



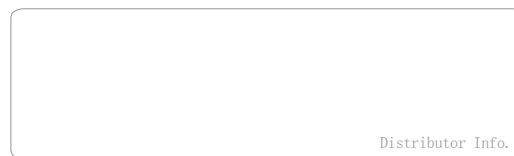
## SANY MOTOR GRADERS



### SANY HEAVY INDUSTRY CO., LTD.

SANY Industry Town, Changsha Economic and Technological  
Development Zone, Hunan Province, China  
Service Line: +86 4006 098 318  
E-mail: [crd@sany.com.cn](mailto:crd@sany.com.cn)

[www.sanygroup.com](http://www.sanygroup.com)



Distributor Info.

Due to our process of continuous innovation, materials and specifications are subject to change without notice.

© Printed in China File No.: 59010962 Date: Mar 2016

# Contents

**INNOVATIVE AND INDUSTRY  
LEADING TECHNOLOGIES**



P03	SANY ROAD MACHINERY
P05	SMG SERIES HEAVY-DUTY MOTOR GRADERS
P09	SAG SERIES MOTOR GRADERS
P13	LEAN MANUFACTURING
P15	TEST SYSTEM
P17	CASES





# SMG SERIES HEAVY-DUTY MOTOR GRADERS

Designed In the US Made In China

Model Line: SMG180-3、SMG200-3、SMG200

## COMFORTABLE OPERATOR ENVIRONMENT

- ◆ Provides the operator with a 360 degree field of vision
- ◆ "Silent ride" engineered cab

## POWERFUL POWERTRAIN SYSTEM

- ◆ Direct drive power shift transmission delivers smooth, responsive shifting
- ◆ The US Cummins engine uses variable horsepower technology to match different power curves to varying load conditions

## PRECISION HYDRAULIC SYSTEM

- ◆ The load sensing hydraulic system provides adequate flow during multiple implement operation. The rapid, precise response to control input results in exceptional grading quality.
- ◆ The automatic regulation of pump flow based on load conditions results in increased fuel economy.
- ◆ In the optional "intelligent fan" cooling system, the fan speed is continuously variable the cooling system operating temperature

## RELIABLE STRUCTURE

- ◆ The precision, reliable, low maintenance circle bearing reduces maintenance costs

## CONVENIENT MAINTENANCE

- ◆ Conveniently located handrails and steps provide easy access to filters, fluids and service items
- ◆ The centralized lay out of filters are easy for maintenance





# TECHNICAL SPECIFICATIONS

## SMG Series Heavy-duty Motor Grader Technical Specifications

Model		SMG180-3	SMG200-3	SMG200	
Basic Parameter	Engine Model	Cummins	Cummins	Cummins	
		QSB6.7-C170 (Tier III )	QSB6.7-C220 (Tier III )	QSC8.3-C205 (Tier III /Tier IV )	
	Rated Power (kW) /Speed (RPM)	129/2200	164/2200	153/1950	
	Max. Torque (N.m) /Speed (RPM)	800/1500	949/1500	1010/1450	
	Dimensions (Standard) (mm)	8558×2550×3214	8946×2725×3260	8946×2725×3353	
	Operating Weight (Standard) (kg)	14600	16120	16920	
Performance Parameter	Top Speed - Forward (km/h)	4.2/5.7/8.3/11.4/17.9/24.4/33.7/44.4	4.0/5.4/8.0/10.9/17.1/23.4/32.3/46.8	3.8/5.1/7.5/10.3/16.1/21.9/ 30.1/43.8	
	Top Speed - Reverse (km/h)	3.3/6.2/9.0/14.1/26.4/38.5	3.2/5.9/8.6/13.5/25.3/37.0	3.0/5.6/8.1/12.7/23.8/34.6	
	Min. Turning Radius (m)	7.2	7.4	7.4	
	Transmission System Pressure (MPa)	2.2~3.0	2.2~3.0	2.2~3.0	
Working Device Parameter	Max. Front Wheel Turning Angle (°)	±50	±50	±50	
	Max. Front Wheel Tilt Angle (°)	±17	±17	±17	
	Max. Oscillation Angle of Front Axle (°)	±16	±16	±16	
	Max. Oscillation Angle of Tandem Box (°)	Forward 15 Backward 15	Forward 15 Backward 25	Forward 15 Backward 25	
	Ground Clearance at Rear Axle (mm)	370	370	370	
	Blade Range	Moldboard Width × Arc Radius (mm)	3660×620	3660×620	3660×620
		Max. Lift above Ground (mm)	480	480	480
		Max. Depth of Cut (mm)	715	715	715
		Max. Blade Position Angle (°)	±90	±90	±90
		Blade Tip Range (°)	Forward 40 Backward 5	Forward 40 Backward 5	Forward 40 Backward 5
		Circle Rotation (°)	360	360	360
	Ripper	Max. Scarifying Depth (mm)	400	470	470
		Max. Lift above Ground (Mm)	590	522	522
		Max. Departure Angle (°)	25	22	22
		Max. Working Width (mm)	2044	2300	2300
	Dozer Blade	Max. Depth of Cut (mm)	229	229	229
Max. Lift above Ground (mm)		614	614	614	
Max. Penetrating Angle (°)		63	63	63	
Max. Working Width (mm)		2740	2740	2740	

