



## ENGINE

Make	FPT
Model	F4HFE613W*B007
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 <sup>3</sup> (6.7 L)
Fuel	#2 Diesel, #1 and #2 mixture permitted for cold temperatures
Fuel injection	Direct injection – electronic
Fuel filter	Replaceable
Fuel pump	Bosch
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
Engine speeds	RPM
Rated – full load	2000
Horsepower – Maximum Power:	
Peak gross @ 1800 RPM	172 hp (128 kW)
Net rated @ 2000 RPM	151 hp (113 kW)
Peak net @ 1800 RPM	162 hp (121 kW)
Torque – Maximum Power:	
Gross @ 1600 RPM	538 lb-ft (730 N-m)
Net @ 1600 RPM	510 lb-ft (692 N-m)
Net torque rise:	
Maximum power range	29%

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 – 4-speed	Forward/Reverse	
1st	4.012/3.804	
2nd	2.174/2.061	
3rd	1.088/1.031	
4th	0.619/ –	
Gear ratios – 5-speed	Forward/Reverse	
1st	4.320/4.097	
2nd	2.191/2.078	
3rd	1.418/0.895	
4th	0.944/ –	
5th	0.611/ –	
Torque converter:		
Stall ratio – 4-speed	2.664:1	
Stall ratio – 5-speed	2.376:1	
Differential:	Limited slip w/ 34% of available axle torque to wheel w/ traction	
Rear axle oscillation	24° total	
Front and rear axles:		
Differential ratio	3.18	
Planetary ratio	6.40	
Final axle ratio	20.34	
HD Axle Std.	Limited Slip Front / Limited Slip Rear	
Optional HD Axles	Diff Lock Front / Open Rear Diff Lock Front / Limited Slip Rear	
Planetaries	Outboard	
Service brakes:	Hydraulically actuated, maintenance-free, multiple wet disc w/ accumulator to all four wheels	
Brake surface area:		
Front hub – each	480 in <sup>2</sup> (0.31 m <sup>2</sup> )	
Rear hub – each	480 in <sup>2</sup> (0.31 m <sup>2</sup> )	
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	4.3 (6.9)	4.5 (7.3)
2nd	8.4 (13.5)	8.8 (14.2)
3rd	14.9 (23.9)	15.6 (25.0)
4th	24.0 (38.6)	–
Travel speeds – 5-speed transmission:	Forward	Reverse
	mph (kph)	mph (kph)
1st	4.0 (6.5)	4.3 (6.9)
2nd	8.3 (13.3)	8.7 (14.0)
3rd	12.7 (20.5)	20.1 (32.4)
4th	19.1 (30.7)	–
5th	28.0 (45.0)	–

NOTE: Travel speeds at full engine throttle w/ 20.5-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 high-visibility orange seat belt; Integrated 4-corner strobe; Multiple storage trays; Single brake pedal; F/N/R shuttle switch; Left and Right external side mirrors; Throttle Lock; Ride control Auto/On/Off; 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\*; DEF gauge.

### 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/ 2.75 yd<sup>3</sup> (2.1 m<sup>3</sup>) Case pin on bucket w/ edge; 20.5-R25 L3 Radial tires; ROPS cab w/ heater and A/C; Std. battery; Heavy counterweight – 1,950 lb (885 kg); Front and rear fenders; Lights; 165 lb (75 kg) operator:  
30,890 lb (14 012 kg)

### XT

Unit equipped w/ 2.5 yd<sup>3</sup> (1.9 m<sup>3</sup>) CNH w/ edge and JRB coupler; 20.5-R25 L3 Radial tires; ROPS cab w/ heater and A/C; Std. battery; Heavy counterweight – 1,950 lb (885 kg); Front and rear fenders; Lights; 165 lb (75 kg) operator:  
31,291 lb (14 193 kg)

### XR

Unit equipped w/ 2.5 yd<sup>3</sup> (1.9 m<sup>3</sup>) Case pin on bucket w/ edge; 20.5-R25 L3 Radial tires; ROPS cab w/ heater and A/C; Std. battery; Heavy counterweight – 1,950 lb (885 kg); Front and rear fenders; Lights; 165 lb (75 kg) operator:  
31,746 lb (14 400 kg)

## HYDRAULICS

### Pump – steering/implement:

Closed center pressure/flow compensated

### Variable displacement – load-sensing:

52.8 GPM @ 2000 RPM  
190 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 65.0 gal (246.0 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 39.0 gal (147.6 L)

### Transmission:

Service w/ filter 29.2 qt (27.6 L)

### Front and rear axle:

Front axle 23.2 qt (22.0 L)  
Rear axle 23.2 qt (22.0 L)

### Front and rear axle – optional:

Front axle 23.2 qt (22.0 L)  
Rear axle 23.2 qt (22.0 L)

Engine oil w/ filter 14 qt (13.2 L)

Cooling system 28.4 qt (26.8 L)

## OTHER SPECIFICATIONS

### Lift cylinder:

Bore diameter 4.7 in (120.6 mm)  
Rod diameter 2.5 in (63.5 mm)  
Stroke 31.0 in (787.6 mm)

### Dump cylinder – Z-Bar and XR:

Bore diameter 5.0 in (127 mm)  
Rod diameter 3.0 in (76.2 mm)  
Stroke 24.4 in (619.7 mm)

### Dump cylinder – XT:

Bore diameter 4.5 in (114 mm)  
Rod diameter 2.5 in (63.5 mm)  
Stroke 32.6 in (819.9 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:  
Z-Bar 5.5 sec  
XR 5.5 sec  
XT 5.6 sec

