

### ENGINE

Model	F5CE 5454 C* A003
Emissions Certification	Tier 3
Type	Diesel, Turbo – Direct Injection
Cylinder	4
Bore/Stroke	3.9 x 4.1 in (99 x 104 mm)
Displacement	195 in <sup>3</sup> (3.2 L)
Fuel injection	Direct
Fuel	#2 diesel
Fuel filter	In-line strainer
Oil filtration	Spin-on – full-flow cartridge
Air intake	Turbocharged w/o waste gate
Cooling	Liquid
Engine speeds	RPM
High idle – no load	2675 +/- 75
Rated – full load	2500
Low idle	1075 +/- 75
Horsepower – SAE J1349 @ 2500 RPM:	
Gross	90 hp (67 kW)
Net	84 hp (63 kW)
Peak torque	251 lb-ft (340 N·m) @ 1400 RPM
Radiator:	
Core type	All aluminum
Core size area	412 in <sup>2</sup> (0.266 m <sup>2</sup> )
Rows of tubes	44 x 4
Cap pressure	16 +/- 2 psi (110 +/- 14 bar)
Fan:	
Diameter	20.4 in (518 mm)
Ratio	0.96:1
Water pump:	
Style	Centrifugal
Flow	29 gpm (110 L/min)
Engine lubrication:	
Pump	Rotor pump w/ deep sump pan, plate cooler, and pressurized under-piston nozzles
Pump operating angle ratings:	
Side to side	45°
Bucket up	35°
Bucket down	45°

### DRIVETRAIN

Drive pump	Mechanical
Pump to engine ratio	1:1
Displacement	2.81 in <sup>3</sup> (46 cm <sup>3</sup> )
Flow at rated engine RPM	
@ 100% efficiency	29.4 gpm (111 L/min)
Charge pressure:	
24.5 +/- 0.5 psi (360 +/- 10 bar)	
System relief	5,220 psi (360 bar)
Drive pump	Electro-hydraulic
Pump to engine ratio	1:1
Displacement	2.75 in <sup>3</sup> (46 cm <sup>3</sup> )
Flow at rated engine RPM	
@ 100% efficiency	28.8 gpm (109 L/min)
Charge pressure	362 psi (15 bar)
System relief	5,220 psi (360 bar)

### DRIVETRAIN (cont.)

Drive motors:	
Max. displacement	28.7 in <sup>3</sup> (470 cm <sup>3</sup> )
Optional high speed	17.2 in <sup>3</sup> (282 cm <sup>3</sup> )
Speed @ high idle engine RPM	
100% efficiency @ rated engine RPM	241
Speed @ optional high speed RPM	355
Torque @ max displacement and relief pressure	1,987 lb-ft (2 694 N·m)
Travel speed:	
Low range	7.0 mph (11.3 kph)
High range – optional	10.5 mph (16.9 kph)
Final drive	Single-reduction chain drive
Drive chain:	
Size	ASA #100
Tensile strength	30,000 lb (133.4 kN)
Axles:	
Torque @ max. displacement and relief pressure	6,620 lb-ft (8 975 N·m)
Diameter	2.44 in (62 mm)
Length	15.6 in (396 mm)
Parking brake:	
Type	Spring-applied, hydraulic release disc
Engagement	Depress on/off brake button on handle or instrument panel, raise seat bar, get off seat, or stop engine

### ELECTRICAL

Alternator	120 amp
Starter	3.2 kW
Battery	12-volt low-maintenance 1,000 cold-cranking amps @ 0° F (-18° C)

### OPERATOR ENVIRONMENT

Enclosed Cab w/ Heater and AC; Fully sealed and pressurized – FSP; Glass door w/ wiper and washer; Sliding side windows – removable; Heater and air conditioner; AM/FM radio w/ 2 speakers; Keyless start ignition; Tilt ROPS/FOPS; Rear window w/ emergency escape; Deluxe cloth, air suspension seat, w/ 2 in (51 mm) retractable 3 point lap seat belt w/ heater and lumbar support; Hand and Foot throttle; Alarm package – back-up and Horn; Headliner; Dome Light; Top window; Cup holder; 12V Power plug socket; Foot rest; Seat Pocket; Padded seat bar w/ integral armrests; Loader control lockout system; Electric parking brake control; Operator's compartment floor cleanout; Proportional auxiliary hydraulic control – on joystick; Advanced Instrument Cluster w/ digital hour meter, tachometer, Fuel level LCD bar graph w/ alarm, DEF level, diagnostic features and security lockout.

#### Warning lights with alarms:

Engine coolant temperature; Engine oil pressure; Engine malfunction; Hydraulic charge pressure; Hydraulic filter restriction; Hydraulic oil temperature; Critical system stop, Engine system, Hydraulic system, Electrical and diagnostic system.

