



ENGINE

Model	FPT F5BFL413A*B
Emissions Certification	Tier 4 Final
Type	Diesel 4-stroke, Turbocharged
Cylinders	4
Bore/Stroke	3.9 x 4.33 in (99 x 110 mm)
Displacement	207 in ³ (3.4 L)
Fuel injection	Direct, high pressure common rail – HPCR
Fuel	Diesel
Engine speeds	RPM
Rated speed – full load	2200
Low idle	900 – 1100
High idle – no load	2320 – 2440
Horsepower @ 2200 RPM:	
Gross	110 hp (82 kW)
Net	108 hp (81 kW)
Maximum torque @ 1400 RPM:	
Gross	339 lb-ft (460 N-m)
Net	338 lb-ft (459 N-m)
Torque rise at rated speed	30% +/- 5%
Radiator:	
Core type	Square wave
Core size area	486 in ² (3 145 cm ²)
Rows of tubes	5
39° fan:	
Style	9 blade suction
Diameter	19.685 in (500 mm)
Ratio*	1.4:1
Pump operating angle ratings:	
Side to side	Rated 35°
Fore and aft	Rated 35°
Oil filtration	Replaceable, full flow cartridge

NOTE: Meets federal emission regulations.

*Viscous fan.

DRIVETRAIN

Transmission – standard: 4F - 3R Powershift H-Type transmission		
Speed adjustable Auto Ride Control		
Gear ratios	Forward/Reverse	
1st	5.533/4.549	
2nd	3.359/2.762	
3rd	1.533/1.260	
4th	0.811/–	
Travel speeds – H-Type Powershift Transmission		
	Forward	Reverse
	mph (kph)	mph (kph)
1st	4.3 (6.9)	5.1 (8.3)
2nd	7.1 (11.4)	8.5 (13.7)
3rd	15.2 (24.5)	18.3 (29.4)
4th	26.3 (42.4)	–
Torque converter ratio		2.38
Limited Slip Differential		
Front/Rear axle:		
Differential ratio	2.75/2.75	
Planetary hub ratio	6.92/6.92	
Total reduction ratio	19.04/19.04	
Service brakes:		
Individually applied, power assisted, hydraulically actuated, maintenance-free, self-adjusting, outboard mounted, wet disc, 3 per side.		
Total disc area		339 in ² (1 092 cm ²)
Parking brakes		Mechanically actuated wet brake pack on transmission output shaft
NOTE: Travel speeds w/ 16.9-28 tires.		

ELECTRICAL

Voltage	12 Volts, negative ground
Alternator	120 amp
Dual Batteries	600 amp each
Power plugs – 1	30 amp

OPERATOR ENVIRONMENT

ROPS/FOPS certified protective cab; 2 door w/ heat, A/C, defroster, floor mat, Bluetooth radio, front and rear wiper; Interior rearview convex mirror; Mechanical suspension deluxe seat; 2 in (50 mm) retractable seat belt; Cup holder and storage trays positioned on the right side; and enclosed storage compartment on left side.

Gauges:

Engine coolant temperature; Converter oil temperature; Fuel level; Tachometer/hourmeter; DEF level.

Warning lights:

Air cleaner restriction; Alternator; A/C high pressure; Cold start; Engine oil pressure; Hydraulic oil filter bypass; Parking brake engagement; Low fuel; Water in fuel; Low DEF.

Audible alarms w/ diagnostics:

Coolant temperature; Engine oil pressure; Parking brake engagement; Converter oil temperature; Shuttle engagement/seat position; Backup alarm; Low DEF.

Horn Dual switched front and rear

OPERATING WEIGHT

Operating Weight:

Cab, HVAC, 15' in-line cylinder Extendahoe backhoe, 6-IN-1 bucket with cutting edge, 24" backhoe bucket, light counterweight, hydraulic side shift, auto ride control and 480/80 R28 wheels.

22,245 lb (10 090 kg)

HYDRAULICS

Pump:

Sauer Danfoss Variable Displacement Axial
Piston Pump
Flow Ratings 36 gpm @ 2,973 psi
(136 L/min @ 205 bar)

Main relief pressure:

2,973 +/- 44 psi (205 +/- 3 bar)

Filtration:

7-micron, full flow replaceable cartridge on
return line, condition indicator light for filter.

