ENGINE

Model: FPT F5BFL413B
Emissions Certification: Tier 4 Final
Type: Diesel 4-stroke, Turbocharged
Cylinders: 4
Bore/Stroke: 3.90 x 4.33 in (99 x 110 mm)
Displacement: 207 in³ (3.4 L)
Fuel injection: Direct, high pressure common rail – HPCR
Fuel: Diesel

Engine speeds:
- RPM
- Rated speed – full load: 2200
- Low idle: 900 – 1000
- High idle – no load: 2330 – 2430

Horsepower @ 2200 RPM:
- Gross: 97 hp (72 kW)
- Net: 95 hp (71 kW)

Maximum torque @ 1400 RPM:
- Gross: 334 lb·ft (453 N·m)
- Net: 333 lb·ft (452 N·m)

Torque rise at rated speed: 45% +/- 5%

Radiator:
- Core type: Square wave
- Core size area: 486 in² (3 145 cm²)
- Rows of tubes: 4

39° fan:
- Style: 9 blade suction
- Diameter: 19.65 in (499 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: *Engine speeds w/ standard transmission. Meets federal emission regulations.
**Viscous fan.

SPECIFICATIONS

Specifications below apply to both Power Shuttle and PowerDrive S-Type transmission unless otherwise indicated.

Gear ratios: Forward/Reverse
1st: 5.603/4.643
2nd: 3.481/2.884
3rd: 1.584/1.313
4th: 0.793/0.657

Travel speeds – Standard Power Shuttle
Transmission: Forward
1st: 3.8 (6.1)
2nd: 6.0 (9.7)
3rd w/ DD Feature Off: 13.1 (21.1)
4th w/ DD Feature Off: 24.6 (39.6)

Transmission: Reverse
1st: 4.5 (7.3)
2nd: 7.2 (11.6)
3rd w/ DD Feature Off: 15.7 (25.3)
4th w/ DD Feature Off: 29.5 (47.5)

Travel speeds – Optional S-Type PowerDrive
DD Transmission: Forward
1st: 3.8 (6.1)
2nd: 6.0 (9.7)
3rd w/ DD Feature Off: 13.1 (21.1)
4th w/ DD Feature Off: 24.6 (39.6)

DD Transmission: Reverse
1st: 4.5 (7.3)
2nd: 7.2 (11.6)
3rd w/ DD Feature Off: 15.7 (25.3)
4th w/ DD Feature Off: 29.5 (47.5)

Transmission – optional:
PowerDrive H-Type, 4F-4R hydraulic clutch shifting w/ auto shift mode and direct drive

Geas ratios: Forward/Reverse
1st: 3.9 (6.2)
2nd: 4.6 (7.4)
3rd: 22.8 (37.4)
4th: 25.0 (40.2)

Travel speeds – Optional H-Type PowerDrive
DD Transmission: Forward
1st: 3.9 (6.2)
2nd: 6.0 (9.7)
3rd w/ DD Feature Off: 13.1 (21.1)
4th w/ DD Feature Off: 24.6 (39.6)

DD Transmission: Reverse
1st: 4.6 (7.4)
2nd: 7.2 (11.6)
3rd w/ DD Feature Off: 15.7 (25.3)
4th w/ DD Feature Off: 29.5 (47.5)

Torque converter ratio: 2.2

Differential-lock: On-the-go push-button activation

Front/Rear axle (w/ 4WD 12x16.5 front tires):
- Differential ratio: 2.0/2.5
- Planetary hub ratio: 6.0/6.4
- Total reduction ratio: 12.0/16.0

Service brakes:
- Individually applied, power assisted, hydraulically actuated, maintenance-free, self-adjusting, outboard mounted, wet disc, 2 per side.
- Total disc area: 384 in² (0.25 m²)
- Parking brakes: Trans Mounted, spring-applied hydraulic release – SAHR

NOTE: Travel speeds at 2312 rpm: 19.5 L x 24.0 tires. Speeds decrease w/ 17.5 L x 24.0 rear tires.

OPERATING WEIGHT

Configuration 1 – SAE Transport:
- No Operator, GP Loader Bucket, Cab, AC, Small Front Counter Weight, 2WD, Full of Fuel, SAE Carry T4 Final Engine, Pilot Controls, 11 L – 16 @ 52 psi front tires, 17.5 L – 24 @ 30 psi rear tires.
- 17,269 lb (7,883 kg)

Configuration 2 – SAE Transport:
- No Operator, 4.1 Loader Bucket, E-hoe, Cab, big front counter weight, Full of Fuel, SAE Carry T4 Final Engine, Pilot Controls, Galaxy 12 x 16.5 @ 50 psi front tires, Solideal 19.5 L – 24 @ 30 psi rear tires.
- 19,067 lb (8,649 kg)

Add-on weights:
- Cab-over canopy: 309 lb (140 kg)
- Fabricated stabilizer pads: 141 lb (64 kg)
- Counterweights: 700 lb (318 kg)
- Extendahoe®: 286 lb (130 kg)
- 4WD w/ driveshaft guard: 283 lb (128 kg)

