**ENGINE - VHP**

Model: FPT F4HE9684L, Tier 3 certified

Compliant with EPA regulations effective January 2011

Electronic control

**Type**

4-stroke, turbocharged and air-to-air after cooled

**Cylinders**

6-cylinder in-line

**Bore/Stroke**

4.09 x 5.17 in (104 x 132 mm)

**Displacement**

409 in$^3$ (6.7 L)

**Fuel**

Diesel

**Fuel injection**

Common Rail

**Cooling**

Liquid

**Horsepower @ 2200 RPM – SAE J1995:**

Gross 220/234 hp (164/175 kW)

Net 205/219 hp (153/163 kW)

**Maximum torque @ 1600 RPM:**

682/726 ft·lb (924/984 N·m)

**DRIVETRAIN**

Rear axle: Graziano, planetary

Differential: Hydraulic lock, operator controlled

**Outboard brakes**

Wet disc

**Number of discs/brake**

6

**Brake surface area**

2,686 in$^2$ (17 191 cm$^2$)

**Tandems:**

Type: Welded plate

Oscillation: 20° each way

**Front axle**

High strength, welded steel

Oscillation: 15.3° each direction

Wheel lean: 20° left/right

**Tires – standard**

14.0 x 24 12PR TL G2 Firestone

**Rims**

1-piece 9 in x 24 in (227 mm x 610 mm)

**OPERATING WEIGHT**

W/ 14 ft (4.27 m) moldboard, 20.5 x 25 tires, front counterweight, 175 lb (79 kg) operator and full fuel:

41,248 lb (18 710 kg)

Weight, front axle: 13,337 lb (6 050 kg)

Weight, rear axle: 27,910 lb (12 660 kg)

Blade pressure: 22,267 lb (10 100 kg)

**ELECTRICAL**

Voltage: 24 Volts, negative ground

Alternator: 90 amp

Batteries: 2 – Low-maintenance 1010 CCA – 100 Ah (20 hr rate)

**Work lights:**

Headlights – 2; Turn signals, front/rear; Stop/tail – 2; Rear mounted floods – 2; Front mounted floods – 2.

Backup alarm: Standard

**OPERATOR ENVIRONMENT**

ROPS/FOPS cab – SAE J231, ISO 3449;

Adjustable operator’s console; Adjustable cloth suspension seat w/ 3 in (76 mm) retractor;

seat belt; Safety glass; Dome light; Inside rearview mirror; Outside rearview mirrors; Cup holder; Storage tray; 12-volt outlet; Radio ready – 12 Volt; Electrical master switch – automatic;

Heater/denfroser/pressurizer; Air conditioner;

Sound suppression; Delphi AM/FM Radio w/ CD; Cab doors – left/right; Steps – left/right; Steering wheel; Windshield wiper – front; Windshield washer – front; Sunshade.

**HYDRAULICS**

System design: Closed center, load sensing

Hydraulic pump: Load sensing piston pump, variable displacement, pressure and flow compensated

Rated flow @ 2200 RPM: 49 gpm (186 L/min)

Control valve: 9 section

Side shift and pitch: Hydraulic

Saddle: 5 positions

Diagnostic quick couplers: 8

**SERVICE CAPACITIES**

Engine: 4.4 gal (17.5 L) w/ filter change

Fuel: 90 gal (341 L)

Transmission: 5.8 gal (22 L) w/ filter change

Radiator: 10.5 gal (40 L)

Hydraulic reservoir: 25 gal (94.6 L)

Hydraulic system: 47.5 gal (180 L)

Circle gearbox: 0.75 gal (2.8 L)

Rear axle center: 10.5 gal (40 L)

Total axle: 10.5 gal (40 L)

Tandem case, each: 18.4 gal (69 L)

**OTHER SPECIFICATIONS**

Steering:

Type: Hydrostatic power steering

Turns – lock-to-lock: 4.75

Pump capacity @ 2200 engine RPM: 11.1 gpm (41.8 L/min)

Relief pressure: 2,200 psi (151 bar)

