

# **SV280B**

SKID STEER LOADER

**TIER 4 FINAL CERTIFIED** 



FPT F5H FL463 A\*G001 Model **Emissions Certification** Tier 4 Final Diesel, Turbo - Direct Injection Type Cylinders Bore/Stroke 3.9 x 4.3 in (99 x 110 mm) 207 in<sup>3</sup> (3.4 L) Displacement Fuel injection Direct, high pressure common rail - HPCR Fuel #2 Diesel Fuel filter: Beta (30) = 200/spin-on Pre-filter Main filter Beta (4) = 20/spin-onAir intake Turbocharged w/ external EGR Diesel Oxidation Exhaust aftertreatment Catalyst - DOC Cooling Liquid Engine speeds **RPM** High idle - no load 2500 +/- 25 Rated - full load 2500 I ow idle 1150 +/- 25 Horsepower @ 2500 RPM - SAE J1349: Gross 74 hp (55 kW) Net 68 hp (51 kW) Peak torque @ 1400 RPM 232 lb·ft (314 N·m) Radiator: Core type All aluminum Core size area 2.05 ft<sup>2</sup> (0.191 m<sup>2</sup>) Rows of tubes x columns 31 x 4 Cap pressure 13 +/- 2 psi (0.90 +/- 0.14 bar) Fan: Diameter 20.4 in (518 mm)

Ratio 0.96:1 standard, 1.1:1 high flow
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

Vertical Lift

#### DRIVETRAIN

Drive pump controls Servo-assist mechanical Pump to engine ratio 1:1 Displacement 2.81 in<sup>3</sup> (46 cm<sup>3</sup>) Flow @ rated engine RPM: @ 97% efficiency 29.4 gpm (111 L/min) Charge pressure 360 psi (24.5 bar) System relief pressure 5,220 psi (360 bar) Drive pump controls Electro-hydraulic Pump to engine ratio 2.75 in<sup>3</sup> (45 cm<sup>3</sup>) Displacement Flow @ rated engine RPM: @ 97% efficiency 28.8 gpm (109 L/min) Charge pressure 362 psi (25 bar) System relief pressure 5,220 psi (360 bar) Drive motors: Max. displacement 28.7 in<sup>3</sup> (470 cm<sup>3</sup>) Displacement: High speed 17.2 in3 (282 cm3) Motor RPM @ high idle and 97% efficiency: 2-speed Motor torque @ max. displacement and relief pressure, calculated @ 5,220 psi (360 bar): 1,987 lb·ft (2 694 N·m) Travel speed: Low range 7.0 mph (11.3 kph) 10.5 mph (16.9 kph) High range Final drive Single-reduction chain drive Drive chain: ASA #100 Size Tensile strength 30,000 lb (133.4 kN) Torque @ max. displacement and 5,957 lb·ft (8 077 N·m) relief pressure Diameter 2.44 in (62 mm) 15.6 in (396 mm) Length Parking brake: Spring-applied, hydraulic Type release multiple 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 950 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; Deluxe cloth, suspension seat vinyl, 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; Rearview mirror; 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 Low Profile bucket; full of fuel; 12 x 16.5 tires: 8,000 lb (3 630 kg) Shipping weight 7,665 lb (3 475 kg) Add-on weights: Side cab glass 47 lb (21.3 kg) Polycarbonate cab door 75 lb (34.0 kg) Glass cab door w/ wiper 75 lb (34.0 kg) Suspension seat 22 lb (10.0 kg) Additional counterweight 300 lb (136.0 kg)

## **HYDRAULICS**

Displacement:

Implement pump type

Standard aux.	2.23 in <sup>3</sup> (36.6 cm <sup>3</sup> )				
High-flow aux.	1.24 in <sup>3</sup> (20.4 cm <sup>3</sup> )				
Standard flow @ rated engine RPM:					
@ 100% efficiency	24.2 gpm (91.5 L/min)				
Optional high-flow @ rated engine RPM:					
@ 100% efficiency	37.6 gpm (142.5 L/min)				
Loader control valve:					
Type 3 spool/ope	en center/series - series				
Relief pressure	3,046 psi (210 bar)				
Port relief pressures:					
Loader raise	3,263 psi (225 bar)				
Bucket curl	3,770 psi (260 bar)				
Bucket dump	1,160 psi (80 bar)				
Hydraulic lines:					
Tubing	37° JIC Flare				
Loop hoses	SAE 100 R19				

