ENGINE

Model	CNH - CFPXL04.5SCB,
	F4HFE413J - Tier4a/Stage 3b
Type	4-stroke, turbocharged
Cylinders	4
Bore/Stroke	4.09 in x 5.20 in
	(104 mm x 132 mm)
Displacement	275 in³ (4.5 L)
Fuel injection	Electronic
Fuel	#2 Diesel
Fuel filter	Replaceable, full flow
	spin-on cartridge
Air filter	Dry type elements
	w/ warning restriction indicator
Mid as some	Parameter alcolor

Mid-mount cooling module:

Mid-mount air/water

Fan:

Style 8 blade puller
Diameter 32 in (813 mm)

Water pump Integral

Engine oil pump operating angle ratings:

Side-to-side Rated 35°
Fore and aft Rated 35°
Oil filtration Replaceable, full flow spin-on cartridge

Engine speeds - RPM:

Rated speed, full load 2000

Horsepower – per SAE J1995/J1349:

Maximum Power Mode:

Standard Power Mode:

Net rated @ 2000 RPM 106 hp (79 kW) Peak net @ 1800 RPM 118 hp (88 kW)

Economy Power Mode:

Net rated @ 2000 RPM 76 hp (57 kW) Peak net @ 1400 RPM 101 hp (75 kW)

Torque - peak:

Maximum Power Mode @ 1600 RPM:

Gross 448 lb⋅ft (608 N⋅m) Net 424 lb⋅ft (575 N⋅m)

Standard Power Mode @ 1300 RPM:

Gross 407 lb-ft (552 N·m) Net 391 lb-ft (530 N·m)

Economy Power Mode @ 1200 RPM:

Gross 403 lb·ft (547 N·m)
Net 389 lb·ft (528 N·m)

Torque rise 21%

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

POWERTRAIN

Transmission:

4F/3R Proportional w/ Electronic Control Module torque sensing autoshift/manual shift and modulation

Gears	Helical cut
Gear ratios	Forward/Reverse
1st 2nd 3rd 4th	4.012/3.804 2.174/2.061 1.088/1.031 0.619/
Torque converter stall ratio	2.30:1

Differential:

Limited slip w/ 45% transfer on front and rear axles

Front and rear axle:

Differential ratio	3.364
Planetary ratio	6.4
Final axle ratio	21.53
Planetaries	Outboard

Service brakes:

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

to all four wheels

Disc area 480 in² (0.31 m²) per hub

Parking brakes:

Spring-applied hydraulic release disc on transmission output shaft nuetralizes power flow to wheels when engaged

Travel speeds:

	Forward mph (km/h)	Reverse mph (km/h)
1st	3.8 (6.1)	4.0 (6.4)
2nd	6.9 (11.1)	7.3 (11.7)
3rd	13.4 (21.6)	14.1 (22.8)
4th	22.3 (35.9)	_

NOTE: Travel speeds at full engine throttle w/ 17.5 x 25 L3 tires.

ELECTRICAL

Voltage	24 Volts, negative ground
Alternator	70 amp
Batteries (2)	12 Volt

PRELIMINARY

OPERATOR ENVIRONMENT

ROPS cab w/ heat; Key start; Articulated power steering w/ tilt column; Fully adjustable, suspension seat; Foot throttle; 1-Lever loader control w/ wrist rest; Cup holder; Coat hook; (1) Interior rearview mirror; 2 in (51 mm) retractable seat belt; Storage tray behind seat; Cooled lunch box; Single brake pedal; F/N/R shuttle switch; External rear view mirrors; Lock 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; Electronic Information Center; Horn.

LCD screen:

Hour meter; Time; FNR indication; Trip computer; Differential lock; Engine speed; Automatic transmission indication; DeClutch indication; Fuel consumption; Engine diagnostics; Error reporting; Travel speed; Gear selection; Engine mode indication; Transmission diagnostics; DEF gauge.

Warning lights:

Parking brake; Coolant temperature; Hydraulic oil temperature; Transmission oil temperature; Air filter; Transmission filter; Alternator; Low fuel; Grid heater*; Brake pressure; Engine oil pressure; Steering pressure.

Audible alarms:

Caution alarm; Critical alarm; Backup alarm.

NOTE: *If equipped w/ option.

