

SEM
MOTOR GRADER

SEM

915F/917F/919F



Contents

Key Features	1-6
Machine Applications	7
Main Specifications	8-9
Dimensions	10
Standard Equipment	11
Optional Equipment	11
Mandatory attachment	11

The SEM F series Tier 2 Motor Grader is equipped with an SDEC engine and a PPPC load-sensing hydraulic system for consistent and precise blade movement and reduced fuel consumption. The SEM rear tandem axle, designed and manufactured by Caterpillar, leverages the proven Caterpillar tandem axle design to deliver differentiated reliability and a longer service life, resulting in lower owning & operating costs.

In response to customer suggestions and feedback, the new generation F series Motor Grader has been upgraded to better meet the needs of customers and further improve machine performance. This includes the removal of the transmission shaft, direct connection of the hydraulic pump to the gearbox, and a new molded engine hood with a contemporary aesthetic, providing the machine with a striking and impactful visual design.

With these enhancements, SEM's new F series Motor Grader offers improved competitiveness and solutions to support the success of our dealers and customers.



Operate in comfort

- Standard float function for high efficiency and simple operation.
- Caterpillar's classic lever control with a short distance and stroke.
- Adjustable console and seat with optimized ergonomics.
- Cab with improved airtightness and noise reduction.
- Added vents in the new dashboard and cab columns for increased comfort.

Low cost per hour

- Less heat and fuel consumption; load-sensing and PPPC hydraulic system offer increased efficiency.
- Hydraulic cooling fan, high efficiency in various ambient temperature conditions and enhances cooling effect.
- Caterpillar (Qingzhou) in-house tandem axle, final drive units with four planetary gears, oil-bath lubrication, and maintenance-free and adjustment-free chain support a higher carrying capability.
- Dismountable drawbar ball joint for easy replacement and maintenance.

Performance you need

- Up to 2 times more circle drive torque than the industry standard for increased working efficiency.
- PPPC hydraulic system ensures precise, predictable and consistent operational movement regardless of engine speed.
- Cab is mounted in the frontal frame to provide enhanced visibility for convenient operations.
- 7-hole linkbar of Electro Hydraulic pin puller offers excellent extensibility of the moldboard, delivering superior performance.



1

High efficiency and reliability

- World-class variable displacement piston pump and proportional priority pressure compensating (PPPC) valves with a load sensor hydraulic system specifically designed for motor grader applications, ensuring continuous matching of hydraulic flow and pressure to power demands while allowing for ease of multi-function control and reduction of energy loss for optimizing working efficiency.
- The implement pump has been moved to the Power take-off (PTO) port of transmission and the pump drive shaft under the cab has been removed, decreased working noise, less points for daily maintenance and easy to own.
- The standard blade float function allows the blade to lower without hydraulic pressure for increased versatility, providing protection for the machine and pavement during snow removal, while reducing the difficulty of work and operator intensity and effectively improving construction efficiency.
- Class-leading circle drive torque delivers higher material spreading and blading capability with superior working efficiency.
- Versatile configurations can meet various customer needs, including options like handle throttle, Drawbar Circle Moldboard (DCM) grease tank, level gauge, rear camera, and transmission guard.





