

SEM  
TRACK TYPE TRACTOR

# SEM 824F



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824F features the new F series design and is powered by the Weichai WD12 T2 engine, delivering a gross power of up to 185 kW (248 hp). The machine utilizes an electronically controlled hydrostatic transmission system, enhancing productivity and maneuverability. It offers various track shoe widths from 560 mm to 915 mm and multiple blade options, including SU, S, U, Waste Handling, and Forest blades. Rear equipment options include multi-shank ripper, single shank ripper, and winch to meet diverse customer needs.



## Proven Performance

- Boost productivity with fully hydrostatic transmission.
- Counter rotations, power turn and infinitely variable speed.
- Hydraulic demand fan as standard for better efficiency.
- Better balance and stability with the gravity optimization.
- Robust and more powerful mechanical engine delivers superior durability and excellent fuel efficiency.

## Comfortable Operation

- Spacious cab with easy-to-operate controls.
- Stylish design from the new F series.
- Six-way adjustable seat for quick customization according to the operator's preferences.
- Exceptional visibility for enhanced on-site awareness.
- 8" LCD display with a great view of machine status and settings.

## Exceptional Reliability

- World class original pump and motor.
- Blades with high tensile strength steel and strong box-section design.
- Reinforced structures, analyzed using Finite Element Analysis (FEA).
- Final drive with double-stage reduction and wet type brake.
- Modular cooling system designed to endure -40°C to +50°C ambient temperatures.



# 1 Enhanced Reliability

- Dual-path, hydrostatic drive system with electronic control technology from a world-class supplier delivers industry-leading reliability.
- The Weichai mechanical engine of 824F with 6% increased power, offers classic durability and dependability.
- Final drive adopts a double-stage reduction combining spur gear and planetary structure for high transmission efficiency to ensure a longer lifespan.
- Machine structures are analyzed using Finite Element Analysis (FEA) and On Machine Stress Analysis (OMSA) to identify and reinforce high-stress areas.
- Equalizer bar and pivot shaft are pinned to the one-piece Track Roller Frame, along with three segmentation spring recoil system minimize impacts and prolong the undercarriage's life.
- Wet type multi-disc brake system, delivers exceptional reliability and high braking performance, even under challenging operating conditions.





# 2

## Outstanding Versatility and Productivity

- Compared to powershift machines, Caterpillar's proven hydrostatic transmission load-sensing system delivers heightened productivity.
- Achieve seamless operations with functions like infinitely variable speed, counter rotation, and power turn, ensuring improved operational efficiency.
- The hydraulic implementation system with pilot control helps adding operator comfort and precise control.
- Modular and single-plane cooling system can endure extreme ambient temperatures ranging from -40°C to +50°C While offering superior fuel efficiency.
- Hydraulic demand fan as standard with reverse function can result in up to 10% more efficiency and efficient cleaning of the engine and cooling system.
- Machine CG (Center of the Gravity) optimization to better improve stability.