ELECTRICAL

Voltage: 12 Volts, negative ground
Alternator: 160 amp
Battery: 850 cold-cranking amps
Optional dual batteries: 850 cold-cranking amps each
Power plugs – 2
30 amps total

OPERATOR ENVIRONMENT

ROPS/FOPS certified protective canopy;
- Anti-vandalism cover for dash – w/ canopy only; Rear fenders extensions; Coat hook w/ garment strap; Interior rearview convex mirror;
- Non-suspension seat – 180° swivel – Vinyl; 2 in (50 mm) retractable seat belt; Cup holder;
- Storage tray mounted on left-hand fender; Right-hand storage compartment w/ lid;
- Audible alarms w/ diagnostics:
  - Engine water 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.

Horn: Dual switched front and rear.

DRIVETRAIN

Transmission – standard:
4F-4R Power Shuttle Synchronesh Transmission manual gear shift, fully synchronized

Transmission – optional:
PowerDrive S-Type, 4F-4R fully synchronized electric/hydraulic shifting w/ auto shift mode and direct drive.

NOTE: *Engine speeds w/ standard transmission. Meets federal emission regulations.
**Viscous fan.

POWERPLANT

Fuel system:
- Common rail – HPCR
- Direct, high pressure

Displacement: 207 in³ (99 x 110 mm)

Bore/Stroke: 3.90 x 4.33 in

Coolant system:
- Temperature sensor; Engine oil pressure;
- Water in fuel; Low DEF.

Air conditioning:
- A/C, high pressure;
- Low fuel;
- Water in fuel;
- Low DEF.

Gauges:
- 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.

Electrical system:
- Voltage: 12 Volts, negative ground
- Alternator: 160 amp
- Battery: 850 cold-cranking amps

Optional dual batteries: 850 cold-cranking amps each
- Power plugs – 2
- 30 amps total
### HYDRAULICS

**Pump:**

Bosch Rexroth Series 31 Variable Displacement Axial Piston Pump

**Main pressure relief:**

- **Standard:** 3,450 +/- 50 psi (238 +/- 3.5 bar)
- **Power Lift:** 3,625 +/- 50 psi (250 +/- 3.5 bar)

**Filtration:**

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

**Oil cooler:**

Heavy-duty

**Loader flow @ rated engine RPM:**

- 41 gpm @ 2,340 psi (156.2 L/min @ 161 bar)

**Loader control valve w/ pilot or manual backhoe controls:**

- Two or three-spool closed center sectional control valve. Single lever manual control for lift and tilt functions. The three-spool valve uses a proportional Electro-Hydraulic control for the auxiliary function. The lift lever has a positive hold “Float” position and a “return-to-dig” feature.

**Loader auxiliary hydraulics w/ proportional thumb switch w/ detent on loader control handle:**

- 0 – 41 gpm @ 2,340 psi (0 – 156.2 L/min @ 161 bar)

**Backhoe flow @ rated engine RPM:**

- 41 gpm @ 3,100 psi (156.2 L/min @ 214 bar)

**Manual backhoe control valve:**

Six, seven, or eight spool sectional closed center control valve. Features “Pro-Control” which includes custom designed spools for each individual function along w/ “swing cushioning” valve for zero-wag swing control. Basic control valve is closed center, w/ circuits in parallel w/ a post-compensated, flow sharing feature for simultaneous operation of all circuits.

### 1-way flow auxiliary hydraulics:

1-way flow hydraulic valve is equipped w/ an adjustable LS relief valve to control attachment pressure and a 6 position flow control selector for 6 detented, distinct flow settings.

**Actuation:**

- Manual backhoe controls – cab floor pedal
- Pilot controls – left-hand joystick

### 2-way flow auxiliary hydraulics:

**Actuation:**

- Activate the 2-way flow switch located on the rear console
- Manual shift – 2-way flow linkage on far right of backhoe tower
- Pilot controls – left-hand joystick.

**NOTE:** Available w/ 1-way/2-way Aux. Hyd. option.

### SERVICE CAPACITIES

**Fuel tank:**

35.0 gal (132.0 L)

**DEF tank:**

3.6 gal (13.5 L)

**Hydraulic system:**

- **Total:** 125 qt (118.0 L)
- **w/ Extendahoe®:** 131 qt (123.6 L)
- **Reservoir w/ filter:** 53 qt (50.5 L)
- **Reservoir w/o filter:** 55 qt (52.4 L)

**Transmission – total system:**

- **2WD Standard:** 18 qt (17.0 L)
- **2WD PowerDrive S-Type:** 23 qt (21.7 L)
- **4WD Standard:** 21 qt (19.4 L)
- **4WD PowerDrive S-Type:** 22 qt (20.7 L)
- **4WD PowerDrive H-Type:** 19 qt (18.0 L)

**Rear axle:**

- 4WD Planetaries – each 0.5 qt (0.5 L)
- 4WD Differential 8.1 qt (7.7 L)
- 4WD Planetary – each 0.5 qt (0.5 L)

