

# TR310

COMPACT TRACK LOADER

**TIER 4 FINAL CERTIFIED** 



Model	FPT F5H FL463 A*F001	
Emissions Certification	Tier 4 Final	
Type D	iesel 4-stroke, Turbo, D.I.	
Cylinders	4	
Bore/Stroke	3.9 x 4.3 in (99 x 110 mm)	
Displacement	207 in <sup>3</sup> (3.4 L)	
Fuel injection	Direct, high pressure common rail – HPCR	
Fuel	#2 Diesel	
Fuel filter: Pre-filter Main filter	Beta (30) = 200/spin-on Beta (4) = 20/spin-on	
Air intake Turbocharged w/ was gate and external cooled EC		
Exhaust aftertreatment	Particulate Matter Catalyst – PM Catalyst	

Engine speeds	RPM
High idle - no load	2500 +/- 25
Rated - full load	2500
Low idle	1150 +/- 25

Horsepower @ 2500 RPM - SAE J1349: Gross 74 hp (55 kW) Net 68 hp (51 kW)

Peak torque @ 1400 RPM 232 lb·ft (314 N·m)

Radiator:

Cooling

All aluminum Core type Core size area 2.77 ft<sup>2</sup> (0.257 m<sup>2</sup>) Rows of tubes x columns 43 x 3 Cap pressure 16 +/- 2 psi (1.10 +/- 0.14 bar)

Fan:

20.4 in (518 mm) Diameter 0.96:1 standard, 1.1:1 high-flow Ratio

Water pump:

Centrifugal Style Flow 29 gpm (110 L/min)

Engine lubrication pump:

Rotor pump w/ deep sump pan, plate cooler and pressurized under-piston nozzles

45°
35°
45°

## LIFT GEOMETRY

Radial Lift

#### DRIVETRAIN

Drive pump controls Servo-assist mechanical Pump to engine ratio 2.81 in<sup>3</sup> (46 cm<sup>3</sup>) Displacement 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) Electro-hydraulic Drive pump controls Pump to engine ratio 1:1 2.75 in<sup>3</sup> (45 cm<sup>3</sup>) Displacement 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 in<sup>3</sup> (50.9 cm<sup>3</sup>) Displacement - optional:

2.02 in<sup>3</sup> (33.1 cm<sup>3</sup>) High speed Motor RPM @ high idle and 97% efficiency: 2-speed

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

5.1 mph (8.2 kph) High range 8.0 mph (12.9 kph)

Final drive:

Liquid

Planetary gearbox w/ 2-speed motor

7,414 lb (3 370 kg) Tractive effort

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	120 amp	
Starter	4.29 hp (3.2 kW)	
Battery	12-volt low-maintenance	
925 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, vinvl 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.

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 Dirt & Foundry bucket; full of fuel:

8,880 lb (4 027 kg)

8,580 lb (3 891 kg) Shipping weight Add-on weights: Side cab glass 47 lb (21.3 kg) 75 lb (34.0 kg) Polycarbonate cab door Glass cab door w/ wiper 75 lb (34.0 kg) 22 lb (10.0 kg) Suspension seat Additional counterweight 140 lb (63.8 kg)

## **HYDRAULICS**

Hydraulic filter

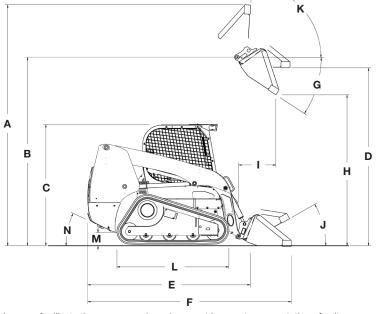
Implement pump type	Gear		
Displacement:			
Standard aux.	2.23 in <sup>3</sup> (36.6 cm <sup>3</sup> )		
High-flow aux.	0.76 in <sup>3</sup> (12.5 cm <sup>3</sup> )		
Standard flow @ rated	engine RPM:		
@ 100% efficiency	24.2 gpm (91.5 L/min)		
Optional high-flow @ ra	ated engine RPM:		
@ 100% efficiency	32.4 gpm (122.6 L/min)		
Loader control valve:			
Type 3 spool/o	pen center/series - series		
Relief pressure	3,046 psi (210 bar)		
Port relief pressures:			
Loader raise	3,263 psi (225 bar)		
Bucket curl	3,770 psi (260 bar)		
Bucket dump	1,160 psi (80 bar)		
Hydraulic lines:			
Tubing	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			
Area	136.5 in <sup>2</sup> (880 cm <sup>2</sup> )		

