

Z-BAR/XR WHEEL LOADER

TIER 4 FINAL CERTIFIED



ENGINE	
Make	FPT
Model	F2CFE614H
Emissions Cert	ification Tier 4 Final
Emissions Tech	nnology SCR/DOC
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 Fore and aft	35° 35°
Air filter	2-element dry type w/ warning restriction indicator

Rear-mount cooling module: Rear-mount air/water

Fan - hydraulic driven:

Style

9 blade puller 36 in (914 mm) Diameter 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** 2100 Rated - full load

Horsepower:

Maximum Power Mode:

320 hp (239 kW) Peak gross @ 1800 RPM Net rated @ 2100 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 @ 2100 RPM 242 hp (180 kW) Peak net @ 1800 RPM 273 hp (204 kW)

Economy Power Mode:

253 hp (188 kW) Peak gross @ 1400 RPM 178 hp (133 kW) Net rated @ 1800 RPM Peak net @ 1400 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)

Economy 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

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 Helica	
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

Differential:

Auto locking Front Differential Open Differential Rear

Rear axle oscillation	26° total
Front and rear axles	Front/Rear:
Differential ratio	4.25/4.50
Planetary ratio	6.35/6.00
Final axle ratio	27.00/27.00

Heavy-duty axles - standard:

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 1,144 in² (0.738 m²) 841 in² (0.542 m²) Rear hub - each

Parking brakes:

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

I ravel speeds -	4-speed transmission	n:
	Forward	Reverse
	mph (kph)	mph (kph)
1st	4.3 (7.0)	4.3 (7.0)
2nd	7.2 (11.6)	7.2 (11.6)
3rd	10.8 (17.4)	15.3 (24.6)
4th	22.0 (35.4)	_

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.

Dispays/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; 26.5-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 (25 075 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

Main pumps – steering/implement: Closed center pressure/flow compensated

Tandem variable displacement – load-sensing

Max. rated flow P1: 50.2 gpm @ 2000 RPM

(190 L/min @ 2000 RPM)

Max. rated flow P2: 42.8 gpm @ 2000 RPM

(162 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 3,650 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 Fl	uid:
Usable capacity	16 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	65.5 qt (62 L)
Rear axle	44.4 qt (42 L)
Engine oil w/ filter	30 qt (28.5 L)
Cooling system	15 gal (56.8 L)

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: 8.00 in (203.2 mm) Bore diameter Rod diameter 5.00 in (127.0 mm) 22.91 in (581.9 mm) Stroke 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

Dump w/ rated bucket load

Sound level in Cab (LpA)

Exterior sound level (LwA)

Float down

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

6.2 sec

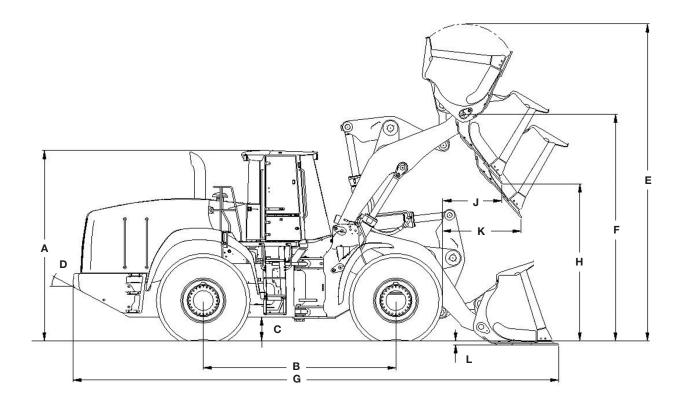
1.3 sec

2.8 sec

69 dB(A)

105 dB(A)

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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			
		Tipping Load	Tipping Load
	Weight	Adjustment	Adjustment
Select Options	Adjustment	Straight: Deflected*	40° Turn: Deflected*
26.5 x 25 L5 Radial Tires	+1.500 lb (+680 kg)	+1.179 lb (+535 ka)	+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.

*Tipping loads: ISO 14397-1 Deflected Tires.

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PERFORMANCE SPECS			
1021G Z-Bar*	4.75 yd³ (3.6 m³) Bucket with Bolt-on Edge - Pin On	4.6 yd³ (3.5 m³) Bucket with Teeth - Pin On	5.5 yd³ (4.2 m³) Bucket with Bolt-on Edge - Pin On
Operating weight	56,106 lb (25 449 kg)	56,102 lb (25 447 kg)	56,365 lb (25 567 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)
L. Dig depth	4.8 in (123 mm)	5.0 in (128 mm)	4.9 in (123 mm)
Operating load – ISO Deflected Tires	18,033 lb (8 180 kg)	18,155 lb (8 235 kg)	17,858 lb (8 100 kg)
Maximum material density – ISO Deflected Tires	3,796 lb/yd³ (2 253 kg/m³)	3,947 lb/yd³ (2 342 kg/m³)	3,247 lb/yd³ (1 927 kg/m³)
Tipping load – ISO Deflected Tires:			
Straight	45,419 lb (20 602 kg)	45,730 lb (20 743 kg)	45,126 lb (20 469 kg)
40° turn	36,066 lb (16 359 kg)	36,310 lb (16 470 kg)	35,717 lb (16 201 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)
Loader clearance circle with bucket	555.7 in (14 115 mm)	560.6 in (14 238 mm)	558.2 in (14 177 mm)

