

WHEEL LOADER

CASE

CONSTRUCTION

SINCE 1842.

821G

ENGINE

Make	FPT
Model	F4HFE613S
Emissions Certification	Tier 4 Final
Emissions Technology	SCR/DOC
Type	4-stroke, turbocharged and air-to-air cooled
Cylinders	6-cylinder in-line
Bore/Stroke	4.09 x 5.20 in (104 x 132 mm)
Displacement	411 in ³ (6.7 L)
Fuel	#2 Diesel, #1 and #2 mixture permitted for cold temperatures
Fuel injection	Direct injection – electronic
Fuel filter	Replaceable, spin-on cartridge
Fuel pump	Bosch CP 3.3
Gradeability:	
Side-to-side	35°
Fore and aft	35°
Air filter	Dry type elements w/ warning restriction indicator
Mid-mount cooling module w/ auto reversing fan:	
Mid-mount Air/Water w/ Lube Oil Cooler	
Fan – hydraulic driven:	
Style	8 blade puller
Diameter	32 in (813 mm)
Water pump	Integral
Engine oil pump operating angle ratings:	
Side-to-side	35°
Fore and aft	35°
Oil filtration	Replaceable, full flow spin-on cartridge
Engine speeds	RPM
Rated – full load	2000
Horsepower – Maximum Power:	
Peak gross @ 1800 RPM	230 hp (172 kW)
Net rated @ 2000 RPM	206 hp (153 kW)
Peak net @ 1800 RPM	213 hp (159 kW)
Torque – Maximum Power:	
Gross @ 1300 RPM	873 lb-ft (1 184 N-m)
Net @ 1300 RPM	845 lb-ft (1 145 N-m)
Net torque rise:	
Maximum power range	56%

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

DRIVETRAIN

Transmission:	4F/3R Proportional w/ Electronic Control Module torque sensing autoshift/manual shift and modulation	
Gears	Helical cut	
Gear ratios	Forward/Reverse	
1st	3.745/3.551	
2nd	2.184/2.071	
3rd	1.072/1.017	
4th	0.636/ –	
Torque converter:		
Stall ratio – 4-speed	2.283:1	
Differential:	Limited slip w/ 67% available axle torque to wheel w/ tractionl	
Rear axle oscillation	24° total	
Front and rear axles:		
Differential ratio	4.11	
Planetary ratio	6.00	
Final axle ratio	24.67	
Heavy-duty axles – optional:		
Front axle equipped w/ locking differential		
Rear axle equipped w/ open differential		
Planetaries	Outboard	
Service brakes:	Hydraulically actuated, maintenance-free, multiple wet disc w/ accumulator to all four wheels	
Brake surface area:		
Front hub – each	600 in ² (0.387 m ²)	
Rear hub – each	721 in ² (0.465 m ²)	
Parking brakes:	Spring-applied hydraulic release disc on transmission output shaft neutralizes power flow to wheels when engaged	
Travel speeds – 4-speed transmission:		
	Forward	Reverse
	mph (kph)	mph (kph)
1st	4.7 (7.1)	4.7 (7.5)
2nd	7.4 (12.0)	7.8 (12.6)
3rd	14.5 (23.3)	15.2 (24.4)
4th	22.8 (36.6)	–
NOTE: Travel speeds at full engine throttle w/ 23.5-R25 L3 Radial tires.		

ELECTRICAL

Voltage	24 Volts, negative ground
Alternator	120 amp
Batteries (2)	12-volt

OPERATOR ENVIRONMENT

ROPS cab AC w/ heat; 8" LCD touchscreen display, adjustable armrest w/ 3 configurable buttons; Key start; Articulated power steering w/ tilt column; Fully adjustable, suspension seat w/ headrest; Foot throttle; Single lever (joystick) loader control w/ auxiliary function and fully adjustable wrist rest, 2 cup holders; Interior rear view mirror; 3 inch (76 mm) retractable seat belt; Integrated 4-corner strobe; Multiple storage trays; Single brake pedal; F/N/R shuttle switch; Left and Right external rear view mirrors; Pressurized air filtering; Anti-glare window strip; Front and Rear Defroster; Side window, partial/fully open; 2 Dome lights; Wipers, rear and intermittent front; Windshield washers, front and rear; Rubber floor mat; Horn; Radio ready – Includes antenna, speakers, wiring, radio fuse, 20A converter, 12-volt auxiliary power outlet, and USB outlet.

