

ENGINE

Make	FPT
Model	F4HFE6131 Tier 4 interim certified
Fuel	#2 Diesel (#1 & 2 mixture permitted for cold temperature) Does not require ultra-low sulfur fuel B5 biodiesel tolerant
Type	4-stroke, turbocharged
Cylinders	6-cylinder in-line
Bore/Stroke	4.09 in x 5.20 in (104 X 132 mm)
Displacement	411 in ³ (6.7 L)
Fuel injection	Direct injection (electronic)
Fuel filter	Replaceable, full flow spin-on cartridge
Fuel pump	Bosch CP 3.3
Fuel cooler	
Gradeability	35° fore /aft & side to side
Air filter	Dry type element w/warning restriction indicator
Mid-mount cooling module	External independent mounted coolers
Fan – Hydraulic drive	
Style	8 blade puller
Diameter	32 in (813 mm)
Water pump	Integral
Engine oil	
Pump	Deep sump plate cooler with pressurized under-piston nozzles
Pump operating angles	
Side-to-side	35°
Fore and aft	35°
Oil filtration	Replaceable, full flow, spin-on cartridge

Engine speeds (rpm)	
Rated speed, full load	2000
Horsepower (per SAE J1349)	
Peak Gross HP – 255 (190 kW) @ 1600	
Max Power Curve –	
Net Rated @ 2000 RPM – 225 HP (168 kW)	
Net Peak @ 1600 RPM – 242 HP (180 kW)	
Std Power Curve –	
Net Rated @ 2000 RPM – 185 HP (138 kW)	
Net Peak @ 1600 RPM – 213 HP (159 kW)	
Eco Power Curve –	
Net Rated @ 2000 RPM – 151 HP (112 kW)	
Net Peak @ 1400 RPM – 206 HP (154 kW)	

NOTE: Gross horsepower and torque per SAE J1995
Net horsepower and torque per SAE J1349

ENGINE (CONTD.)

Torque – Peak	
Max Power Range –	
Gross	959 lb-ft (1300 N-m) @ 1300 rpm
Net	930 lb-ft (1261 N-m) @ 1300 rpm
Standard Power Range –	
Gross	828 lb-ft (1123 N-m) @ 1300 rpm
Net	800 lb-ft (1084 N-m) @ 1300 rpm
Economy Power Range –	
Gross	828 lb-ft (1123 N-m) @ 1300 rpm
Net	800 lb-ft (1084 N-m) @ 1300 rpm
Torque rise	
Max Power Range	49%

DRIVETRAIN

Transmission	4F/3R Proportional w/Electronic Control Module torque sensing autoshift/manual shift and modulation	
Gears	Helical cut	
Torque converter		
Stall ratio	4 speed	5 speed
	2.28:1	2.35:1
Differential	Open on front and rear axles	
Rear axle oscillation	24° total	
Front and rear axles		
Differential ratio	4.11	
Planetary ratio	6.00	
Final axle ratio	24.67	
Special application axles (optional)		
Front axle equipped with locking differential		
Rear axle equipped with open differential		
Planetaries	Outboard	
4 speed transmission travel speeds (mph (km/h) w/23.5 x 25 L3 tires)	Forward	Reverse
1st	4.0 (6.4)	4.2 (6.8)
2nd	7.4 (12.0)	7.8 (12.6)
3rd	14.3 (23.1)	15.0 (24.2)
4th	22.4 (36.0)	NA
NOTE: Travel speeds at full engine throttle.		
5 speed transmission w/lock-up torque converter travel speeds (mph (km/h) w/23.5 x 25 L3 tires)	Forward	Reverse
1st	4.0 (6.4)	4.2 (6.8)
2nd	6.9 (11.1)	7.3 (11.7)
3rd	10.6 (17.0)	17.2 (27.7)
4th	16.3 (26.3)	NA
5th	25.0 (40.0)	NA
NOTE: Travel speeds at full engine throttle.		

Parking brakes
Spring-applied hydraulic release disc on
transmission output shaft

DRIVETRAIN (CONTD.)