2

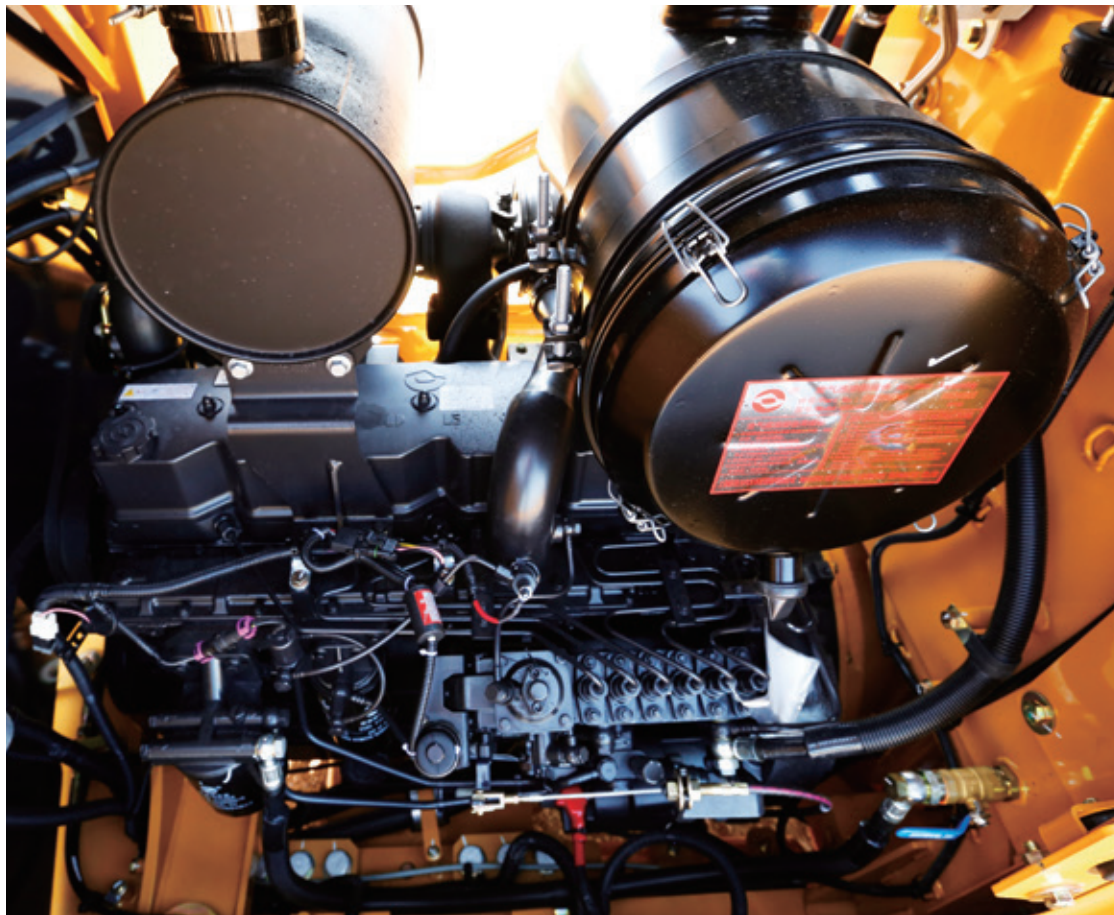
Ease of operation

- The cab, mounted on the front frame, provides an exceptional view of the blade and front axle even when using articulation, ensuring the safety and accuracy of operation.
- Short throw levers are efficiently spaced, allowing ease of multi-function control. The short lever stroke coupled with low lever effort, reduces operator fatigue with and enhances overall operation efficiency.
- The PPPC load sensing hydraulic system maintains consistent and precise blade movement, whether extending or retracting the cylinder, regardless of variable engine speed.
- 7-hole link bar with electro-hydraulic control allows for ease of operation within the cab, providing excellent blade extension capability.
- Air conditioning is standard, with additional air vents from the dashboard and left and right cab columns for improved comfort. The optimization of cab sealing capability further contributes to lower noise and vibration levels.

3

Robustness and durability

- The A-frame tubular design drawbar provides maximum strength and durability. The flanged box section front frame removes welds from high-stress areas, improving reliability and durability. Continuous top and bottom plate construction ensures consistency and strength, further enhancing front frame durability.
- Leveraging Caterpillar's design and experience with the Motor Grader tandem axle, there's an improved bearing layout and optimized load distribution with a final drive featuring four planetary gears, oil bath tandem axle, and longer service intervals for lubrication oil changes without the need to fill in grease frequently.
- Inboard lock check valves within the PPPC system prevent inadvertent cylinder movement and potential leaks.
- The hydraulic driven cooling fan comes with a standard 43 °C and optional 50 °C cooling package, providing better adaptability for all kinds of application environments.





4

Ease of maintenance and lower cost

- New family style metal molded hood offers a bold visual impact, and right and left lateral doors for easy service and maintenance.
- Replaceable drawbar draft ball (bolted – not welded), allowing for easy removal of wear shims to adjust the drawbar, resulting in less service time and cost.
- The axle tandem comes with an external disk service brake, providing superior braking and a shorter brake distance. The SEM Wheel Loader-compatible friction plate allows for easy replacement, and high reliability, while the grease-free lubrication design of the rear axle and tandem, along with the chain adjustment-free design, prolongs the maintenance cycle, contributing to lower cost of ownership.
- Hydraulic hose routing minimizes exposure to damage and provides quick access for service.
- One-key operation for convenient machine and fleet management.
- The transmission filling port is raised up to ease oil changing and protect the port from crashes. Additionally, the transmission oil level dipstick has been replaced with a glasses level gauge, making inspection much more convenient.



5

Operational safety

- The disk service brake features dual circuit braking separately for front/rear braking and left/right braking, ensuring high safety standards.
- The dashboard includes a 3-level alarm monitoring system.
- A three-point contact handrail is provided for easy access and regular inspection and maintenance.