### OPERATOR ENVIRONMENT (cont.)

Warning alarms:	
Battery voltage – plus display; Oil service.	
Indicator light:	
Engine preheat; Parking brake; Seat bar reminder.	

### OPERATING WEIGHT

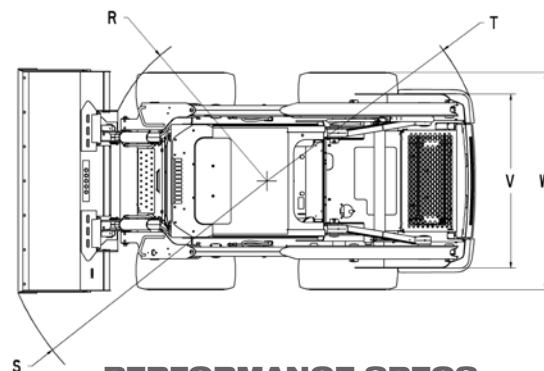
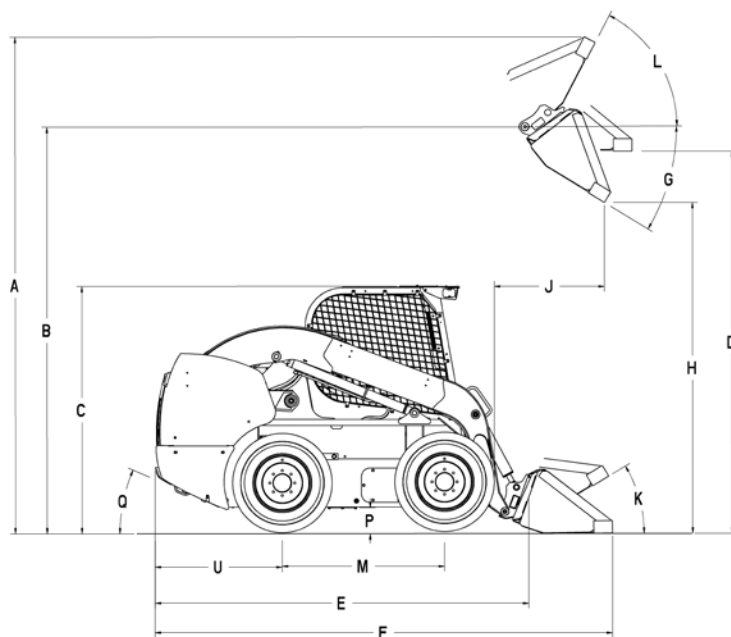
Shipping weight	7,965 lb (3 610 kg)
Operating weight	8,300 lb (3 765 kg)
Add-on weights:	
Side cab glass	47 lb (21.3 kg)
Lexan® door	74 lb (33.6 kg)
Glass door w/ wiper	134 lb (60.8 kg)
Suspension seat	22 lb (10 kg)

### HYDRAULICS

Standard equipment pump type	Gear
Displacement:	
Standard aux.	2.08 in <sup>3</sup> (34.1 cm <sup>3</sup> )
High flow aux.	1.1 in <sup>3</sup> (18.3 cm <sup>3</sup> )
Pump flow @ rated engine RPM:	
@ 100% efficiency	22.5 gpm (85 L/min)
Optional high flow @ rated engine RPM:	
@ 100% efficiency	34.6 gpm (131 L/min)
Loader control valve:	
Type	3 Spool/Open center/Series
Relief pressure	3,000 psi (207 bar)
Port relief pressures:	
Loader raise	3,263 psi (225 bar)
Bucket dump	3,770 psi (260 bar)
Bucket curl	1,160 psi (80 bar)
Hydraulic lines:	
Tubing	37° JIC Flare
Loop hoses	SAE 100 R13
Hydraulic oil cooler:	
Number of fins	10 per in (3.94 per cm)
Number of tubes	11
Area	130.7 in <sup>2</sup> (843 cm <sup>2</sup> )
Hydraulic filter	6 micron/Spin on
Lift cylinder:	
Bore diameter	2.75 in (69.85 mm)
Rod diameter	2.0 in (50.8 mm)
Stroke	47.4 in (1 205 mm)
Closed length	34.9 in (886.5 mm)
Bucket cylinders:	
Bore diameter	3.0 in (76.2 mm)
Rod diameter	1.5 in (38.1 mm)
Stroke	16.4 in (410.0 mm)
Closed length	24 in (610.0 mm)

### SERVICE CAPACITIES

Fuel tank	25.5 gal (96.5 L)
Engine oil w/ filter	10 qt (9.5 L)
Hydraulic system:	
Reservoir	6 gal (22.7 L)
Total	47 qt (44.5 L)
Chain tanks – per side	29.5 qt (27.9 L)



