

ENGINE

Make	FPT
Model	F2CFE614C
Emissions Certification	Tier 4 Final
Type	4-stroke, turbocharged and air-to-air cooled
Cylinders	6-cylinder in-line
Bore/Stroke	4.61 x 5.31 in (117 x 135 mm)
Displacement	531 in ³ (8.7 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	2-element dry type w/ warning restriction indicator
Mid-mount cooling module:	Mid-mount air/water
Fan – hydraulic driven:	
Style	9 blade puller
Diameter	34.5 in (876 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	2100
Horsepower:	
Maximum Power Mode:	
Peak gross @ 1800 RPM	320 hp (239 kW)
Net rated @ 2000 RPM	262 hp (195 kW)
Peak net @ 1800 RPM	296 hp (221 kW)
Standard Power Mode:	
Peak gross @ 1800 RPM	297 hp (222 kW)
Net rated @ 1800 RPM	273 hp (204 kW)
Peak net @ 2100 RPM	242 hp (180 kW)
Economy Power Mode:	
Peak gross @ 1400 RPM	253 hp (188 kW)
Net rated @ 1400 RPM	178 hp (133 kW)
Peak net @ 1800 RPM	241 hp (180 kW)

Torque – peak:

Maximum Power Mode:	
Gross @ 1100 RPM	1,091 lb-ft (1 479 N-m)
Net @ 1100 RPM	1,064 lb-ft (1 442 N-m)
Standard Power Mode:	
Gross @ 1100 RPM	1,013 lb-ft (1 374 N-m)
Net @ 1100 RPM	986 lb-ft (1 337 N-m)
Standard Power Mode:	
Gross @ 1300 RPM	948 lb-ft (1 285 N-m)
Net @ 1300 RPM	910 lb-ft (1 234 N-m)

Torque rise:

Maximum power range	50%
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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	3.731/3.731
2nd	2.207/2.207
3rd	1.421/0.970
4th	0.625/ —

Torque converter:

Stall ratio	3.089
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Differential:

Open Type Differential, Front & Rear

Rear axle oscillation	26° total
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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
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Service brakes:

Hydraulically actuated, maintenance-free, multiple wet disc w/ accumulator to all four wheels

Brake surface area:

Front hub – each	841 in ² (0.542 m ²)
Rear hub – each	841 in ² (0.542 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 mph (kph)	Reverse mph (kph)
1st	4.7 (7.7)	4.7 (7.7)
2nd	7.8 (12.6)	7.8 (12.6)
3rd	11.8 (18.9)	16.5 (26.6)
4th	23.6 (38.0)	—

NOTE: Travel speeds at full engine throttle w/ 26.5-R25 L3 Radial tires.

ELECTRICAL

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

OPERATOR ENVIRONMENT

ROPS cab AC w/ heat; Key start; Articulated power steering w/ tilt column; Fully adjustable, suspension seat; Foot throttle; Single lever loader control w/ fully adjustable wrist rest, 2 cup holders; 2 interior rear view mirrors; 2 in (51 mm) retractable seat belt; Multiple storage trays; Single brake pedal; F/N/R shuttle switch; External rearview 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.

Displays/Gauges:

Digital:

Transmission oil temperature; Engine coolant temperature; Fuel level; DEF level.

LCD screen:

Hour meter; Time; FNR indication; Trip computer A/B; Metric/english; Differential lock*; Engine speed; Automatic trans indication; DeClutch indication; Fuel consumption; Engine diagnostics; Error reporting; Travel speed; Current gear selection; Engine mode indication; Multiple languages; Transmission diagnostics; Warning prompts.

Audible/Visual alarms:

Warning lights:

Four-way flashers and turn signals; Brake pressure; Lamp/high beam indication; Grid 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/ ROPS cab w/ heater and A/C; Standard counterweight; 23.5-R25 L3 Radial tires; 5.5 yd³ (4.2 m³) GP pin-on w/ bolt on edge; Full fuel; 165 lb (75 kg) operator:
55,282 lb (25 076 kg)

XR
Unit equipped w/ ROPS cab w/ heater and A/C; Standard counterweight; 26.5-R25 L3 Radial tires; 5.5 yd³ (4.2 m³) HD pin-on w/ bolt on edge; Full fuel; 165 lb (75 kg) operator:
58,711 lb (26 631 kg)

HYDRAULICS

Pump – steering/implement:
Closed center pressure/flow compensated

Variable displacement – load-sensing:
50 gpm @ 2000 RPM
(190 L/min @ 2000 RPM)