Gear

## HYDRAULICS CONT.

Hydraulic oil cooler:

Number of fins 10 per inch (3.94 per cm) Number of tube rows x columns 11 x 2 130.7 in<sup>2</sup> (843.2 cm<sup>2</sup>) Area

Hydraulic filter Beta (4) = 75/spin-on

Lift cylinders:

Bore diameter 2.75 in (69.9 mm) Rod diameter 1.75 in (44.5 mm) Stroke 33.4 in (847.9 mm) 47.1 in (1 196 mm) Closed length

Bucket cylinders:

3.0 in (76.2 mm) Bore diameter Rod diameter 1.5 in (38.1 mm) 16.4 in (410 mm) Stroke Closed length 24.0 in (610 mm)

## SERVICE CAPACITIES

Fuel tank	25.5 gal (96.5 L)
Engine oil w/ filter	8.9 qt (8.5 L)

Hydraulic system:

Reservoir 6.0 gal (22.7 L) Total 11.99 gal (45.46 L) 5.8 gal (22.2 L)

Chain tanks - per side

## **PERFORMANCE SPECS**

Rated operating capacity – ROC\*:

50% of tipping load 2,800 lb (1 270 kg) w/ additional counterweight 2,900 lb (1 315 kg)

Tipping load\* 5,600 lb (2 540 kg)

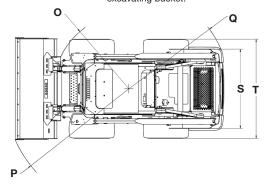
Breakout forces @ 3,150 psi (217 bar)\*:

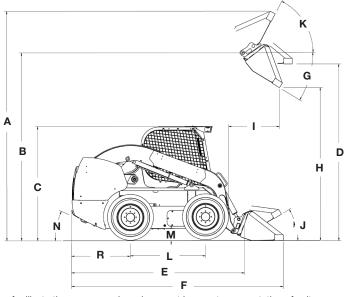
**Bucket cylinders** 8,620 lb (38.3 kN) 6,030 lb (27.3 kN) Lift cylinders - tip limit

Cycle times:

Raise 4.5 sec Lower 2.6 sec Dump 2.6 sec 2.0 sec Roll back

NOTE: \*Measured using 72 in (1.83 m) foundry/ excavating bucket.





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

DIMENSIONS	
A. Overall operating height:	
with foundry/excavating bucket	159.7 in (4.06 m)
with low profile extended bucket	168.8 in (4.29 m)
Height to:	100 F in (0.00 m)
<ul><li>B. Bucket hinge pin</li><li>C. Top of ROPS</li></ul>	129.5 in (3.29 m) 78.8 in (2.00 m)
D. Bottom of level bucket, fully raised	122.6 in (3.12 m)
Overall length:	122.0 111 (3.12 111)
E. without attachment with coupler	117.6 in (2.99 m)
F. with foundry/excavating bucket on ground	142.8 in (3.63 m)
with low profile extended bucket	151.9 in (3.86 m)
G. Maximum dump angle	54.7°
H. Dump height:	
with foundry/excavating bucket	103.1 in (2.62 m) @ 45°
with low profile extended bucket	96.6 in (2.45 m) @ 45°
I. Dump reach at maximum height with low profile extended bucket	38.3 in (0.97 m) @ 45°
Maximum attachment rollback:	
J. Bucket on ground	33.6°
K. Bucket at full height	84.8°
L. Wheelbase	52.0 in (1.32 m)
M. Ground clearance – bottom of belly pan	8.0 in (0.20 m)
N. Angle of departure	23.5°
Clearance circle:	
O. without bucket	54.2 in (1.38 m)
P. with 72 in (1.83 m) foundry/excavating bucket in carry position	84.0 in (2.14 m)
with 72 in (1.83 m) extended low profile on ground	92.4 in (2.35 m)
Q. Clearance circle rear	70.4 in (1.79 m)
R. Rear axle to bumper	40.7 in (1.03 m)
S. Tread over gauge with spec tires	56.9 in (1.45 m)
T. Over the tire width spec tires	69.8 in (1.77 m)