OPERATING WEIGHT

7 Bar

Unit equipped w/ ROPS cab w/ heater and A/C, full counterweight, 17.5 x 25 XTLA Michelin tires, front and rear fenders, 2.1 yd³ (1.61 m³) general purpose loader bucket w/ edge, full fuel, 175 lb (79 kg) operator:

22,856 lb (10 367 kg)

хт

Unit equipped w/ ROPS cab w/ heater and A/C, full counterweight, 17.5 x 25 XTLA Michelin tires, 2.1 yd³ (1.61 m³) ACS loader bucket, standard batteries, full fuel, 175 lb (79 kg) operator:

24,585 lb (11 152 kg)

XR

Unit equipped w/ ROPS cab w/ heater and A/C, full counterweight, 17.5 x 25 XTLA Michelin tires, front and rear fenders, 2.1 yd³ (1.61 m³) general purpose loader bucket w/ edge, full fuel, 175 lb (79 kg) operator:

23,229 lb (10 537 kg)

HYDRAULICS

III DI IAGEIGG
Pump – steering/implement:
Closed centered pressure/flow compensated
Variable displacement:
4.33 in³/rev 35.4 gpm @ 2000 RPM @ 3,625 ps (134 L/min @ 2000 RPM @ 250 bar)
Loader control valve:
Closed-center, load sensing circuit,

positive low pressure regeneration for bucket dump. Remote control hydraulic power assist w/ electromagnet detents.

Loader auxiliary steering: Hydraulic orbital center-pivot articulating w/ on-demand oil flow

High pressure standby 3,625 psi (24 993 kPa)

Filtration:

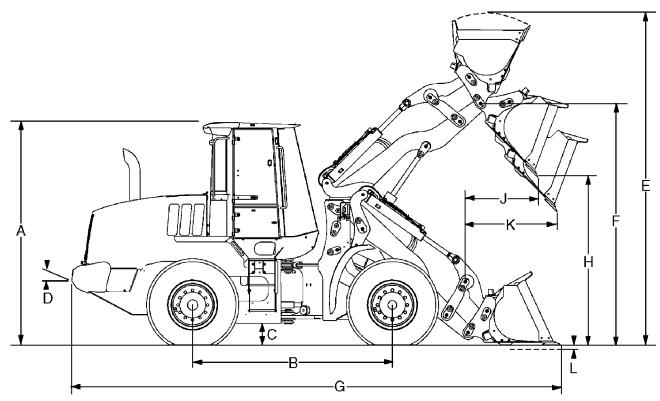
Filtered vent w/ relief on hydraulic reservoir, maintains 2-8 psi on reservoir. 10-micron, return filter furnishes only clean oil to all components of the system.

SERVICE CAPACITY

Fuel tank	50 gal (189 L)		
Hydraulic system:			
Reservoir	15 gal (57 L)		
Total	30 gal (113.6 L)		
Transmission:			
Service w/ filter	5.0 gal (18.9 L)		
Front and rear axle:			
Front axle	23.2 qt (22.0 L)		
Rear axle	23.2 qt (22.0 L)		
Engine oil w/ filter	3.3 gal (12 L)		
Cooling system (-40)	5.8 qt (22 L)		
DEF tank - Diesel exhaust fluid:			
Usable	6.5 gal (24.8 L)		
Total	10.2 gal (38.6 L)		

OTHER SPECIFICATIONS			
Lift cylinder:			
Bore diameter	4.0 in (102 mm)		
Rod diameter	2.25 in (57 mm)		
Stroke	30.82 in (783 mm)		
Dump cylinder – Z-Bar and	XR:		
Bore diameter	4.5 in (114 mm)		
Rod diameter	2.5 in (64 mm)		
Stroke	20.84 in (529 mm)		
Dump cylinders – XT:			
Bore diameter	4.00 in (101.6 mm)		
Rod diameter	2.25 in (57 mm)		
Stroke	29.8 in (783 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 5.4 sec Dump w/ rated bucket load:			

Cycle Time:	
Raise w/ rated bucket load Dump w/ rated bucket load:	5.4 sec
Z-Bar	1.2 sec
XT	1.2 sec
Lower – empty:	
Power down	3.9 sec
Float down	3.9 sec



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

DIMENSIONS

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Height to:	
A. Top of ROPS cab	129.0 in (3277 mm)
Drawbar	37.6 in (954 mm)
B. Wheelbase	108.3 in (2750 mm)
C. Ground clearance	14.85 in (377 mm)
D. Angle of departure	34°
Width:	
Overall* without bucket	98.0 in (2489 mm)
Centerline tread	78.7 in (2000 mm)
Turning radius* – outside	197.7 in (4022 mm)
Turning angle:	
From center	40°
Total angle	80°
Rear axle oscillation, total	24°

NOTE: *Dimensions taken with 17.5 x 25 XTLA TL tires. Additional dimensions on pages 4 & 5.