Loader control valve:
Closed-center, sectional 2, 3 or 4-function w/ 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 3,650 psi (25 165 kPa)
Steering 3,495 psi (24 097 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	125 gal (473.0 L)
DEF tank – Diesel Exhaust Fluid:	
Usable capacity	16.1 gal (61.0 L)
Total	24 gal (90.8 L)

Hydraulic system:	
Reservoir	35.4 gal (134 L)
Total	66 gal (250 L)

Transmission:	
Service w/ filter	12 gal (45.4 L)

Front and rear axle:	
Front axle	44.4 qt (42 L)
Rear axle	44.4 qt (42 L)

Engine oil w/ filter	30 qt (28.5 L)
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Cooling system	15 gal (56.8 L)
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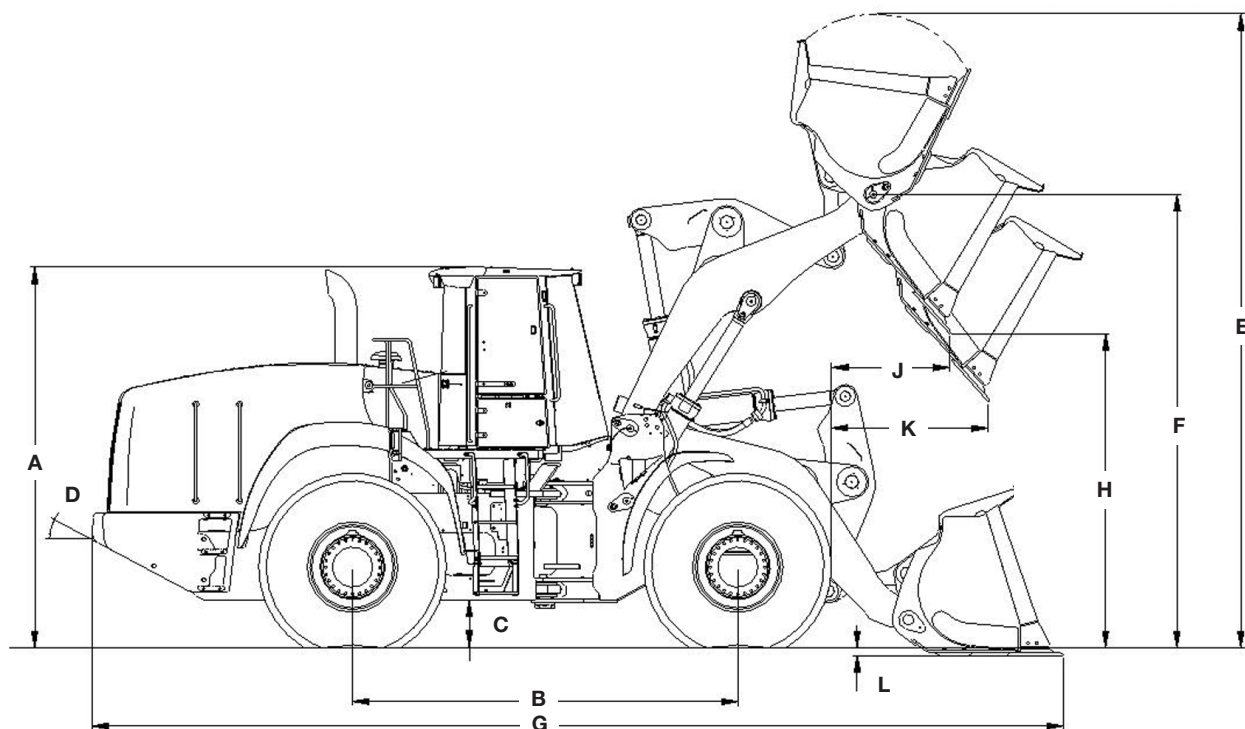
OTHER SPECIFICATIONS

Lift cylinder:	
Bore diameter	7.00 in (177.8 mm)
Rod diameter	4.50 in (114.3 mm)
Stroke	30.73 in (780.6 mm)

Dump cylinder – Z-Bar and XR:	
Bore diameter	8.00 in (203.2 mm)
Rod diameter	5.00 in (127.0 mm)
Stroke	22.91 in (581.9 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	1.3 sec
Power down	2.8 sec
Float down	2.6 sec



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

DIMENSIONS

A. Height to top of ROPS cab	140.8 in (3 577 mm)
Height to drawbar	45.0 in (1 143 mm)
B. Wheelbase	139.8 in (3 550 mm)
C. Ground clearance	17.2 in (437 mm)
D. Angle of departure	23°
Width:	
Overall* without bucket	117.2 in (2 978 mm)
Centerline tread	90.6 in (2 300 mm)
Turning radius* – outside	250.6 in (6 366 mm)
Turning angle:	
From center	40°
Total angle	80°
Rear axle oscillation – total	26°

NOTE: *Dimensions taken with 26.5-R25 L3 Radial tires. Additional dimensions on pages 4 through 5.