## PERFORMANCE SPECS

Rated operating load:	
50%	3,000 lb (1 364 kg)
Tipping load	
	6,000 lb (2 727 kg)
Breakout forces @ 3,150 psi (217 bar):	
Lift cylinder	5,590 lb (24.9 kN)
Bucket cylinder	7,570 lb (33.7 kN)
Cycle times:	
Raise	4.8 sec
Lower	2.8 sec
Dump	2.7 sec
Roll back	2.0 sec

## DIMENSIONS

<b>A.</b> Overall operating height:	
with foundry/excavating bucket short lip	160.4 in (4 073 mm)
with low profile/standard lip bucket	164.4 in (4 176 mm)
with low profile extended/long lip bucket	169.5 in (4 304 mm)
Height to:	
<b>B.</b> Bucket hinge pin	130 in (3 302 mm)
<b>C.</b> Top of ROPS	78.8 in (2 002 mm)
<b>D.</b> Bottom of level bucket, fully raised	124.8 in (3 169 mm)
Overall length:	
<b>E.</b> without attachment with coupler	117.7 in (2 990 mm)
<b>F.</b> with foundry excavation bucket on ground	141.9 in (3 604 mm)
with low profile bucket	146 in (3 708 mm)
with low profile extended bucket	151 in (3 835 mm)
<b>G.</b> Dump angle	53.5°
<b>H.</b> Dump height:	
with foundry/excavating bucket short lip	103.5 in (2 629 mm)
with low profile/standard lip bucket	100.6 in (2 556 mm)
<b>J.</b> Dump reach – max. height	29.3 in (744 mm)
Maximum attachment rollback:	
<b>K.</b> Bucket on ground	35°
<b>L.</b> Bucket at full height	86°
<b>M.</b> Wheelbase	52 in (1 322 mm)
<b>P.</b> Ground clearance – bottom of belly pan	8 in (203 mm)
<b>Q.</b> Angle of departure	23.5°
Clearance circle:	
<b>R.</b> without bucket	56.2 in (1 428 mm)
<b>S.</b> with 72 in (1.8 m) foundry bucket in carry position	84.1 in (2 136 mm)
with 72 in (1.8 m) low profile bucket on ground	87.8 in (2 230 mm)
with 72 in (1.8 m) extended low profile on ground	92.4 in (2 347 mm)
<b>T.</b> Clearance circle rear	70.4 in (1 789 mm)
<b>U.</b> Rear axle to bumper	40.7 in (1 034 mm)
Rolling radius	16.1 in (409 mm)
<b>V.</b> Tread width with spec tires	56.9 in (1 448 mm)
<b>W.</b> Over the tire width with spec tires	69.6 in (1 768 mm)

## TIRE SELECTION

	Size	Ply Rating	Tread Depth	Tire Width	Width Tread Width	Over Tires	Tire Weight*
Heavy-Duty	12 x 16.5	—	—	—	57 in (1 465 mm)	70 in (1 785 mm)	—
Premium	12 x 16.5	—	—	—	57 in (1 465 mm)	70 in (1 785 mm)	—
Premium-Lined	12 x 16.5	—	—	—	57 in (1 465 mm)	70 in (1 785 mm)	—
Severe Duty	12 x 16.5	—	—	—	57 in (1 465 mm)	70 in (1 785 mm)	—
Mining	12 x 16.5	—	—	—	57 in (1 465 mm)	70 in (1 785 mm)	—
Non-Pneumatic	12 x 16.5	—	—	—	57 in (1 465 mm)	70 in (1 785 mm)	—
Flotation	33 x 15.5	—	—	—	60 in (1 544 mm)	76 in (1 930 mm)	—
Premium	14 x 17.5	—	—	—	62 in (1 579 mm)	76 in (1 930 mm)	—

NOTE: \*Tire weight does not include the wheel weight.

## OPTIONAL BUCKETS

Type	Width	Weight	Heaped Capacity
Dirt & Foundry	72 in (1.83 m)	420 lb (190 kg)	16.2 ft <sup>3</sup> (0.46 m <sup>3</sup> )
	78 in (2.0 m)	440 lb (200 kg)	18.4 ft <sup>3</sup> (0.52 m <sup>3</sup> )
Low Profile	72 in (1.83 m)	420 lb (190 kg)	14.8 ft <sup>3</sup> (0.42 m <sup>3</sup> )
Low Profile Extended	72 in (1.83 m)	420 lb (190 kg)	17.7 ft <sup>3</sup> (0.50 m <sup>3</sup> )
	78 in (2.0 m)	440 lb (200 kg)	18.6 ft <sup>3</sup> (0.53 m <sup>3</sup> )
	84 in (2.1 m)	575 lb (262 kg)	20.2 ft <sup>3</sup> (0.57 m <sup>3</sup> )
Light Material	72 in (1.83 m)	420 lb (190 kg)	23.3 ft <sup>3</sup> (0.66 m <sup>3</sup> )
	84 in (2.1 m)	575 lb (262 kg)	27.9 ft <sup>3</sup> (0.79 m <sup>3</sup> )
Manure & Slurry	72 in (1.83 m)	420 lb (190 kg)	19.1 ft <sup>3</sup> (0.54 m <sup>3</sup> )
	84 in (2.1 m)	575 lb (262 kg)	22.5 ft <sup>3</sup> (0.64 m <sup>3</sup> )
Heavy-Duty	72 in (1.83 m)	420 lb (190 kg)	14.1 ft <sup>3</sup> (0.40 m <sup>3</sup> )
	78 in (2.0 m)	440 lb (200 kg)	15.9 ft <sup>3</sup> (0.45 m <sup>3</sup> )
	84 in (2.1 m)	575 lb (262 kg)	19.4 ft <sup>3</sup> (0.55 m <sup>3</sup> )