### Dump w/ rated bucket load:

Z-Bar 1.1 sec  
XR 1.1 sec  
XT 2.3 sec

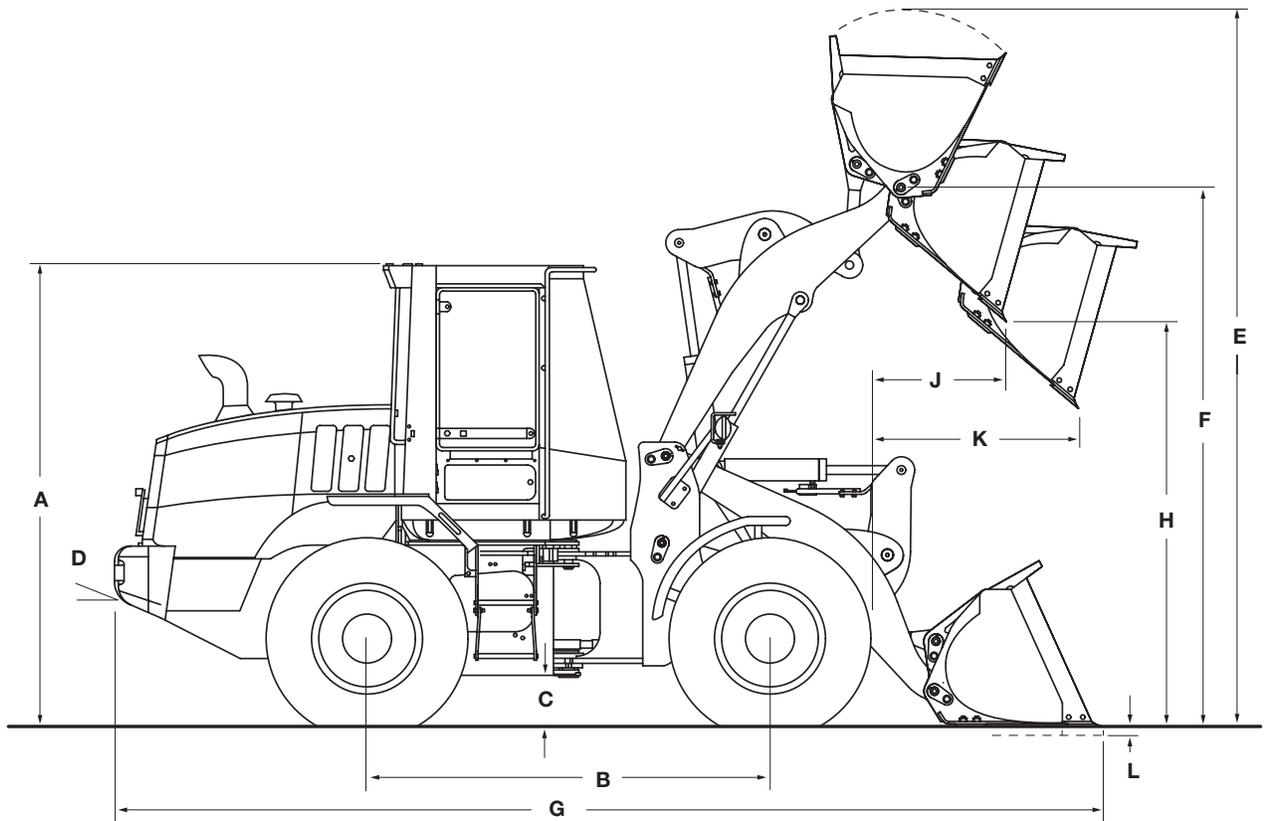
### Float down:

Z-Bar 4.3 sec  
XR 4.3 sec  
XT 4.1 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	133.2 in (3 384 mm)
Height to drawbar	42.1 in (1 070 mm)
B. Wheelbase	114.2 in (2 900 mm)
C. Ground clearance	15.3 in (389 mm)
D. Angle of departure	25°
Width:	
Overall* without bucket	97.6 in (2 478 mm)
Tread width	76.8 in (1 950 mm)
Turning radius* – outside	205.6 in (5 223 mm)
Turning angle:	
From center	40°
Total angle	80°
Rear axle oscillation – total	24°

NOTE: \*Dimensions taken with 20.5-R25 (L3 Radial) tires. For transport dimensions, refer to specific bucket width and overall length on pages 4 through 9.

## WEIGHT ADJUSTMENTS

Select Options	Weight Adjustment	Tipping Load Adjustment Straight: Deflected*	Tipping Load Adjustment 40° Turn: Deflected*
20.5 x 25 12 ply L2 Bias tires	-592 lb (-269 kg)	-598 lb (-371 kg)	-1 693 lb (-768 kg)
20.5 x 25 12 ply L3 Bias tires	-20 lb (-9 kg)	+299 lb (+136 kg)	+363 lb (+165 kg)
20.5-R25 L2 Radial tires	-256 lb (-116 kg)	-259 lb (-117 kg)	-125 lb (-57 kg)
20.5-R25 Snow Radial Tires	-132 lb (-60 kg)	-173 lb (-79 kg)	-43 lbs (-19 kg)
20.5-R25 Solid Tires Req. Diff Axles, Ltd Speed Controller	+5,592 lb (+2 536 kg)	+5,219 lb (+2 367 kg)	+ 5,168 lb (+2 344 kg)

NOTE: Unit equipped with Z-Bar loader arms, 2.75 yd<sup>3</sup> (2.1 m<sup>3</sup>) general purpose pin on bucket with bolt-on edge, 20.5-R25 (L3 Radial) tires, ROPS cab with heater and air conditioner, heavy counterweight, standard batteries, front and rear fenders, full fuel and 165 lb (79 kg) operator. Adjust select options from rated weight.  
\*Tipping loads: ISO 14397-1 Deflected Tires.