Oil cooler

Heavy-duty

Loader control valve:

Two or three spool sectional valve. The two
Spool valve has single lever control for lift and
tilt. The three spool valve has a pilot controlled
clam valve. The lift lever has positive hold "float"
position and "return to dig" feature. Valve is
post compensated with flow sharing. Valve
allows simultaneous operation of loader lift and
loader bucket.

Backhoe flow @ 2200 RPM:

Maximum backhoe flow for 1-way hydraulics:
36 gpm @ 2,973 psi
(136 L/min @ 205 bar)

Manual or Pilot backhoe:

Six, seven, or eight spool sectional valve. Basic
control valve is closed center type with circuits
in parallel and flow sharing feature. Flow sharing
created by compensator. Stabilizer circuit may
have an external pilot operated check valves in
lowering direction (safety valve).

1-way flow auxiliary hydraulics:

1-way flow hydraulic valve is equipped with a
variable flow feature adjustable at the valve.
Actuation:
Left-hand joystick/pedal.

2-way flow auxiliary hydraulics:

2-way flow hydraulic valve
Actuation:
Left-hand joystick.

Combined auxiliary hydraulics:

Combined 1-way/2-way auxiliary hydraulics

SERVICE CAPACITIES

Fuel tank	34.6 gal (131 L)
DEF tank	3.5 gal (13.2 L)
Hydraulic system: Total	37 gal (142 L)
Transmission – total system: 4WD Standard	22 qt (20.8 L)
Standard front axle: 4WD Differential	1.7 gal (6.5 L)
Rear axle: Differential and planetaries	5.6 gal (21.2 L)
Engine oil w/ filter	8.5 qt (8.0 L)

OTHER SPECIFICATIONS

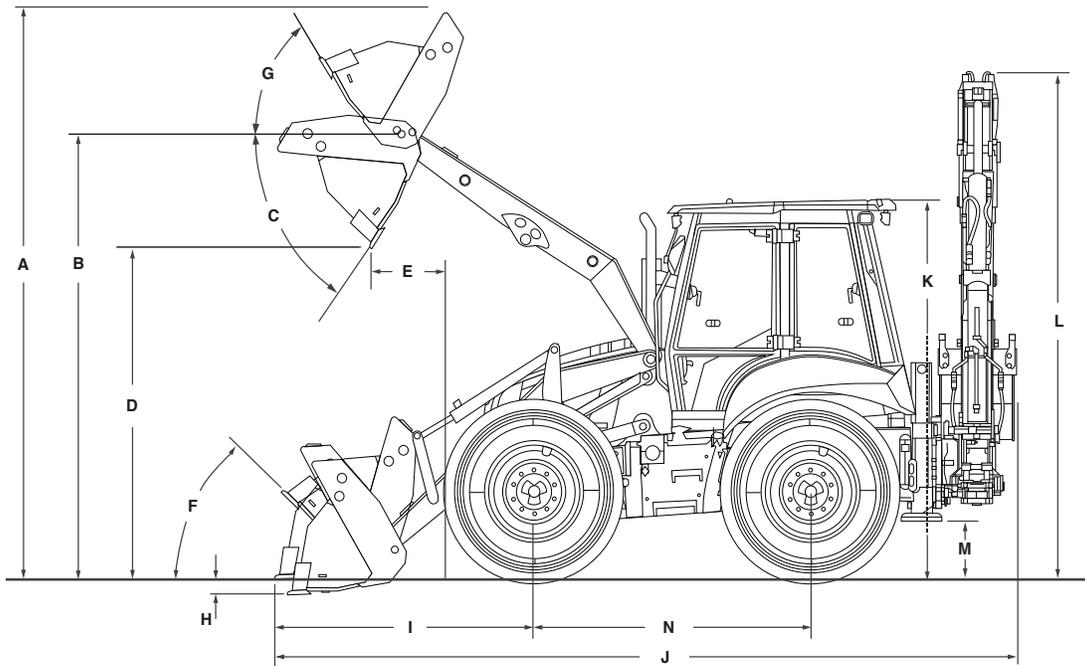
Tires:

16.9-28 R4. 12-ply rating
440/80R-28 IT530
Michelin 440/80 R28 XMCL

Turning radius* Curb to Curb:

2 wheel steer mode 26 ft 10 in (8.18 m)
4 wheel steer mode 15 ft 9 in (4.81 m)

NOTE: *Turning radius dimensions curb to curb
w/ 440/80 R28 tires.