# 3

## Enhanced Operating Comfort

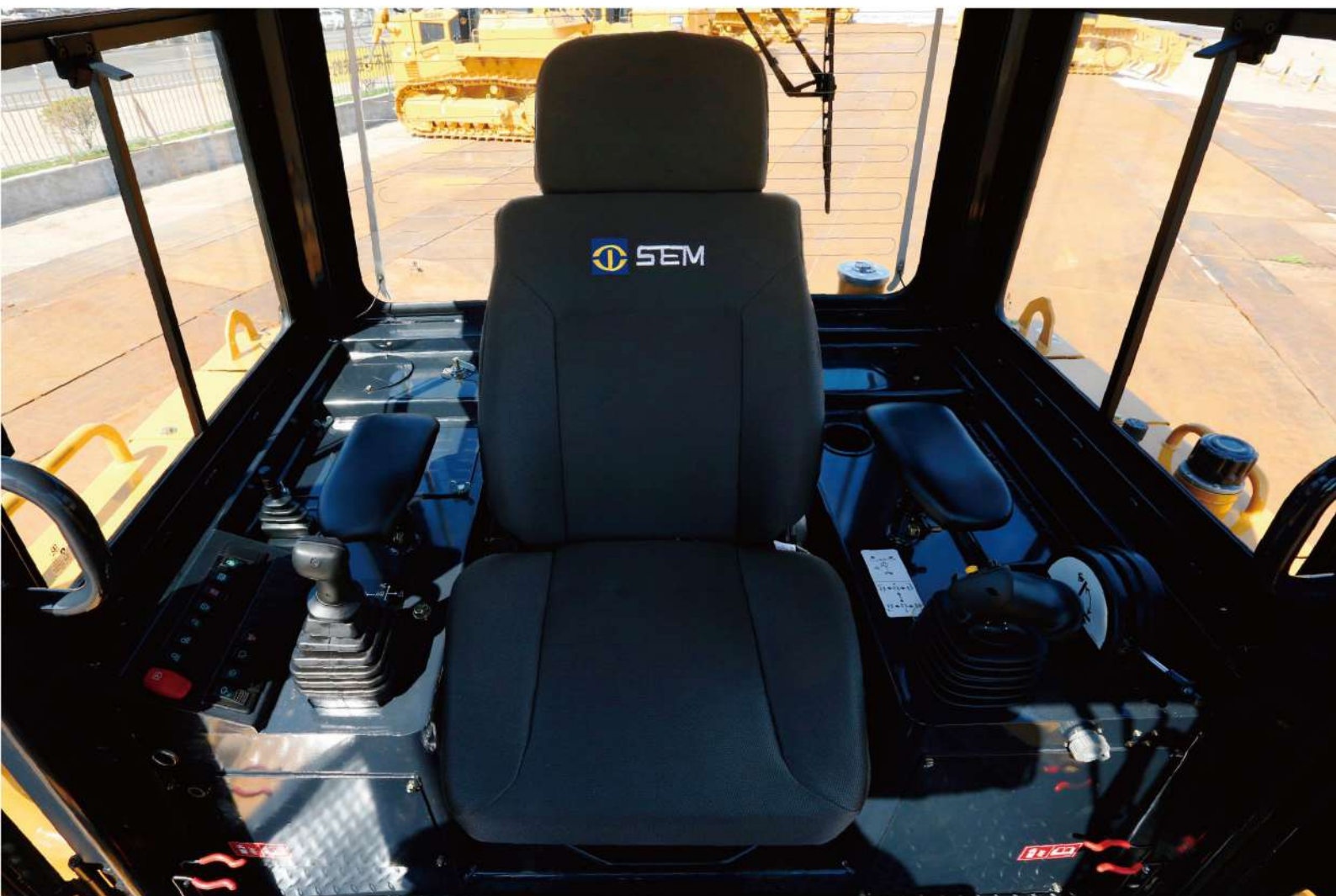
- Ample cabin space and fabric-covered seat offer a welcoming operational environment, delivering exceptional comfort and visibility.
- Single multi-functional joystick ensures precise performance and maneuverability.
- The brand-new F Series showcases a stylish design.
- 8' LCD main display with a great view of machine settings and features is easy to use.
- Exceptional visibility for enhanced on-site awareness.
- LED lights as standard configuration for working better at night.

# 4

## Lower Operation Cost

- Integrated hydrostatic oil tank and hydraulic oil tank allow for longer maintenance intervals and reduced maintenance costs.
- Electric Pressure Override (EPOR) function prevents high-pressure overflow and reduces heat load.





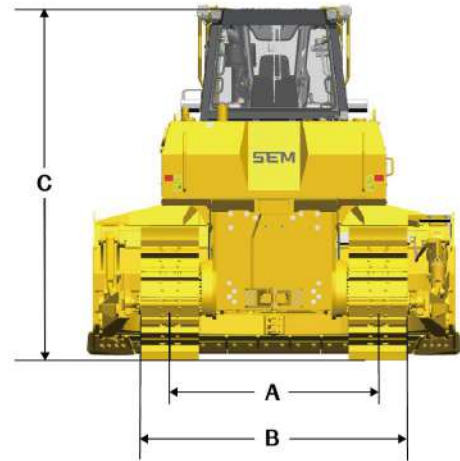
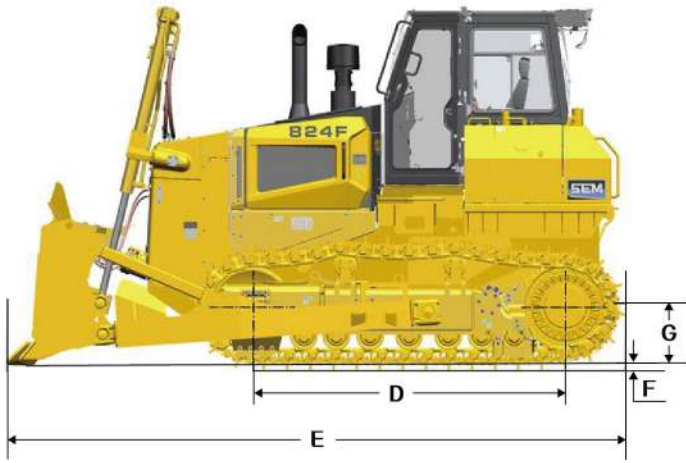
# 5