**Engine oil w/ filter:**

8.5 qt (8.0 L)

**Cooling system:**

- w/ heater 19.0 qt (18.0 L)
- w/o heater 18.3 qt (17.3 L)

**Window washer reservoir:**

3.0 qt (2.8 L)

### Loader Bucket Sizes

<table>
<thead>
<tr>
<th>Type</th>
<th>Width</th>
<th>Weight</th>
<th>Struck</th>
<th>Heaped Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Lip Bucket</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>without bolt-on edge</td>
<td>82 in</td>
<td>864 lb</td>
<td>0.88 yd³</td>
<td>1.03 yd³ (0.79 m³)</td>
</tr>
<tr>
<td>with bolt-on edge</td>
<td>93 in</td>
<td>1,188 lb</td>
<td>1.10 yd³</td>
<td>1.29 yd³ (0.99 m³)</td>
</tr>
</tbody>
</table>

| 4 IN 1st Bucket with bolt-on edge | 82 in | 1,572 lb | 0.85 yd³ (0.65 m³) | 1.04 yd³ (0.80 m³) |

**NOTE:** Weight of 4 IN 1st bucket includes edges, cylinders and tube lines.

### Backhoe Bucket Sizes

<table>
<thead>
<tr>
<th>Type</th>
<th>Width</th>
<th>Weight</th>
<th>Heaped Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Buckets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 in (305 mm)</td>
<td>295 lb</td>
<td>3.40 ft³ (0.10 m³)</td>
<td></td>
</tr>
<tr>
<td>18 in (457 mm)</td>
<td>356 lb</td>
<td>5.30 ft³ (0.15 m³)</td>
<td></td>
</tr>
<tr>
<td>24 in (610 mm)</td>
<td>427 lb</td>
<td>7.70 ft³ (0.22 m³)</td>
<td></td>
</tr>
<tr>
<td>30 in (762 mm)</td>
<td>489 lb</td>
<td>10.20 ft³ (0.29 m³)</td>
<td></td>
</tr>
<tr>
<td>36 in (914 mm)</td>
<td>552 lb</td>
<td>12.70 ft³ (0.36 m³)</td>
<td></td>
</tr>
</tbody>
</table>

<p>| High Capacity Buckets |       |        |                 |
| 24 in (610 mm)        | 447 lb | 8.50 ft³ (0.24 m³) |
| 30 in (762 mm)        | 502 lb | 10.60 ft³ (0.30 m³) |</p>
<table>
<thead>
<tr>
<th>Description</th>
<th>Long Lip Bucket</th>
<th>4 IN 1&lt;sup&gt;®&lt;/sup&gt; Bucket</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Overall operating height – fully raised</strong></td>
<td>13 ft 9 in (4.18 m)</td>
<td>13 ft 8 in (4.16 m)</td>
</tr>
<tr>
<td><strong>Height to:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Bucket hinge pin fully raised</td>
<td>11 ft 3 in (3.42 m)</td>
<td>11 ft 3 in (3.42 m)</td>
</tr>
<tr>
<td>C. Bucket hinge pin at SAE carry</td>
<td>13.6 in (345 mm)</td>
<td>13.6 in (345 mm)</td>
</tr>
<tr>
<td><strong>D. Dump angle at full height</strong></td>
<td>47°</td>
<td>47°</td>
</tr>
<tr>
<td><strong>E. Dump clearance at full height, 45° dump:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bucket</td>
<td>8 ft 10 in (2.69 m)</td>
<td>8 ft 11 in (2.71 m)</td>
</tr>
<tr>
<td>Clam open</td>
<td>—</td>
<td>9 ft 8 in (2.96 m)</td>
</tr>
<tr>
<td><strong>F. Dump reach at full height, 45° dump – from bumper:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bucket</td>
<td>31.5 in (801 mm)</td>
<td>29.1 in (738 mm)</td>
</tr>
<tr>
<td>Clam open</td>
<td>—</td>
<td>15.3 in (388 mm)</td>
</tr>
<tr>
<td><strong>Bucket rollback:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. @ Groundline</td>
<td>42°</td>
<td>42°</td>
</tr>
<tr>
<td>H. @ SAE carry</td>
<td>42°</td>
<td>42°</td>
</tr>
<tr>
<td>J. @ Full height</td>
<td>Adjustable</td>
<td>Adjustable</td>
</tr>
<tr>
<td><strong>K. Digging depth below grade:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bucket flat</td>
<td>6.1 in (155 mm)</td>
<td>4.8 in (122 mm)</td>
</tr>
<tr>
<td>Clam open – dozing</td>
<td>—</td>
<td>4.1 in (103 mm)</td>
</tr>
<tr>
<td><strong>L. Reach from front axle centerline – bucket on ground</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 ft 10 in (2.07 m)</td>
<td>6 ft 8 in (2.03 m)</td>
<td></td>
</tr>
<tr>
<td><strong>Lift capacity to full height – calculated values:</strong></td>
<td>7,044 lb (3 195 kg)</td>
<td>6,703 lb (3 040 kg)</td>
</tr>
<tr>
<td><strong>Breakout force:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lift cylinders</td>
<td>9,833 lb (4 460 daN)</td>
<td>9,610 lb (4 359 daN)</td>
</tr>
<tr>
<td>Dump cylinders</td>
<td>10,947 lb (4 965 daN)</td>
<td>11,658 lb (5 288 daN)</td>
</tr>
<tr>
<td><strong>Bucket cutting edge width</strong></td>
<td>82.5 in (2.09 m)</td>
<td>82.0 in (2.08 m)</td>
</tr>
<tr>
<td><strong>Maximum grading angle</strong></td>
<td>114°</td>
<td>114°</td>
</tr>
<tr>
<td><strong>Maximum clam opening</strong></td>
<td>—</td>
<td>38.3 in (972 mm)</td>
</tr>
<tr>
<td><strong>Moldboard height</strong></td>
<td>—</td>
<td>36.8 in (934 mm)</td>
</tr>
<tr>
<td><strong>Raising time to full height – manual/pilot controls</strong></td>
<td>2.6/3.2 sec</td>
<td>2.6/3.2 sec</td>
</tr>
<tr>
<td><strong>Bucket dumping time</strong></td>
<td>0.8/1.2 sec</td>
<td>0.8/1.2 sec</td>
</tr>
<tr>
<td><strong>Lowering time:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power down</td>
<td>1.9/2.1 sec</td>
<td>1.9/2.1 sec</td>
</tr>
<tr>
<td>Return-to-dig</td>
<td>2.5/2.2 sec</td>
<td>2.5/2.2 sec</td>
</tr>
<tr>
<td><strong>Clam:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open time</td>
<td>—</td>
<td>1.1 sec</td>
</tr>
<tr>
<td>Close time</td>
<td>—</td>
<td>1.1 sec</td>
</tr>
</tbody>
</table>