**PERFORMANCE SPECS**

<b>651G Z-Bar</b>		<b>3.0 yd<sup>3</sup> (2.3 m<sup>3</sup>) Bucket with Bolt-on Edge Pin On</b>	<b>2.75 yd<sup>3</sup> (1.9 m<sup>3</sup>) Bucket with Bolt-on Edge Pin On</b>
Operating weight		30,993 lb (14 058 kg)	30,993 lb (14 058 kg)
<b>E.</b>	Operating height – fully raised with spillguard	202.7 in (5 148 mm)	199.7 in (5 073 mm)
<b>F.</b>	Hinge pin height – fully raised	155.0 in (3 938 mm)	155.0 in (3 938 mm)
<b>G.</b>	Overall length – bucket level on ground	290.7 in (7 383 mm)	288.0 in (7 316 mm)
Dump angle – fully raised		47°	47°
<b>H.</b>	Dump height – fully raised, 45° dump	114.5 in (2 909 mm)	116.3 in (2 953 mm)
<b>J.</b>	Bucket reach – fully raised, 45° dump	35 in (890 mm)	33.3 in (845 mm)
<b>K.</b>	Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	59.5 in (1 511 mm)	58.6 in (1 490 mm)
<b>L.</b>	Dig depth	2.4 in (60 mm)	2.1 in (55 mm)
Operating load – ISO Rigid Tires		11,447 lb (5 192 kg)	11,584 lb (5 254 kg)
Operating load – ISO Deflected Tires		10,336 lb (4 688 kg)	10,471 lb (4 749 kg)
Maximum material density – ISO Rigid Tires		3,816 lb/yd <sup>3</sup> (2 264 kg/m <sup>3</sup> )	4,212 lb/yd <sup>3</sup> (2 499 kg/m <sup>3</sup> )
Maximum material density – ISO Deflected Tires		3,445 lb/yd <sup>3</sup> (2 044 kg/m <sup>3</sup> )	3,808 lb/yd <sup>3</sup> (2 259 kg/m <sup>3</sup> )
Tipping load – ISO Rigid Tires:			
	Straight	26,435 lb (11 991 kg)	26,733 lb (12 126 kg)
	40° turn	22,894 lb (10 385 kg)	23,167 lb (10 508 kg)
Tipping load – ISO Deflected Tires:			
	Straight	24,751 lb (11 227 kg)	25,047 lb (11 361 kg)
	40° turn	20,671 lb (9 376 kg)	20,942 lb (9 499 kg)
Lift capacity:			
	Full height	16,104 lb (7 304 kg)	16,211 lb (7 353 kg)
	Ground	22,176 lb (10 059 kg)	23,464 lb (10 643 kg)
Breakout force with tilt cylinder		23,984 lb (10 879 kg)	25,446 lb (11 524 kg)
Loader clearance circle with bucket		455.1 in (11 560 mm)	453.6 in (11 520 mm)

<b>651G XR</b>		<b>3.0 yd<sup>3</sup> (2.3 m<sup>3</sup>) Bucket with Bolt-on Edge - Pin On</b>	<b>2.75 yd<sup>3</sup> (1.9 m<sup>3</sup>) Bucket with Bolt-on Edge - Pin On</b>
Operating weight		31,394 lb (14 240 kg)	31,291 lb (14 193 kg)
<b>E.</b>	Operating height – fully raised with spillguard	219.4 in (5 573 mm)	216.4 in (5 497 mm)
<b>F.</b>	Hinge pin height – fully raised	171.7 in (4 362 mm)	171.8 in (4 362 mm)
<b>G.</b>	Overall length – bucket level on ground	306.8 in (7 792 mm)	304.1 in (7 725 mm)
Dump angle – fully raised		41°	41°
<b>H.</b>	Dump height – fully raised, 41° dump	133.2 in (3 384 mm)	134.9 in (3 426 mm)
<b>J.</b>	Bucket reach – fully raised, 41° dump	36.4 in (924 mm)	34.5 in (877 mm)
<b>K.</b>	Bucket reach – 7 ft 0 in (2.13 m) height, 41° dump	73.6 in (1 870 mm)	72.6 in (1 845 mm)
<b>L.</b>	Dig depth	2.3 in (59 mm)	2.1 in (53 mm)
Operating load – ISO Rigid Tires		9,719 lb (4 408kg)	9,719lb (4 408 kg)
Operating load – ISO Deflected Tires		8,906 lb (4 040 kg)	8,906 lb (4 040 kg)
Maximum material density – ISO Rigid Tires		3,534 lb/yd <sup>3</sup> (2 097 kg/m <sup>3</sup> )	3,534 lb/yd <sup>3</sup> (2 097 kg/m <sup>3</sup> )
Maximum material density – ISO Deflected Tires		3,239 lb/yd <sup>3</sup> (1 922kg/m <sup>3</sup> )	3,239 lb/yd <sup>3</sup> (1 922 kg/m <sup>3</sup> )
Tipping load – ISO Rigid Tires:			
	Straight	22,529 lb (10 219 kg)	22,529 lb (10 219 kg)
	40° turn	19,438 lb (8 817kg)	19,438 lb (8 817 kg)
Tipping load – ISO Deflected Tires:			
	Straight	21,321 lb (9 671 kg)	21,321lb (9 671 kg)
	40° turn	17,813 lb (8 080 kg)	17,813 lb (8 080 kg)
Lift capacity:			
	Full height	15,936 lb (7 228 kg)	16,040 lb (7,275 kg)
	Ground	24,182 lb (10 969kg)	24,434 lb (11 083 kg)
Breakout force with tilt cylinder		24,663 lb (11 187 kg)	26,179 lb (11 875kg)
Loader clearance circle with bucket		470.7 in (11 955 mm)	468.9in (11 911 mm)

