



## ENGINE

Model	F5C E5454 G*A001
Emissions Certification	Tier 3/Tier 4 Interim
Type	Diesel, Turbo – Direct Injection
Cylinders	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/ waste gate
Cooling	Liquid
Engine speeds	RPM
High idle – no load	2675 +/- 75
Rated – full load	2500
Low idle	1075 +/- 75
Horsepower @ 2500 RPM – SAE J1349:	
Gross	74 hp (55 kW)
Net	68 hp (51 kW)
Peak torque @ 1400 RPM	203 lb-ft (275 N-m)
Radiator:	
Core type	All aluminum
Core size area	2.77 ft <sup>2</sup> (0.257 m <sup>2</sup> )
Rows of tubes x columns	43 x 3
Cap pressure	16 +/- 2 psi (1.10 +/- 0.14 bar)
Fan:	
Diameter	18.9 in (480 mm)
Ratio	1.1:1
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°

## LIFT GEOMETRY

Radial Lift

## DRIVETRAIN

Drive pump controls	Mechanical
Pump to engine ratio	1:1
Displacement	2.81 in <sup>3</sup> (46 cm <sup>3</sup> )
Flow @ rated engine RPM:	
@ 100% efficiency	29.4 gpm (111 L/min)
Charge pressure	363 psi (25 bar)
System relief pressure	5,220 psi (360 bar)

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

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 at rated engine RPM	241
Speed @ optional high speed RPM	355
Torque @ max. displacement and relief pressure – calculated @ 5,003 psi (345 bar):	
2,694 lb-ft (1 987 N-m)	

Travel speed:	
Low range	7.1 mph (11.4 kph)
High range – optional	10.5 mph (16.9 kph)

Final drive	Single-reduction chain drive
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Drive chain:	
Size	ASA #100
Tensile strength	30,000 lb (133.4 kN)

Axles:	
Torque @ max. displacement and relief pressure	8,980 lb-ft (6 623 N-m)
Diameter	2.44 in (61.9 mm)
Length	15.7 in (399.0 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	4.29 hp (3.2 kW)
Battery	12-volt low-maintenance 925 cold-cranking amps @ 0° F (-18° C°)

## OPERATOR ENVIRONMENT

ROPS/FOPS Level 1 canopy w/ side screens; Keyed start ignition; Tilt ROPS/FOPS; Rear window w/ emergency escape; Suspension seat, vinyl w/ 2 in (51 mm) retractable 3 point lap seat belt; Hand and foot throttles; 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, 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.

Warning alarms:  
Battery voltage – plus display; Oil service.

Indicator light:  
Engine preheat; Parking brake;  
Seat bar reminder.

## OPERATING WEIGHT

Unit equipped w/ open cab; 165 lb operator; 72 in Dirt & Foundry bucket; full of fuel;	
12 x 16.5 tires:	6,970 lb (3 160 kg)
Shipping weight	6,670 lb (3 025 kg)

Add-on weights:	
Side cab glass	47 lb (21.3 kg)
Lexan® cab door	74 lb (33.6 kg)
Glass cab door w/ wiper	134 lb (60.8 kg)
Suspension seat	22 lb (10.0 kg)

## HYDRAULICS

Standard equipment pump type	Gear
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Displacement:	
Standard aux.	2.08 in <sup>3</sup> (34.1 cm <sup>3</sup> )
High-flow aux.	0.76 in <sup>3</sup> (12.5 cm <sup>3</sup> )

Standard flow @ rated engine RPM: @ 100% efficiency	22.5 gpm (85 L/min)
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Optional high-flow @ rated engine RPM: @ 100% efficiency	30.8 gpm (116.6 L/min)
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Loader control valve:	
Type	3 spool/open center/series
Relief pressure	3,000 (+145/-0) 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 inch (3.94 per cm)
Number of tube rows x columns	9 x 1
Area	137.5 in <sup>2</sup> (880 cm <sup>2</sup> )

Hydraulic filter	6 micron/Spin-on
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## HYDRAULICS CONT.