**NOTE:** Loader dimensions taken with 4WD, 12.0 x 16.5 front tires and 19.5 L x 24.0 rear tires.

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

<table>
<thead>
<tr>
<th>M. Overall transport length:</th>
<th>2WD with 17.5 L x 24.0 rear tires</th>
<th>4WD with 19.5 L x 24.0 tires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Lip bucket with Quick Coupler</td>
<td>23 ft 5 in (7.14 m)</td>
<td>23 ft 4 in (7.10 m)</td>
</tr>
<tr>
<td>4 IN 1&lt;sup&gt;®&lt;/sup&gt; bucket with Quick Coupler</td>
<td>23 ft 3 in (7.07 m)</td>
<td>23 ft 1 in (7.04 m)</td>
</tr>
<tr>
<td>Long Lip bucket with Straight Links</td>
<td>23 ft 6 in (7.15 m)</td>
<td>23 ft 4 in (7.12 m)</td>
</tr>
<tr>
<td>4 IN 1&lt;sup&gt;®&lt;/sup&gt; bucket with Straight Links</td>
<td>23 ft 3 in (7.09 m)</td>
<td>23 ft 2 in (7.06 m)</td>
</tr>
<tr>
<td>Overall transport width</td>
<td>7 ft 2 in (2.17 m)</td>
<td>7 ft 2 in (2.17 m)</td>
</tr>
<tr>
<td>Height:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To top of canopy</td>
<td>8 ft 8 in (2.64 m)</td>
<td>8 ft 9 in (2.66 m)</td>
</tr>
<tr>
<td>To top of cab</td>
<td>8 ft 9 in (2.68 m)</td>
<td>8 ft 11 in (2.72 m)</td>
</tr>
<tr>
<td>To top of exhaust stack</td>
<td>8 ft 5 in (2.58 m)</td>
<td>8 ft 7 in (2.62 m)</td>
</tr>
<tr>
<td>N. Transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground clearance at backhoe frame</td>
<td>10 ft 10 in (3.29 m)</td>
<td>11 ft 1 in (3.37 m)</td>
</tr>
<tr>
<td>Angle of departure</td>
<td>15.3°</td>
<td>19.0°</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>width over tires:</th>
<th>11.0 L x 16.0</th>
<th>12.0 L x 16.5</th>
<th>12.5/80 x 18.0</th>
<th>19.5 L x 24.0</th>
<th>17.5 L x 24.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.0 L x 16.0</td>
<td>67.5 in (1.72 m)</td>
<td>67.5 in (1.72 m)</td>
<td>70.3 in (1.79 m)</td>
<td>61.2 in (1.55 m)</td>
<td>63.1 in (1.60 m)</td>
</tr>
<tr>
<td>12.0 L x 16.5</td>
<td>67.1 in (1.72 m)</td>
<td>67.1 in (1.72 m)</td>
<td>70.3 in (1.79 m)</td>
<td>61.2 in (1.55 m)</td>
<td>63.1 in (1.60 m)</td>
</tr>
<tr>
<td>12.5/80 x 18.0</td>
<td>70.3 in (1.79 m)</td>
<td>70.3 in (1.79 m)</td>
<td>81.4 in (2.07 m)</td>
<td>81.4 in (2.07 m)</td>
<td>81.7 in (2.07 m)</td>
</tr>
<tr>
<td>19.5 L x 24.0</td>
<td>61.2 in (1.55 m)</td>
<td>61.2 in (1.55 m)</td>
<td>81.4 in (2.07 m)</td>
<td>81.4 in (2.07 m)</td>
<td>81.7 in (2.07 m)</td>
</tr>
<tr>
<td>17.5 L x 24.0</td>
<td>63.1 in (1.60 m)</td>
<td>63.1 in (1.60 m)</td>
<td>81.7 in (2.07 m)</td>
<td>81.7 in (2.07 m)</td>
<td>81.7 in (2.07 m)</td>
</tr>
<tr>
<td>19.5 L x 24.0</td>
<td>84.0 in (2.13 m)</td>
<td>84.5 in (2.15 m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.5 L x 24.0</td>
<td>84.0 in (2.13 m)</td>
<td>84.5 in (2.15 m)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CYLINDERS