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

LOADER DIMENSIONS

	6 IN 1 Bucket	4 IN 1® Bucket
A. Overall operating height – fully raised	14 ft 9 in (4.50 m)	14 ft 9 in (4.50 m)
B. Bucket hinge pin fully raised	11 ft 5 in (3.48 m)	11 ft 5 in (3.48 m)
C. Dump angle at full height	55°	55°
D. Dump clearance at full height, 45° dump: Bucket	8 ft 7 in (2.61 m)	8 ft 7 in (2.61 m)
E. Dump reach at full height, 45° dump – from bumper: Bucket Forks for 6 IN 1 bucket	1 ft 11 in (0.59 m) 7 ft 6 in (2.28 m)	1 ft 11 in (0.59 m) 7 ft 6 in (2.28 m)
Bucket rollback:		
F. @ Groundline	45°	45°
G. @ Full height	56°	56°
H. Digging depth below grade: Bucket flat	5.5 in (139 mm)	5.5 in (139 mm)
I. Reach from front axle centerline – bucket on ground	6 ft 9 in (2.06 m)	6 ft 9 in (2.06 m)
Lift capacity to full height – calculated values	6,779 lb (3 075 kg)	6,779 lb (3 075 kg)
Breakout force:		
Lift cylinders	7,949 lbf (3 536 daN)	7,949 lbf (3 536 daN)
Dump cylinders	12,358 lbf (5 497 daN)	12,358 lbf (5 497 daN)
Raising time to full height	3.3 sec	3.3 sec
Bucket dumping time	2.3 sec	2.3 sec
Lowering time:		
Power down	2.7 sec	2.7 sec
Clam:		
Open time	1.9 sec	1.9 sec
Close time	1.4 sec	1.4 sec

NOTE: Loader dimensions taken with 440/80-R28 tires.

DIMENSIONS

	Side Shift Backhoe with 440/80-R28 tires
J. Overall transport length	19 ft 5 in (5.90 m)
Overall transport width	8 ft 2 in (2.48 m)
Height:	
K. To top of cab	9 ft 9 in (2.96 m)
L. Transport	13 ft 2 in (4.01 m)
M. Ground clearance at backhoe frame	15.7 in (398 mm)
Angle of departure	27°
N. Wheelbase:	
440/80-R28 tires	7 ft 3 in (2.20 m)

AXLE RATINGS

	Rear	Front
Maximum static	56,202 lbf (22 500 daN)	56,202 lbf (22 500 daN)
Dynamic operating	20,232 lbf (9 000 daN)	20,232 lbf (9 000 daN)

LOADER BUCKET SIZES

Type	Width	Weight	Struck	Heaped Capacity
6 IN 1 Bucket with forks and bolt-on edge	94 in (2.40 m)	2,209 lb (1 002 kg)	1.20 yd ³ (0.92 m ³)	1.50 yd ³ (1.15 m ³)
4 IN 1 [®] Bucket with bolt-on edge	94 in (2.40 m)	1,785 lb* (810 kg)	1.20 yd ³ (0.92 m ³)	1.50 yd ³ (1.15 m ³)

NOTE: *Weight of 6 IN 1 and 4 IN 1[®] bucket includes bucket includes cylinders and hoses.

BACKHOE BUCKET SIZES

Type	Width	Weight	Heaped Capacity
Heavy Duty (SV Series Bucket)	24 in (610 mm)	348 lb (158 kg)	6.4 ft ³ (0.18 m ³)
Heavy Duty (N-Series Bucket)	24 in (610 mm)	427 lb (194 kg)	7.7 ft ³ (0.22 m ³)

Various widths of backhoe buckets are available.

