CASE CONSTRUCTION

TV450B

COMPACT TRACK LOADER

TIER 4 FINAL CERTIFIED



ENGINE

Model	FPT F5B FL413 D*C001
Emissions Certification	Tier 4 Final
Type	Diesel 4-stroke, Turbo, D.I.
Cylinders	4
Bore/Stroke	3.9 x 4.3 in (99 x 110 mm)
Displacement	207 in³ (3.4 L)
Fuel injection	Direct, high pressure common rail – HPCR
Fuel	#2 Diesel
Fuel filter:	
Pre-filter	Beta (30) = 200/spin-on
Main filter	Beta (4) = 20/spin-on
Air intake	Turbocharged w/ waste gate and external cooled EGR
Exhaust aftertreatment	Selective Catalytic Reduction (SCR)
Cooling	Liquid
Engine speeds	RPM
High idle – no load	2500 +/- 25
Rated – full load	2500
Low idle	1150 +/- 25
Horsepower @ 2500 RPM – SAE J1349:	
Gross	90 hp (67 kW)
Net	84 hp (63 kW)
Peak torque @ 1400 RPM	282 lb·ft (383 N·m)
Radiator:	
Core type	Aluminum bar and plate
Core size area	319 in² (0.206 m²)
Rows of tubes x columns	21 rows
Cap pressure	16 +/- 2 psi (1.10 +/- 0.14 bar)
Fan:	
Diameter	22 in (560 mm)
Ratio	0.96:1 standard, 1.1:1 high-flow
Water pump:	
Style	Centrifugal
Flow	47.8 gpm (181 L/min)
Engine lubrication pump:	
Rotor pump w/ deep sump pan, plate cooler and pressurized under-piston nozzles	
Pump operating angle ratings:	
Side to side	45°
Bucket up	35°
Bucket Down	45°

LIFT GEOMETRY

Vertical Lift

DRIVETRAIN

Drive pump controls	Servo-assist mechanical
Pump to engine ratio	1:1
Displacement	2.81 in³ (46 cm³)
Flow @ rated engine RPM:	
@ 97% efficiency	29.4 gpm (111 L/min)
Charge pressure	360 psi (24.5 bar)
System relief pressure	5,220 psi (360 bar)
Drive pump controls	Electro-hydraulic
Pump to engine ratio	1:1
Displacement	2.75 in³ (45 cm³)
Flow @ rated engine RPM:	
@ 97% efficiency	28.8 gpm (109 L/min)
Charge pressure	362 psi (24.5 bar)
System relief pressure	5,220 psi (360 bar)
Drive motors:	
Max. displacement	3.10 in³ (50.9 cm³)
Displacement:	
High speed	2.02 in³ (33.1 cm³)
Motor RPM @ high idle and 97% efficiency:	
2-speed	156
Motor torque @ max. displacement and relief pressure, calculated @ 5,220 psi (360 bar):	4,654 lb·ft (6 310 N·m)
Travel speed:	
Low range	5.5 mph (8.9 kph)
High range	8.0 mph (12.9 kph)
Final drive:	
Planetary gearbox w/ 2-speed motor	
Tractive effort	7,414 lb (3 370 kg)
Parking brake:	
Type	Spring-applied, hydraulic release multiple disc.
Engagement	Depress on/off brake button on handle or instrument panel, raise seat bar, get off seat or stop engine.

ELECTRICAL

Alternator	160 amp
Starter	4.29 hp (3.2 kW)
Battery	12-volt low-maintenance 1,000 cold-cranking amps @ 0° F (-18° C°)

OPERATOR ENVIRONMENT

ROPS/FOPS Level 1 canopy w/ side screens; Keyed start ignition; Tilt ROPS/FOPS; Rear window w/ emergency escape; Suspension Seat, vinyl w/ 2 in (51 mm) retractable 3 point lap seat belt; Hand and foot throttles; Alarm package – back-up and horn; Rearview mirror; Headliner; Dome Light; Top window; Cup holder; 12V Power plug socket; Foot rest; Seat pocket; Padded seat bar w/ integral armrests; Loader control lockout system; Electric parking brake control; Operator's compartment floor cleanout; Proportional auxiliary hydraulic control – on joystick; Advanced Instrument Cluster w/ digital hour meter, tachometer, Fuel level LCD bar graph w/ alarm, diagnostic features and security lockout; Electro-hydraulic controls: For drive/steering, loader functions, Switchable between H and ISO patterns, Adjustable sensitivity of controls.