WEIGHT ADJUSTMENTS

Select Options	Weight Adjustment	Tipping Load Adjustment Straight	Tipping Load Adjustment 40° Turn
17.5 x 25 12 ply L2 tires	-256 lb (-116 kg)	-181 lb (-82 kg)	-159 lb (-72 kg)
17.5 x 25 12 ply L3 tires	-48 lb (-22 kg)	-34 lb (-16 kg)	-29 lb (-13 kg)
17.5-R25 XHA TL tires	+108 lb (+49 kg)	+76 lb (+34 kg)	+68 lb (+31 kg)
20.5-R25 XHA TL tires	+992 lb (+450 kg)	+701 lb (+318 kg)	+619 lb (+281 kg)
Base counterweight	-1,050 lb (+477 kg)	-2,352 lb (-1067 kg)	-1,977 lb (-897 kg)
Open ROPS	-295 lb (-134 kg)	-299 lb (-136 kg)	-276 lb (-125 kg)

NOTE: Tires inflated to 50 psi (345 kPa) in the front and 40 psi (275 kPa) in the rear.

^{**}Unit equipped with Z-Bar loader arms, 2.1 yd³ (1.61 m³) general purpose pin on bucket with bolt-on edge, 17.5-R25 XTLA Michelin tires, ROPS cab with heater and A/C, full counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (79 kg) operator. Adjust select options from rated weight.

