



ENGINE

Model	FPT F5MGL413J
Emissions	Tier 4 Final/Stage V Certified
Type	4-cycle
Cylinders	4
Bore/Stroke	4.0 x 4.3 in (102 x 110 mm)
Displacement	220 in ³ (3.6 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 after treatment:	
	Fixed geometry turbocharger w/ aircooled inter cooler, ATS (after treatment system.)
Radiator:	
Core type	All aluminum
Fan:	
Style	Direct drive
Lubrication/cooling oil pump:	
Style	Integral
Engine oil:	
Pump:	
	Rotor Pump w/ deep sump pan, plate cooled & 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:	
Peak	112 hp (82 kW)
Net	98 hp (72 kW)
Peak torque @ 1400 RPM:	
Gross	232 lb-ft (314 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	42.3 gpm (160 L/min)	
Differential:	Standard limited slip, Optional Diff Lock.	
Planetaries	Outboard	
Service brakes:	Master cylinder hydraulically actuated, wet disc on front axle	
SAHR parking brake:	Mechanical, caliper on front and rear axles	
Travel speeds – HS	Forward	Reverse
	mph (kph)	mph (kph)
1st Low	3.6 (5.9)	3.6 (5.9)
2nd High	12.4 (14.4)	12.4 (20.0)
3rd High	25 (40.0)	25 (40.0)

NOTE: Travel speeds at full engine throttle
w/ 17.5 R25 L3 radial.

ELECTRICAL

Voltage	12 Volts
Alternator	160 amp
Batteries	95 AHR, 900 CCA

OPERATOR ENVIRONMENT

ROPS: ISO 3471: 2008; Deluxe Cab w/ heater and A/C; Key start; Articulated power steering w/ tilt column; Adjustable, cloth suspension seat; Foot throttle; Single joystick w/ electronic speed shift control F/N/R switch, proportional loader control and proportional hydraulic auxiliary w/detent switch hydraulic; Cup holder; High vis orange 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 rear-view mirrors; Loader control lockout; 4 Corner Strobes; Display w/ encoder and integrated backup camera; 416 JRB compatible coupler
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; SAHR 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, 17.5R25 XHA2 L3 Michelin tires, front and rear fenders, 1.9 yd³ (1.5 m³) general purpose bucket w/ edge, full fuel, 165 lb (75 kg) operator:

19,775 lb (8 970 kg)

HYDRAULICS

Pump – steering/implement:

Open-centered pressure/flow compensated

Fixed gear type:

Standard flow:

Max. 25.1 gpm @ 3,336 psi
(Max. 95 L/min @ 230 bar)

Optional high flow:

Max. 33.0 gpm @ 4,061 psi
(Max. 125 L/min @ 280 bar)

Loader control valve:

Closed-center circuit. Electro-hydraulic 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 2,920 psi (20 133 kPa)

Filtration:

15-micron, full flow replaceable cartridges on return line

SERVICE CAPACITIES

Fuel tank	31.1 gal (118.0 L)
DEF tank	5.7 gal (21.5 L)
Hydraulic system:	
Reservoir	19.3 gal (73.0 L)
Total	24.0 gal (92.0 L)
Front and rear axle:	
Front axle	2.4 gal (8.9 L)
Rear axle	2.4 gal (8.9 L)
Engine oil w/ filter	1.8 gal (7.0 L)
Cooling*	3.7 gal (13.9 L)