Warning lights with alarms:
Engine coolant temperature; Engine oil pressure; Engine malfunction; Hydraulic charge pressure; Hydraulic filter restriction; Hydraulic oil temperature: Critical system stop, Engine system, Hydraulic system, Electrical and diagnostic system.

Warning alarms:
Battery voltage – plus display; Oil service.

Indicator light:
Engine preheat; Parking brake; Seat bar reminder.

OPERATING WEIGHT

Unit equipped w/ open cab; 165 lb operator; 78 in Heavy Duty bucket; full of fuel: 10,610 lb (4 823 kg)

Shipping weight	10,267 lb (4 667 kg)
Add-on weights:	
Side cab glass	47 lb (21.3 kg)
Polycarbonate cab door	75 lb (34.0 kg)
Glass cab door w/ wiper	75 lb (34.0 kg)
Suspension seat	22 lb (10.0 kg)
Additional counterweight	600 lb (273 kg)

HYDRAULICS

Implement pump type	Gear
Displacement:	
Standard aux.	2.23 in³ (36.6 cm³)
High-flow aux.	1.42 in³ (23.3 cm³)
Standard flow @ rated engine RPM:	
@ 100% efficiency	24.2 gpm (91.5 L/min)
Optional high-flow @ rated engine RPM:	
@ 100% efficiency	39.5 gpm (149 L/min)
Enhanced high-flow @ rated engine RPM:	
@ 100% efficiency	35.0 gpm (132.5 L/min)
Loader control valve:	
Type	3 spool/open center/series - series
Relief pressure	3,450 psi (238 bar)
Port relief pressures:	
Loader raise	3,625 psi (250 bar)
Bucket curl	3,916 psi (270 bar)
Bucket dump	3,625 psi (250 bar)
Hydraulic lines:	
Tubing	ORFS + 37° JIC Flare
Loop hoses	SAE 100 R19
Hydraulic oil cooler:	
Number of fins	10 per inch (3.94 per cm)
Number of tube rows x columns	9 bar/plate
Area	138.7 in² (890 cm²)
Hydraulic filter	Beta (4) = 75/spin-on

HYDRAULICS CONT.

Lift cylinders:	
Bore diameter	2.75 in (69.85 mm)
Rod diameter	1.75 in (44.5 mm)
Stroke	35.7 in (908 mm)
Closed length	53.9 in (1 369 mm)
Bucket cylinders:	
Bore diameter	3.0 in (76.2 mm)
Rod diameter	1.5 in (38.1 mm)
Stroke	15.9 in (405 mm)
Closed length	24.3 in (617.0 mm)