BACKHOE LIFT CAPACITIES

	In-Line Cylinder Backhoe		Overlapping Cylinder Backhoe	
	Retracted	Extended	Retracted	Extended
Boom Lift	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)
+16 ft (4.87 m)	2,918 (1 326)	2,219 (1 008)	—	2,633 (1 197)
+14 ft (4.27 m)	3,434 (1 561)	2,401 (1 091)	3,967 (1 803)	2,662 (1 210)
+12 ft (3.66 m)	3,526 (1 603)	2,462 (1 119)	3,881 (1 764)	2,638 (1 199)
+10 ft (3.05 m)	3,485 (1 584)	2,492 (1 133)	3,681 (1 673)	2,581 (1 173)
+8 ft (2.44 m)	3,181 (1 446)	2,462 (1 119)	3,489 (1 586)	2,504 (1 138)
+6 ft (1.83 m)	2,989 (1 358)	2,361 (1 073)	3,311 (1 505)	2,416 (1 098)
+4 ft (1.22 m)	2,887 (1 312)	2,300 (1 045)	3,148 (1 431)	2,330 (1 059)
+2 ft (0.61 m)	2,837 (1 289)	2,269 (1 032)	2,999 (1 363)	2,253 (1 024)
Ground Level	2,857 (1 299)	2,269 (1 032)	2,860 (1 300)	2,198 (999)
-2 ft (0.61 m)	2,928 (1 331)	2,310 (1 050)	2,730 (1 241)	2,171 (987)
-4 ft (1.22 m)	2,867 (1 303)	2,330 (1 059)	2,611 (1 187)	2,189 (995)
-6 ft (1.83 m)	2,827 (1 285)	2,320 (1 055)	2,501 (1 137)	2,281 (1 037)
-8 ft (2.44 m)	2,806 (1 276)	2,330 (1 059)	2,400 (1 091)	2,372 (1 078)
-10 ft (3.05 m)	2,867 (1 303)	2,361 (1 073)	2,306 (1 048)	2,521 (1 146)
-12 ft (3.66 m)	3,303 (1 501)	2,452 (1 114)	2,295 (1 043)	2,739 (1 245)
-14 ft (4.27 m)	—	2,685 (1 220)	—	—
-15 ft (4.57 m)	—	3,870 (1 759)	—	—
Dipper Lift				
+14 ft (4.27 m)	—	3,120 (1 418)	—	2,497 (1 135)
+12 ft (3.66 m)	4,062 (1 846)	3,049 (1 386)	5,113 (2 324)	3,029 (1 377)
+10 ft (3.05 m)	3,917 (1 780)	3,009 (1 368)	5,958 (2 708)	3,368 (1 531)
+8 ft (2.44 m)	3,958 (1 799)	3,039 (1 382)	6,637 (3 017)	3,659 (1 663)
+6 ft (1.83 m)	4,228 (1 922)	3,141 (1 428)	7,478 (3 399)	3,962 (1 801)
+4 ft (1.22 m)	5,015 (2 280)	3,394 (1 543)	10,144 (4 611)	4,360 (1 982)
+2 ft (0.61 m)	—	3,860 (1 755)	—	—
Ground Level	—	4,559 (2 072)	—	—

NOTE: Boom and Dipper Lift Capacities are rated per SAE J31 and are 87% of the maximum hydraulic lift force available with the specified options.

BACKHOE OPERATIONAL DATA

	In-Line Cylinder Backhoe		Overlapping Cylinder Backhoe	
	Retracted	Extended	Retracted	Extended
Digging depth:				
Maximum	15 ft 4 in (4.67 m)	19 ft 4 in (5.88 m)	15 ft 7 in (4.75 m)	19 ft 7 in (5.97 m)
2 ft (610 mm) flat bottom	15 ft 2 in (4.63 m)	19 ft 2 in (5.85 m)	15 ft 6 in (4.72 m)	19 ft 6 in (5.93 m)
8 ft (2.44 m) flat bottom	14 ft 1 in (4.29 m)	18 ft 4 in (5.59 m)	14 ft 5 in (4.38 m)	18 ft 8 in (5.68 m)
Overall reach from swing pivot	19 ft 2 in (5.83 m)	22 ft 10 in (6.97 m)	19 ft 5 in (5.93 m)	23 ft 3 in (7.09 m)
Loading height	12 ft 8 in (3.87 m)	15 ft 1 in (4.60 m)	13 ft 5 in (4.10 m)	16 ft 10 in (5.12 m)
Loading reach	6 ft 3 in (1.90 m)	9 ft 5 in (2.88 m)	2 ft 10 in (0.88 m)	4 ft 8 in (1.43 m)
Swing arc	180°	180°	180°	180°
Bucket rotation – speed hole	203°	203°	198°	198°
Digging force:				
Bucket cylinder – SAE rated 3,050 psi	13,418 lb (5 971 daN)	13,418 lb (5 971 daN)	13,739 lb (6 114 daN)	13,739 lb (6 114 daN)
Dipper cylinder – SAE rated 3,050 psi	7,547 lb (3 358 daN)	5,368 lb (2 389 daN)	7,555 lb (3 362 daN)	5,437 lb (2 420 daN)