## STANDARD EQUIPMENT

### OPERATOR ENVIRONMENT

See page 1

### ENGINE

F5CE 5454 C\*A003

195 CID (3.2L) Turbo

Non-regulated

Tier 3

Turbocharged without waste gate

Fuel Injection

Horsepower:

Gross: 90 (67 kW)

Net: 84 (63 kW)

Peak torque 251 lb-ft (340 N-m)

120 amp alternator

Dual element air cleaner

Organic Acid Technology (OAT)

Anti-freeze solution to -34° F

Fuel tank - 25.5 gal (US)

Over and under radiator and oil cooler

3-stack after cooler/radiator/oil cooler configuration

Glow Plugs

### ENGINE (CONTINUED)

Integral engine oil cooler

Fuel filter with water trap

1,000 CCA 12V battery

Master electrical disconnect

### DRIVETRAIN

2-speed hydrostatic four wheel drive

ASA #100HS drive chain

SAHR disc parking brake

### HYDRAULICS

Auxiliary hydraulics:

@ 3,050 psi (210 bar) – 23.8 gpm (90 L/min)

6 micron oil filtration system

3-spool loader control valve

Auxiliary hydraulic disconnects, ISO flat-face – connect-under-pressure w/ case drain

Hydraulic circuit pedal lock

Auxiliary function lockout override

Loader lift lockout override

Heavy duty hydraulic oil cooler

Loader arm float position

Hydraulic one-way self-leveling

Ride Control

### LOADER

Heavy Duty Hydraulic attachment coupler

Vertical Lift geometry

Loader lift arm support strut

SAE operating load: 3,000 lbs

Tipping load: 6,000 lbs

In-cab Loader Lock

### TIRES

12 X 16.5 Heavy Duty - 70 inch

Over-the-Tire Width (OTW)

Galaxy XD2002

### OTHER STANDARD FEATURES

Halogen Lights - 2 front, 2 side, 2 rear flood

Heavy Duty Front Lights

Pre-wired for rotating beacon

Lockable service access hood

Single point daily service

Rear tail lights

Remote oil drain

Remote oil and fuel filters

Block Heater

Debris Ingression Sealing

Machine protection auto shutdown

Mounting points for add-on counterweights

Heavy Duty Rear Door

## OPTIONAL EQUIPMENT

### OPERATOR ENVIRONMENT

ROPS/FOPS Level 1 canopy with side screens

Keyed start ignition

Ventilation system with integrated heater

Electro-hydraulic controls:

For drive/steering, loader functions

Switchable between H and ISO patterns

Adjustable sensitivity of controls

Mechanical hand controls

Hand and Foot controls:

Hand controls the loader drive function and foot controls the bucket and boom

Non suspension seat

Suspension Seat, vinyl

Open cab interior trim package

Demolition cab door with polycarbonate

FOPS level 2

### HYDRAULICS

High-flow auxiliary hydraulics – combined:

@ 3,050 psi (210 bar) – 33.2 gpm (126 L/min)

Enhanced High-Flow auxiliary hydraulics – EHF:

@ 4,000 psi (276 bar) – 35.0 gpm (132.5 L/min)

Second auxiliary hydraulics

### LOADER

Auxiliary front electric control

Manual attachment coupler

### OTHER

Language decals

Factory-installed tires – see page 3

Buckets – see page 3

Bolt-on bucket cutting edges

Bolt-on heavy-duty bucket spill guard

Special paint

Offsite Service Arrangement

Telematics

### FACTORY SUPPLIED ATTACHMENTS

Interior mirror

Add-on counterweights

Road lights

Rotating beacon

Four-corner LED strobe

Bolt-on heavy-duty bucket teeth

48 in (1.22 m) pallet forks

### SERVICE PARTS

3 inch (76.2 mm) retractable seat belt



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

NOTE: All engines meet current EPA emissions requirements.

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