Displays/Gauges:

Digital:
Transmission oil temperature Engine coolant temperature; Fuel Level; DEF level.
LCD screen:
Hour meter; Engine speed; Travel speed; Time; Automatic transmission indication; Current gear selection; FNR indication; DeClutch indication; Engine mode indication; Trip computer A/B; Fuel consumption; Multiple languages, Metric/English; Engine diagnostics; Transmission diagnostics; Warning prompts; Error reporting; Diff. lock*.

Audible/Visual alarms:

Warning lights:
Four-way flashers and turn signals; Brake pressure; Lamp/high beam indication; Engine Block Heater.
Caution warnings:
Parking brake; Coolant temperature; Hydraulic oil temperature; Transmission oil temperature; Air filter; Transmission filter; Hydraulic filter; Alternator; Low fuel.
Critical warnings:
Engine oil pressure; Brake pressure; Steering pressure – w/ aux. steering*; Coolant temperature; Hydraulic oil temperature; Transmission oil temperature.

Backup alarm

Maintenance reminders:

Cab air filter; Engine oil filter; Fuel pre-filter;
DEF tank vent filter; SCR supply filter;
Hydraulic oil and filter; Engine air filter;
Engine coolant; Drive belt; Cab recirculation
filter; Engine breather filter; Transmission
breather; Front and rear axle fluid; SCR
supply module filter.

NOTE: *If equipped w/ option.

OPERATING WEIGHT

Z-Bar

Unit equipped w/ 23.5-R25 L3 Radial tires;
ROPS cab w/ heater and A/C; Heavy-duty
counterweight – 4,940 lb (2 241 kg); Heavy-duty
batteries; Front and rear fenders; Lights; Full
fuel; 165 lb (75 kg) operator; 4.25 yd³ (3.2 m³)
MD pin on w/ bolt on edge:

40,057 lb (18 170 kg)

HYDRAULICS

Main pumps – steering/implement:

Closed center pressure/flow compensated

Tandem variable displacement – load-sensing

Max. rated flow x2: 31.6 gpm @ 2000 RPM
(120 L/min @ 2000 RPM)

Loader control valve:

Closed-center, sectional 2, 3 or 4-function
w/ control for lift, tilt and auxiliary hydraulics

Loader auxiliary steering:

Hydraulic orbital center-pivot articulating
w/ on-demand oil flow

High pressure standby:

Implement 3,625 psi (25 000 kPa)
Steering 3,500 psi (24 132 kPa)

Filtration:

Filtered vent w/ relief on hydraulic reservoir,
maintains 3-5 psi on reservoir, 10-micron,
return filter furnishes only clean oil to all
components of the system.

SERVICE CAPACITIES

Fuel tank 76.0 gal (288.0 L)

DEF tank – Diesel Exhaust Fluid:

Usable capacity 9.8 gal (37.1 L)
Total 15.6 gal (58.9 L)

Hydraulic system:

Reservoir 24.0 gal (90.8 L)
Total 47.0 gal (178.0 L)

Transmission:

Service w/ filter 36.0 qt (34.0 L)

Front and rear axle:

Front axle 42.3 qt (40.0 L)
Rear axle 42.3 qt (40.0 L)

Engine oil w/ filter 16.0 qt (15.1 L)

Cooling system 32.0 qt (30.0 L)

OTHER SPECIFICATIONS

Lift cylinder:

Bore diameter 5.5 in (139.7 mm)
Rod diameter 3.0 in (76.2 mm)
Stroke 33.3 in (845.7 mm)

Dump cylinder:

Bore diameter 6.5 in (165.1 mm)
Rod diameter 3.5 in (88.9 mm)
Stroke 23.6 in (599.6 mm)

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.