521F Z-Bar*	Ві	2.6 yd³ GP (1.99 m³) ucket with Bolt-on Edge	2.3 yd³ GP (1.76 m³) Bucket with Bolt-on Edge
SAE bucket capacity – struck		1.77 yd³ (1.35 m³)	1.98 yd³ (1.51 m³)
Heaped		2.10 yd³ (1.61 m³)	2.3 yd³ (1.76 m³)
Bucket width - outside		100.4 in (2550 mm)	100.4 in (2550 mm)
Bucket weight		1,729 lb (784 kg)	1,804 lb (818 kg)
E. Operating height – fully raised with spillguard		186.4 in (4736 mm)	184.0 in (4673 mm)
F. Hinge pin height – fully raised		142.1 in (3608 mm)	142.1 in (3608 mm)
G. Overall length – bucket level on ground		265.9 in (6755 mm) 55°	263.2 in (6685 mm) 55°
Dump angle – fully raised H. Dump height – fully raised, 45° dump		105.0 in (2667 mm)	106.8 in (2714 mm)
J. Bucket reach – fully raised, 45° dump		41.6 in (1056 mm)	39.9 in (1013 mm)
K. Bucket reach – 7 ft 0 in (2.13 m)		57.6 in (1463 mm)	56.9 in (1444 mm)
height, 45° dump			
Operating load – ISO		7,835 lb (3554 kg)	7,883 lb (3576 kg)
Maximum material density – ISO		3,013 lb/yd³ (1788 kg/m³)	3,427 lb/yd³ (2034 kg/m³)
Tipping load – ISO:		10 201 lb (0210 km)	10 442 lb (000E lcs)
Straight 40° turn		18,321 lb (8310 kg)	18,443 lb (8365 kg)
Lift capacity:		15,669 lb (7107 kg)	15,765 lb (7151 kg)
Full height		12,237 lb (5550 kg)	12,163 lb (5517 kg)
Maximum reach		16,900 lb (7666 kg)	16,841 lb (7639 kg)
Ground		21,021 lb (9535 kg)	22,411 lb (10 165 kg)
Breakout force with tilt cylinder		18,118 lb (8218 kg)	19,303 lb (8756 kg)
Maximum rollback:			, , , , , , ,
@ Ground		40°	40°
@ Carry position		43°	43°
@ Maximum reach		52°	52°
@ Full height		54°	54°
L. Dig depth		3.1 in (78 mm)	2.8 in (70 mm)
Maximum grading angle with bucket – back dragging		60°	60°
Loader clearance circle		434.3 in (11 032 mm)	432.7 in (10 991 mm)
		2.1 yd³ GP (1.61 m³)	2.1 yd³ GP (1.61 m³)
521F XT		ACS Bucket with Edge**	ACS Bucket with Teeth and Segment**
E. Operating height – fully raised with spillguard		194.0 in (4927 mm)	194 in (4927 mm)
F. Hinge pin height – fully raised		147.5 in (3745 mm)	147.5 in (3745 mm)
G. Overall length – bucket level on ground		266.8 in (6776 mm) 57°	272.6 in (6923 mm) 57°
Dump angle – fully raised H. Dump height – fully raised, 45° dump		106.2 in (2697 mm)	102.4 in (2602 mm)
J. Bucket reach – fully raised, 45° dump		46.2 in (1173 mm)	50.2 in (1276 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump		63 in (1601 mm)	64.9 in (1648 mm)
Operating load – ISO		6,860 lb (3112 kg)	6,934 lb (3145 kg)
Maximum material density – ISO		3,341 lb/yd³ (1982 kg/m³)	3,534 lb/yd³ (2097 kg/m³)
Tipping load – ISO:			
Straight		16,189 lb (7343 kg)	16,346 lb (7414 kg)
40° turn		13,719 lb (6223 kg)	13,868 lb (6290 kg)
Lift capacity:			
Full height		10,509 lb (4767 kg)	10,617 lb (4816 kg)
Maximum reach		14,361 lb (6514 kg)	14,455 lb (6557 kg)
Ground		24,357 lb (11 048 kg)	24,332 lb (11 037 kg)
Breakout force – dump cylinder		21,563 lb (9781 kg)	21,822 lb (9898 kg)
Loader clearance circle			435.5 in (11 061 mm)
		434 in (10 972 mm)	(
	2.6 yd³ GP (1.99 m³)	2.3 yd³ GP (1.76 m²	2.3 yd³ GP (1.76 m³)
521F XR	Bucket with Bolt-on Edge	2.3 yd³ GP (1.76 m Bucket with Bolt-on Edg	2.3 yd² GP (1.76 m²) e Bucket with Teeth & Segments
E. Operating height – fully raised with spillguard	Bucket with Bolt-on Edge 201.4 in (5115 mm)	2.3 yd³ GP (1.76 m Bucket with Bolt-on Edg 198.9 in (5052 mm	2.3 yd³ GP (1.76 m³) e Bucket with Teeth & Segments n) 198.9 in (5052 mm)
Operating height – fully raised with spillguard Hinge pin height – fully raised	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edg 198.9 in (5052 mm 157.0 in (3987 mm	2.3 yd³ GP (1.76 m³) e Bucket with Teeth & Segments n) 198.9 in (5052 mm) 157.0 in (3987 mm)
E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edge 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm	2.3 yd³ GP (1.76 m³) e Bucket with Teeth & Segments n) 198.9 in (5052 mm) n) 157.0 in (3987 mm) n) 282.6 in (7178 mm)
E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51°	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edge 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm	2.3 yd³ GP (1.76 m³) e Bucket with Teeth & Segments 1) 198.9 in (5052 mm) 1) 157.0 in (3987 mm) 282.6 in (7178 mm) 51°
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edge 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51	2.3 yd³ GP (1.76 m³) e Bucket with Teeth & Segments b) 198.9 in (5052 mm) c) 157.0 in (3987 mm) c) 282.6 in (7178 mm) c) 51° c) 117.9 in (2994 mm)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edge 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51 121.8 in (3092 mm 38.9 in (988 mm	2.3 yd³ GP (1.76 m³) e Bucket with Teeth & Segments 1) 198.9 in (5052 mm) 1) 157.0 in (3987 mm) 282.6 in (7178 mm) 51° 117.9 in (2994 mm) 42.9 in (1089mm)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edge 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51	2.3 yd³ GP (1.76 m³) e Bucket with Teeth & Segments 1) 198.9 in (5052 mm) 1) 157.0 in (3987 mm) 282.6 in (7178 mm) 51° 51° 117.9 in (2994 mm) 1) 42.9 in (1089mm) 1) 70.7 in (1795 mm)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edge 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51 121.8 in (3092 mm 38.9 in (988 mm 68.6 in (1743 mm	2.3 yd° GP (1.76 m²) Bucket with Teeth & Segments 1) 198.9 in (5052 mm) 1) 157.0 in (3987 mm) 1) 282.6 in (7178 mm) 1) 282.6 in (7178 mm) 1) 117.9 in (2994 mm) 1) 42.9 in (1089mm) 1) 70.7 in (1795 mm) 1) 6,749 lb (3061 kg)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump Operating load – ISO 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm) 6,622 lb (3004 kg)	2.3 yd³ GP (1.76 mm Bucket with Bolt-on Edg 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51 121.8 in (3092 mm 38.9 in (988 mm 68.6 in (1743 mm 6,650 lb (3016 kg	2.3 yd° GP (1.76 m²) Bucket with Teeth & Segments 1) 198.9 in (5052 mm) 1) 157.0 in (3987 mm) 1) 282.6 in (7178 mm) 1) 282.6 in (7178 mm) 1) 117.9 in (2994 mm) 1) 42.9 in (1089mm) 1) 70.7 in (1795 mm) 1) 6,749 lb (3061 kg)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump Operating load – ISO Maximum material density – ISO 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm) 6,622 lb (3004 kg)	2.3 yd³ GP (1.76 mm Bucket with Bolt-on Edg 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51 121.8 in (3092 mm 38.9 in (988 mm 68.6 in (1743 mm 6,650 lb (3016 kg	2.3 yd° GP (1.76 m²) Bucket with Teeth & Segments 198.9 in (5052 mm) 1) 157.0 in (3987 mm) 282.6 in (7178 mm) 51° 117.9 in (2994 mm) 42.9 in (1089mm) 70.7 in (1795 mm) 6,749 lb (3061 kg) 3,053 lb/yd³ (1812 kg/m³)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump Operating load – ISO Maximum material density – ISO Tipping load – ISO: 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm) 6,622 lb (3004 kg) 2,547 lb/yd³ (1511 kg/m³)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edg 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51 121.8 in (3092 mm 38.9 in (988 mm 68.6 in (1743 mm 6,650 lb (3016 kg 2,891 lb/yd³ (1716 kg/m	2.3 yd° GP (1.76 m²) Bucket with Teeth & Segments 198.9 in (5052 mm) 1) 157.0 in (3987 mm) 282.6 in (7178 mm) 282.6 in (7178 mm) 10 117.9 in (2994 mm) 117.9 in (2994 mm) 10 42.9 in (1089mm) 117.7 in (1795 mm) 117.9 in (3061 kg) 117.8 in (3061 kg)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump Operating load – ISO Maximum material density – ISO Tipping load – ISO:	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm) 6,622 lb (3004 kg) 2,547 lb/yd³ (1511 kg/m³) 15,574 lb (7064 kg)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edgr 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 276.8 in (7178 mm 38.9 in (988 mm 38.9 in (988 mm 68.6 in (1743 mm 6,650 lb (3016 kg 2,891 lb/yd³ (1716 kg/m 15,650 lb (7099 kg	2.3 yd° GP (1.76 m²) Bucket with Teeth & Segments 198.9 in (5052 mm) 1) 157.0 in (3987 mm) 282.6 in (7178 mm) 282.6 in (7178 mm) 10 117.9 in (2994 mm) 117.9 in (2994 mm) 10 42.9 in (1089mm) 117.7 in (1795 mm) 117.9 in (3061 kg) 117.8 in (3061 kg)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump Operating load – ISO Maximum material density – ISO Tipping load – ISO: Straight 40° turn 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm) 6,622 lb (3004 kg) 2,547 lb/yd³ (1511 kg/m³) 15,574 lb (7064 kg)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edgr 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 276.8 in (7178 mm 38.9 in (988 mm 38.9 in (988 mm 68.6 in (1743 mm 6,650 lb (3016 kg 2,891 lb/yd³ (1716 kg/m 15,650 lb (7099 kg	2.3 yd° GP (1.76 m²) Bucket with Teeth & Segments 198.9 in (5052 mm) 157.0 in (3987 mm) 282.6 in (7178 mm) 282.6 in (7178 mm) 291 117.9 in (2994 mm) 292 117.9 in (1089mm) 293 294 295 3,053 lb/yd³ (1812 kg/m³) 295 3,053 lb/yd³ (1812 kg/m³) 296 313497 lb (6122 kg)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump Operating load – ISO Maximum material density – ISO Tipping load – ISO: Straight 40° turn Lift capacity: 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm) 6,622 lb (3004 kg) 2,547 lb/yd³ (1511 kg/m³) 15,574 lb (7064 kg) 13,243 lb (6007 kg)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edg 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51 121.8 in (3092 mm 38.9 in (988 mm 68.6 in (1743 mm 6,650 lb (3016 kg 2,891 lb/yd³ (1716 kg/m 15,650 lb (7099 kg 13,299 lb (6033 kg	2.3 yd³ GP (1.76 m³) Bucket with Teeth & Segments 198.9 in (5052 mm) 157.0 in (3987 mm) 282.6 in (7178 mm) 282.6 in (7178 mm) 117.9 in (2994 mm) 29 in (1089mm) 20 70.7 in (1795 mm) 30 6,749 lb (3061 kg) 30 3,053 lb/yd³ (1812 kg/m³) 31 15,865 lb (7196 kg) 31 13497 lb (6122 kg) 31 11,100 lb (5035 kg)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump Operating load – ISO Maximum material density – ISO Tipping load – ISO: Straight 40° turn Lift capacity: Full height Maximum reach Ground 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm) 6,622 lb (3004 kg) 2,547 lb/yd³ (1511 kg/m³) 15,574 lb (7064 kg) 13,243 lb (6007 kg) 11,094 lb (5032 kg) 14,979 lb (6794 kg) 19,560 lb (8872 kg)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edg: 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 276.8 in (7178 mm 38.9 in (988 mm 38.9 in (988 mm 68.6 in (1743 mm 6,650 lb (3016 kg 2,891 lb/yd³ (1716 kg/m 15,650 lb (7099 kg 13,299 lb (6033 kg 11,018 lb (4998 kg 14,921 lb (6768 kg 19,615 lb (8897 kg	2.3 yd³ GP (1.76 m³) Bucket with Teeth & Segments 198.9 in (5052 mm) 157.0 in (3987 mm) 282.6 in (7178 mm) 282.6 in (7178 mm) 30 117.9 in (2994 mm) 30 42.9 in (1089mm) 30 70.7 in (1795 mm) 30 6,749 lb (3061 kg) 3,053 lb/yd³ (1812 kg/m²) 31 15,865 lb (7196 kg) 31 13497 lb (6122 kg) 31 11,100 lb (5035 kg) 31 15,017 lb (6811 kg) 31 19,788 lb (8976 kg)
 E. Operating height – fully raised with spillguard F. Hinge pin height – fully raised G. Overall length – bucket level on ground Dump angle – fully raised H. Dump height – fully raised, 45° dump J. Bucket reach – fully raised, 45° dump K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump Operating load – ISO Maximum material density – ISO Tipping load – ISO: Straight 40° turn Lift capacity: Full height Maximum reach 	Bucket with Bolt-on Edge 201.4 in (5115 mm) 157.0 in (3987 mm) 279.5 in (7099 mm) 51° 119.9 in (3046 mm) 40.6 in (1032 mm) 39.4 in (1763 mm) 6,622 lb (3004 kg) 2,547 lb/yd³ (1511 kg/m³) 15,574 lb (7064 kg) 13,243 lb (6007 kg) 11,094 lb (5032 kg) 14,979 lb (6794 kg)	2.3 yd³ GP (1.76 m² Bucket with Bolt-on Edgr 198.9 in (5052 mm 157.0 in (3987 mm 276.8 in (7178 mm 51 121.8 in (3092 mm 38.9 in (988 mm 68.6 in (1743 mm 6,650 lb (3016 kg 2,891 lb/yd³ (1716 kg/m 15,650 lb (7099 kg 13,299 lb (6033 kg 11,018 lb (4998 kg 14,921 lb (6768 kg	2.3 yd° GP (1.76 m²) Bucket with Teeth & Segments 198.9 in (5052 mm) 157.0 in (3987 mm) 282.6 in (7178 mm) 282.6 in (7178 mm) 2994 mm) 30 42.9 in (1089mm) 30 70.7 in (1795 mm) 31 6,749 lb (3061 kg) 3,053 lb/yd° (1812 kg/m²) 31 15,865 lb (7196 kg) 31 13497 lb (6122 kg) 31 11,100 lb (5035 kg) 31 15,017 lb (6811 kg) 31 19,788 lb (8976 kg) 31 20,732 lb (9404 kg)