WEIGHT ADJUSTMENTS

Select Options	Weight Adjustment	Tipping Load Adjustment Straight	Tipping Load Adjustment 40° Turn
26.5 x 25 L5 Radial Tires	+1,500 lb (+680 kg)	+1,175 lb (+534 kg)	+1,056 lb (+479 kg)

NOTE: Unit equipped with Z-Bar loader arms, 5.5 yd³ (4.2 m³) pin on bucket w/ bolt-on edge, 26.5-R25 L3 Radial tires, ROPS cab with heater and A/C, full counterweight, front and rear fenders, full fuel and 165 lb (75 kg) operator. Adjust select options from rated weight.

PERFORMANCE SPECS

1021G Z-Bar*	4.75 yd³ GP (3.6 m³) Bucket with Bolt-on Edge	4.6 yd³ GP (3.5 m³) Bucket with Teeth Only	5.5 yd³ GP (4.2 m³) Bucket with Bolt-on Edge
Operating weight	55,023 lb (24 958 kg)	55,019 lb (24 956 kg)	55,282 lb (25 075 kg)
SAE bucket capacity – struck	4.07 yd³ (3.11 m³)	3.87 yd³ (2.96 m³)	4.75 yd³ (3.63 m³)
Heaped	4.75 yd³ (3.63 m³)	4.60 yd³ (3.52 m³)	5.50 yd³ (4.21 m³)
Bucket width – outside	125.8 in (3 195 mm)	126.9 in (3 223 mm)	125.8 in (3 195 mm)
Bucket weight	4,418 lb (2 004 kg)	4,413 lb (2 002 kg)	4,676 lb (2 121 kg)
E. Operating height – fully raised with spillguard	224.4 in (5 701 mm)	224.4 in (5 701 mm)	229.3 in (5 824 mm)
F. Hinge pin height – fully raised	167.2 in (4 246 mm)	167.2 in (4 246 mm)	167.2 in (4 246 mm)
G. Overall length – bucket level on ground	347.6 in (8 829 mm)	354.8 in (9 011 mm)	352.3 in (8 948 mm)
Dump angle – fully raised	53°	53°	53°
H. Dump height – fully raised, 45° dump	124.2 in (3 154 mm)	119.5 in (3 036 mm)	121.2 in (3 078 mm)
J. Bucket reach – fully raised, 45° dump	46.2 in (1 175 mm)	51.5 in (1 308 mm)	49.8 in (1 265 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	72.0 in (1 829 mm)	75.3 in (1 913 mm)	74.3 in (1 888 mm)
Operating load – ISO Deflected Tires	18,044 lb (8 185 kg)	18,166 lb (8 240 kg)	17,869 lb (8 105 kg)
Maximum material density – ISO Deflected Tires	3,799 lb/yd³ (2 254 kg/m³)	3,949 lb/yd³ (2 343 kg/m³)	2,249 lb/yd³ (1 928 kg/m³)
Tipping load – ISO Deflected Tires:			
Straight	45,444 lb (20 613 kg)	45,755 lb (20 754 kg)	45,152 lb (20 480 kg)
40° turn	36,088 lb (16 369 kg)	36,331 lb (16 480 kg)	35,739 lb (16 211 kg)
Lift capacity:			
Full height	31,284 lb (14 190 kg)	31,225 lb (14 164 kg)	31,048 lb (14 083 kg)
Ground	53,070 lb (24 072 kg)	53,621 lb (24 322 kg)	52,015 lb (23 593 kg)
Breakout force with tilt cylinder	49,787 lb (22 583 kg)	53,661 lb (24 340 kg)	45,056 lb (20 437 kg)
Maximum rollback:			
Ground	44°	45°	44°
Carry position	50°	46°	50°
@ Full height	65°	65°	65°
L. Dig depth	4.8 in (123 mm)	5.0 in (128 mm)	4.8 in (123 mm)
Maximum grading angle with bucket – back dragging	61°	60°	60°
Loader clearance circle with bucket	556.3 in (14 129 mm)	561.1 in (14 251 mm)	558.7 in (14 190 mm)