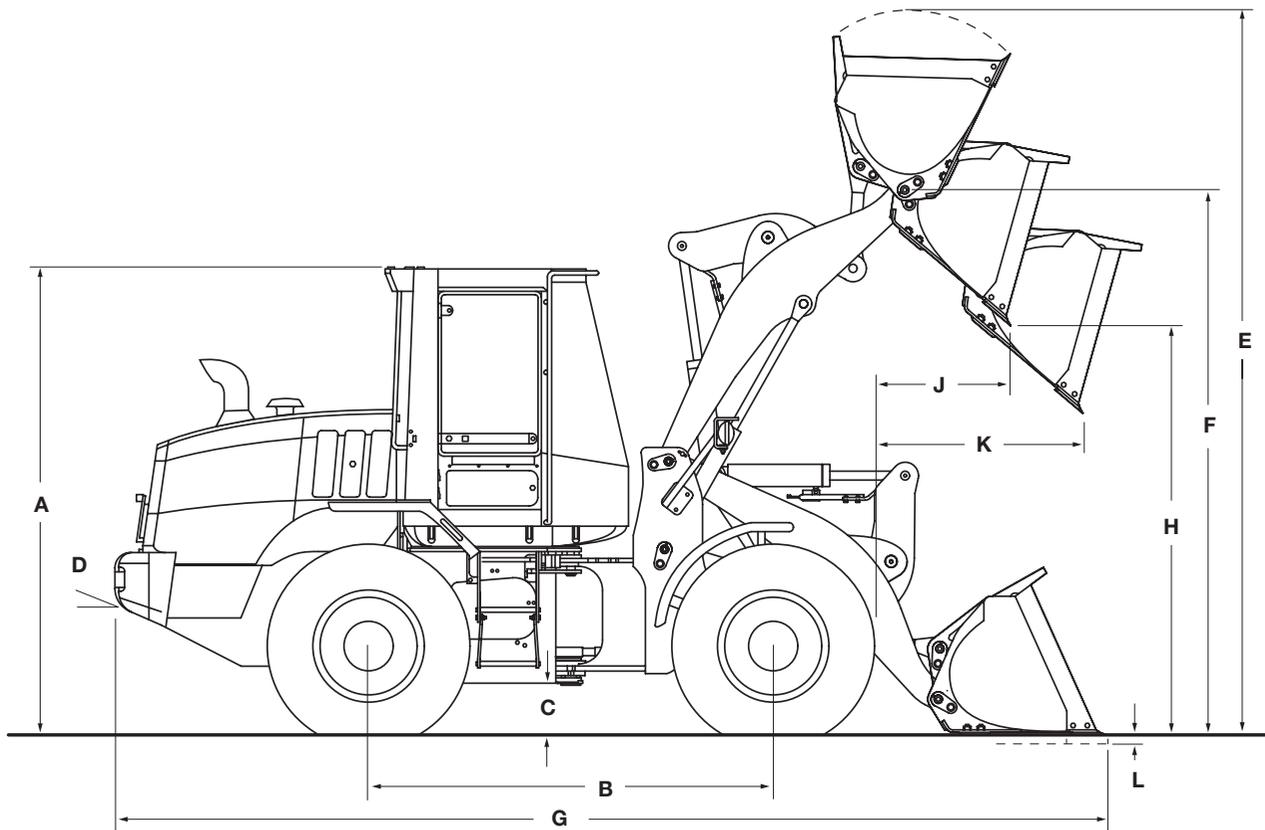
Cycle time:

Raise w/ rated bucket load 6.2 sec
Dump w/ rated bucket load 1.2 sec
Float down 2.5 sec

Sound level in Cab (LpA) 68 dB(A)

Exterior sound level (LwA) 104 dB(A)

NOTE: Sound level data tested in accordance
with ISO6395, 6396, 3744.



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

DIMENSIONS

A. Height to top of ROPS cab	136.2 in (3.460 mm)
Height to drawbar	42.6 in (1.081 mm)
B. Wheelbase	131.5 in (3.340 mm)
C. Ground clearance	17.0 in (431 mm)
D. Angle of departure	29°
Width:	
Overall* without bucket	111.4 in (2.829mm)
Centerline tread	87.8 in (2.230 mm)
Turning radius* – outside	236.3 in (6.003 mm)
Turning angle:	
From center	40°
Total angle	80°
Rear axle oscillation – total	24°

NOTE: *Dimensions taken with 23.5-R25 L3 Radial tires. Additional dimensions on pages 4 through 8.

WEIGHT ADJUSTMENTS

Select Options	Weight Adjustment	Tipping Load Adjustment	
		Straight: Deflected*	40° Turn: Deflected*
23.5-R25 L2 Bias	-748 lb (-339 kg)	-610 lb (-277 kg)	-971 lb (-440 kg)
23.5-R25 L2 Radial tires	-28 lb (-13 kg)	-104 lb (-47 kg)	-133 lb (-60 kg)
23.5-R25 Snow Radial Tires	+52 lb (+24 kg)	+162 lb (+73 kg)	+166 lb (+75 kg)

NOTE: Unit equipped with Z-Bar loader arms, 4.25 yd³ (3.2 m³) general purpose pin on bucket with bolt-on edge, 23.5-R25 L3 Radial tires, ROPS cab with heater and air conditioner, heavy counterweight, heavy-duty batteries, front and rear fenders, full fuel and 165 lb (75 kg) operator. Adjust select options from rated weight. *Tipping loads: ISO 14397-1 Deflected Tires.