521F Z-Bar*	2.3 yd ³ GP (1.76 m ³) Bucket with Teeth & Segments	2.1 yd³ GP (1.61 m³) Bucket with Bolt-on Edge	2.1 yd ³ GP (1.61 m ³) Bucket with Teeth & Segments
SAE bucket capacity – struck	1.90 yd³ (1.45 m³)	1.77 yd³ (1.35 m³)	1.67 yd³ (1.28 m³)
Heaped	2.21 yd³ (1.69 m³)	2.1 yd³ (1.61 m³)	1.96 yd³ (1.50 m³)
Bucket width - outside	101.1 in (2567 mm)	100.4 in (2550 mm)	101.1 in (2567 mm)
Bucket weight	1,722 lb (781 kg)	1711 lb (776 kg)	1,629 lb (739 kg)
E. Operating height – fully raised with spillguard	184.0 in (4673 mm)	181.3 in (4604 mm)	181.3 in (4605 mm)
F. Hinge pin height – fully raised	142.1 in (3609 mm)	142.1 in (3608 mm)	142.1 in (3609 mm)
G. Overall length – bucket level on ground	269.0 in (6833 mm)	260.2 in (6609 mm)	266.1 in (6759 mm)
Dump angle – fully raised	55°	55°	55°
H. Dump height – fully raised, 45° dump	103.0 in (2615 mm)	108.8 in (2763 mm)	104.9 in (2665 mm)
J. Bucket reach – fully raised, 45° dump	43.8 in (1114 mm)	37.9 in (963 mm)	41.9 in (1064 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	58.7 in (1490 mm)	55.9 in (1421 mm)	57.8 in (1469 mm)
Operating load – ISO	8,000 lb (3629 kg)	7,997 lb (3627 kg)	8,116 lb (3681 kg)
Maximum material density – ISO	3,619 lb/yd³ (2147 kg/m³)	3,808 lb/yd³ (2259 kg/m³)	4,137 lb/yd³ (2455 kg/m³)
Tipping load – ISO:			
Straight	18,698 lb (8481 kg)	18,691 lb (8478 kg)	18,952 lb (8597 kg)
40° turn	15,999 lb (7257 kg)	15,993 lb (7254 kg)	16,232 lb (7363 kg)
Lift capacity:			
Full height	12,246 lb (5555 kg)	12,257 lb (5559 kg)	12,341 lb (5598 kg)
Maximum reach	16,937 lb (7682 kg)	16,947 lb (7687 kg)	17,043 lb (7731 kg)
Ground	23,860 lb (10 823 kg)	23,991 lb (10 882 kg)	24,257 lb (11 003 kg)
Breakout force with tilt cylinder	20,733 lb (9404 kg)	20,868 lb (9466 kg)	22,528 lb (10219 kg)
Maximum rollback:			
@ Ground	40°	40°	40°
@ Carry position	43°	43°	43°
@ Maximum reach	52°	52°	52°
@ Full height 54°	54°	54°	54°
L. Dig depth	3.1 in (80 mm)	2.5 in (64 mm)	2.9 in (75 mm)
Maximum grading angle with bucket - back dragging	61°	60°	60°
Loader clearance circle	436.8 in (11 095 mm)	431.0 in (10 949 mm)	435.0 in (11 050 mm)