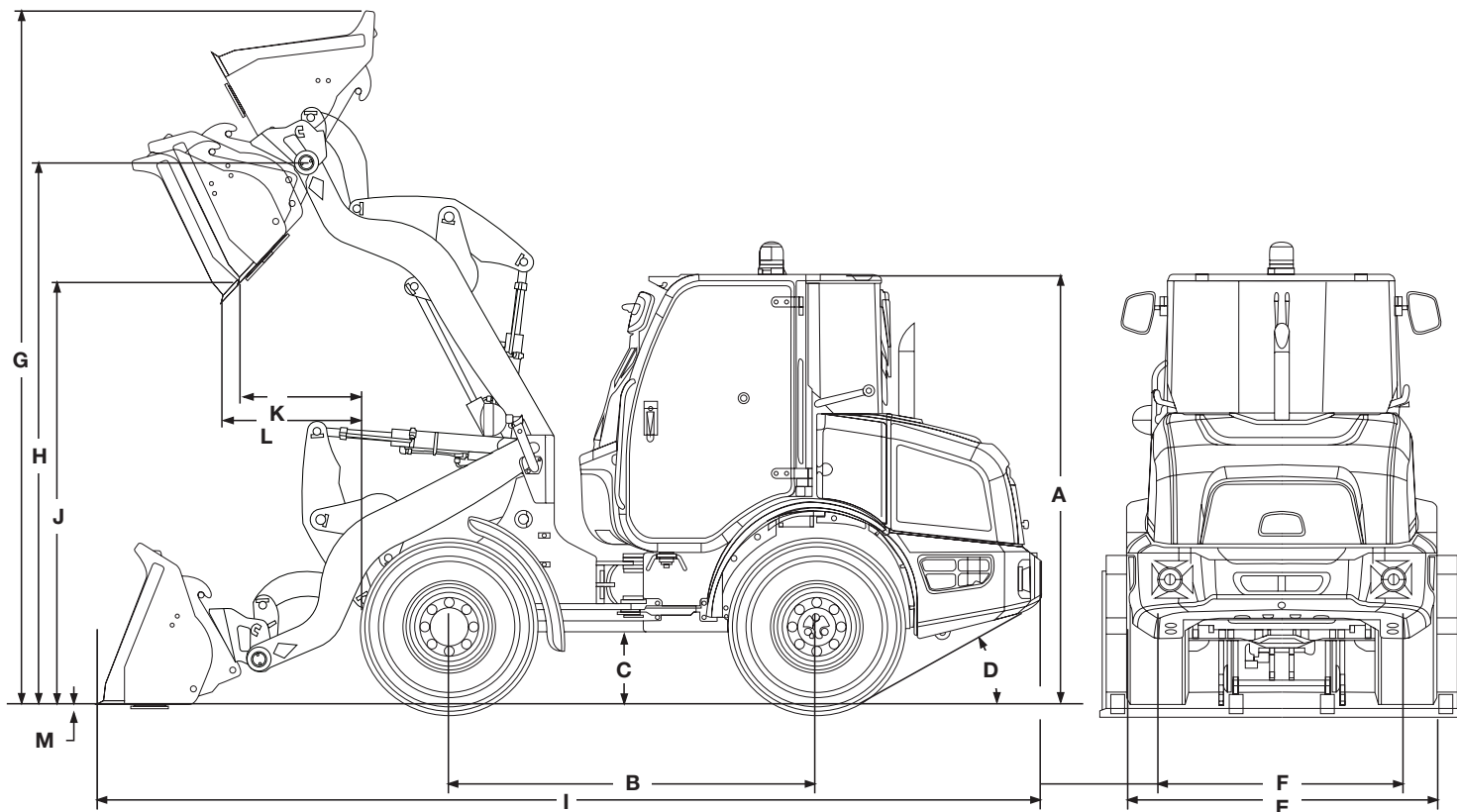
NOTE: *1.72 gal (6.5 L) antifreeze + 1.72 gal (6.5 L) water.

OTHER SPECIFICATIONS

Lift cylinders	Two (2)
Bore diameter	4.00 in (101.6 mm)
Rod diameter	2.25 in (57.2 mm)
Stroke	31.79 in (807.5 mm))
Tilt cylinder:	
Bore diameter	4.25 in (108.0 mm)
Rod diameter	2.25 in (57.1 mm)
Stroke	20.94 in (531.9 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	0.9 sec
Lower – empty	3.8 sec



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

Machine equipped with JRB coupler 1.96 yd³ (1.5 m³ bucket) 17.5R25 XHA2 L3 Michelin.

DIMENSIONS

A. Height to top of ROPS cab	118.8 in (3 017 mm)
B. Wheelbase	102.4 in (2 600 mm)
C. Ground clearance under shaft	13.7 in (349 mm)
Ground clearance under axles	19.2 in (488 mm)
D. Angle of departure	33°
Width:	
E. Overall without bucket	90.1 in (2 289 mm)
F. Centerline tread	70.9 in (1 800 mm)
Turning radius – outside	185.7 in (4 716 mm)
Turning angle:	
From center	40°
Total angle	80°
Rear axle oscillation – total	20°