<table>
<thead>
<tr>
<th>Loader:</th>
<th>Bore Diameter</th>
<th>Rod Diameter</th>
<th>Stroke</th>
<th>Closed Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lift – 2</td>
<td>3.25 in (82.6 mm)</td>
<td>1.75 in (44.5 mm)</td>
<td>28.86 in (733.0 mm)</td>
<td>42.95 in (1 082.0 mm)</td>
</tr>
<tr>
<td>Dump – 2</td>
<td>3.00 in (76.2 mm)</td>
<td>1.50 in (38.1 mm)</td>
<td>20.33 in (516.5 mm)</td>
<td>29.90 in (759.5 mm)</td>
</tr>
<tr>
<td>4 IN 1&lt;sup&gt;®&lt;/sup&gt; clam – 2</td>
<td>3.00 in (76.2 mm)</td>
<td>1.75 in (44.5 mm)</td>
<td>9.08 in (230.6 mm)</td>
<td>19.62 in (498.3 mm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Backhoe:</th>
<th>Bore Diameter</th>
<th>Rod Diameter</th>
<th>Stroke</th>
<th>Closed Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom</td>
<td>5.00 in (127.0 mm)</td>
<td>2.50 in (63.5 mm)</td>
<td>38.25 in (971.6 mm)</td>
<td>52.82 in (1 341.6 mm)</td>
</tr>
<tr>
<td>Dipperstick</td>
<td>4.75 in (120.7 mm)</td>
<td>2.50 in (63.5 mm)</td>
<td>25.14 in (645.8 mm)</td>
<td>39.65 in (1 007.0 mm)</td>
</tr>
<tr>
<td>Bucket</td>
<td>3.50 in (88.9 mm)</td>
<td>2.50 in (63.5 mm)</td>
<td>35.35 in (897.9 mm)</td>
<td>48.17 in (1 223.6 mm)</td>
</tr>
<tr>
<td>Extendahoe&lt;sup&gt;®&lt;/sup&gt;</td>
<td>3.00 in (76.2 mm)</td>
<td>1.75 in (44.5 mm)</td>
<td>42.05 in (1 068.0 mm)</td>
<td>56.22 in (1 428.0 mm)</td>
</tr>
<tr>
<td>Swing – 2</td>
<td>4.00 in (101.6 mm)</td>
<td>2.00 in (50.8 mm)</td>
<td>11.50 in (292.0 mm)</td>
<td>24.44 in (620.8 mm)</td>
</tr>
<tr>
<td>Stabilizer – 2</td>
<td>4.50 in (114.3 mm)</td>
<td>2.25 in (57.2 mm)</td>
<td>21.37 in (542.9 mm)</td>
<td>33.87 in (860.2 mm)</td>
</tr>
</tbody>
</table>

### AXLE RATINGS

<table>
<thead>
<tr>
<th>Front – 2WD</th>
<th>Rear</th>
<th>Front – 4WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum static</td>
<td>70,821 lb (32 124 kg)</td>
<td>90,145 lb (40 889 kg)</td>
</tr>
<tr>
<td>Dynamic operating</td>
<td>44,261 lb (20 076 kg)</td>
<td>56,200 lb (25 492 kg)</td>
</tr>
<tr>
<td>Static operating</td>
<td>17,704 lb (8 030 kg)</td>
<td>22,480 lb (10 197 kg)</td>
</tr>
<tr>
<td>Oscillation – front axle</td>
<td>22° total – 11° side to side</td>
<td>—</td>
</tr>
</tbody>
</table>
### BACKHOE LIFT CAPACITIES