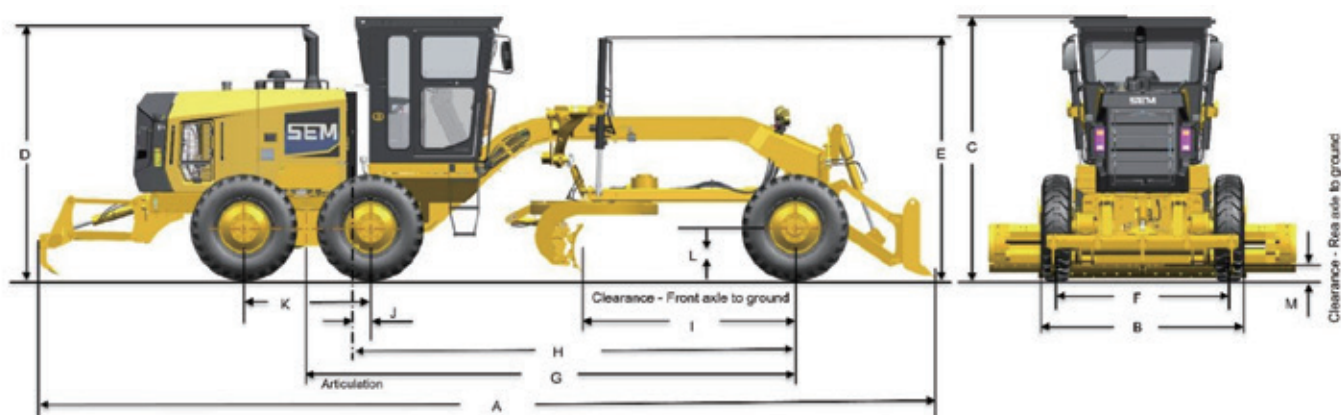
Typical applications include grading, final grading, cut slopes, ditch, ditch cleaning, snow removal. It is essential equipment for road construction, water conservancy projects, and farmland turning and leveling.



Main Parameters			
Items	915F T2	917F T2	919F T2
Main Specifications			
Standard Weight/kg (Non ROPS base)	12,200	13,500	14,500
Standard Weight/kg (with ROPS)	12,520	13,820	14,820
Overall Dimensions/mm (L*W*H)	10,723*2,410*3,125	10,723*2,491*3,150	10,723*2,635*3,170
Travel Speed (Forward/Reverse) km/h	40/29	40/29	40/25
Max. Drawbar traction/kN	70	75	80
Frame Articulation Angle	20°	20°	20°
Min. Turning Radius/mm	7,300	7,300	7,300
Tire	13-24 12PR	14-24 12PR	17.5-25 12PR
Engine			
Engine Manufacturer	SDEC	SDEC	SDEC
Engine Model	SC7H150G2B	SC7H170.1G2B	SC7H190.2G2
Net Power/kW@RPM	110 @ 2200	125 @ 2200	140 @ 2200
Max. Torque/N.m@RPM	570 @ 1400	750 @ 1400	760 @ 1400
Emissiont	Tier 2	Tier 2	Tier 2
Transmission			
Brand/Manufacturer	Advance/HangChi	Advance/HangChi	Advance/HangChi
Type	Converter, Powershift	Converter, Powershift	Converter, Powershift
Forward/Reverse Gears	6 Forward/3 Reverse	6 Forward/3 Reverse	6 Forward/3 Reverse
Rear Axle/Tandem			
Brand/Manufacturer	SEM/Caterpillar	SEM/Caterpillar	SEM/Caterpillar
Differential	No-Spin	No-Spin	No-Spin
Service Brake	Air over oil, Disc	Air over oil, Disc	Air over oil, Disc
Oscillation Front Up	15°	15°	15°
Oscillation Front Down	25°	25°	25°

Main Parameters			
Items	915F T2	917F T2	919F T2
Front Axle			
Ground Clearance/mm	615	640	640
Wheel Lean, left/right	±18°	±18°	±18°
Max. Oscillation	±16°	±16°	±16°
Steering Range, left/right	±45°	±45°	±45°
Hydraulic System			
Circuit Type	Load Sensing, PPPC	Load Sensing, PPPC	Load Sensing, PPPC
Pump Type	Variable Piston	Variable Piston	Variable Piston
Moldboard			
Blade Width, STD/mm	3,059	3,669	3,669
Blade Width, OPT/mm	3,669	3,972	3,972
Blade Height/mm	580	580	580
Blade Thickness/mm	20	20	20
Max. Lifting Height/mm	435	435	435
Max. Cut Depth/mm	750	750	750
Float Function	YES	YES	YES
Service Refill Capacity			
Fuel Tank/L	230	230	230
Engine Oil/L	17.5	17.5	17.5
Coolant/L	37	37	37
Transmission/L	17	17	17
Differential Case/L	27	27	27
Tandem Case, each side/L	50	50	50
Circle Drive, Non-Slip Clutch/L	2	2	2
Circle Drive, With Slip Clutch/L	7	7	7
Hydraulic Oil Tank/L	55	55	55

Dimension



Unit: mm		915F	917F	919F
A		10,723	10,723	10,723
B		2,410	2,491	2,635
C	Low profile non-ROPS cab	3,125	3,150	3,170
	ROPS cab	3,345	3,370	3,390
D		3,031	3,056	3,076
E		2,970	2,995	3,015
F		2,055	2,142	2,190
G		5,830	5,830	5,830
H		5,220	5,220	5,220
I		2,542	2,542	2,542
J		146	146	146
K		1,510	1,510	1,510
L		615	640	640
M		365	390	390

*915F with 13.00-24 tire, 917F with 14.00-24 tire, 919F with 17.5-25 tire.