## Leading in Class Serviceability

- Maintenance-free and lifetime-lubricated idlers and track/carrier rollers provide simplified servicing, providing real value to our customers.
- The Implement Distribution Valve, featuring a pressure testing port, is installed outside of the hydraulic oil tank for easy access to reduce overall maintenance time.
- Standard diagnostic description on the display covering both the engine and hystat system allows for quick troubleshooting.
- Product link as standard configuration convenient for fleet management.

Major Parameters						
Model	824F	824F LGP	824F CH	824F DS	824F WH	824F FR
Operating Weight	23,730 kg	27,660 kg	24,550 kg	26,920 kg	28,350 kg	25,480/28,365/28,440 kg
Ground Pressure	63 kPa	38 kPa	54 kPa	37 kPa	39 kPa	67/63/63 kPa
Ground Clearance	400 mm					
Maximum Slope	30°					
Engine						
Model	WD12G250E202					
Gross Power (ISO 14396)	185 kW/248 hp					
Rated Speed	2,100 r/min					
Powertrain						
Type	Dual-path, closed loop electronically controlled hydrostatic drive system					
Travel Speed-F/R	Infinitely variable speeds 0-10 km/h					
Steering & Brake	Hydrostatic steering; wet, multi-disc brake, Bellville spring actuated and hydraulically released					
Undercarriage						
Track Shoe Width	560 mm	910 mm 915 mm	660 mm	915 mm 910 mm	915 mm	560 mm 660 mm
Track Shoe Quantity (Each side)	40	45	40	45	45	40
Track Roller Quantity (Each side)	7	8	7	8	8	7
Carrier Roller Quantity (Each side)	2	2	2	2	2	2
Hydraulic System						
Type	Gear Pump, Pilot control					
Implement hydraulic System Pressure	19 MPa					
Blades						
Blade Type	SU/S	S-LGP	U/Coal	S-LGP	S-WH	SU-FR/S/A
Blade Capacity (ISO 9246)	6.4/5.8 m^3	5.5 m^3	7.5/9.2 m^3	5.5 m^3	12.7 m^3	8.6/5.8/3.9 m^3
Blade Width (w/end bit)	3,605/3,700 mm	4,400 mm	3,820 mm	4,400 mm	4,400 mm	3,605/3,700/4,365 mm
Blade Height	1,510 mm	1,350 mm	1,420/1,620 mm	1,350 mm	1,945 mm	1,830/1,510/1,105 mm
Max. Blade Lift Ground Clearance	1,140 mm	1,165 mm	1,140 mm	1,165 mm	1,165 mm	1,140/1,140/1,175 mm
Max. Blade Digging Depth	570 mm	665 mm	570 mm	665 mm	665 mm	570/570/550 mm
Blade Tilt Height (middle hole)	520/540 mm	640 mm	550 mm	640 mm	640 mm	520/540 mm
Blade Weight (w/o push arm)	1,760/1,645 kg	1,930 kg	2,100/2,300 kg	1,930 kg	2,300 kg	1,870/1,645/1,307 kg
Minimum Turning Radius	4,215 mm	4,300 mm	4,500 mm	4,300 mm	4,300 mm	4,215/4,075 mm
Multiple Shank Ripper						
Type	Parallelogram	/	/	Parallelogram	/	Parallelogram
Maximum Penetration (Top hole)	860 mm	/	/	860 mm	/	860 mm
Maximum Clearance Under Tip (Bottom hole)	640 mm	/	/	640 mm	/	640 mm
Weight	2,445 kg	/	/	2,445 kg	/	2,445 kg
Single Shank Ripper						
Type	Parallelogram	/	/	Parallelogram	/	Parallelogram
Maximum Penetration (Top hole)	737 mm	/	/	737 mm	/	737 mm
Maximum Clearance Under Tip (Bottom hole)	742 mm	/	/	742 mm	/	742 mm
Weight	2,320 kg	/	/	2,320 kg	/	2,320 kg