1021G XR	4.75 yd³ (3.6 m³) Bucket with Bolt-on Edge - Pin On	4.6 yd ³ (3.5 m ³) Bucket with Teeth - Pin On	5.5 yd³ (4.2 m³) Bucket with Bolt-on Edge - Pin On
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)
L. Dig depth	5.0 in (126 mm)	5.2 in (131 mm)	5.0 in (127 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)
Loader clearance circle with bucket	575.2 in (14 611 mm)	580.7 in (14 751 mm)	578.1 in (14 684 mm)

1021G		Z-Bar/XR	Z-Bar/XR	Z-Bar/XR
Maximum rollback:	Ground	44°/42°	45°/42°	44°/42°
	Carry position	49°/48°	49°/48°	49°/48°
	@ Full height	65°/66°	65°/66°	65°/66°
Maximum grading angle with	n bucket - back dragging	61°/63°	60°/62°	60°/63°
SAE bucket capacity - struc	k	4.07 yd ³ (3.11 m ³)	3.87 yd³ (2.96 m³)	4.75 yd ³ (3.63 m ³)
Heaped		4.75 yd ³ (3.63 m ³)	4.60 yd ³ (3.52 m ³)	5.50 yd ³ (4.21 m ³)
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)

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PERFORMANCE SPECS	
1021G Z-Bar*	5.3 yd³ (4.1 m³) Bucket with Teeth - Pin On
Operating weight	56,361 lb (25 565 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)
L. Dig depth	5.0 in (128 mm)
Operating load – ISO Deflected Tires	17,980 lb (8 155 kg)
Maximum material density – ISO Deflected Tires	3,392 lb/yd³ (2 013 kg/m³)
Tipping load – ISO Deflected Tires: Straight 40° turn	45,428 lb (20 606 kg) 35,959 lb (16 311 kg)
Lift capacity: Full height Ground	30,993 lb (14 058 kg) 52,533 lb (23 829 kg)
Breakout force with tilt cylinder	48,219 lb (21 872 kg)
Loader clearance circle with bucket	563.1 in (14 303 mm)

58,707 lb (26 629 kg)
252.2 in (6 405 mm)
190.0 in (4 827 mm)
379.8 in (9 648 mm)
50°
139.4 in (3 541 mm)
55.6 in (1 411 mm)
96.3 in (2 446 mm)
5.2 in (131 mm)
15,346 lb (6 961 kg)
2,896 lb/yd³ (1 718 kg/m³)
38,047 lb (17 258 kg)
30,692 lb (13 922 kg)
27,705 lb (12 567 kg)
42,153 lb (19 120 kg)
48,698 lb (22 089 kg)
583.7 in (14 826 mm)

1021G		Z-Bar/XR
Maximum rollback:	Ground	45°/42°
	Carry position	49°/48°
	@ Full height	65°/66°
Maximum grading angle with bucket – back dragging		60°/62°
SAE bucket capacity - stru	ck	4.56 yd³ (3.49 m³)
Heaped		5.30 yd³ (4.05 m³)
Bucket width - outside		126.9 in (3 223 mm)
Bucket weight		4,672 lb (2 119 kg)
NOTE: *7 Day a sufamora a	ata ali anno noto atau alanda anno dan anno ainha	

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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.

OPERATOR ENVIRONMENT

See page 1

ENGINE

Case/FPT F2CFE614H

Tier 4 Final Certified

Selective Catalytic Reduction (SCR) with Diesel Oxidation Catalyst

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 – 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

Heavy-duty axles:

Larger size axles front and rear with auto 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

Greasable 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) 1000 CCA 12-volt batteries

Electric starter

Lights:

Front and rear halogen flood lights

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, partial coverage

Standard counterweight

Drawbar hitch

Articulation locking bar

Lift arm locking bar

Lift and tie-down points - front/rear

Backup alarm

3-piece rims

Grouped remote-mounted ecology drains:

Engine oil

Engine coolant

Hydraulic oil

TELEMATICS

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

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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) retractable seat belt

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

In cab powered cooler box

In cab accessory mount

LED rotating beacon

Joystick steering

Rear view camera

External rear view mirrors

External heated rear view mirrors

Front LED driving/headlights

LED front and rear work lights

Extra front-facing LED work lights

DRIVETRAIN

Open type differential axle, front and rear

Axle coolers

Axle oscillation stops

Cold weather package:

Engine block heater

Fuel heater

Hydraulic oil cooler bypass

Low temperature hydraulic oil

Grid heater

HYDRAULICS

Auxiliary hydraulics

Ride Control™

Secondary steering

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

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

ADVANCED ENGINE AIR FILTRATION

Variable speed hydraulic reversing fan Sy-Klone® ejector type pre-cleaner

OTHER

Special paint

Tool box

Fire extinguisher

Side guards for rear frame

License plate brackets, front and rear

12 mph (20 kph) maximum speed control

Wide full coverage fenders with right and left

hand steps

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