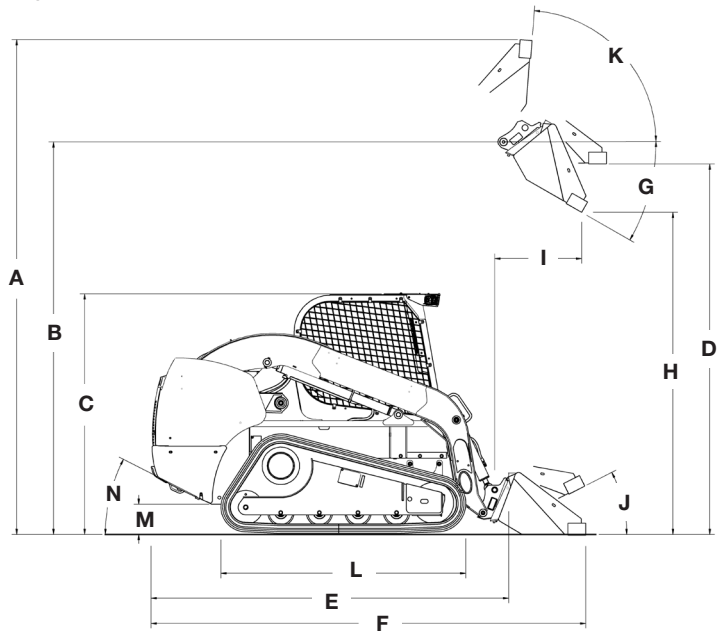
SERVICE CAPACITIES

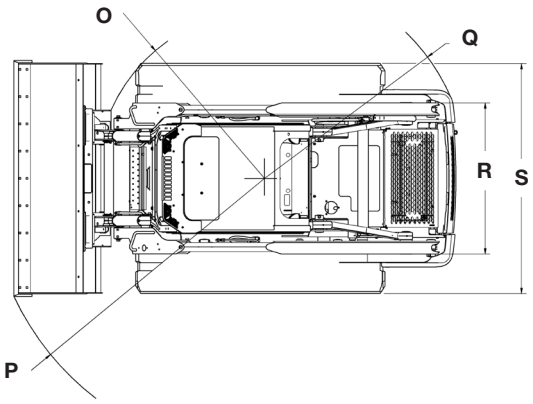
Fuel Tank	25.5 gal (96.5 L)
Engine oil w/ filter	8.9 qt (8.5 L)
Hydraulic system:	
Reservoir	6.0 gal (22.7 L)
Total	11.9 gal (45.4 L)
Diesel Exhaust Fluid (DEF) Tank	2.8 gal (10.7 L)

PERFORMANCE SPECS

Rated operating capacity – ROC*:	
35% of tipping load	3,150 lb (1 432 kg)
50% of tipping load	4,500 lb (2 045 kg)
w/ additional counterweight	4,700 lb (2 135 kg)
Tipping load*	9,000 lb (4 091 kg)
Breakout forces @ 3,150 psi (217 bar)*:	
Bucket Cylinders	9,188 lb (41.8 kN)
Lift cylinders – hydraulic limit	7,773 lb (35.3 kN)
Cycle times:	
Raise	5.1 sec
Lower	3.5 sec
Dump	2.7 sec
Roll back	2.0 sec

NOTE: *Measured using 78 in (1.98 m) heavy-duty bucket.





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

DIMENSIONS

A. Overall operating height:	
with foundry/excavating bucket	161.4 in (4.10 m)
with heavy duty bucket	165.6 in (4.21 m)
with low profile extended bucket	170.4 in (4.33 m)
Height to:	
B. Bucket hinge pin	131.6 in (3.34 m)
C. Top of ROPS	80.4 in (2.04 m)
D. Bottom of level bucket, fully raised	123.2 in (3.13 m)
Overall length:	
E. without attachment with coupler	120.2 in (3.05 m)
F. with foundry/excavating bucket on ground	144.4 in (3.67 m)
with heavy duty bucket	148.6 in (3.78 m)
with low profile extended bucket	153.5 in (3.89 m)
G. Maximum dump angle	45.3°
H. Dump height:	
with foundry/excavating bucket	104.1 in (2.65 m) @ 45.0°
with heavy duty bucket	101.1 in (2.57 m) @ 45.0°
I. Dump reach at maximum height with low profile extended bucket	35.1 in (0.89 m) @ 45.0°
Maximum attachment rollback:	
J. Bucket on ground	32.0°
K. Bucket at full height	83.1°
L. Track on ground	64.5 in (1.64 m)
M. Ground clearance – bottom of belly pan	9.5 in (0.24 m)
N. Angle of departure	32.0°
Clearance circle:	
O. without bucket	57.7 in (1.47 m)
P. with 78 in (1.98 m) foundry/excavating bucket on ground	87.8 in (2.23 m)
Q. Clearance circle rear	68.6 in (1.74 m)
R. Track gauge	58.6 in (1.49 m)
S. Over the track width	76.5 in (1.94 m)

TRACK SELECTION

Type	Area	Ground Pressure	Width to Outside Track
17.7 in (450 mm)	2,286 in^2 (1.48 m^2)	4.6 psi (31.7 kPa)	76 in (1.93 m)

OPTIONAL BUCKETS

Type	Width	Weight	Heaped Capacity
Dirt & Foundry	78 in (1.98 m)	440 lb (200 kg)	17.7 ft^3 (0.50 m^3)
Low Profile Extended	78 in (1.98 m)	540 lb (245 kg)	19.1 ft^3 (0.54 m^3)
	84 in (2.13 m)	575 lb (262 kg)	20.5 ft^3 (0.58 m^3)
Light Material	84 in (2.13 m)	540 lb (245 kg)	27.5 ft^3 (0.78 m^3)
Heavy-Duty	78 in (1.98 m)	530 lb (240 kg)	15.5 ft^3 (0.44 m^3)
	84 in (2.13 m)	550 lb (250 kg)	17.0 ft^3 (0.48 m^3)
Heavy-Duty Extended with SmartFit Teeth	78 in (1.98 m)	697 lb (316 kg)	18.9 ft^3 (0.54 m^3)
	84 in (2.13 m)	728 lb (330 kg)	20.5 ft^3 (0.58 m^3)