PERFORMANCE SPECS

421G Z-Bar	1.9 yd³ GP (1.5 m³) GP JRB Bucket with Bolt-on Edge	2.2 yd³ GP (1.7 m³) LM Bucket with Bolt-on Edge
ISO bucket capacity – struck	1.70 yd³ (1.3 m³)	1.90 yd³ (1.45 m³)
Heaped	1.96 yd³ (1.5 m³)	2.2 yd³ (1.7 m³)
Bucket width – outside	94.5 in (2 400 mm)	94.5 in (2 400 mm)
Bucket weight – includes coupler and added components	1,684 lb (764 kg)	1,772 lb (804 kg)
G. Operating height – fully raised with spillguard	194.3 in (4 934 mm)	194.3 in (4 934 mm)
H. Hinge pin height – fully raised	146.2 in (3 714 mm)	146.2 in (3 714 mm)
I. Overall length – bucket level on ground	251.6 in (6 390 mm)	251.6 in (6 390 mm)
Dump angle – fully raised	45°	45°
J. Dump height – fully raised, 45° dump	106.4 in (2 702 mm)	104.6 in (2 656 mm)
K. Bucket reach – fully raised, 45° dump	34.6 in (880 mm)	36.5 in (927 mm)
L. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	53.0 in (1 346 mm)	53.5 in (1 359 mm)
M. Dig depth	3.4 in (86 mm)	3.5 in (90 mm)
Operating Load (ROC) – ISO	6,476 lb (2 937 kg)	6,347 lb (2 879 kg)
Maximum material density (Rigid) – ISO	3,301 lb/yd³ (1 959 kg/m³)	2,885 lb/yd³ (1 309 kg/m³)
Tipping load – ISO: (Rigid)		
Straight	14,718 lb (6 676 kg)	14,436 lb (6 548 kg)
40° turn	12,952 lb (5 875 kg)	12,694 lb (5 758 kg)
Lift capacity:		
Full height	14,826 lb (6 725 kg)	14,716 lb (6 675 kg)
Maximum reach	14,334 lb (6 502 kg)	13,380 lb (6 069 kg)
Ground	15,333 lb (6 955 kg)	14,308 lb (6 490 kg)
Breakout force with tilt cylinder	15,806 lb (7 170 kg)	14,831 lb (6 727 kg)
Maximum rollback:		
@ Ground	45°	45°
@ Carry position	48°	48°
@ Maximum reach	61°	62°
@ Full height	65°	65°
Maximum grading angle with bucket – back dragging	56°	56°
Loader clearance circle with bucket	412.3 in (10 474 mm)	413.8 in (10 512 mm)

FORKS

421G Z-Bar	
Fork length	47.2 in (1 200 mm)
Fork weight – includes coupler	1,684 lb (746 kg)
Operating load – level ground	7,255 lb (3 291 kg)
Operating mass	19,775 lb (8 970 kg)
Tipping load – straight	10,725 lb (4 865 kg)
Tipping load – 40° turn	9,453 lb (4 288 kg)
Fork load center	15.0 in (380 mm)

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

See page 1

ENGINE

FPT F5MGL413J
Fuel filter with water trap
Dual element air cleaner
Smart Mode feature

LOADER

See page 2

DRIVETRAIN

4-wheel drive – shift on the fly
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
SAHR (spring applied hydraulic release)
park brake

HYDRAULICS

3-spool loader control valve
3 Diagnostic quick couplers
Adjustable electro hydraulic (EH) loader controls
Smooth, moderate & aggressive settings
for both lift and tilt responsiveness:
Return to Dig
Hydraulic skid steer compatible coupler
Connect under pressure connectors
Remote drain of hydraulic oil
Aux. Hydraulic drain line coupling
Auxiliary flow 25.1 gpm @ 3,336 psi
(95 L/min @ 230 bar)

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
Tool box
Wired for radio
Bucket position indicator
Front electrical socket for powered attachments
4 corner strobes
CASE SiteWatch™ Telematics
CASE Site Connect™ & Site Manager™
includes hardware and a 5-yr
Advanced data subscription

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 open rear axles
Radio, antenna, and speakers

LOADER

Buckets – see performance data:
General purpose standard
General purpose light material
Forks
Auto Ride Control
Cold weather with Block Heater - Two 680
CCA batteries and Low-temp Hytran oil
Optional High Flow:
Max 33.0 gpm @ 4,061 psi
(125 L/min @280 bar)
Adjustable Ride Control Settings

TIRES

17.5R25 XHA2 L3 Michelin
17.5R25 L3 Triangle

OTHER

LED work lights, 2 front and 2 Rear

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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.