	10,255 lb (4 652 kg)
40° turn	8,192 lb (3 716 kg)	8,289 lb (3 760 kg)
40° turn with optional counterweight	8,530 lb (3 869 kg)	8,632 lb (3 916 kg)
Lift capacity:		
Full height	8,345 lb (3 785 kg)	8,249 lb (3 742 kg)
Full height with optional counterweight	8,354 lb (3 789 kg)	8,253 lb (3 744 kg)
Maximum reach		
Ground	10,503 lb (4 764 kg)	10,406 lb (4 720 kg)
Ground with optional counterweight	13,164 lb (5 971 kg)	12,975 lb (5 885 kg)
Ground with optional counterweight	13,163 lb (5 970 kg)	12,975 lb (5 885 kg)
Breakout force with tilt cylinder	10,076 lb (4 570 kg)	9,021 lb (4 092 kg)
Maximum rollback:		
@ Ground	37°	37°
@ Carry position	44°	44°
@ Maximum reach	53°	53°
@ Full height	53°	53°
Maximum grading angle with bucket – back dragging	65°	66°
Loader clearance circle with bucket	373.9 in (9 496 mm)	376.1 in (9 554 mm)

FORKS

321F Z-Bar		With Optional Additional Counterweight
Fork length	47.2 in (1 200 mm)	47.2 in (1 200 mm)
Fork weight – includes coupler	394 lb (869 kg)	394 lb (869 kg)
Operating load – level ground	4,753 lb (2 156 kg)	4,998 lb (2 267 kg)
Tipping load – straight	6,989 lb (3 170 kg)	7,372 lb (3 344 kg)
Tipping load – 40° turn	5,942 lb (2 695 kg)	6,247 lb (2 834 kg)
Fork load center	19.7 in (500 mm)	19.7 in (500 mm)

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

See page 1

ENGINE

FPT F5H FL463 A*F004
Fuel filter with water trap
Dual element air cleaner

LOADER

See page 2

DRIVETRAIN

4-wheel drive
Open – front and rear axles
Hydrostatic transmission
Single joystick with electronic speed shift control
F/N/R switch and proportional loader control
Outboard planetary axles
Hydraulic wet disc brakes
Mechanical parking brake

HYDRAULICS

Hydraulic remote control
3-spool loader control valve
3 Diagnostic quick couplers

OTHER

Front and rear fenders
Lights:
2 Front driving headlights – high/low beam
2 Rear flood lights
2 Stop tail lights and backup light
Front and rear turn signal/flash
Drawbar pin
Articulation locking pin
Tie-down and Lift-up point – front and rear
Backup alarm
Wired for radio
Bucket position indicator

OPTIONAL EQUIPMENT

OPERATOR ENVIRONMENT

Creep speed 0 – 3.1 mph (5 kph)
TeleScop adjustable steering column on
Deluxe Cab
Rotating beacon
Limited slip – front and rear axles
100% lock – front and rear axles
Mechanical coupler
Horizontal pin coupler
Air conditioning
Radio ready antenna and speakers

LOADER

Additional auxiliary flow:
Max. 22.5 gpm @ 2500 RPM @ 3,626 psi
(Max. 85 L/min @ 2500 RPM @ 25 000 kPa)
Optional High flow:
Max. 34.3 gpm @ 2500 RPM @ 2,901 psi
(Max. 130 L/min @ 2500 RPM @ 20 000 kPa)
Buckets – see performance data:
General purpose standard
General purpose light material
4-IN-1®
STD forks
Tiltable forks
Auto Ride Control
Return to dig

TIRES

405/70 R20 SPT9 L2 DUNL
14.5-20MPT-04 MITAS
365/80 R20 SPT L2(DL) – Standard
365/80 R20 EM MITAS
405/70 R20 EM MITAS

OTHER

Tool box
Counterweight:
330 lb (150 kg)
Mounts on rear chassis

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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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