<b>651G</b>		<b>Z-Bar/XR</b>	<b>Z-Bar/XR</b>
Maximum rollback:			
	Ground	41°/40°	40°/40°
	Carry position	45°/45°	45°/45°
	@ Full height	55°/59°	55°/59°
Maximum grading angle with bucket – back dragging		59°/59°	59°/59°
SAE bucket capacity – struck		2.5 yd <sup>3</sup> (1.91 m <sup>3</sup> )	2.25 yd <sup>3</sup> (1.75 m <sup>3</sup> )
Heaped		3.00 yd <sup>3</sup> (2.29 m <sup>3</sup> )	2.75 yd <sup>3</sup> (2.1 m <sup>3</sup> )
Bucket width – outside		102.4 in (2 600 m)	102.4 in (2 602 mm)
Bucket weight		2,029 lb (920 kg)	1,926 lb (873 kg)

**PERFORMANCE SPECS**

<b>651G Z-Bar</b>	<b>4.5 yd<sup>3</sup> (2.3 m<sup>3</sup>) Bucket with Bolt-on Edge - JRB Coupler</b>	<b>3.5 yd<sup>3</sup> (2.7 m<sup>3</sup>) Bucket with Bolt-on Edge - JRB coupler</b>	<b>3.0 yd<sup>3</sup> (2.3 m<sup>3</sup>) Bucket with Bolt-on Edge - JRB Coupler</b>
Operating weight	32,345 lb (14 672 kg)	32,568 lb (14,773 kg)	31,859 lb (16 759 kg)
<b>E.</b> Operating height – fully raised with spillguard	223.4 in (5 675 mm)	213.7 in (5 428 mm)	209.2 in (5 313 mm)
<b>F.</b> Hinge pin height – fully raised	155.0 in (3 937 mm)	155.0 in (3 937 mm)	155.0 in (3 937 mm)
<b>G.</b> Overall length – bucket level on ground	306.5 in (7 785 mm)	299.4 in (7 604mm)	299.4 in (7 604 mm)
Dump angle – fully raised	47°	47°	47°
<b>H.</b> Dump height – fully raised, 45° dump	104.2 in (2 647 mm)	109.0 in (2 769 mm)	109.0 in (2 769 mm)
<b>J.</b> Bucket reach – fully raised, 45° dump	46.3 in (1 177mm)	42.2 in (1 073 mm)	42.2 in (1 073 mm)
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	64.6 in (1 641 mm)	63.6 in (1 615 mm)	63.6 in (1 615 mm)
<b>L.</b> Dig depth	3.0 in (77 mm)	2.0 in (50 mm)	2.0 in (50 mm)
Operating load – ISO Rigid Tires	10,069 lb (4 567 kg)	10,341 lb (4 690 kg)	10,341 lb (4 690 kg)
Operating load – ISO Deflected Tires	9,006 lb (4 085 kg)	9,302 lb (4 220 kg)	9,302 lb (4 220 kg)
Maximum material density – ISO Rigid Tires	2,238 lb/yd <sup>3</sup> (1 328 kg/m <sup>3</sup> )	3,447 lb/yd <sup>3</sup> (2 045 kg/m <sup>3</sup> )	3,447 lb/yd <sup>3</sup> (2 045 kg/m <sup>3</sup> )
Maximum material density – ISO Deflected Tires	2,001 lb/yd <sup>3</sup> (1 188 kg/m <sup>3</sup> )	3,101 lb/yd <sup>3</sup> (1 840 kg/m <sup>3</sup> )	3,101 lb/yd <sup>3</sup> (1 840 kg/m <sup>3</sup> )
Tipping load – ISO Rigid Tires:			
Straight	23,457 lb (10 640 kg)	24,008 lb (10 890 kg)	24,008 lb (10 179 kg)
40° turn	20,138 lb (9 134 kg)	20,681 lb (9 381 kg)	20,681 lb (9 381 kg)
Tipping load – ISO Deflected Tires:			
Straight	21,849 lb (9 910 kg)	22,440 lb (10 179kg)	22,440 lb (10 179 kg)
40° turn	18,013 lb (8 171 kg)	18,605 lb (8 439 kg)	18,605 lb (8 439kg)
Lift capacity:			
Full height	14,725 lb (6 679 kg)	15,211 lb (6 899kg)	15,211 lb (6 899kg)
Ground	14,276 lb (6 475 kg)	15,237 lb (6 911kg)	15,237 lb (6 911kg)
Breakout force with tilt cylinder	17,142 lb (7 775 kg)	19,449 lb (8 822kg)	19,449 lb (8 822 kg)
Loader clearance circle with bucket	464.7in (11 803 mm)	8,822 in (11 689mm)	460.2 lb (11 689 mm)