Integral w/ priority valve

Cylinder – 2:

2.0 in bore x 11.85 in stroke x 1.0 in rod dia. (50.8 mm x 301.0 mm x 25.4 mm)

Supplemental steering: Integral

Articulation:

Type: Hydraulic actuated – w/ lock valve

Range: 25° left/right

Controls: Hydraulic

NOTE: “Not applicable when equipped w/ 20.5 x 25 tires”
### MAINFRAME

- **Type**: All welded box
- **Front section**:
  - **Size**: 10.0 in x 11.73 in (254 mm x 298 mm)
  - **Weight – each side**: 124.7 lb·ft (172.8 kg/m)
- **Rear section**:
  - **Size**: 4.75 in x 11.75 in (121 mm x 299 mm)
  - **Weight – each side**: 76.8 lb·ft (114.2 kg/m)

### DRAWBAR

- **Type**: “A” frame welded construction with center mounted circle turn motor
  - **Ball and circle**: Shim adjustable

### MOLDBOARD

- **Type**: High-carbon steel
- **Shape**: Involute curve
- **Length**: 14 ft 0 in (4 267 mm)
- **Height**: 23.6 in (600 mm)
- **Thickness**: 0.875 in (22.2 mm)
- **End bits**: 2, interchangeable
- **Blade pitch positions**:
  - **Normal pitch**: 47°
  - **Minimum pitch**: 42°
  - **Maximum pitch**: 87°
- **Max. bank cutting angle**:
  - **Right**: 90°
  - **Left**: 90°
- **Max. ground penetration**: 28 in (711.2 mm)
- **Max. lift above ground**: 17.5 in (444.5 mm)

### CIRCLE

- **Type**: Welded construction
- **Diameter**:
  - **Max. outside**: 69.0 in (1 752.6 mm)
  - **Vertical member**: 63.0 in (1 600.2 mm)
- **Rotation**: 360°
- **Speed**: 1.2 RPM (7.2°/second)
- **Drive**: Hydraulic motor
  - **Type**: Roller geroter
  - **Displacement**: 15.26 in³/Rev. (0.25 L/Rev.)
  - **Rated hydraulic flow**: 19.8 gpm (75 L/min)

### ATTACHMENTS

#### SCARIFIER

- **Type**: Front mounted
- **Width of cut**: 46 in (1 168 mm)
- **Teeth**:
  - **Optional**: 11
- **Tooth spacing**:
  - **Optional**: 9.0 in (229 mm)
  - **Optional**: 4.5 in (114.3 mm)
- **Lift above ground**: 20.75 in (527 mm)
- **Max. penetration**: 12.5 in (318 mm)
- **Weight**: 1,256 lb (570 kg)
  - Includes front attachment group

#### REAR RIPPER

- **Type**: Parallel
- **Ripper teeth**:
  - **3**
  - **Optional**: 5
- **Scarifier teeth**:
  - **5**
  - **Optional**: 9
- **Width of cut**: 86.4 in (2 195 mm)
- **Lift above ground**:
  - **Ripper teeth**: 20.38 in (518 mm)
  - **Scarifier teeth**: 27.67 in (703 mm)
- **Max. penetration**:
  - **Ripper teeth**: 17.22 in (437 mm)
  - **Scarifier teeth**: 9.43 in (252 mm)
- **Weight**: 1,874 lb (850 kg)
  - Includes front attachment group

#### PUSH BLOCK

- **Type**: Front mounted
- **Weight**: 1,084 lb (492 kg)

#### DOZER BLADE

- **Type**: Front mounted
- **Width**: 109 in (2 762 mm)
- **Height**: 37.5 in (953 mm)
- **Lift above ground**: 24.5 in (622 mm)
- **Penetration**: 6.5 in (165 mm)
- **Weight**: 2,568 lb (1 165 kg)
  - Includes front attachment group
A. Blade width 14 ft 0 in (4 267 mm)