	521F XT	2.1 yd³ GP (1.61 m³) Case Bucket with Edge***	2.1 yd ³ GP (1.61 m ³) Case Bucket with Teeth***	
E.	Operating height – fully raised with spillguard	188.5 in (4787 mm)	188.5 in (4787 mm)	
F.	Hinge pin height - fully raised	147.4 in (3744 mm)	147.4 in (3744 mm)	
G.	Overall length – bucket level on ground	271.2 in (6889 mm)	277.1 in (7037 mm)	
Dur	np angle - fully raised	57°	57°	
H.	Dump height – fully raised, 45° dump	102.1 in (2591 mm)	98.3 in (2497 mm)	
J.	Bucket reach - fully raised, 45° dump	40.6 in (1031 mm)	44.7 in (1135 mm)	
K.	Bucket reach - 7 ft 0 in (2.13 m) height, 45° dump	55.0 in (1397 mm)	56.7 in (1439 mm)	
Оре	erating load - ISO	6,706 lb (3042 kg)	6,738 lb (6057 kg)	
Max	kimum material density – ISO	3,193 lb/yd³ (1895 kg/m³)	3,435 lb/yd³ (2038 kg/m³)	
Tipping load – ISO:				
	Straight	15,755 lb (7147 kg)	15,839 lb (7185 kg)	
	40° turn	13,412 lb (6084 kg)	13,477 lb (6113 kg)	
Lift capacity:				
	Full height	10,483 lb (4755 kg)	10,518 lb (4771 kg)	
	Maximum reach	14,650 lb (6645 kg)	14,735 lb (6684 kg)	
	Ground	22,260 lb (10 097 kg)	22,257 lb (10 095 kg)	
Bre	akout force – dump cylinder	21,563 lb (9781 kg)	22,912 lb (10 393 kg)	
Loa	der clearance circle	435.8 in (11 069 mm)	439.3 in (11 159 mm)	