<b>651G XR</b>	<b>4.5 yd<sup>3</sup> (2.3 m<sup>3</sup>) Bucket with Bolt-on Edge - JRB Coupler</b>	<b>2.5 yd<sup>3</sup> (1.9 m<sup>3</sup>) Bucket with Bolt-on Edge - JRB coupler</b>	<b>3.0 yd<sup>3</sup> (2.3 m<sup>3</sup>) Bucket with Bolt-on Edge - JRB Coupler</b>
Operating weight	32,746 lb (14 853 kg)	32,060 lb (14 542 kg)	32,259 lb (14 632 kg)
<b>E.</b> Operating height – fully raised with spillguard	240.1 in (6 099mm)	221.2 in (5 619 mm)	225.9 in (5 738 mm)
<b>F.</b> Hinge pin height – fully raised	171.7 in (4 361 mm)	171.7 in (4 361mm)	171.7 in (4 361 mm)
<b>G.</b> Overall length – bucket level on ground	322.5 in (8 191 mm)	310.0 in (7 873 mm)	315.5 in (8 014 mm)
Dump angle – fully raised	41°	41°	41°
<b>H.</b> Dump height – fully raised, 41° dump	123.6 in (3 140 mm)	131.5 in (3 340 mm)	128.2 in (3 256 mm)
<b>J.</b> Bucket reach – fully raised, 41° dump	48.3 in (1 227 mm)	39.5 in (1 002mm)	43.9 in (1 116 mm)
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 41° dump	79.6 in (2 021 mm)	75.7 in (1 922 mm)	78.1 in (1 985 mm)
<b>L.</b> Dig depth	3.0 in (75 mm)	1.9 in (48 mm)	1.9 in (48 mm)
Operating load – ISO Rigid Tires	8,438 lb (3 828 kg)	8,901 lb (4 038 kg)	8,696 lb (3 945 kg)
Operating load – ISO Deflected Tires	7,656 lb (3 472 kg)	8,132 lb (3 688 kg)	7,928 lb (3 596 kg)
Maximum material density – ISO Rigid Tires	1,875 lb/yd <sup>3</sup> (1 009kg/m <sup>3</sup> )	3,561 lb/yd <sup>3</sup> (2 113 kg/m <sup>3</sup> )	2,899 lb/yd <sup>3</sup> (1 720 kg/m <sup>3</sup> )
Maximum material density – ISO Deflected Tires	1,701 lb/yd <sup>3</sup> (2 166 kg/m <sup>3</sup> )	3,253 lb/yd <sup>3</sup> (1 930 kg/m <sup>3</sup> )	2,643 lb/yd <sup>3</sup> (1 568 kg/m <sup>3</sup> )
Tipping load – ISO Rigid Tires:			
Straight	19,787 lb (8 975 kg)	32,380 lb (14 687 kg)	20,307 lb (9 211 kg)
40° turn	16,877 lb (7 655 kg)	27,092 lb (12 289 kg)	17,392 lb (7 889 kg)
Tipping load – ISO Deflected Tires:			
Straight	18,624 lb (8 447 kg)	20,747 lb (9 411 kg)	19,168 lb (8 694 kg)
40° turn	15,311 lb (6 945 kg)	17,803 lb (8 075 kg)	15,856 lb (7 192kg)
Lift capacity:			
Full height	14,591 lb (6 618 kg)	19,606 lb (8 893 kg)	15,075 lb (6 838 kg)
Ground	21,713 lb (9 849 kg)	16,263 lb (7 377 kg)	22,279 lb (10 106kg)
Breakout force with tilt cylinder	17,623 lb (7 994 kg)	22,519 lb (10 214 kg)	20,047 lb (9 093 kg)
Loader clearance circle with bucket	481.2 in (12 222 mm)	472.4 in (12 000 mm)	476.2 lb (12 095 mm)

**PERFORMANCE SPECS**

<b>651G XT</b>	<b>2.5 yd<sup>3</sup> (1.9 m<sup>3</sup>) Bucket with Bolt-on Edge - JRB coupler</b>	<b>3.0 yd<sup>3</sup> (2.3 m<sup>3</sup>) Bucket with Bolt-on Edge - JRB Coupler</b>
Operating weight	31,746 lb (14 400 kg)	31,946 lb (14 490 kg)
<b>E.</b> Operating height – fully raised with spillguard	211.9 in (5 382 mm)	216.6 in (5 501 mm)
<b>F.</b> Hinge pin height – fully raised	155.8 in (3 957 mm)	155.8 in (3 956mm)
<b>G.</b> Overall length – bucket level on ground	302.3 in (7 678 mm)	307.9 in (7 820 mm)
Dump angle – fully raised	55°	55°
<b>H.</b> Dump height – fully raised, 45° dump	107.7 in (2 737 mm)	104.2 in (2 646 mm)
<b>J.</b> Bucket reach – fully raised, 45° dump	51.3 in (1 302 mm)	55.5 in (1 410 mm)
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	70.1 in (1 780 mm)	72.2 in (1 833 mm)
<b>L.</b> Dig depth	2.5 in (64 mm)	2.5 in (64 mm)
Operating load – ISO Rigid Tires	9,618 lb (4 363kg)	9,408 lb (4 267kg)
Operating load – ISO Deflected Tires	8,674 lb (3 934 kg)	8,463 lb (3 839 kg)
Maximum material density – ISO Rigid Tires	3,197 lb/yd <sup>3</sup> (1 897 kg/m <sup>3</sup> )	3,136 lb/yd <sup>3</sup> (1 861 kg/m <sup>3</sup> )
Maximum material density – ISO Deflected Tires	2,883 lb/yd <sup>3</sup> (1 711 kg/m <sup>3</sup> )	2,821 lb/yd <sup>3</sup> (1 674kg/m <sup>3</sup> )
Tipping load – ISO Rigid Tires:		
Straight	22,104 lb (10 026 kg)	21,655 lb (9 822 kg)
40° turn	19,236 lb (8 725 kg)	18,816 lb (8 535 kg)
Tipping load – ISO Deflected Tires:		
Straight	20,682 lb (9 381 kg)	20,231 lb (9 177 kg)
40° turn	17,347 lb (7 869 kg)	16,925 lb (7 677kg)
Lift capacity:		
Full height	14,125 lb (6 407 kg)	13,857 lb (6 286 kg)
Ground	28,331 lb (12 851 kg)	26,866 lb (12 186 kg)
Breakout force with tilt cylinder	22,804 lb (10 344 kg)	20,611 lb (9 349 kg)
Loader clearance circle with bucket	451.2 in (11 460 mm)	453.4 lb (11 517 mm)

