



## 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 <sup>3</sup> (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 <sup>2</sup> (3 145 cm <sup>2</sup> )
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 <sup>2</sup> (1 092 cm <sup>2</sup> )
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, 4-IN-1 bucket with cutting edge, 24" backhoe bucket, light counterweight, ride control and 480/80 R28 wheels.  
19,930 lb (9 040 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:  
35.9 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	34.9 gal (132 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.

## LOADER DIMENSIONS

	6 IN 1 Bucket	4 IN 1 <sup>®</sup> Bucket
Overall operating height – fully raised	14 ft 9 in (4.50 m)	14 ft 9 in (4.50 m)
Height to:		
Bucket hinge pin fully raised	11 ft 5 in (3.48 m)	11 ft 5 in (3.48 m)
Dump angle at full height	55°	55°
Dump clearance at full height, 45° dump:		
Bucket	8 ft 7 in (2.62 m)	8 ft 7 in (2.62 m)
Dump reach at full height, 45° dump – from bumper:		
Bucket	1 ft 11 in (0.59 m)	1 ft 11 in (0.59 m)
Forks for 6 IN 1 bucket	7 ft 5 in (2.27 m)	7 ft 5 in (2.27 m)
Bucket rollback:		
@ Groundline	45°	45°
@ Full height	56°	56°
Digging depth below grade:		
Bucket flat	5 in (127 mm)	5 in (127 mm)
Reach from front axle centerline – bucket on ground	6 ft 9 in (2.05 m)	6 ft 9 in (2.05 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

	Center Pivot Backhoe with 440/80-R28 tires
Overall transport length	23 ft 11 in (7.29 m)
Overall transport width	8 ft 2 in (2.48 m)
Height:	
To top of cab	9 ft 9 in (2.96 m)
Transport	13 ft 3 in (4.04 m)
Ground clearance at backhoe frame	19.0 in (483 mm)
Angle of departure	27°
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 <sup>3</sup> (0.92 m <sup>3</sup> )	1.50 yd <sup>3</sup> (1.15 m <sup>3</sup> )
4 IN 1 <sup>®</sup> Bucket with bolt-on edge	94 in (2.40 m)	1,785 lb* (810 kg)	1.20 yd <sup>3</sup> (0.92 m <sup>3</sup> )	1.50 yd <sup>3</sup> (1.15 m <sup>3</sup> )

NOTE: \*Weight of 6 IN 1 and 4 IN 1<sup>®</sup> 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 <sup>3</sup> (0.18 m <sup>3</sup> )
Heavy Duty (N-Series Bucket)	24 in (610 mm)	427 lb (194 kg)	7.7 ft <sup>3</sup> (0.22 m <sup>3</sup> )

Various widths of backhoe buckets are available.

**BACKHOE LIFT CAPACITIES**

	In-Line Cylinder Backhoe		Overlapping Cylinder Backhoe	
	Retracted	Extended	Retracted	Extended
<b>Boom Lift</b>	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)
<b>Ground Level</b>	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)	—	—
<b>Dipper Lift</b>				
+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)	—	—
<b>Ground Level</b>	—	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)	23 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 (3.86 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

Center Pivot Backhoe  
15' In-line cylinder curved boom with Extendahoe®  
Flip over stabilizer pads (center pivot)  
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  
Bucket quick coupler  
Buckets – see page 2

### OTHER

Forward tilt engine hood  
Front/Rear tie downs  
Reflective logos  
Signal Lights:  
2 rear tail/stop  
2 front flashers/turn  
2 rear flashers/turn  
Working/Driving Lights:  
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 Drivetrain 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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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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