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OPTIONAL BUCKETS			
Туре	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 (1.98 m)	440 lb (200 kg)	17.7 ft <sup>3</sup> (0.50 m <sup>3</sup> )
Low Profile	72 in (1.83 m)	480 lb (218 kg)	14.8 ft <sup>3</sup> (0.42 m <sup>3</sup> )
Low Profile Extended	72 in (1.83 m)	510 lb (232 kg)	17.7 ft <sup>3</sup> (0.50 m <sup>3</sup> )
	78 in (1.98 m)	540 lb (245 kg)	19.1 ft <sup>3</sup> (0.54 m <sup>3</sup> )
	84 in (2.13 m)	575 lb (262 kg)	20.5 ft <sup>3</sup> (0.58 m <sup>3</sup> )
Light Material	72 in (1.83 m)	475 lb (216 kg)	23.3 ft <sup>3</sup> (0.66 m <sup>3</sup> )
	84 in (2.13 m)	540 lb (245 kg)	27.5 ft <sup>3</sup> (0.78 m <sup>3</sup> )
Manure & Slurry	72 in (1.83 m)	480 lb (218 kg)	19.1 ft <sup>3</sup> (0.54 m <sup>3</sup> )
Heavy-Duty	72 in (1.83 m)	510 lb (230 kg)	14.1 ft <sup>3</sup> (0.40 m <sup>3</sup> )
	78 in (1.98 m)	530 lb (240 kg)	15.5 ft <sup>3</sup> (0.44 m <sup>3</sup> )
	84 in (2.13 m)	550 lb (250 kg)	17.0 ft <sup>3</sup> (0.48 m <sup>3</sup> )
Heavy-Duty Extended with SmartFit Teeth	72 in (1.83 m)	667 lb (303 kg)	17.4 ft <sup>3</sup> (0.49 m <sup>3</sup> )
	78 in (1.98 m)	697 lb (316 kg)	18.9 ft <sup>3</sup> (0.54 m <sup>3</sup> )
	84 in (2.13 m)	728 lb (330 kg)	20.5 ft <sup>3</sup> (0.58 m <sup>3</sup> )

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#### STANDARD EQUIPMENT

## **OPERATOR ENVIRONMENT**

See page 1

## **ENGINE**

Charge Air Cooler (CAC)

Dual element air cooler

Organic Acid Technology (OAT)

Anti-freeze solution to -34° F

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

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) - 24.2 gpm (91.5 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

#### LOADER

Manual attachment coupler Auxiliary front electric control Vertical lift geometry Loader lift arm lock support pin

#### **TIRES**

12 X 16.5 Heavy duty

## **OTHER STANDARD FEATURES**

LED lights - 2 front, 2 side, 2 rear flood Pre-wired for rotating beacon Lockable service access hood

Single-point daily service

Rear tail lights

Remote fuel filters

Block heater

Debris ingression sealing

Mounting points for add-on counterweights

#### **TELEMATICS**

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

## **OPTIONAL EQUIPMENT**

#### **OPERATOR ENVIRONMENT**

Enclosed cab:

Fully sealed and pressurized - FSP Glass door with wiper and washer Sliding side windows – removable Heater and air conditioner AM/FM Bluetooth radio with 2 speakers Keyless start ignition

8 in Color LCD Display

Economy Mode (auto idle shutdown)

Auto Engine Protection Shutdown

Electro-hydraulic controls:

For drive/steering, loader functions Switchable between H and ISO patterns Adjustable sensitivity of controls

Mechanical hand controls - H pattern

Hand and foot controls:

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

Deluxe cloth, air suspension seat, with heater and lumbar support

Demolition cab door with polycarbonate **Ignition Timeout** 

Machine Settings User Access Levels **Operator Security Codes** 

### **HYDRAULICS**

High-flow auxiliary hydraulics - combined: @ 3,050 psi (210 bar) - 37.6 gpm (142.5 L/min)

Second auxiliary hydraulics Hydraulic one-way self-leveling Ride Control (mechanical controls) Auto Ride Control (EH controls)

Auxiliary flow control within cab

#### LOADER

Hydraulic attachment coupler

## DRIVETRAIN

Creep Speed Mode (standard with **EH Controls**)

#### **OTHER**

Language decals Buckets - see page 3 Bolt-on bucket cutting edges Special paint

## SERVICE PARTS

Precleaner

3 inch (76.2 mm) retractable seat belt Bolt-on heavy-duty bucket teeth Add-on counterweights Road lights Rotating beacon Four-corner LED strobe Single point lift device Four point lift device Aspirator

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