	521F XR	2.1 yd³ GP (1.61 m³) Bucket with Bolt-on Edge	2.1 yd³ GP (1.61 m³) Bucket with Teeth & Segments	
E.	Operating height – fully raised with spillguard	196.2 in (4983 mm)	196.2 in (4984 mm)	
F.	Hinge pin height – fully raised	157.0 in (3987 mm)	157.0 in (3987 mm)	
G.	Overall length – bucket level on ground	273.9 in (6956 mm)	279.7 in (7104 mm)	
Dump angle – fully raised		51°	51°	
Н.	Dump height – fully raised, 45° dump	123.7 in (3142 mm)	119.9 in (3044 mm)	
J.	Bucket reach - fully raised, 45° dump	36.9 in (938 mm)	40.9 in (1039 mm)	
K.	Bucket reach - 7 ft 0 in (2.13 m) height, 45° dump	67.5 in (1715 mm)	69.7 in (1770 mm)	
Ope	rating load - ISO	6,748 lb (3061 kg)	6,848 lb (3106 kg)	
Max	imum material density - ISO	3,213 lb/yd³ (1907 kg/m³)	3,491 lb/yd³ (2071 kg/m³)	
Tipping load – ISO:				
	Straight	15,862 lb (7195 kg)	16,081 lb (7294 kg)	
	40° turn	13,495 lb (6121 kg)	13,697 lb (6213 kg)	
Lift capacity:				
	Full height	11,110 lb (5040 kg)	11,192 lb (5077 kg)	
	Maximum reach	15,027 lb (6816 kg)	15,124 lb (6860 kg)	
	Ground	19,826 lb (8993 kg)	19,999 lb (9072 kg)	
Brea	kout force with tilt cylinder	20,874 lb (9468 kg)	22,529 lb (10 219 kg)	
Load	der clearance circle	443.6 in (11 267 mm)	448.0 in (11 378 mm)	