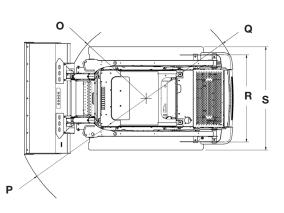
Beta (4) = 75/spin-on

HYDRAULICS CONT.	
Lift cylinders:	
Bore diameter	2.75 in (69.85 mm)
Rod diameter	1.75 in (44.5 mm)
Stroke	32.2 in (817.9 mm)
Closed length	45.6 in (1 158 mm)
Bucket cylinders:	
Bore diameter	3.0 in (76.2 mm)
Rod diameter	1.5 in (38.1 mm)
Stroke	16.4 in (410 mm)
Closed length	24.0 in (610.0 mm)
1	

SERVICE CAPACITIES	
Fuel Tank	19.5 gal (73.8 L)
Engine oil w/ filter	8.9 qt (8.5 L)
Hydraulic system:	
Reservoir	5.3 gal (20.0 L)
Total	10 gal (38.1 L)

PERFORMANCE SPECS	:		
Rated operating capacity - ROC*:			
35% of tipping load	2,170 lb (984 kg)		
50% of tipping load	3,100 lb (1 406 kg)		
w/ additional counterwei	ght 3,200 lb (1 451 kg)		
Tipping load*	6,200 lb (2 810 kg)		
Breakout forces @ 3,150 psi (217 bar)*:			
Bucket cylinders	8,680 lb (38.6 kN)		
Lift cylinders - hydraulic	limit 6,440 lb (29.0 kN)		
Cycle times:			
Raise	4.3 sec		
Lower	2.6 sec		
Dump	2.3 sec		
Roll back	1.9 sec		
NOTE: *Measured using 78 excavating bucket.	in (1.98 m) foundry/		





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

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S.	Over the track width	74.3 in (1.89 m)
R.	Track gauge	53.4 in (1.36 m)
Q.	Clearance circle rear	62.9 in (1.60 m)
P.	with 72 in (1.83 m) foundry/excavating bucket in carry position with 72 in (1.83 m) low profile bucket on ground with 72 in (1.83 m) extended low profile on ground	79.9 in (2.03 m) 83.1 in (2.11 m) 87.7 in (2.23 m)
	earance circle: without bucket	50.7 in (1.29 m)
	Angle of departure	32.0°
	Ground clearance – bottom of belly pan	8.0 in (0.20 m)
	Track on ground	55.9 in (1.42 m)
J.	ximum attachment rollback: Bucket on ground Bucket at full height	31.0° 98.6°
l.	with low profile bucket  Dump reach at maximum height with low profile bucket	95.6 in (2.43 m) @ 39.6° 25.4 in (0.65 m) @ 39.6°
	Dump height: with foundry/excavating bucket	98.2 in (2.50 m) @ 39.6°
G	with low profile extended bucket  Maximum dump angle	138.8 in (3.53 m) 39.6°
F.	with foundry/excavating bucket on ground with low profile bucket	129.6 in (3.29 m) 133.7 in (3.40 m)
	erall length: without attachment with coupler	105.1 in (2.67 m)
В. С.	ight to: Bucket hinge pin Top of ROPS Bottom of level bucket, fully raised	123.0 in (3.12 m) 78.7 in (2.00 m) 116.1 in (2.95 m)
	Overall operating height: with foundry/excavating bucket with low profile bucket with low profile extended bucket	154.3 in (3.92 m) 158.3 in (4.02 m) 163.2 in (4.15 m)
DII	MENSIONS	

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TRACK SELECTION			
Туре	Area	Ground Pressure	Width to Outside Track
15.75 in (400 mm)	1,760 in <sup>2</sup> (1.13 m <sup>2</sup> )	5.0 psi (34.5 kPa)	74.3 in (1.89 m)