PERFORMANCE SPECS

821G Z-Bar*	4.5 yd ³ (3.4 m ³) Bucket with Bolt-on Edge - Pin On	4.25 yd ³ (3.2 m ³) Bucket with Bolt-on Edge - Pin On	4.0 yd ³ (3.1 m ³) Bucket with Teeth - Pin On
Operating weight	40,123 lb (18.200 kg)	40,057 lb (18.170 kg)	39,916 lb (18.106 kg)
E. Operating height – fully raised with spillguard	216.7 in (5.505 mm)	215.4 in (5.471 mm)	215.4 in (5.471 mm)
F. Hinge pin height – fully raised	162.2 in (4.120 mm)	162.2 in (4.120 mm)	162.2 in (4.120 mm)
G. Overall length – bucket level on ground	316.5 in (8.039 mm)	315.1 in (8.004 mm)	321.0 in (8.153 mm)
Dump angle – fully raised	55°	55°	55°
H. Dump height – fully raised, 45° dump	116.5 in (2.958 mm)	117.3 in (2.981 mm)	113.6 in (2.885 mm)
J. Bucket reach – fully raised, 45° dump	44.4 in (1.128 mm)	43.4 in (1.102 mm)	47.8 in (1.215 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	67.4 in (1.712 mm)	66.8 in (1.696 mm)	69.4 in (1.762 mm)
L. Dig depth	3.1 in (78 mm)	3.1 in (78 mm)	3.1 in (78 mm)
Operating load – ISO Rigid Tires	13,342 lb (6.052 kg)	13,409 lb (6.082 kg)	13,625 lb (6.180 kg)
Operating load – ISO Deflected Tires	12,189 lb (5.529 kg)	2,257 lb (5.560 kg)	12,457 lb (5.650 kg)
Maximum material density – ISO Rigid Tires	2,965 lb/yd ³ (1.759 kg/m ³)	3,155 lb/yd ³ (1.872 kg/m ³)	3,406 lb/yd ³ (2.021 kg/m ³)
Maximum material density – ISO Deflected Tires	2,709 lb/yd ³ (1.607 kg/m ³)	2,884 lb/yd ³ (1.711 kg/m ³)	3,114 lb/yd ³ (1.848 kg/m ³)
Tipping load – ISO Rigid Tires: Straight	32,245 lb (14.626 kg)	32,384 lb (14.689 kg)	32,870 lb (14.910 kg)
40° turn	26,684 lb (12.104 kg)	26,819 lb (12.165 kg)	27,249 lb (12.360 kg)
Tipping load – ISO Deflected Tires: Straight	30,231 lb (13.713 kg)	30,375 lb (13.777 kg)	30,829 lb (13.984 kg)
40° turn	24,377 lb (11.057 kg)	24,515 lb (11.120 kg)	24,913 lb (11.300 kg)
Lift capacity: Full height	21,913 lb (9.939 kg)	21,980 lb (9.970 kg)	22,138 lb (10.042 kg)
Ground	40,294 lb (18.277 kg)	40,434 lb (18.341 kg)	40,760 lb (18.488 kg)
Breakout force with tilt cylinder	34,301 lb (15.559 kg)	35,288 lb (16.007 kg)	37,922 lb (17.201 kg)
Loader clearance circle with bucket	524.0 in (13.311 mm)	523.3 in (13.291 mm)	526.5 in (13.373 mm)

821G	Z-Bar	Z-Bar	Z-Bar
Maximum rollback: Ground	41°/37°	41°/37°	42°/37°
Carry position	45°/43°	45°/43°	45°/43°
@ Full height	59°/60°	59°/60°	59°/60°
Maximum grading angle with bucket – back dragging	60°/63°	60°/63°	61°/64°
SAE bucket capacity – struck	3.78 yd ³ (2.89 m ³)	3.63 yd ³ (2.78 m ³)	3.44 yd ³ (2.63 m ³)
Heaped	4.50 yd ³ (3.44 m ³)	4.25 yd ³ (3.25 m ³)	4.00 yd ³ (3.06 m ³)
Bucket width – outside	119.3 in (3 030 mm)	119.3 in (3 030 mm)	119.2 in (3 027 mm)
Bucket weight	3,464 lb (1 571 kg)	3,398 lb (1 541 kg)	3,256 lb (1 477 kg)