NOTE: Lift capacities apply straight to the rear of prime mover. 4WD with 440/80-R28 tires and equipped with 36 in (914 mm) heavy-duty bucket except as noted.

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

See page 1

ENGINE

FPT F5 diesel
Selective Catalytic Reduction – SCR
Full flow engine oil filter
Aspirated air cleaner – replaceable dual element dry type with radial seal
Fuel filter with water trap
Radiator with de-aeration bottle
Antifreeze to -34° F (-37° C)
Electronic throttles – foot and rotary hand
Self-adjusting belt
High Pressure Common Rail computer controlled injection with diagnostic features
ECO Power Mode
Auto Engine Idle
Auto Engine Shutdown
Auto Protection Shutdown
Electronic Fuel Priming
Glow Plugs

DRIVETRAIN

H-Type Powershift transmission, 4F-3R, hydraulic clutch shifting, kick down, transmission disconnect and FNR switch in loader control lever, includes auto shift mode
Front axle:
4WD limited slip outboard planetary drive
Rear axle:
4WD limited slip outboard planetary drive
Torque converter – 11.8 in (300 mm)
On-the-go electric 4WD control
Electric F/R shuttle control
Mechanically actuated wet parking brake pack on transmission output shaft

OPTIONAL EQUIPMENT

LOADER

Hydraulic front quick coupler
Tool portfolio of additional attachments
Buckets – see page 2

HYDRAULICS

Load Sensing Closed Center with Variable Volume Pump
Heavy-duty hydraulic oil cooler
7-micron, spin on oil filter

LOADER

Tool carrier loader arms with self leveling in both directions and return to dig; Single lever 4-function loader control: lift, dump, clutch cut-out
Auxiliary hydraulics for loader-mounted equipment with thumb-operated proportional control

BACKHOE

Hydraulic Side Shift Backhoe
15' In-line cylinder curved boom with Extendahoe®
Dirt stabilizer pads
Pilot operated control system:
Thumb-operated proportional Electro-Hydraulic Extendahoe® control
Thumb-operated horn button
Thumb-operated auxiliary hydraulic control
Infinitely adjustable towers
In-cab switchable “excavator to backhoe” control pattern change
Hydraulic Transport Lock

BACKHOE

15' Overlapping Cylinder Boom w/ Extendahoe
Hydraulic thumb for overlapping cylinder boom
1-way auxiliary hydraulics
2-way auxiliary hydraulics
Combined 1-way/2-way auxiliary hydraulics
Universal Footstreet stabilizer pads
Bucket quick coupler
Buckets – see page 4

OTHER

Forward tilt engine hood
Front/Rear tie downs
Reflective logos
Signal Lights – cab:
2 rear tail/stop
2 rear flashers/turn
Working/Driving Lights – cab and canopy:
Adjustable halogen work lights – 55 W:
4 front
4 rear
Master disconnect switch and remote jump-start terminals
Hydrostatic steering
Backup alarm
Vertical spin-on engine oil, fuel and hydraulic filters
Front & rear fenders
Dual 12 volt batteries
Tool Box

TELEMATICS

CASE SiteWatch™ Telematics includes:
Hardware and 5-yr advanced data subscription

WARRANTY

1-Year/Unlimited-Hour Full-Coverage Base Limited Warranty
2-Year/2,000-Hour Extended Engine and Drive Train Warranty

OTHER

LED Working/Driving Light Package:
4 front
4 rear
Cold Weather Lubricants

SERVICE PARTS

3 inch seat belt
N Series compatible backhoe coupler for in-line cylinder backhoe

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CASE Construction Equipment is biodiesel-friendly. NOTE: All engines meet current EPA emissions regulations. All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.



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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