OPTIONAL BUCKETS			
Туре	Width	Weight	Heaped Capacity
Dirt & Foundry	72 in (1.83 m)	420 lb (190 kg)	16.2 ft <sup>3</sup> (0.46 m <sup>3</sup> )
Low Profile	78 in (1.98 m)	440 lb (200 kg)	17.7 ft³ (0.50 m³)
	72 in (1.83 m)	480 lb (218 kg)	14.8 ft³ (0.42 m³)
Low Profile Extended	72 in (1.83 m)	510 lb (232 kg)	17.7 ft³ (0.50 m³)
	78 in (1.98 m)	540 lb (245 kg)	19.1 ft <sup>3</sup> (0.54 m <sup>3</sup> )
	84 in (2.13 m)	575 lb (262 kg)	20.5 ft <sup>3</sup> (0.58 m <sup>3</sup> )
Light Material	72 in (1.83 m)	475 lb (216 kg)	23.3 ft³ (0.66 m³)
	84 in (2.13 m)	540 lb (245 kg)	27.5 ft³ (0.78 m³)
Manure & Slurry	72 in (1.83 m)	480 lb (218 kg)	19.1 ft³ (0.54 m³)
	84 in (2.13 m)	545 lb (248 kg)	22.6 ft³ (0.64 m³)
Heavy-Duty	72 in (1.83 m)	510 lb (230 kg)	14.1 ft³ (0.40 m³)
	78 in (1.98 m)	530 lb (240 kg)	15.5 ft³ (0.44 m³)
Heavy-Duty with spillguard	72 in (1.83 m)	585 lb (265 kg)	18.4 ft³ (0.52 m³)
	78 in (1.98 m)	605 lb (275 kg)	19.8 ft³ (0.56 m³)

## STANDARD EQUIPMENT

## **OPERATOR ENVIRONMENT**

See page 1

## **ENGINE**

FPT F5H FL463 A\*F001 207 CID (3.4 L) Turbo Tier 4 Final Certified Particulate Matter Catalyst (PMC) High Pressure Common Rail (HPCR) fuel injection

Horsepower: Gross: 74 hp (55 kW) Net: 68 hp (51 kW)

Peak torque: 232 lb·ft (314 N·m)

120 amp alternator Dual element air cleaner Organic Acid Technology (OAT) Anti-freeze solution to -34° F

Fuel tank - 19.5 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 925 CCA 12V battery

Master electrical disconnect

#### DRIVETRAIN

2-speed hydrostatic four wheel drive SAHR disc parking brake

#### **HYDRAULICS**

Auxiliary hydraulics:

@ 3,050 psi (210 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 Radial lift geometry Loader lift arm support strut SAE operating load: 3,100 lbs Tipping load: 6,200 lbs

## **TRACKS**

HiQual S-Wave Tracks

#### OTHER STANDARD FEATURES

Halogen lights - 2 front, 2 side, 2 rear flood Heavy duty front lights

Pre-wired for rotating beacon

Lockable service access hood

Single-point daily servicing

Rear tail lights

Remote oil drain

Remote oil and fuel filters

Block heater

Debris ingression sealing

Mounting points for add-on counterweights

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#### **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 radio with 2 speakers Keyless start ignition

Electro-hydraulic controls:

For drive/steering, loader functions Switchable between H and ISO patterns Adjustable sensitivity of controls

Mechanical hand controls

Hand and foot controls:

Hand controls the loader drive function and foot controls the bucket and boom

Non suspension seat

Deluxe cloth, air suspension seat, with heater and lumbar support

Open cab interior trim package Demolition cab door with polycarbonate FOPS Level 2 Heavy duty rear door

#### **HYDRAULICS**

High-flow auxiliary hydraulics - combined: @ 3,050 psi (210 bar) - 32.4 gpm (122.6 L/min)

Second auxiliary hydraulics Hydraulic one-way self-leveling Ride control

#### LOADER

Auxiliary front electric control Hydraulic attachment coupler

#### DRIVETRAIN

1-speed hydrostatic four wheel drive

## OTHER

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

## **FACTORY SUPPLIED ATTACHMENTS**

Add-on counterweights Road lights Rotating beacon Four-corner LED strobe Bolt-on heavy-duty bucket teeth 48 in (1.22 m) pallet forks

## SERVICE PARTS

3 inch (76.2 mm) retractable seat belt

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