<b>651G XT</b>		<b>Z-Bar/XT</b>	<b>Z-Bar/XT</b>
Maximum rollback:	Ground	57°	57°
	Carry position	59°	59°
	@ Full height	59°	59°
Maximum grading angle with bucket – back dragging		62°	63°
SAE bucket capacity – struck		2.09 yd <sup>3</sup> (1.60 m <sup>3</sup> )	2.50 yd <sup>3</sup> (1.91 m <sup>3</sup> )
Heaped		3.01 yd <sup>3</sup> (2.30 m <sup>3</sup> )	3.00 yd <sup>3</sup> (2.29 m <sup>3</sup> )
Bucket width – outside		102.4 in (2 602 mm)	102.4 in (2 602 mm)
Bucket weight		2,666 lb (1 209 kg)	2,866 lb (1 300 kg)

<b>651G</b>		<b>Z-Bar/XR</b>	<b>Z-Bar/XR</b>	<b>Z-Bar/XR</b>	<b>Z-Bar/XR</b>
Maximum rollback:	Ground	40°/40°	40°/46°	40°/37°	41°/41°
	Carry position	45°/46°	45°/46°	45°/43°	45°/46°
	@ Full height	55°/59°	55°/57°	55°/57°	55°/59°
Maximum grading angle with bucket – back dragging		60°/60°	62°/61°	63°/59°	64°/62°
SAE bucket capacity – struck		2.1 yd <sup>3</sup> (1.61 m <sup>3</sup> )	2.50 yd <sup>3</sup> (1.91 m <sup>3</sup> )	2.50 yd <sup>3</sup> (1.91 m <sup>3</sup> )	4 yd <sup>3</sup> (3.06 m <sup>3</sup> )
Heaped		2.5 yd <sup>3</sup> (1.91 m <sup>3</sup> )	3.00 yd <sup>3</sup> (2.29 m <sup>3</sup> )	3.5 yd <sup>3</sup> (2.68 m <sup>3</sup> )	4.5 yd <sup>3</sup> (2.3 m <sup>3</sup> )
Bucket width – outside		102.4 in (2 600 mm)	102.4 in (2 600 mm)	106.3 in (2 700 mm)	102.4 in (2 600 mm)
Bucket weight		2,695 lb (1 222 kg)	2,894 lb (1 313 kg)	3,604 lb (1 635 kg)	3,381 lb (1 534 kg)

NOTE: \*Z-Bar performance data shown with full counterweight. Performance data unit equipped with 20.5-R25 Michelin XTLA (L2 Radial) tires, ROPS cab with heater and A/C, 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.

**PERFORMANCE SPECS**

<b>651G Z-Bar</b>	<b>3.5 yd<sup>3</sup> (2.7 m<sup>3</sup>)</b>		<b>3.0 yd<sup>3</sup> (2.3 m<sup>3</sup>)</b>	
	<b>Bucket with Bolt-on Edge - ACS Coupler</b>		<b>Bucket with Bolt-on Edge - ACS Coupler</b>	
Operating weight	32,739 lb (14 850 kg)		32,068 lb (14 546 kg)	
<b>E.</b> Operating height – fully raised with spillguard	211.8 in (5 380 mm)		207.8 in (5 279 mm)	
<b>F.</b> Hinge pin height – fully raised	154.9 in (3 935 mm)		155.0 in (3 936 mm)	
<b>G.</b> Overall length – bucket level on ground	300.0 in (7 620 mm)		297.3 in (7 552 mm)	
Dump angle – fully raised	47°		47°	
<b>H.</b> Dump height – fully raised, 45° dump	108.5 in (2 757 mm)		110.3 in (2 802 mm)	
<b>J.</b> Bucket reach – fully raised, 45° dump	42.5 in (1 079 mm)		40.8 in (1 037 mm)	
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	63.6 in (1 614 mm)		63.0 in (1 599 mm)	
<b>L.</b> Dig depth	2.2 in (55 mm)		1.9 in (47 mm)	
Operating load – ISO Rigid Tires	10,043 lb (4 555 kg)		10,419 lb (4 726 kg)	
Operating load – ISO Deflected Tires	8,978 lb (4 072 kg)		9,360 lb (4 246 kg)	
Maximum material density – ISO Rigid Tires	2,869 lb/yd <sup>3</sup> (1 703 kg/m <sup>3</sup> )		3,473 lb/yd <sup>3</sup> (2 061 kg/m <sup>3</sup> )	
Maximum material density – ISO Deflected Tires	2,565 lb/yd <sup>3</sup> (1 522 kg/m <sup>3</sup> )		3,120 lb/yd <sup>3</sup> (1 851 kg/m <sup>3</sup> )	
Tipping load – ISO Rigid Tires:	Straight	23,464 lb (10 643 kg)	24,216 lb (10 984 kg)	
	40° turn	20,085 lb (9 110 kg)	20,838 lb (9 452 kg)	
Tipping load – ISO Deflected Tires:	Straight	21,852 lb (9 912 kg)	22,616 lb (10 258 kg)	
	40° turn	17,956 lb (8 145 kg)	18,721 lb (8 492 kg)	
Lift capacity:	Full height	14,340 lb (6 504 kg)	15,013 lb (6 810 kg)	
	Ground	15,172 lb (6 882 kg)	16,286 lb (7 387 kg)	
Breakout force with tilt cylinder	18,823 lb (8 538 kg)		20,154 lb (9 142 kg)	
Loader clearance circle with bucket	464.0 in (11 787 mm)		458.9 in (11 657 mm)	