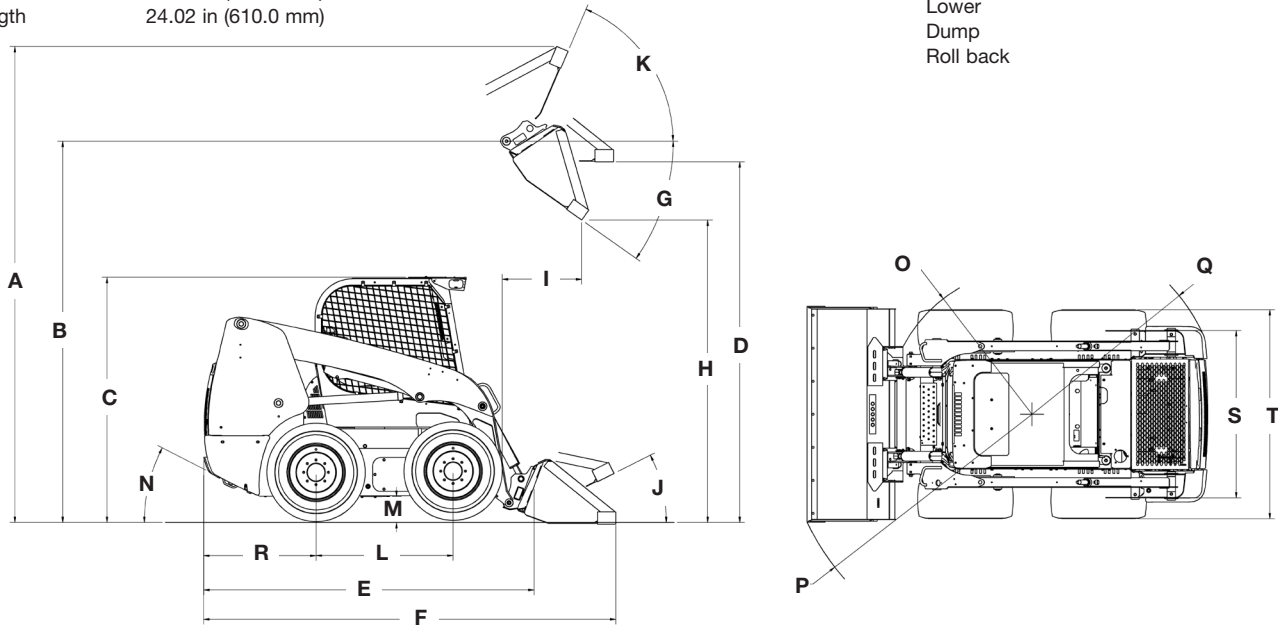
<b>Lift cylinders:</b>	
Bore diameter	2.50 in (63.5 mm)
Rod diameter	1.75 in (44.5 mm)
Stroke	31.69 in (804.9 mm)
Closed length	45.6 in (1 158.0 mm)
<b>Bucket cylinders:</b>	
Bore diameter	2.75 in (69.9 mm)
Rod diameter	1.38 in (34.9 mm)
Stroke	16.14 in (410.0 mm)
Closed length	24.02 in (610.0 mm)

## SERVICE CAPACITIES

Fuel tank	20 gal (75.7 L)
Engine oil w/ filter	2.5 gal (9.5 L)
<b>Hydraulic system:</b>	
Reservoir	5.3 gal (20.0 L)
Total	7.3 gal (27.5 L)
Chain tanks – per side	2.1 gal (7.9 L)

## PERFORMANCE SPECS

<b>Rated operating load:</b>	
50% of tipping load	2,000 lb (905 kg)
Tipping load	4,000 lb (1 814 kg)
<b>Breakout forces:</b>	
Bucket cylinders	7,270 lb (32.3 kN)
Lift cylinders – tip limit	4,570 lb (20.3 kN)
<b>Cycle times:</b>	
Raise	3.7 sec
Lower	1.9 sec
Dump	2.3 sec
Roll back	1.7 sec