1021G XR	4.75 yd³ GP (3.6 m³) Bucket with Bolt-on Edge	4.6 yd³ GP (3.5 m³) Bucket with Teeth Only	5.5 yd³ GP (4.2 m³) Bucket with Bolt-on Edge
Operating weight	58,453 lb (26 514 kg)	58,449 lb (26 512 kg)	58,711 lb (26 631 kg)
E. Operating height – fully raised with spillguard	247.3 in (6 282 mm)	247.3 in (6 282 mm)	252.2 in (6 405 mm)
F. Hinge pin height – fully raised	190.0 in (4 827 mm)	190.0 in (4 827 mm)	190.0 in (4 827 mm)
G. Overall length – bucket level on ground	368.0 in (9 348 mm)	375.2 in (9 529 mm)	372.7 in (9 467 mm)
Dump angle – fully raised	50°	50°	50°
H. Dump height – fully raised, 45° dump	147.1 in (3 735 mm)	142.4 in (3 617 mm)	144.1 in (3 659 mm)
J. Bucket reach – fully raised, 45° dump	46.7 in (1 187 mm)	52.0 in (1 321 mm)	50.3 in (1 278 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	90.3 in (2 294 mm)	93.9 in (2 385 mm)	92.8 in (2 358 mm)
Operating load – ISO Deflected Tires	15,439 lb (7 003 kg)	15,533 lb (7 046 kg)	15,259 lb (6 921 kg)
Maximum material density – ISO Deflected Tires	3,250 lb/yd³ (1 929 kg/m³)	3,377 lb/yd³ (2 004 kg/m³)	2,774 lb/yd³ (1 646 kg/m³)
Tipping load – ISO Deflected Tires:			
Straight	38,219 lb (17 336 kg)	38,463 lb (17 447 kg)	37,816 lb (17 153 kg)
40° turn	30,878 lb (14 006 kg)	31,066 lb (14 091 kg)	30,518 lb (13 843 kg)
Lift capacity:			
Full height	27,990 lb (12 696 kg)	27,948 lb (12 677 kg)	27,746 lb (12 585 kg)
Ground	42,661 lb (19 351 kg)	43,039 lb (19 522 kg)	41,798 lb (18 959 kg)
Breakout force with tilt cylinder	50,267 lb (22 801 kg)	54,190 lb (24 580 kg)	45,493 lb (20 635 kg)
Maximum rollback:			
Ground	42°	42°	42°
Carry position	49°	49°	49°
@ Full height	66°	66°	66°
L. Dig depth	5.0 in (126 mm)	5.2 in (131 mm)	5.0 in (127 mm)
Maximum grading angle with bucket – back dragging	63°	62°	63°
Loader clearance circle with bucket	575.7 in (14 622 mm)	581.1 in (14 760 mm)	578.5 in (14 694 mm)

PERFORMANCE SPECS

1021G Z-Bar*	5.3 yd ³ GP (4.1 m ³) Bucket with Teeth Only
Operating weight	55,278 lb (25 074 kg)
SAE bucket capacity – struck	4.56 yd ³ (3.49 m ³)
Heaped	5.30 yd ³ (4.05 m ³)
Bucket width – outside	126.9 in (3 223 mm)
Bucket weight	4,672 lb (2 119 kg)
E. Operating height – fully raised with spillguard	229.3 in (5 824 mm)
F. Hinge pin height – fully raised	167.2 in (4 246 mm)
G. Overall length – bucket level on ground	359.4 in (9 130 mm)
Dump angle – fully raised	53°
H. Dump height – fully raised, 45° dump	116.5 in (2 959 mm)
J. Bucket reach – fully raised, 45° dump	55.1 in (1 399 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	77.5 in (1 969 mm)
Operating load – ISO Deflected Tires	17,991 lb (8 160 kg)
Maximum material density – ISO Deflected Tires	3,394 lb/yd ³ (2 014 kg/m ³)
Tipping load – ISO Deflected Tires:	
Straight	45,453 lb (20 617 kg)
40° turn	35,981 lb (16 321 kg)
Lift capacity:	
Full height	30,993 lb (14 058 kg)
Ground	52,533 lb (23 829 kg)
Breakout force with tilt cylinder	48,219 lb (21 872 kg)
Maximum rollback:	
Ground	45°
Carry position	50°
@ Full height	65°
L. Dig depth	5.0 in (128 mm)
Maximum grading angle with bucket – back dragging	61°
Loader clearance circle with bucket	563.5 in (14 314 mm)