PERFORMANCE SPECS

821G Z-Bar*	4.0 yd ³ (3.06 m ³) Bucket with Bolt-on Edge - JRB Coupler	3.8 yd ³ (2.9 m ³) Bucket with Teeth - JRB Coupler	4.0 yd ³ (3.1 m ³) Bucket with Bolt-On Edge - ACS Coupler
Operating weight	41,430 lb (18.792 kg)	41,289 lb (18.728 kg)	41,483 lb (18.816 kg)
E. Operating height – fully raised with spillguard	221.9 in (5.636 mm)	221.9 in (5.637 mm)	218.8 in (5.558 mm)
F. Hinge pin height – fully raised	162.1 in (4.118 mm)	162.1 in (4.118 mm)	162.1 in (4.118 mm)
G. Overall length – bucket level on ground	325.1 in (8.258 mm)	331.0 in (8.406 mm)	320.9 in (8.151 mm)
Dump angle – fully raised	55°	55°	55°
H. Dump height – fully raised, 45° dump	110.9 in (2.817 mm)	107.1 in (2.721 mm)	113.6 in (2.886 mm)
J. Bucket reach – fully raised, 45° dump	51.0 in (1.295 mm)	55.4 in (1.408 mm)	47.8 in (1.213 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	71.2 in (1.807 mm)	73.5 in (1.866 mm)	69.4 in (1.762 mm)
L. Dig depth	3.1 in (79 mm)	3.2 in (80 mm)	3.1 in (79 mm)
Operating load – ISO Rigid Tires	11,830 lb (5.366 kg)	12,023 lb (5.454 kg)	12,170 lb (5.520 kg)
Operating load – ISO Deflected Tires	10,768 lb (4.884 kg)	10,947 lb (4.966 kg)	11,077 lb (5.024 kg)
Maximum material density – ISO Rigid Tires	2,958 lb/yd ³ (1.755 kg/m ³)	3,164 lb/yd ³ (1.877 kg/m ³)	3,042 lb/yd ³ (1.805 kg/m ³)
Maximum material density – ISO Deflected Tires	2,692 lb/yd ³ (1.597 kg/m ³)	2,881 lb/yd ³ (1.709 kg/m ³)	2,769 lb/yd ³ (1.643 kg/m ³)
Tipping load – ISO Rigid Tires: Straight	28,844 lb (13.083 kg)	29,278 lb (13.280 kg)	29,661 lb (13.454 kg)
40° turn	23,661 lb (10.732 kg)	24,046 lb (10.907 kg)	24,339 lb (11.040 kg)
Tipping load – ISO Deflected Tires: Straight	27,004 lb (12.249 kg)	27,412 lb (12.434 kg)	27,762 lb (12.593 kg)
40° turn	21,537 lb (9.769 kg)	21,894 lb (9.931 kg)	22,154 lb (10.049 kg)
Lift capacity: Full height	20,513 lb (9.305 kg)	20,670 lb (9.376 kg)	20,500 lb (9.299 kg)
Ground	28,363 lb (12.865 kg)	29,604 lb (13.428 kg)	32,373 lb (14.684 kg)
Breakout force with tilt cylinder	28,872 lb (13.096 kg)	30,698 lb (13.925 kg)	31,163 lb (14.135 kg)
Loader clearance circle with bucket	529.0 in (13.437 mm)	532.4 in (13.523 mm)	526.5 in (13.374 mm)

821G	Z-Bar	Z-Bar	Z-Bar
Maximum rollback: Ground	42°/37°	42°/37°	42°/37°
Carry position	45°/43°	45°/43°	45°/43°
@ Full height	59°/60°	59°/60°	59°/60°
Maximum grading angle with bucket – back dragging	62°/65°	64°/67°	61°/64°
SAE bucket capacity – struck	3.41 yd ³ (2.61 m ³)	3.25 yd ³ (2.48 m ³)	3.41 yd ³ (2.61 m ³)
Heaped	4.00 yd ³ (3.06 m ³)	3.80 yd ³ (2.91 m ³)	4.00 yd ³ (3.06 m ³)
Bucket width – outside	119.3 in (3.030 mm)	119.2 in (3.027 mm)	119.3 in (3.030 mm)
Bucket weight	4,770 lb (2.164 kg)	4,629 lb (2.100 kg)	4,824 lb (2.188 kg)

NOTE: *Z-Bar performance data shown with full counterweight. Performance data unit equipped with 23.5-R25 L3 Radial tires, ROPS cab with heater and air conditioner, full counterweight, standard batteries, front and rear fenders, full fuel and 165 lb (75 kg) operator. Specifications per SAE J732, J1234, J695, J742, and J818.