<b>651G XT</b>	<b>2.5 yd<sup>3</sup> (1.9 m<sup>3</sup>)</b>		<b>3.0 yd<sup>3</sup> (2.3 m<sup>3</sup>)</b>	
	<b>Bucket with Bolt-on Edge - ACS Coupler</b>		<b>Bucket with Bolt-on Edge - ACS Coupler</b>	
Operating weight	32,055 lb (14 540 kg)		32,281 lb (14 642 kg)	
<b>E.</b> Operating height – fully raised with spillguard	207.6 in (5 274 mm)		212.1 in (5 387 mm)	
<b>F.</b> Hinge pin height – fully raised	155.8 in (3 956 mm)		155.7 in (3 956 mm)	
<b>G.</b> Overall length – bucket level on ground	296.6 in (7 533 mm)		301.8 in (7 667 mm)	
Dump angle – fully raised	55°		55°	
<b>H.</b> Dump height – fully raised, 45° dump	111.4 in (2 830 mm)		108.0 in (2 744 mm)	
<b>J.</b> Bucket reach – fully raised, 45° dump	47.1 in (1 198 mm)		51.1 in (1 297 mm)	
<b>K.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	67.9 in (1 719 mm)		70.1 in (1 779 mm)	
<b>L.</b> Dig depth	2.4 in (61 mm)		2.4 in (61 mm)	
Operating load – ISO Rigid Tires	9,904 lb (4 493 kg)		9,698 lb (4 399 kg)	
Operating load – ISO Deflected Tires	8,918 lb (4 045 kg)		8,708 lb (3 950 kg)	
Maximum material density – ISO Rigid Tires	3,962 lb/yd <sup>3</sup> (2 351 kg/m <sup>3</sup> )		3,233 lb/yd <sup>3</sup> (1 918 kg/m <sup>3</sup> )	
Maximum material density – ISO Deflected Tires	3,567 lb/yd <sup>3</sup> (2 117 kg/m <sup>3</sup> )		2,903 lb/yd <sup>3</sup> (1 722 kg/m <sup>3</sup> )	
Tipping load – ISO Rigid Tires:	Straight	22,789 lb (10 337 kg)	22,351 lb (10 138 kg)	
	40° turn	19,809 lb (8 985 kg)	19,396 lb (8 798 kg)	
Tipping load – ISO Deflected Tires:	Straight	21,301 lb (9 662 kg)	20,856 lb (9 460 kg)	
	40° turn	17,837 lb (8 091 kg)	17,417 lb (7 900 kg)	
Lift capacity:	Full height	14,154 lb (6 420 kg)	13,878 lb (6 295 kg)	
	Ground	34,050 lb (15 445 kg)	32,398 lb (14 695 kg)	
Breakout force with tilt cylinder	25,354 lb (11 500 kg)		22,846 lb (10 363 kg)	
Loader clearance circle with bucket	448.9 in (11 403 mm)		451.0 in (11 455 mm)	