<table>
<thead>
<tr>
<th></th>
<th>Standard Backhoe</th>
<th>Retracted</th>
<th>Extendahoe®</th>
<th>Extended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boom Lift</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| +16 ft (4.87 m)  | 3,039 (1 178)    | 2,837 (1 287) | 2,115 (0.959) | 2,298 (1 043)
| +14 ft (4.27 m)  | 3,413 (1 458)    | 3,201 (1 452) | 2,536 (1 152) | 2,757 (1 250)
| +12 ft (3.66 m)  | 3,485 (1 581)    | 3,263 (1 480) | 2,593 (1 176) | 2,818 (1 278)
| +10 ft (3.05 m)  | 3,438 (1 559)    | 3,213 (1 457) | 2,564 (1 163) | 2,786 (1 264)
| +8 ft (2.44 m)   | 3,168 (1 432)    | 3,007 (1 364) | 2,645 (1 118) | 2,767 (1 257)
| +6 ft (1.83 m)   | 3,146 (1 427)    | 3,077 (1 396) | 2,489 (1 129) | 2,706 (1 227)
| +4 ft (1.22 m)   | 3,093 (1 376)    | 3,018 (1 369) | 2,446 (1 118) | 2,680 (1 215)
| +2 ft (0.61 m)   | 2,965 (1 345)    | 2,965 (1 345) | 2,446 (1 118) | 2,680 (1 215)
| Ground Level     | -                 |           |              |          |
| -2 ft (0.61 m)   | 2,301 (1 042)    | 2,301 (1 042) | 2,070 (0.928) | 2,943 (1 335)
| -4 ft (1.22 m)   | 2,345 (1 060)    | 2,345 (1 060) | 2,070 (0.928) | 2,943 (1 335)
| -6 ft (1.83 m)   | 2,328 (1 045)    | 2,328 (1 045) | 2,070 (0.928) | 2,943 (1 335)
| -8 ft (2.44 m)   | 2,307 (1 043)    | 2,307 (1 043) | 2,070 (0.928) | 2,943 (1 335)
| -10 ft (3.05 m)  | 2,276 (1 035)    | 2,276 (1 035) | 2,070 (0.928) | 2,943 (1 335)
| -12 ft (3.66 m)  | 2,246 (1 029)    | 2,246 (1 029) | 2,070 (0.928) | 2,943 (1 335)
| -14 ft (4.27 m)  | 2,216 (1 023)    | 2,216 (1 023) | 2,070 (0.928) | 2,943 (1 335)
| Dipper Lift      |                  |           |              |          |
| +14 ft (4.27 m)  | 5,822 (2 641)    | 5,618 (2 548) | 4,046 (1 835) | 4,046 (1 835)
| +12 ft (3.66 m)  | 5,620 (2 540)    | 5,399 (2 449) | 3,984 (1 807) | 3,984 (1 807)
| +10 ft (3.05 m)  | 5,562 (2 523)    | 5,360 (2 431) | 3,913 (1 775) | 3,913 (1 775)
| +8 ft (2.44 m)   | 6,236 (2 829)    | 6,030 (2 735) | 4,166 (1 889) | 4,166 (1 889)
| +6 ft (1.83 m)   | 7,424 (3 368)    | 7,203 (3 267) | 4,102 (1 861) | 4,102 (1 861)
| +4 ft (1.22 m)   | 7,817 (3 543)    | 7,599 (3 429) | 4,050 (1 805) | 4,050 (1 805)
| +2 ft (0.61 m)   | 8,095 (3 677)    | 7,884 (3 553) | 4,000 (1 800) | 4,000 (1 800)