1021G XR	5.3 yd ³ GP (4.1 m ³) Bucket with Teeth Only
Operating weight	58,707 lb (26 629 kg)
E. Operating height – fully raised with spillguard	252.2 in (6 405 mm)
F. Hinge pin height – fully raised	190.0 in (4 827 mm)
G. Overall length – bucket level on ground	379.8 in (9 648 mm)
Dump angle – fully raised	50°
H. Dump height – fully raised, 45° dump	139.4 in (3 541 mm)
J. Bucket reach – fully raised, 45° dump	55.6 in (1 411 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	96.3 in (2 446 mm)
Operating load – ISO Deflected Tires	15,346 lb (6 961 kg)
Maximum material density – ISO Deflected Tires	2,896 lb/yd ³ (1 718 kg/m ³)
Tipping load – ISO Deflected Tires:	
Straight	38,047 lb (17 258 kg)
40° turn	30,692 lb (13 922 kg)
Lift capacity:	
Full height	27,705 lb (12 567 kg)
Ground	42,153 lb (19 120 kg)
Breakout force with tilt cylinder	48,698 lb (22 089 kg)
Maximum rollback:	
Ground	42°
Carry position	49°
@ Full height	66°
L. Dig depth	5.2 in (131 mm)
Maximum grading angle with bucket – back dragging	62°
Loader clearance circle with bucket	584.0 in (14 834 mm)

NOTE: *Z-Bar performance data shown w/ standard counterweight.
Performance data unit equipped with 26.5-R25 L3 Radial tires, ROPS cab w/ heater and A/C, standard counterweight, full fuel and 165 lb (75 kg) operator.
Specifications per SAE J732, J1234, J695, J742, and J818.

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

ROPS/FOPS cab structure
See page 1

ENGINE

Case/FPT F2CFE614H
Tier 4 Final
Selectable work modes:
 Maximum power
 Auto power
 Standard power
 Economy power
Automatic shutdown – idle reduction device
Turbocharger
Charge air cooling
Automatic fan belt tensioner
Integral engine oil cooling
Fuel filter with water trap
Dual-element dry-type air cleaner
Hydraulic-driven cooling fan
Air-cooled radiator
Rear-mounted cooling module
Common rail electronic fuel injection

LOADER

See page 2

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
Open differentials in front and rear axles
Heavy-duty axles - XR:
 Larger size axles front and rear with
 locking differential on front axle, open
 differential on rear axle.
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
Greaseable rear axle trunnion

HYDRAULICS

Electro-hydraulic (EH) joystick loader control
Low-effort steering
Hydraulic driven fan
8 Diagnostic quick couplers
Split flange hydraulic connections –
 1 inch or greater
Hydraulic oil cooler

ELECTRICAL

120 amp alternator and voltage regulator
Battery isolator/electrical disconnect
(2) 900 CCA 12-volt batteries
Electric starter
Lights:
 Front and rear halogen flood lights
 Tail lights and stop lights combined
 2 Front driving headlights – high/low beam
 2 Front flood
 2 Rear flood
 2 LED stop and tail lights
 Front and rear turn signal/flash
Key start/stop switch
Centrally located fuse box with all electrical
 circuits protected
Backup alarm
Remote jump start posts

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
3-piece rims

TELEMATICS

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

OPTIONAL EQUIPMENT

OPERATOR ENVIRONMENT

Cloth-covered heated air-suspension seat
Leather trimmed heated air seat with active suspension
Cloth mechanical suspension seat
3 in (76 mm) seatbelt
Sound Shield noise suppression package
Bluetooth radio, 12V AM/FM with auxiliary input
Radio-ready – 12 or 24-volt with auxiliary power – 12-volt
Cab convenience package:
Rear sun shade, interior mirror, under the seat drawer, coat hook, 12V accessory port, and an ash tray
LED rotating beacon
Joystick steering
External rear view mirrors
LED Front and Rear work lights
Rear view camera
Extra front-facing LED work lights

DRIVETRAIN

Heavy-duty axles - Z-bar:
Larger size axles front and rear with locking differential on front axle, open differential on rear axle.
Special application axles with locking front differential
Axle oscillation stops
Cold weather package:
Engine block heater
Fuel heater
Hydraulic oil cooler bypass
Low temperature hydraulic oil
Grid heater
Ejector type pre-cleaner

HYDRAULICS

Auxiliary hydraulics
Ride Control
Secondary steering
3- or 4-function loader valves with 2- or 3-lever loader control
Variable speed hydraulic reversing fan

LOADER

Extended Reach XR
Attachment auxiliary hydraulics
Buckets – see pages 4 and 5

TIRES

26.5 x 25 L3 Bias
26.5-R25 L3 Radial
26.5 x 25 L5 Bias
26.5-R25 L5 Radial

OTHER

Special paint
Full coverage fenders
Tool box
Fire extinguisher
Side guards for rear frame
License plate brackets, front and rear
12 mph (20 kph) maximum speed control
Wide fenders with right hand and left hand steps
Sy-Klone® ejector type Pre-cleaner

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