Service brakes	Hydraulically actuated, maintenance-free, multiple wet disc w/accumulator to all four wheels	
Brake surface area		
Front hub	841 in ² (.542 m ²)	
Rear hub	721 in ² (.465 m ²)	

ELECTRICAL

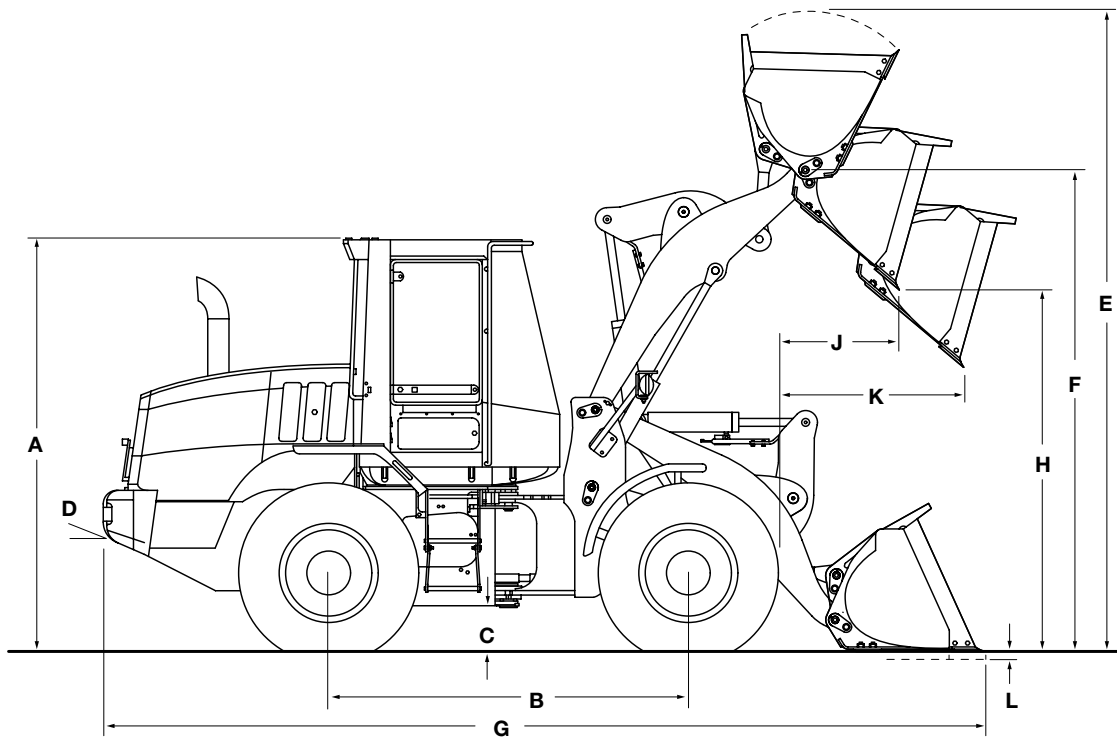
Voltage	24 Volts, negative ground	
Alternator	65 amp	
Batteries	(2) 12-Volt	

HYDRAULICS

Pump (steering/implement)	Closed center pressure/flow compensated	
Variable displacement	9.02 in ³ /rev 74.2 gpm @ 2000 rpm (282 L/min @ 2000 rpm)	
Loader control valve	Closed-center, sectional 2, 3 or 4-spool with pilot control for lift, tilt and auxiliary hydraulics, electromagnetic detents in float, raise and rollback	
Loader auxiliary steering	Hydraulic orbital center-pivot articulating w/on-demand oil flow	
High pressure standby		
Implement	3625 psi (25 000 kPa)	
Steering	3500 psi (24 132 kPa)	
Filtration	10-micron, full flow replaceable cartridges on return line, condition indicator light for filter	

CYLINDERS

Lift cylinder		
Bore diameter	6.0 in (152.4 mm)	
Rod diameter	3.5 in (88.9 mm)	
Stroke	33.3 in (845.7 mm)	
Dump cylinder		
Bore diameter	7.0 in (177.8 mm)	
Rod diameter	4.0 in (101.6 mm)	
Stroke	23.62 in (600 mm)	



DIMENSIONS

A. Height to top of ROPS cab	135.8 in (3450 mm)
B. Wheelbase	131.5 in (3340 mm)
C. Ground clearance	16.4 in (415.8 mm)
D. Angle of departure	30°
Width –	
Overall* w/o bucket	113.6 in (2.89 m)
Centerline tread	87.8 in (2.23 m)
Turning radius* – outside	237.5 in (6.03 m)
Turning angle –	
From center	40°
Total angle	80°
Rear axle oscillation, total	24°

NOTE: *Dimensions taken with 23.5R25 Michelin XHA2 tires. Additional dimensions on pages 3 & 4.