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

<table>
<thead>
<tr>
<th></th>
<th>Standard Backhoe</th>
<th>Retracted</th>
<th>Extendahoe®</th>
<th>Extended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digging depth:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>14 ft 6 in (4.41 m)</td>
<td>14 ft 6 in (4.41 m)</td>
<td>17 ft 11 in (5.47 m)</td>
<td></td>
</tr>
<tr>
<td>Maximum with hi-capacity bucket</td>
<td>15 ft 0 in (4.57 m)</td>
<td>15 ft 0 in (4.57 m)</td>
<td>18 ft 6 in (5.63 m)</td>
<td></td>
</tr>
<tr>
<td>2 ft (610 mm) flat bottom</td>
<td>14 ft 4 in (4.37 m)</td>
<td>14 ft 4 in (4.37 m)</td>
<td>17 ft 10 in (5.34 m)</td>
<td></td>
</tr>
<tr>
<td>8 ft (2.44 m) flat bottom</td>
<td>13 ft 4 in (4.06 m)</td>
<td>13 ft 4 in (4.06 m)</td>
<td>17 ft 1 in (5.19 m)</td>
<td></td>
</tr>
<tr>
<td>Overall reach from:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear axle centerline</td>
<td>21 ft 10 in (6.66 m)</td>
<td>21 ft 10 in (6.66 m)</td>
<td>25 ft 3 in (7.69 m)</td>
<td></td>
</tr>
<tr>
<td>Swing pivot</td>
<td>18 ft 2 in (5.55 m)</td>
<td>18 ft 2 in (5.55 m)</td>
<td>21 ft 7 in (6.58 m)</td>
<td></td>
</tr>
<tr>
<td>Loading height</td>
<td>12 ft 1 in (3.67 m)</td>
<td>12 ft 1 in (3.67 m)</td>
<td>14 ft 5 in (4.38 m)</td>
<td></td>
</tr>
<tr>
<td>Loading reach</td>
<td>4 ft 7 in (1.41 m)</td>
<td>4 ft 7 in (1.41 m)</td>
<td>7 ft 3 in (2.20 m)</td>
<td></td>
</tr>
<tr>
<td>Swing arc</td>
<td>180°</td>
<td>180°</td>
<td>180°</td>
<td></td>
</tr>
<tr>
<td>Bucket rotation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straight links</td>
<td>175.6°</td>
<td>175.6°</td>
<td>175.6°</td>
<td></td>
</tr>
<tr>
<td>Mechanical coupler</td>
<td>198.0°</td>
<td>198.0°</td>
<td>198.0°</td>
<td></td>
</tr>
<tr>
<td>Hydraulic coupler – Extendahoe® dipper</td>
<td>194.8°</td>
<td>194.8°</td>
<td>194.8°</td>
<td></td>
</tr>
<tr>
<td>Hydraulic coupler – standard dipper</td>
<td>198.0°</td>
<td>198.0°</td>
<td>198.0°</td>
<td></td>
</tr>
<tr>
<td>Stabilizer spread – operating:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flip pad</td>
<td>9 ft 3 in (2.82 m)</td>
<td>9 ft 3 in (2.82 m)</td>
<td>9 ft 3 in (2.82 m)</td>
<td></td>
</tr>
<tr>
<td>Cast pad</td>
<td>9 ft 7 in (2.93 m)</td>
<td>9 ft 7 in (2.93 m)</td>
<td>9 ft 7 in (2.93 m)</td>
<td></td>
</tr>
<tr>
<td>Digging force:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bucket cylinder – SAE rated 3,460 psi</td>
<td>13,975 lb (61 363 N)</td>
<td>13,975 lb (61 363 N)</td>
<td>13,975 lb (61 363 N)</td>
<td></td>
</tr>
<tr>
<td>Bucket cylinder – Power Lift</td>
<td>14,452 lb (64 240 N)</td>
<td>14,452 lb (64 240 N)</td>
<td>14,452 lb (64 240 N)</td>
<td></td>
</tr>
<tr>
<td>Dipper cylinder – SAE rated 3,460 psi</td>
<td>8,657 lb (38 508 N)</td>
<td>8,657 lb (38 508 N)</td>
<td>6,305 lb (28 045 N)</td>
<td></td>
</tr>
<tr>
<td>Dipper cylinder – Power Lift</td>
<td>9,070 lb (40 345 N)</td>
<td>9,070 lb (40 345 N)</td>
<td>6,606 lb (29 382.7 N)</td>
<td></td>
</tr>
<tr>
<td>Leveling angle:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flip pad</td>
<td>11.8°</td>
<td>11.8°</td>
<td>11.8°</td>
<td></td>
</tr>
<tr>
<td>Cast pad</td>
<td>12.8°</td>
<td>12.8°</td>
<td>12.8°</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Lift capacities apply straight to the rear of prime mover. 4WD with 19.5 L x 24.0 tires equipped with 24 in (610 mm) heavy-duty bucket and Case coupler except as noted.
**STANDARD EQUIPMENT**

**OPERATOR ENVIRONMENT**

See page 1

**ENGINE**

FPT F5BFL413B 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
Engine ECO Mode – Detent on backhoe hand throttle, push button switch on dash
Auto Engine Idle
Auto Engine Shutdown
Auto Protection Shutdown
Electronic Fuel Priming

**DRIVETRAIN**

Power Shuttle 4F-4R synchromesh transmission
Front axle:
  2WD front axle with 11.0 L x 16.0 tires
  4WD mechanically driven front axle with 12.0 L x 16.5 tires and drive shaft guard
Rear axle:
  2/4WD heavy-duty outboard planetary drive, with 19.5 L x 24.0 tires
Torque converter – 11.8 in (300 mm)
On-the-go electric 4WD control
Electric F/R shuttle control
Electric differential lock control, push-button
Park brake, spring-applied, hydraulic release – SAHR

**HYDRAULICS**

Ground level remote hydraulic test ports
Pump:
  41 gpm @ 3,000 psi
  (156.2 L/min @ 207 bar)
Heavy-duty hydraulic oil cooler
7-micron, spin on oil filter

**LOADERS**

Bucket position indicator; Lifting lugs on standard bucket; Single lever control with self-leveling and return-to-dig; Hand operated clutch disconnects on loader and shift levers, single lever 4-function loader control: lift, dump, clutch cut-out, differential lock

**BACKHOE**

Over center design, Fabricated “S” boom; Pro Control System; Dipperstick integrated serrated gripper teeth; Case mechanical coupler