NOTE:

- *Z-Bar performance data shown with full counterweight **XT lift arm with buckets for ACS Pro Series 2000® size 30 HD coupler.
- ***XT lift arm with bucket for Case coupler

Performance data unit equipped with 17.5 x 25 XTLA tires, ROPS cab with heater and A/C, full counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (79 kg) operator.

Specifications per SAE J732, J1234, J695, J742 and J818.

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

See page 1

ENGINE

Case F4HFE413J

Tier 4a/IIIb Certified

Selectable work modes:

Maximum power

Automatic power

Standard power

Economy power

Turbocharger

Charge air cooling

Automatic fan belt tensioner

Integral engine oil cooling

Fuel filter with water trap

Dual element air cleaner

70 amp alternator

2 - 700 CCA 12-volt batteries

Liquid-cooled radiator

Non spark-arresting muffler

Mid-mounted cooling module

Common rail electronic fuel injection

POWERTRAIN

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

Limited-slip differentials

Transmission oil cooler

Brake pedal transmission disconnect

Hydraulic wet disc brakes

Spring-applied hydraulic release parking brake

Limp-Home Mode

Lubed-for-life drive shaft

HYDRAULICS

Single lever 2-spool loader control valve

Low-effort steering

Hydraulic driven fan

8 Diagnostic quick couplers

LOADER

See page 2

OTHER

Front and rear fenders

Lights:

2 Front driving headlights - high/low beam

2 Front flood

2 LED stop and tail lights

2 Rear flood

Front and rear turn signal/flash

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 ENVIRONMENT

Cloth-covered air-suspension seat

Sound Shield noise suppression package

Cab air-conditioning with heater

Radio

Radio-ready - 12 or 24-volt

Auxiliary power - 12-volt

Cab convenience package

RH steps and platform

Rotating beacon

Second brake pedal

Open ROPS

Joystick steering

ENGINE

Cold weather package:

Heavy-duty batteries

Fuel heater

Hydraulic oil cooler bypass

Low temperature hydraulic oil

Grid heater

HYDRAULICS

Auxiliary hydraulics

Ride Control

Secondary steering

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

loader control

Hydraulic reversing fan

Hydraulic cooler

LOADER

Hydraulic attachment coupler systems

Attachment auxiliary hydraulics

Buckets - see page 4 & 5

XT parallel lift

XR extended reach

TIRES

17.5 x 25 radial

20.5 R25 radial

20.5 R25 bias

OTHER

Heavy-duty axle

Special paint

Full coverage fenders

Belly pan

Tool box

Full counterweight - Z-Bar

Temperature controlled fan

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

NOTE: All engines meet current EPA emissions requirements.

IMPORTANT: Case Construction Equipment Inc. reserves the right to change these specifications without notice and without incurring any obligation relating to such change. Case Construction Equipment Inc. does not warrant the safety or reliability of attachments from other manufacturers.

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