WEIGHT ADJUSTMENTS

Select Options	Weight Adjustment	Tipping Load Adjustment Straight	Tipping Load Adjustment 40° Turn
Base counterweight	-1,364 lb (-619 kg)	-3,143 lb (-1425 kg)	-2,652 lb (-1203 kg)
L2BIAS tires	-949 lb (-430 kg)	-726 lb (-329 kg)	-641 lb (-291 kg)
L3BIAS tires	-313 lb (-142 kg)	-239 lb (-109 kg)	-211 lb (-96 kg)
ROPS Canopy	-295 lb (-134 kg)	-255 lb (-116 kg)	-248 lb (-112 kg)

NOTE: Unit equipped with Z-Bar loader arms, 4.75 yd³ (3.6 m³) pin on bucket w/bolt-on edge, 23.5R25 Michelin XHA2 tires, ROPS cab with heater/AC, full counterweight, heavy-duty batteries, front and rear fenders, full fuel and 175 lb (79 kg) operator. Adjust select options from rated weight.

PERFORMANCE DATA

921F Z-Bar*	4.0 yd ³ General Purpose	4.0 yd ³ General Purpose	4.75 yd ³ General Purpose
	Pin On (3.1 m ³)	Pin On (3.1 m ³)	Pin On (3.6 m ³)
	Bucket w/Bolt-on Edge	Bucket w/Teeth Only	Bucket w/Bolt-on Edge
SAE bucket capacity – struck	3.41 yd ³ (2.61 m ³)	3.26 yd ³ (2.49 m ³)	4.08 yd ³ (3.12 m ³)
Heaped	4.00 yd ³ (3.06 m ³)	3.83 yd ³ (2.93 m ³)	4.75 yd ³ (3.63 m ³)
Bucket width – outside	119.3 in (3030 mm)	119.3 in (3030 mm)	119.3 in (3030 mm)
Bucket weight	3,619 lb (1641 kg)	3,468 lb (1573 kg)	3,932 lb (1783 kg)
E. Operating height – fully raised w/spillguard	213.8 in (5430 mm)	213.8 in (5430 mm)	219.8 in (5583 mm)
F. Hinge pin height – fully raised	162.1 in (4118 mm)	162.1 in (4118 mm)	162.1 in (4118 mm)
G. Overall length – bucket level on ground	308.4 in (7833 mm)	313.9 in (7973 mm)	314.0 in (7976 mm)
Dump angle – fully raised	55°	55°	55°
H. Dump height – fully raised, 45° dump	118.0 in (2998 mm)	114.5 in (2908 mm)	114.4 in (2906 mm)
J. Bucket reach – fully raised, 45° dump	42.7 in (1084 mm)	46.9 in (1192 mm)	47.0 in (1194 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	66.4 in (1687 mm)	68.9 in (1751 mm)	69.0 in (1752 mm)
Operating load – ISO	16,002 lb (7258 kg)	16,252 lb (7372 kg)	15,703 lb (7123 kg)
Maximum material density – SAE	3,672 lb/yd ³ (2179 kg/m ³)	3,892 lb/yd ³ (2309 kg/m ³)	3,027 lb/yd ³ (1796 kg/m ³)
Tipping load – ISO			
Straight	37,190 lb (16 869 kg)	37,738 lb (17 118 kg)	36,551 lb (16 579 kg)
40° turn	32,003 lb (14 517 kg)	32,503 lb (14 743 kg)	31,406 lb (14 245 kg)
Lift capacity –			
Full height	26,962 lb (12 230 kg)	27,132 lb (12 307 kg)	26,638 lb (12 083 kg)
Maximum reach	36,346 lb (16 486 kg)	36,537 lb (16 573 kg)	35,994 lb (16 327 kg)
Ground	48,236 lb (21 879 kg)	48,610 lb (22 049 kg)	46,622 lb (21 148 kg)
Breakout force w/tilt cylinder	42,128 lb (19 109 kg)	45,355 lb (20 573 kg)	37,552 lb (17 034 kg)
Maximum rollback –			
Ground	42°	42°	42°
Carry position	44°	44°	44°
@ Maximum reach	54°	54°	54°
@ Full height	59°	59°	59°
L. Dig depth	3.1 in (80 mm)	3.1 in (80 mm)	3.1 in (80 mm)
Maximum grading angle w/bucket – back dragging	60°	61°	61°
Loader clearance circle	522.2 in (13 264 mm)	525.3 in (13 344 mm)	525.4 in (13 345 mm)