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

## DIMENSIONS

<b>A.</b> Overall operating height:	
with foundry/excavating bucket short lip	154.3 in (3.92 m)
with low profile/standard lip bucket	158.3 in (4.05 m)
with low profile extended/long lip bucket	163.2 in (4.15 m)
<b>Height to:</b>	
<b>B.</b> Bucket hinge pin	123.0 in (3.12 m)
<b>C.</b> Top of ROPS	78.7 in (2.00 m)
<b>D.</b> Bottom of level bucket, fully raised	116.1 in (2.95 m)
<b>Overall length:</b>	
<b>E.</b> without attachment with coupler	105.1 in (2.67 m)
<b>F.</b> with foundry/excavating bucket on ground	129.6 in (3.29 m)
with low profile bucket	133.7 in (3.40 m)
with low profile extended bucket	138.8 in (3.53 m)
<b>G.</b> Dump angle	39.6°
<b>H.</b> Dump height:	
with foundry/excavating bucket short lip	98.2 in (2.50 m)
with low profile/standard lip bucket	95.6 in (2.43 m)
with low profile extended bucket	N/A
<b>I.</b> Dump reach at maximum height	20.3 in (0.52 m)
<b>Maximum attachment rollback:</b>	
<b>J.</b> Bucket on ground	31.0°
<b>K.</b> Bucket at full height	98.6°
<b>L.</b> Wheelbase	44.4 in (1.13 m)
<b>M.</b> Ground clearance – bottom of belly pan	8.0 in (0.20 m)
<b>N.</b> Angle of departure	25.0°
<b>Clearance circle:</b>	
<b>O.</b> without bucket	50.7 in (1.29 m)
<b>P.</b> with 66 in (1.68 m) foundry bucket in carry position	79.9 in (2.03 m)
with 66 in (1.68 m) low profile bucket on ground	83.1 in (2.11 m)
with 66 in (1.68 m) extended low profile on ground	87.7 in (2.23 m)
<b>Q.</b> Clearance circle rear	62.9 in (1.60 m)
<b>R.</b> Rear axle to bumper	36.4 in (0.92 m)
<b>S.</b> Tread width with spec tires	56.9 in (1.45 m)
<b>T.</b> Over the tire width with spec tires	69.1 in (1.76 m)

**TIRE SELECTION**

Type	Size	Tread Gauge	Width Over Tires	Tire Weight
Heavy-Duty	10 x 16.5	53 in (1.35 m)	64 in (1.63 m)	—
Premium	10 x 16.5	53 in (1.35 m)	64 in (1.63 m)	—
Premium-Lined	10 x 16.5	53 in (1.35 m)	64 in (1.63 m)	—
Severe-Duty	10 x 16.5	53 in (1.35 m)	64 in (1.63 m)	—
Non-Pneumatic – Solid	10 x 16.5	53 in (1.35 m)	64 in (1.63 m)	—
Heavy-Duty	12 x 16.5	57 in (1.47 m)	70 in (1.79 m)	—
Premium	12 x 16.5	57 in (1.47 m)	70 in (1.79 m)	—
Premium-Lined	12 x 16.5	57 in (1.47 m)	70 in (1.79 m)	—
Severe-Duty	12 x 16.5	57 in (1.47 m)	70 in (1.79 m)	—
Mining	12 x 16.5	57 in (1.47 m)	70 in (1.79 m)	—
Non-Pneumatic	12 x 16.5	57 in (1.47 m)	70 in (1.79 m)	—
Flotation	33 x 15.5	60 in (1.54 m)	76 in (1.93 m)	—