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

See page 1.

ENGINE

FPT F4HFE613S
Tier 4 Final Certified
Selective Catalytic Reduction (SCR) with Diesel Oxidation Catalyst
Selectable work modes:
Maximum Mode
Smart Mode
Turbocharger
Charge air cooling
Automatic belt tensioner
Integral engine oil cooling
Fuel filter with water trap
Dual-element dry-type air cleaner
Hydraulic-driven cooling fan
Air-cooled radiator
Mid-mounted cooling module with hydraulically driven auto reversing fan
Engine block heater
Common rail electronic fuel injection

LOADER

See page 2 – Operating weight,
Other specifications

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
Limited-slip differentials
Outboard planetary axles
Transmission oil cooler
Brake pedal transmission disconnect – declutch
Hydraulic wet disc brakes
Spring-applied hydraulic release parking brake
Limp-Home Mode
Greaseable rear axle trunnion
3-piece rims

HYDRAULICS

Adjustable Electro-hydraulic - EH loader control with one auxiliary function and 3 configurable buttons
Adjustable EH settings:
Smooth
Moderate
Aggressive
Auxiliary Hydraulics
Ride Control™
Locking hydraulics for coupler
EH Parallel Lift
Low-effort steering
Hydraulic driven cooling fan
Diagnostic quick couplers
Split flange hydraulic connections – 1 in or greater
Hydraulic oil cooler

ELECTRICAL

Alternator and voltage regulator
Battery isolator/electrical disconnect
120 amp alternator
(2) 700 CCA 12-volt batteries
Electric starter
Lights:
Integrated 4-corner strobe
2 Front and 2 rear halogen flood lights
2 Front driving headlights – high/ low beam with integrated turn signals
2 LED stop/ tail lights with integrated turn signals
Key start /stop switch
Backup alarm
Centrally located fuse box with all electrical circuits protected
Remote jump start posts

OTHER

Electric hood lift
Front and rear fenders, partial coverage
External rear view mirrors
Heavy counterweight
Drawbar hitch
Articulation locking bar
Lift arm locking bar
Lift and tie-down points – front /rear
Rear frame side covers
License plate brackets; front bracket and lit rear bracket
Rubber steering stops
Grouped remote-mounted ecology drains:
Engine oil
Engine coolant
Hydraulic oil

OPTIONAL EQUIPMENT

OPERATOR ENVIRONMENT

Cloth-covered heated air-suspension seat with headrest
Sound Shield noise suppression package
Bluetooth radio, 12V AM/FM with auxiliary input
Cab convenience package:
Rear sun shade, interior mirror, under the seat drawer, coat hook, 12V accessory port, and an ash tray
In cab powered cooler box
In cab accessory mount
Rear view camera
External heated rear view mirrors
Front LED driving/headlights
LED front and rear work lights – 4 front, 2 rear

DRIVETRAIN

Heavy-duty axles:
With locking front differential and open/conventional rear differential
Cold weather package:
Heavy-duty (2) 950 CCA 12V batteries
Fuel heater
Hydraulic oil cooler bypass
Low temperature hydraulic oil
Fast-warm hydraulic valve

HYDRAULICS

Secondary steering
Integrated Payload System
Tire Pressure Monitoring System
2-function loader valve with joystick loader control
4-function loader valve with joystick loader control and two proportional auxiliary roller switches

LOADER

Attachment auxiliary hydraulics
Coupler systems – JRB or ACS compatible
Buckets – see pages 4 through 6

TIRES

23.5 x 25 L2 bias – dirt / traction
23.5 x 25 L3 bias – rock
23.5-R25 L2 radial – dirt / traction
23.5-R25 L3 radial – rock
23.5-R25 radial Michelin SnoPlus
Axle oscillation stops

ADVANCED ENGINE AIR FILTRATION

Sy-Klone® ejector type pre-cleaner

OTHER

Additional RH steps and platform with standard or wide fenders
12.4 mph (20 kph) maximum speed control
Special paint
Skid plate and transmission
Standard fenders with right and left hand steps
Wide full coverage fenders with right and left hand steps



CASE Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold. The specifications, descriptions, and illustrative materials contained here reflect correctly the data known up to the publication date, but are subject to changes with no previous notice. The illustrations may include optional equipment and accessories and may not include all standard equipment.

CCEIO138 – 05/2022

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