921F/XR	4.0 yd ³ General Purpose	4.0 yd ³ General Purpose	4.75 yd ³ General Purpose
	Pin On (3.1 m ³)	Pin On (3.1 m ³)	Pin On (3.6 m ³)
	Bucket w/Bolt-on Edge	Bucket w/Teeth Only	Bucket w/Bolt-on Edge
E. Operating height – fully raised w/spillguard	231.2 in (5872 mm)	231.2 in (5872 mm)	237.2 in (6025 mm)
F. Hinge pin height – fully raised	179.5 in (4560 mm)	179.5 in (4560 mm)	179.5 in (4559 mm)
G. Overall length – bucket level on ground	327.5 in (8318 mm)	333.0 in (8458 mm)	333.1 in (8461 mm)
Dump angle – fully raised	49°	49°	49°
H. Dump height – fully raised, 45° dump	135.4 in (3439 mm)	131.9 in (3350 mm)	131.8 in (3347 mm)
J. Bucket reach – fully raised, 45° dump	47.1 in (1197 mm)	51.3 in (1304 mm)	51.4 in (1307 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	83.5 in (2122 mm)	86.3 in (2193 mm)	86.4 in (2194 mm)
Operating load – ISO	12,719 lb (5769 kg)	12,916 lb (5859 kg)	12,454 lb (5649 kg)
Maximum material density – SAE	2,957 lb/yd ³ (1754 kg/m ³)	3,135 lb/yd ³ (1860 kg/m ³)	2,434 lb/yd ³ (1444 kg/m ³)
Tipping load – ISO			
Straight	29,790 lb (13 512 kg)	30,219 lb (13 707 kg)	29,229 lb (13 258 kg)
40° turn	25,437 lb (11 538 kg)	25,832 lb (11 717 kg)	24,909 lb (11 298 kg)
Lift capacity –			
Full height	24,970 lb (11 326 kg)	25,193 lb (11 403 kg)	24,650 lb (11 181 kg)
Maximum reach	31,497 lb (14 287 kg)	31,697 lb (14 378 kg)	31,135 lb (14 123 kg)
Ground	37,116 lb (16 836 kg)	37,477 lb (16 999 kg)	36,435 lb (16 527 kg)
Breakout force w/tilt cylinder	42,840 lb (19 432 kg)	46,119 lb (20 919 kg)	38,192 lb (17 324 kg)
Loader clearance circle	541.6 in (13 756 mm)	545.4 in (13 852 mm)	545.4 in (13 854 mm)

PERFORMANCE DATA

921F Z-Bar*		4.75 yd³ General Purpose Pin On (3.6 m³) Bucket w/Teeth Only	
	SAE bucket capacity – struck	3.98 yd ³ (3.04 m ³)	
	Heaped	4.59 yd ³ (3.51 m ³)	
	Bucket width – outside	119.3 in (3030 mm)	
	Bucket weight	3,780 lb (1715 kg)	
E.	Operating height – fully raised w/spillguard	219.8 in (5584 mm)	
F.	Hinge pin height – fully raised	162.1 in (4118 mm)	
G.	Overall length – bucket level on ground	319.5 in (8117 mm)	
	Dump angle – fully raised	55°	
H.	Dump height – fully raised, 45° dump	110.8 in (2815 mm)	
J.	Bucket reach – fully raised, 45° dump	51.2 in (1302 mm)	
K.	Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	71.4 in (1813 mm)	
	Operating load – ISO	15,945 lb (7233 kg)	
	Maximum material density – SAE	3,180 lb/yd ³ (1887 kg/m ³)	
	Tipping load – ISO		
	Straight	37,081 lb (16 820 kg)	
	40° turn	31,890 lb (14 465 kg)	
	Lift capacity –		
	Full height	26,808 lb (12 160 kg)	
	Maximum reach	36,185 lb (16 413 kg)	
	Ground	47,926 lb (21 739 kg)	
	Breakout force w/tilt cylinder	40,130 lb (18 203 kg)	
	Maximum rollback –		
	Ground	42°	
	Carry position	44°	
	@ Maximum reach	54°	
	@ Full height	59°	
L.	Dig depth	3.1 in (80 mm)	
	Maximum grading angle w/bucket – back dragging	62°	
	Loader clearance circle	528.7 in (13 428 mm)	

NOTE:

*Z-Bar performance data shown w/full counterweight.