B. Distance between outside edges of tires 8 ft 8.5 in (2 664 mm)

C. Wheel tread 7 ft 1 in (2 174 mm)

D. Height to top of cab
   Height to top of cab – low profile 11 ft 0 in (3 340 mm) 10 ft 4 in (3 150 mm)

E. Tire radius – when static 2 ft 0 in (610 mm)

F. Blade base 8 ft 5 in (2 562 mm)

G. Distance between tandem axles 5 ft 4 in (1 624 mm)

H. Distance between tandem center and wheel 2 ft 8 in (812 mm)

I. Wheelbase 20 ft 5 in (6 219 mm)

J. Distance between tandem center and rear end of machine 5 ft 5 in (1 650 mm)

K. Distance between front axle and rear end of machine 25 ft 10 in (7 874 mm)

L. Overall length – without ripper or front attachment 28 ft 0 in (8 534 mm)

M. Distance between rear tires and rear ripper 6 ft 8 in (2 040 mm)

N. Distance between front tires and front scarifier 5 ft 0 in (1 524 mm)

O. Distance between front tires and front dozer blade 5 ft 5 in (1 645 mm)

Outside tire turning radius 23 ft 11 in (7 289 mm)

Ground clearance – rear axle 14.1 in (359 mm)

Ground clearance – front axle 22.8 in (580 mm)

NOTE: All units equipped with 17.5 x 25-12 PR tires, ROPS cab with heater and A/C, std. battery, full fuel, 175 lb (79 kg) operator. Specifications per ISO 7134.
STANDARD EQUIPMENT

ENGINE
FPT F4HE9684L turbocharged diesel
Tier 3 certified
Temperature controlled cooling fan
Charge air cooler
Air intake grid heater
Common rail electronic fuel injection
Hydraulic driven cooling fan
Auto idle

DRIVETRAIN
Hydraulic differential lock

HYDRAULICS
Closed center, load sensing hydraulic system
Controls for all functions
9 section control valve
Hydraulic moldboard side shift and pitch
5-position saddle
14 ft x 23.6 in (4 267 x 600 mm) moldboard
Moldboard Float Control
8 hydraulic diagnostic quick couplers
Front and rear piping for hydraulic attachment

OPTIONAL EQUIPMENT

MOLDBOARDS
12 ft x 22 in (3 658 x 559 mm), involute curve
13 ft x 23.6 in (3 962 x 600 mm), involute curve
Extensions – 2 ft (610 mm)
Front Float Control
Lift cylinder/side shift accumulator
Lift cylinder accumulator
Moldboard corner reinforcement

OPERATOR ENVIRONMENT
Front windows openable with rear window defroster
Lower front wiper/washers
Rear windshield washer
Air suspension seat

TIRES
14.0 x 24-12 PR

INSTRUMENTS
Analog displays/Gauges:
- Fuel level; Engine coolant temperature;
- Transmission oil temperature;
- Hydraulic oil temperature.
Monitor Functions:
- Hour meter; Engine speed; Travel speed; Current gear selection; FNR indication; Clock; Trip computer; Fuel consumption; Fuel level percentage; Oil pressure; Coolant temperature; Engine oil temperature; Transmission oil temperature; Hydraulic oil temperature; Turbocharger air temperature; Differential lock indicator; Gear selection indicator;
- Engine diagnostics; Transmission diagnostics; System voltage; Error reporting; Warning prompts; Indicator warning lamps – main warning, parking brake, low brake pressure, high beams, turn signals, hazard lights, low fuel.

ELECTRICAL
2 – Heavy-duty batteries – 1010 CCA
Electronic Systems Monitor
Horn
Alternator – 90 amp
Backup alarm
Headlights
2 – Tail lights with turn signals, brake lights
Flood lights – cab mounted

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

OTHER
Bidirectional engine cooling fan
Cold weather package
Fire extinguisher
Strobe light
Tool box – without tools
Deluxe tool box – with tools
Tire inflator kit
Spare wheel
Spare wheel support
Slow moving vehicle sign
Rear pull hook

ATTACHMENTS
Front pull hook
Front counterweight
Front dozer blade
Front scarifier
Front push plate
Front support and lift cylinder
Rear ripper

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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.