## Dimension



		STD	LGP	DS	CH	WH	FR
A	Track Gauge	2,000 mm	2,340 mm	2,340 mm	2,000 mm	2,340 mm	2,000 mm
B	Width of Tractor, Trunnions Outside	2,880 mm	3,450 mm	3,450 mm	2,880 mm	3,450 mm	2,880 mm
C	Machine Height, w/o Grouser	3,320 mm	3,320 mm	3,765 mm	3,320 mm	3,320 mm	3,475/3,495 mm
	Rops, w/o Grouser	3,320 mm	3,320 mm	3,765 mm	3,320 mm	3,320 mm	3,475 mm
	Alarm, w/o Grouser	3,460 mm	3,465 mm	3,460 mm	3,460 mm	3,460 mm	3,460 mm
	Exhaust Stack, w/o Grouser	3,170 mm	3,170 mm	3,170 mm	3,170 mm	3,170 mm	3,170 mm
D	Length of Track on Ground	2,948 mm	3,488 mm	3,488 mm	2,948 mm	3,488 mm	2,948 mm
E	Length of Basic Tractor, w. Drawbar	4,680 mm	4,710 mm	4,680 mm	4,680 mm	4,965 mm	4,680/4,815 mm
	With Following Attachments, add:						
	SU Blade	1,165 mm	N/A		N/A		
	LGP S Blade	N/A	1,300 mm	1,310 mm	N/A		
	U Blade	N/A	N/A		1,430 mm		
	WH Blade	N/A			N/A	1,305 mm	
	FR SU Blade	N/A	N/A		N/A		1,170 mm
	Ripper	1,615 mm	N/A	N/A	1,615 mm	N/A	1,615 mm
F	Grouser Bar Height	70 mm	107 mm	70 mm	70 mm	70 mm	70 mm
G	Drawbar Height (Pin Center)	525 mm	525 mm	525 mm	525 mm	525 mm	525 mm



The target applications for the 824F is dozing, grading, stockpiling, spreading and ripping, and the target customer industries had been extended to general & heavy construction, road construction, mining, coal handling, waste handling and forest.



# Standard Equipment

## POWERTRAIN

- Coupling GP
- Hystat GP

## HYDRAULICS

- Hydraulic Implement
- Pilot GP

## LFB

- HYD Tank
- Engine Hood

## OPERATOR ENVIRONMENT

- Mounting GP Cab
- Seat

## COOLING

- Cooling GP
- Pipe GP Cooling

## FRAMES

- Case Frame

## OTHERS

- Decal GP Warning

# Optional Equipment

## HEATER GP

- Coolant Heater

## ELECTRICAL

- Warning Beacon

## FIRE SUPPRESSION

- Extinguisher, 2 Set

## CABLE GP

- Guard Lamp

# Mandatory Attachment

## ENGINE

- Engine
- Engine, Desert

## FINAL DRIVE

- Final Drive, STD
- Final Drive, LGP
- Final Drive, WH

## TRACK ROLLER FRAME

- TRF, STD
- TRF, STD\_HD
- TRF, LGP
- TRF, WHA

## TRACKS

- Track, 560 mm, 40 SG
- Track, 560 mm, 40 SG SALT
- Track, 660 mm, 40 SG
- Track, 910 mm, 45 APEX
- Track, 915 mm, 45 SG
- Track, 915 mm, 45 SG\_TRAP

## STARTERS

- Starter, Normal
- Starter, Cold

## LIGHTING

- Work Lights, LED, 6
- Work Lights, LED, 6, FR
- Work Lights, LED, 6, Canopy

## CAB TRIM

- Cab, STD
- Cab, Radio

## DOOR GLASS

- Door, STD
- Door, Wiper
- Door, Non

## CAB ARRANGEMENT

- Cab, STD
- Cab, ROPs
- Cab, FR
- Canopy

## ELECTRICAL

- Electrical, STD
- Electrical, FR
- Electrical, EAEU
- Electrical, EAEU, FR
- Electrical, Canopy

## GPS

- GPS,
- GPS, Disable

## REAR ATTACHMENT

- Drawbar
- Ripper
- Ripper Ready
- Winch Ready
- INI Winch
- Striker

## AIR FRESHER

- Air Fresher,
- Air Fresher, Non

## RADIATOR GUARD

- Radiator Guard
- Radiator Guard. CH
- Radiator Guard. FR

## BOTTOM GUARD

- Bottom Guard
- Bottom Guard. CH
- Bottom Guard. FR

## TANK

- Tank
- Tank, FR
- Tank, Canopy

## BLADES

- Semi-U
- S Type
- U Type
- Coal Handling
- SU Type, Forest
- S Type, LGP
- Waste Handling Blade

## PUSH ARMS

- Push Arm, STD
- Push Arm, LGP

## FAN HYDRAULICS

- Fan, STD
- Fan, Cold Start

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

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

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