Performance data unit equipped with 23.5R25 Michelin XHA2 tires, ROPS cab w/heater and A/C, full counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (75 kg) operator. Specifications per SAE J732, J1234, J695, J742, and J818.

921F/XR		4.75 yd³ General Purpose Pin On (3.6 m³) Bucket w/Teeth Only	
E.	Operating height – fully raised w/spillguard	237.2 in (6025 mm)	
F.	Hinge pin height – fully raised	179.5 in (4560 mm)	
G.	Overall length – bucket level on ground	338.7 in (8602 mm)	
	Dump angle – fully raised	49°	
H.	Dump height – fully raised, 45° dump	128.2 in (3257 mm)	
J.	Bucket reach – fully raised, 45° dump	55.7 in (1414 mm)	
K.	Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	89.1 in (2262 mm)	
	Operating load – ISO	12,647 lb (5737 kg)	
	Maximum material density – SAE	2,557 lb/yd ³ (1517 kg/m ³)	
	Tipping load – ISO		
	Straight	29,647 lb (13 448 kg)	
	40° turn	25,294 lb (11 473 kg)	
	Lift capacity –		
	Full height	24,818 lb (11 257 kg)	
	Maximum reach	31,334 lb (14 213 kg)	
	Ground	36,784 lb (16 685 kg)	
	Breakout force w/tilt cylinder	40,811 lb (18 511 kg)	
	Loader clearance circle	549.3 in (13 953 mm)	

INSTRUMENTATION

Electronic Information Center

Displays/Gauges –

Analog –

- Fuel level
- Engine coolant temperature
- Transmission oil temperature
- Hydraulic oil temperature

LCD screen –

(metric/English; multiple languages)

- Hour meter
- Engine speed
- Travel speed
- Current gear selection
- FNR indication
- Clock
- Trip computer
- Fuel consumption
- Fuel level percentage
- DEF (Diesel Exhaust Fluid) gauge
- Oil pressure
- Coolant temperature
- Engine oil temperature
- Transmission oil temperature
- Transmission sump oil temperature
- Hydraulic oil temperature
- Turbocharger air temperature
- Differential lock indicator*
- Joystick steering indicator*
- Automatic transmission indicator
- De-clutch indicator
- Engine mode indicator
- Engine diagnostics
- Transmission diagnostics
- System voltage
- Error reporting

Indicator lights –

- Low fuel
- Turn signals
- Four-way flashers
- High beam lights
- Grid heater*
- Brake pressure
- Master indicator
- Secondary steering*
- Parking brake

Audible/Visual alarms –

- Caution alarm -
 - Parking brake
 - Coolant temperature
 - Hydraulic oil temperature
 - Transmission oil temperature
- Air filter
- Transmission filter
- Hydraulic filter
- Alternator
- Low fuel
- Critical alarm -
 - Engine oil pressure
 - Brake pressure
 - Steering pressure (w/aux steering)*
 - Coolant temperature
 - Hydraulic oil temperature
 - Transmission oil temperature
- Backup alarm

Horn

NOTE: *If equipped with option.

OPERATOR ENVIRONMENT

ROPS cab w/ heat

Key start

Articulated power steering w/tilt column

Fully adjustable, suspension seat

Foot throttle

Single lever 2-spool loader control w/wrist rest

Cup holder

Coat hook

(1) Interior rearview mirror

2 in (51 mm) retractable seat belt

Storage tray behind seat

Lunch box compartment

Single brake pedal

F/N/R shuttle switch

Glove box

Pressurized air filtering

Anti-glare window strip

Defroster

Side window, partial/fully open

Dome light

Wipers, rear and intermittent front

Windshield washers, front and rear

Rubber floor mat

LOADER

Z-bar loader linkage

Single control for lift and tilt

Positive hold float

Automatic return-to-dig

Automatic height control

Automatic return-to-travel

Brake pedal transmission disconnect

Bucket position indicator on bucket

CYCLE TIME

Raise w/rated bucket load 6.2 sec

Dump w/rated bucket load 1.4 sec

Lower (empty)

Power down 3.8 sec

Float down 3.1 sec

SERVICE CAPACITIES

Fuel tank 76 gal (288 L)

DEF (Diesel Exhaust Fluid) tank 15.8 gal (59.8 L)

Usable capacity 10.9 gal (41.3 L)

Hydraulic system

Total 53 gal (200 L)

Reservoir 29 gal (110 L)

Transmission

Service w/filter 36 qt (34.1 L)

Front and rear axle

Front axle 44.4 qt (42 L)