**OTHER**

Forward tilt engine hood
Replaceable, molded front bumpers
Front/Rear tie downs
Reflective logos
Signal Lights – cab and canopy:
  2 rear tail/stop
  2 front flashers/turn
  2 rear flashers/turn
Working/Driving Lights – cab and canopy:
  Adjustable halogen work lights – 55 W:
    4 front
    2 side – one left, one right
    4 rear
Master disconnect switch and remote jump-start terminals
Hydrostatic steering
Backup alarm
Vertical spin-on engine oil, fuel and hydraulic filters

**TELEMATICS**

CASE SiteWatch™ Telematics – includes hardware and a 3-yr Advanced data subscription

**WARRANTY**

1-Year/Unlimited-Hour Full-Coverage Base Limited Warranty
2-Year/2,000-Hour Extended Engine Warranty
OPTIONAL EQUIPMENT

OPERATOR ENVIRONMENT

- Speed selectable Auto Ride Control – 4WD models
- Standard Ride Control – 2WD models
- Comfort Steering with two speed steering pump and 3rd/4th gear cutout
- Deluxe Canopy with glass windshield, windshield wiper, windshield washer, floor mat, 85 dba sound level, two additional front lights, two additional rear lights and anti-vandalism cover
- ROPS/FOFS certified protective cab available in LH Door or 2 door with heat, A/C, defroster, door activated dome light, 4 front, 4 rear and 2 adjustable side lights, tilt steering wheel, floor mat, tinted glass, radio ready, front and rear wiper and fender extensions
- Deluxe Cab package with deluxe interior, viscous fan, pull-down sun visor and 72 dba sound level
- Mechanical suspension seat with flip-up armrests, 180° swivel, adjustable seat and weight, backrest angle, lumbar and cushion angle – cab units cloth or vinyl, canopy units vinyl only
- Air suspension seat with flip-up armrests, 180° swivel, electric height adjustment, adjustable back rest and lumbar and cushion angle – cab units cloth or vinyl, canopy units vinyl only
- Heated seat option for vinyl and cloth Air suspension seats – cab units cloth or vinyl, canopy units vinyl only
- Premium multi-color, hand stitched cloth, heated air suspension seat – not for use with ROPS Canopy option
- Bluetooth Radio – Communication and Media streaming, Sirius XM satellite radio ready – does not include satellite antenna, AM/FM tuner, NOAA weatherband tuner, USB input and audio Aux-in
- 3 in (75 mm) seat belt for mechanical and air suspension seat

ENGINE

- Cold Weather Starting Aid:
  - Dual 12 volt batteries, glow plugs, engine block heater and heated CCV hose
- Severe Cold Weather Starting Aid:
  - Synthetic transmission, hydraulic and engine oil – order with cold weather starting aid

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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.

DRIVETRAIN

- PowerDrive S-Type transmission, 4F-4R, fully synchronized electronic transmission controller, kick down, transmission disconnect and FNR switch in loader control lever, includes auto shift mode and direct drive
- PowerDrive H-Type transmission, 4F-4R, hydraulic clutch shifting, kick down, transmission disconnect and FNR switch in loader control lever, includes auto shift mode and direct drive
- 4WD heavy-duty mechanically driven front axle with 12.5/80 x 18.0 tires

OTHER

- Front tires: 11.5 L x 16.0 or 12.0 L x 16.5
- 12.5/80 x 18.0 10-ply includes heavy duty front axle
- Rear tires: 17.5 L x 24.0 or 19.5 L x 24.0
- Special paint
- Tool box – bolt-on, step-mounted
- Front counterweights: 700 lb and 1,100 lb (318 kg and 500 kg)
- Rotating beacon
- LED Working/Driving Light Package:
  - 4 front
  - 4 rear
  - 2 side
- Chaff Screen – Additional fine mesh screen in front of standard grille
- Locking DEF/Fuel covers
- Front Fenders

LOADERS

Auxiliary hydraulics for loader-mounted equipment with thumb-operated proportional control

- Hydraulic front quick coupler
- Tool portfolio of additional attachments

Buckets – see page 2

BACKHOE

1-way Auxiliary backhoe hydraulics for hammers, plate compactors or similar 1-way flow attachments

- 1-way/2-way Auxiliary backhoe hydraulics for hammers, plate compactors or similar 1-way flow attachments or switch to 2-way flow for thumbs, augers or similar 2-way flow attachments
- Extendahoe®
- Power Lift
- Power Boost
- Bolt-on hardened gripper teeth
- Two-lever control – backhoe or Extendahoe®
- Pilot operated control system:
  - fingertip proportional Electro-Hydraulic stabilizer controls
  - 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
- Flip over stabilizer pads
- Cemetery/Street pads
- Hydraulic bucket quick coupler
- Universal coupler – CAT/Deere compatible
- Buckets – see page 2

Hydraulic thumb – Includes: 2 replaceable, high strength, bolt on tines with two positions for Universal or Hi-Cap buckets – meshes with Bucket teeth on 18 in & 24 in Buckets