**OPTIONAL BUCKETS**

Type	Width	Weight	Heaped Capacity
Dirt & Foundry	66 in (1.68 m)	440 lb (200 kg)	14.8 ft <sup>3</sup> (0.42 m <sup>3</sup> )
	72 in (1.83 m)	420 lb (190 kg)	16.7 ft <sup>3</sup> (0.47 m <sup>3</sup> )
	78 in (1.98 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)	14.5 ft <sup>3</sup> (0.41 m <sup>3</sup> )
	78 in (1.98 m)	440 lb (200 kg)	17.7 ft <sup>3</sup> (0.50 m <sup>3</sup> )
Low Profile Extended	66 in (1.68 m)	440 lb (200 kg)	15.9 ft <sup>3</sup> (0.45 m <sup>3</sup> )
	72 in (1.83 m)	420 lb (190 kg)	17.1 ft <sup>3</sup> (0.48 m <sup>3</sup> )
	78 in (1.98 m)	440 lb (200 kg)	18.6 ft <sup>3</sup> (0.53 m <sup>3</sup> )
	84 in (2.13 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 (2.13 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 (2.13 m)	575 lb (262 kg)	22.5 ft <sup>3</sup> (0.64 m <sup>3</sup> )
Heavy-Duty	66 in (1.68 m)	440 lb (200 kg)	13.1 ft <sup>3</sup> (0.37 m <sup>3</sup> )
	72 in (1.83 m)	420 lb (190 kg)	14.6 ft <sup>3</sup> (0.41 m <sup>3</sup> )
	78 in (1.98 m)	440 lb (200 kg)	15.9 ft <sup>3</sup> (0.45 m <sup>3</sup> )

## STANDARD EQUIPMENT

### OPERATOR ENVIRONMENT

See page 1

### ENGINE

F5C E5454 G\*A001  
195 CID (3.2 L) Turbo  
Non-regulated  
Tier 3/Tier 4 Interim  
Turbocharged with waste gate fuel injection  
Horsepower:  
Gross: 74 hp (55 kW)  
Net: 68 hp (51 kW)  
Peak torque: 203 lb-ft (275 N·m)  
120 amp alternator  
Dual element air cleaner  
Organic Acid Technology (OAT)  
Anti-freeze solution to -34° F  
Fuel tank - 20 gal (U.S.)  
Over and under radiator and oil cooler  
3-stack after cooler/radiator/oil cooler configuration  
Glow plugs

Integral engine oil cooler  
Fuel filter with water trap  
925 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 with case drain  
Hydraulic circuit pedal lock  
Auxiliary function lockout override  
Loader lift lockout override  
Heavy-duty hydraulic oil cooler  
Loader arm float position  
Loader function lockout system  
Hydraulic one-way self-leveling  
Ride control

### LOADER

Manual attachment coupler  
Radial lift geometry  
Loader lift arm support strut  
SAE operating load: 2,000 lbs  
Tipping load: 4,000 lbs

### TIRES

12 X 16.5 Heavy duty

### 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 servicing  
Rear tail lights  
Remote oil drain  
Remote oil and fuel filters  
Block heater  
Debris ingress sealing  
Mounting points for add-on counterweights

## OPTIONAL EQUIPMENT

### OPERATOR ENVIRONMENT

Enclosed cab:  
Fully sealed and pressurized – FSP  
Glass door with wiper and washer  
Sliding side windows – removable  
Ventilation system with integrated heater  
Heater and air conditioner  
AM/FM radio with 2 speakers  
Keyless start ignition  
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  
Deluxe cloth, air suspension seat, with heater and lumbar support  
Open cab interior trim package  
Demolition cab door with polycarbonate  
FOPS level 2  
Heavy duty rear door

### HYDRAULICS

High-flow auxiliary hydraulics – combined:  
@ 3,050 psi (210 bar) – 33.2 gpm (126 L/min)  
Second auxiliary hydraulics

### LOADER

Auxiliary front electric control  
Hydraulic attachment coupler

### DRIVETRAIN

1-speed hydrostatic four wheel drive

### 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

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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.

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