**PERFORMANCE SPECS**

651G XR	2.5 yd <sup>3</sup> (1.9 m <sup>3</sup> )		3.0 yd <sup>3</sup> (2.3 m <sup>3</sup> )	
	Bucket with Bolt-on Edge - ACS Coupler		Bucket with Bolt-on Edge - ACS Coupler	
Operating weight	32,243 lb (14 625 kg)		32,468 lb (14 727 kg)	
E. Operating height – fully raised with spillguard	220.1 in (5 591 mm)		224.5 in (5 703 mm)	
F. Hinge pin height – fully raised	171.7 in (4 361 mm)		171.7 in (4 361 mm)	
G. Overall length – bucket level on ground	308.2 in (7 829 mm)		313.5 in (7 962 mm)	
Dump angle – fully raised	41°		41°	
H. Dump height – fully raised, 41° dump	132.5 in (3 367 mm)		129.4 in (3 287 mm)	
J. Bucket reach – fully raised, 41° dump	38.2 in (970 mm)		42.4 in (1 077 mm)	
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	75.0 in (1 905 mm)		77.4 in (1 966 mm)	
L. Dig depth	1.8 in (46 mm)		1.8 in (46 mm)	
Operating load – ISO Rigid Tires	8,921 lb (4 046 kg)		8,727 lb (3 958 kg)	
Operating load – ISO Deflected Tires	8,141 lb (3 693 kg)		7,946 lb (3 604 kg)	
Maximum material density – ISO Rigid Tires	3,568 lb/yd <sup>3</sup> (2 117 kg/m <sup>3</sup> )		2,909 lb/yd <sup>3</sup> (1 726 kg/m <sup>3</sup> )	
Maximum material density – ISO Deflected Tires	3,256 lb/yd <sup>3</sup> (1 932 kg/m <sup>3</sup> )		2,649 lb/yd <sup>3</sup> (1 572 kg/m <sup>3</sup> )	
Tipping load – ISO Rigid Tires:	Straight	20,820 lb (9 444 kg)	Straight	20,406 lb (9 256 kg)
	40° turn	17,842 lb (8 093 kg)	40° turn	17,453 lb (7 917 kg)
Tipping load – ISO Deflected Tires:	Straight	19,663 lb (8 919 kg)	Straight	19,248 lb (8 731 kg)
	40° turn	16,282 lb (7 386 kg)	40° turn	15,892 lb (7 209 kg)
Lift capacity:	Full height	15,093 lb (6 846 kg)	Full height	14,868 lb (6 744 kg)
	Ground	22,798 lb (10 341 kg)	Ground	22,328 lb (10 128 kg)
Breakout force with tilt cylinder	23,280 lb (10 560 kg)		20,779 lb (9 425 kg)	
Loader clearance circle with bucket	471.3 in (11 971 mm)		474.8 in (12 059 mm)	

651G XT	Z-Bar/XT		Z-Bar/XT	
	Maximum rollback:	Ground	57°	Ground
	Carry position	59°	Carry position	57°
	@ Full height	59°	@ Full height	58°
Maximum grading angle with bucket – back dragging	61°		60°	
SAE bucket capacity – struck	2.1 yd <sup>3</sup> (1.61 m <sup>3</sup> )		2.50 yd <sup>3</sup> (1.91 m <sup>3</sup> )	
Heaped	2.5 yd <sup>3</sup> (1.91 m <sup>3</sup> )		3.00 yd <sup>3</sup> (2.29 m <sup>3</sup> )	
Bucket width – outside	102.4 in (2 600 mm)		106.8 in (2 713 mm)	
Bucket weight	2,975 lb (1 349 kg)		3,240 lb (1 470 kg)	

651G	XR		Z-Bar/XR		Z-Bar	
	Maximum rollback:	Ground	40°	40°/40°	41°	Ground
	Carry position	46°	45°/46°	45°	Carry position	45°
	@ Full height	59°	55°/59°	55°	@ Full height	55°
Maximum grading angle with bucket – back dragging	60°		61°/60°		62°	
SAE bucket capacity – struck	2.1 yd <sup>3</sup> (1.61 m <sup>3</sup> )		2.50 yd <sup>3</sup> (1.91 m <sup>3</sup> )		3.00 yd <sup>3</sup> (2.68 m <sup>3</sup> )	
Heaped	2.5 yd <sup>3</sup> (1.91 m <sup>3</sup> )		3.00 yd <sup>3</sup> (2.29 m <sup>3</sup> )		3.5 yd <sup>3</sup> (2.68 m <sup>3</sup> )	
Bucket width – outside	102.4 in (2 600 mm)		102.4 in (2 600 mm)		106.3 in (2 700 mm)	
Bucket weight	2,878 lb (1 305 kg)		3,104 lb (1 408 kg)		3,775 lb (1 712 kg)	

## STANDARD EQUIPMENT

### OPERATOR ENVIRONMENT

See page 1

### ENGINE

CASE/FPT F4HFE613W  
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 – Z-Bar  
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 controls:  
Smooth  
Moderate  
Aggressive  
Auxiliary Hydraulics  
Ride Control™  
Locking hydraulics for hydraulic coupler  
EH Parallel Lift  
Low-effort steering  
Hydraulic driven cooling fan  
Diagnostic quick couplers  
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

### TELEMATICS

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

## 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 heated lens  
LED front and rear work lights – 4 front, 2 rear

### DRIVETRAIN

5F/3R Autoshift/manual shift transmission, lockup torque converter, PowerInch de-clutch  
HD Axle Options  
Locking Front Diff / Open Rear  
Locking Front Diff / Limited Slip Rear  
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-spool loader valves with joystick loader control  
4-function loader valve with joystick loader control and two proportional auxiliary roller switches

### LOADER

XR extended reach version  
XT tool carrier version  
Attachment auxiliary hydraulics  
Coupler systems – JRB or ACS compatible  
Buckets – see pages 4 through 8

### TIRES

20.5x25 L2 bias (16 ply) – dirt/traction  
20.5 x25 L3 bias (16 ply) – rock  
20.5-R25 L2 radial – dirt/traction  
20.5-R25 L3 radial – rock  
20.5-R25 radial Michelin SnoPlus  
Axle oscillation stops

### GUARDING

Skid plate, transmission and front chassis bottom guards

### ADVANCED ENGINE AIR FILTRATION

Heavy Debris cooling system:  
Slanted cooling module cover  
Increased cooling fin spacing  
Added cooling module sealing  
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  
Standard fenders with right and left hand steps  
Wide full coverage fenders with right and left hand steps

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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.

Form No. CCE202401651G  
Replaces Form No. N/A

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