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

See page 1

ENGINE

- Dual element air cleaner
- Organic Acid Technology (OAT)
- Anti-freeze solution to -34° F
- Fuel tank - 25.5 gal (U.S.)
- Over and under radiator and oil cooler
- 3-stack after cooler/radiator/oil cooler configuration
- Glow plugs
- Integral engine oil cooler
- Fuel filter with water trap
- 1,000 CCA 12V battery
- Master electrical disconnect
- Jump start terminal

DRIVETRAIN

- 2-speed hydrostatic
- SAHR disc parking brake

HYDRAULICS

- Auxiliary hydraulics:
  @ 3,450 psi (238 bar) – 24.2 gpm (91.5 L/min)
- 6 micron oil filtration system
- 3-spool loader control valve
- Auxiliary hydraulic disconnects, ISO flat-face – connect-under-pressure with case drain
- Hydraulic circuit pedal lock
- Auxiliary function lockout override
- Loader lift lockout override
- Heavy-duty hydraulic oil cooler
- Loader arm float position
- Loader function lockout system

LOADER

- Manual attachment coupler
- Vertical lift geometry
- Loader lift arm support strut
- SAE operating load: 3,150 lbs
- Tipping load: 9,000 lbs

TRACKS

- Rubber Tracks

OTHER STANDARD FEATURES

- LED lights - 2 front, 2 side, 2 rear flood
- Pre-wired for rotating beacon
- Lockable service access hood
- Single-point daily servicing
- Rear tail lights
- Remote oil and fuel filters
- Block heater
- Debris ingression sealing
- Mounting points for add-on counterweights

TELEMATICS

- CASE SiteWatch™ Telematics – includes hardware and a 5-yr data subscription
- SiteConnect Module providing remote diagnostics capability

OPTIONAL EQUIPMENT

OPERATOR ENVIRONMENT

- Enclosed cab:
  - Fully sealed and pressurized – FSP
  - Glass door with wiper and washer
  - Sliding side windows – removable
  - Ventilation system with integrated heater
  - Heater and air conditioner
  - AM/FM Bluetooth radio with 2 speakers and USB port
  - Keyless start ignition
- 8 in Color LCD Display
- Economy Mode (auto idle shutdown)
- Auto Engine Protection Shutdown
- Mechanical hand controls
- Hand and foot controls:
  Hand controls the loader drive function and foot controls the bucket and boom
- Deluxe cloth, air suspension seat, with heater and lumbar support
- Demolition cab door with polycarbonate
- Ignition Timeout
- Machine Settings User Access Levels
- Operator Security Codes
- Auto Idle settings

HYDRAULICS

- High-flow auxiliary hydraulics – combined:
  @ 3,450 psi (238 bar) – 39.5 gpm (149 L/min)
- Enhanced High-Flow auxiliary hydraulics – EHF:
  @ 4,000 psi (276 bar) – 35.0 gpm (132.5 L/min)
- Second auxiliary hydraulics
- Hydraulic one-way self-leveling
- Ride control

LOADER

- Auxiliary front electric control
- Hydraulic attachment coupler

DRIVETRAIN

- Creep Speed Mode (for EH machines only)
- EZ Trac – suspension track with bogey wheel design

FACTORY SUPPLIED ATTACHMENTS

- Rotating beacon
- Four point lift hook
- 48 in (1.22 m) pallet forks

SERVICE PARTS

- Add-on counterweights
- Road lights
- Four-corner LED strobe
- Single point lift hook
- Aspirator
- Precleaner
- 3 inch (76.2 mm) retractable seat belt
- Bolt-on heavy-duty bucket teeth

OTHER

- Language decals
- Buckets – see page 3
- Bolt-on bucket cutting edges
- Bolt-on heavy-duty bucket spill guard
- Special paint
- Offsite service arrangement

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SAFETY™ NEVER HURTS

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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