Rear axle 42.3 qt (40 L)

Engine oil w/filter 16 qt (15.1 L)

Cooling system 32 qt (30 L)

OPERATING WEIGHTS

Z-Bar

Unit equipped with ROPS cab with heater and A/C, full counterweight, 23.5R25 XHA2 tires, wide front and rear fenders, 4.75 yd³ (3.6 m³) pin on w/bolt on edge, full fuel, 175 lb (79 kg) operator

43,778 lb (19 857 kg)

XR

Unit equipped with ROPS cab with heater and A/C, full counterweight, 23.5R25 XHA2 tires, wide front and rear fenders, 4.75 yd³ (3.6 m³) pin on w/bolt on edge, full fuel, 175 lb (79 kg) operator

44,090 lb (19 999 kg)

STANDARD EQUIPMENT

OPERATOR'S ENVIRONMENT

ROPS/FOPS cab structure

See page 5

ENGINE

FPT F4HFE6131

Tier 4 interim certified

Selectable work modes

Max power

Auto power

Standard power

Economy power

Turbocharger

Charge air cooling

Automatic fan belt tensioner

Integral engine oil cooling

Fuel filter w/water trap

Dual-element dry-type air cleaner

Hydraulic-driven cooling fan

65 amp alternator

(2) 700 CCA 12-volt batteries

Liquid-cooled radiator

Mid-mounted cooling module

Common rail electronic fuel injection

LOADER

See page 5

DRIVETRAIN

4-wheel drive

4F/3R Selectable autoshift/manual shift transmission

Electronic Control Module – Programmable, computer controlled proportional shifting with programmable gear selection

Onboard diagnostics

Single lever electronic shift control

F/N/R switch in loader control handle

Downshift button

Torque converter

Outboard planetary axles

Transmission oil cooler

Brake pedal transmission disconnect

Hydraulic wet disc brakes

Spring-applied hydraulic release parking brake

Limp-Home Mode

Greasable rear axle trunnion

HYDRAULICS

Single lever 2-spool loader control valve

Low-effort steering

Hydraulic driven fan

(8) Diagnostic quick couplers

Split flange hydraulic connections (1 inch or greater)

Hydraulic cooler

ELECTRICAL

Alternator and voltage regulator

Electrical disconnect

Batteries

Electric starter

Front and rear halogen flood lights

Tail lights and stop lights combined

(2) Front driving headlights (high/low beam)

(2) Front flood

(2) LED Stop/tail lights

(2) Rear flood

Front and rear turn signal/flash

Key start/stop switch

Centrally located fuse box with all electrical circuits protected

OTHER

Electric hood lift

Front and rear fenders

Standard counterweight

Drawbar hitch

Articulation locking bar

Lift arm locking bar

Lift and tie-down points – front/rear

Backup alarm

Remote drain points

OPTIONAL EQUIPMENT

OPERATOR'S COMPARTMENT

Heated cloth-covered air-suspension seat

Sound Shield noise suppression package

Cab air-conditioning w/heater

Radio

Radio-ready (12 or 24-volt) with auxiliary power (12-volt)

Cab convenience package

RH steps and platform

Rotating beacon

Second brake pedal

Open ROPS

Joystick steering

External rear view mirrors

Rear view camera with accessory mount

Extra front-facing work lights

DRIVETRAIN

5F/3R Autoshift/manual shift transmission, lockup torque converter, PowerInch de-clutch
Special application axles with locking front differential

Cold weather package

Heavy-duty (2) 950 CCA 12V batteries

Fuel heater

Hydraulic oil cooler bypass

Low temperature hydraulic oil

Grid heater

Full-view or ejector type pre-cleaner

Remote jump start receptacle

HYDRAULICS

Auxiliary hydraulics

Ride Control

Secondary steering

3 or 4-spool loader valves with 2 or 3-lever loader control

Variable speed hydraulic reversing fan

LOADER

Extended reach XR

Attachment auxiliary hydraulics

Buckets (see pages 3 & 4)

TIRES

23.5 x 25 L3 Bias

23.5 R25 L2 Radial

23.5 R25 L3 Radial

OTHER

Special paint

Full coverage fenders

Belly pan

Tool box

Full counterweight - Z-Bar

Fire extinguisher

Spare wheels and tires

Side guards for rear frame

License plate bracket

20 kph Max speed control



NOTE: All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.

NOTE: All engines meet current EPA emissions requirements.

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All Case construction equipment is biodiesel ready.



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