*Standard weight, 915F without frontal and rear counterweight, 917F/919F with frontal 500 kg and rear 400 kg counterweight.

Standard equipment

Engine & Installation

- SDEC 7H Tier 2 engine
- Engine & installation

Powertrain & Transmission

- Electro-hydraulic power shift transmission and attachments
- Tandem axle
- Front axle
- Drive shaft

Hydraulic

- Lines pump
- Lines steering
- Lines fan
- Lines drawbar, circle, moldboard

Frame

- Front frame
- Rear frame
- Hitch

Cab Installation

- Console operation
- Control transmission
- Floor attachment

Electrical

- Wiring
- Wiring engine
- Switch attachment (dashboard)

Cooling

- Cooling radiators
- Lines group
- Fan
- Coolant tank

Work Tool

- Lift blade
- Circle group
- Drawbar group

Structure

- Enclosure group
- Fuel tank
- Battery box
- Front cover
- Hydraulic tank
- Ladder group

Brake

- Brake service
- Brake parking

Air Conditioner

Product Link

Optional equipment

Electrical

- License light
- Rear camera
- Beacon
- Radio

Work tool

- Scarifier
- Tooth

Others

- Cab guard
- Toolbox
- Transmission guard
- Hand throttle
- Drawbar circle moldboard grease tank
- Level gauge
- Rear mirror
- Fender

Mandatory attachment

Cab

- Cab non-ROPS base Low Profile
- Cab non-ROPS plus Low Profile
- Cab non-ROPS base High Profile
- Cab ROPS plus High Profile

Hydraulic

- Control (multi-way valves)
- Tip
 - Hydraulic
 - Manual
- Circle drive
 - Standard
 - Slip clutch
- Pin puller
 - Hydraulic
 - Manual

Work tools

- Blade
 - 10 feet
 - 12 feet
 - 13 feet
- Rear attachment
 - Rear counterweight 400 kg + Hitch towing
 - Rear counterweight 600 kg + Hitch towing
 - Ripper
- Front attachment
 - Blade
 - Counterweight 500 kg
 - Counterweight 1000 kg

Start-up System

- Normal starting
- Cold starting (Pre-heating)

Light

- Working lights
 - Halogen
 - LED
- Road lights
 - Head & tail
 - Tail

Tire & Rim

- Tube tire
- Tubeless tire

*Select one from each group. Mandatory and optional equipment may vary. Consult your dealer for specifics.

» *EMPOWER YOUR SUCCESS* »»

We steadfastly uphold our service promise – “SEM Services, Full Commitment”, with an unwavering focus on customer satisfaction. Through our comprehensive “Five Strengths” approach, which encompasses responsiveness, maintenance, reliability, professionalism, and assurance, SEM offers seamless support from pre-sales to after-sales for our rapidly growing global customer base. We pledge top-tier response times, exceptional service capabilities, and premier spare parts solutions. At the same time, in order to better assist customers, minimize equipment downtime, streamline equipment management, and maximize customer value, we have deeply integrated digital technology with traditional construction machinery aftermarket services, and with the launch of the SEM eService APP, we now provide a comprehensive online solution for parts and technical information.

We are dedicated to providing a range of diversified and competitive aftermarket solutions, which encompass our Customer Service Agreement (CSA), SEM SELECT parts, service options, SEM Extended Protection (SEP) and more. Our aim is to deliver the utmost value to customers. With a global parts distribution network comprising over 20,000 types of spare parts, we assure unparalleled service and availability to SEM customers in a timely and dependable manner. Moving forward, we will continue to deliver reliable aftermarket support carefully tailored to your needs.



Caterpillar (Qingzhou) Ltd. Address: No. 12999 Nanhuan Road, Qingzhou City, Shandong Province, Zip Code: 262500, P.R.China

© 2024 Caterpillar (Qingzhou) Ltd. All Rights Reserved. 山工机械, SEM, SEM Logo, their respective logos, trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar (Qingzhou) Ltd. and may not be used without permission.

Materials and specifications are subject to change without notice. Featured machines in photos may include optional equipment. Contact your SEM dealer for available options.

Version: March 2024



Scan the QR code to visit the
SEM Official Website