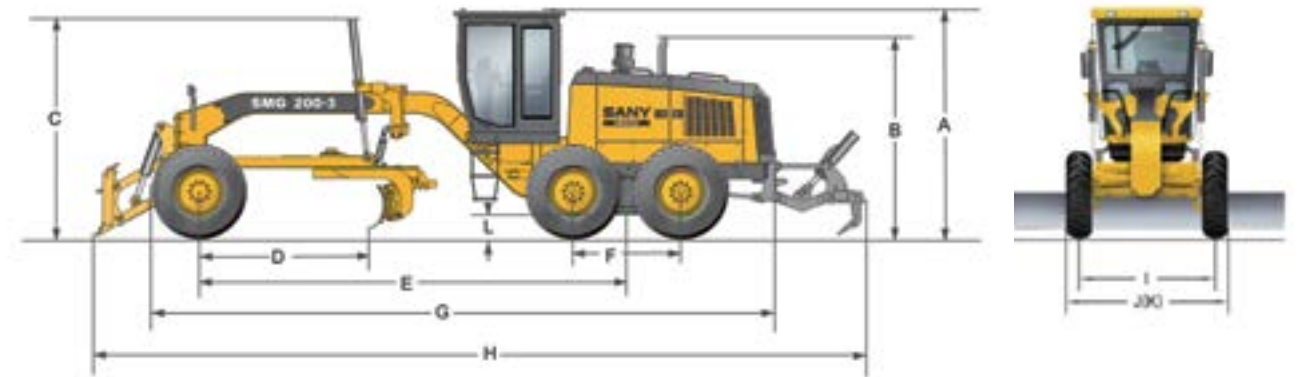
Size Code	Name	SMG180-3	SMG200-3	SMG200
A	Height to Top of Cab (mm)	3214	3257	3353
B	Height at Exhaust Stack (mm)	2885	3155	3155
C	Height to Top of Cylinders (mm)	3110	3110	3110
D	Length - Front Axle to Moldboard ( mm)	2462	2462	2520
E	Length - Front Axle to Mid Tandem ( mm)	6088	6156	6175
F	Length - Between Tandem Axles (mm)	1538	1524	1524
G	Length - Front Tire to Rear of Machine (mm)	8558	8946	8946
H	Overall Length - Front Dozer Blade to Ripper (mm)	10758	11120	11137
I	Width - Tire Center Lines (mm)	2159	2077	2077
J	Width - Outside Front Tires (mm)	2544	2725	2725
K	Width - Outside Rear Tires (mm)	2550	2634	2634
L	Ground Clearance at Rear Axle (mm)	370	370	370

Notes: Due to technical and product updates, data on specifications might change without prior notice. The pictures may differ from a real machine.

## SMG Series Heavy-Duty Motor Grader Standard and Optional Configurations

Model	Parts	Standard	Optional
SMG180-3	Moldboard	12ft	/
	HVAC	Air Conditioner	/
	Dozer Blade	/	Front Dozer Blade
	Ripper	/	Rear Ripper
SMG200-3	Engine	Tier III	/
	Moldboard	12ft	14ft
	HVAC	Air Conditioner	/
	Dozer Blade	/	Front Dozer Blade
SMG200	Ripper	/	Rear Ripper
	Moldboard	12ft	14ft
	HVAC	Air Conditioner	/
	Dozer Blade	/	Front Dozer Blade

Notes: Due to the fact that engine configurations may vary based on different options, technical specifications may change without prior notice. Please enquire with Sany for the latest information.





# SAG SERIES MOTOR GRADERS

## SAG120-5

Tiptronic Comfortable Operation Reliable and Durable

- ◆ Hydraulic drive, stepless speed change, simplified operation
- ◆ The highly reliable, Euro III Dongfeng Cummins engine with auto preheat and
- ◆ German Bosch fuel injection features extremely low exhaust emissions.
- ◆ The compact structure, small turning radius and big ground clearance ensures its flexibility.
- ◆ Self-adaptive load control and steering technology eliminates frequent gear shifting and ensures high working efficiency.
- ◆ NOSPIN mechanical differential technology allows an excellent anti-skid performance and powerful working ability.
- ◆ The disc service brake, the normally closed friction disc parking brake and the hydraulic auxiliary brake ensure high safety.
- ◆ Ground level refueling point and centralized electrical component locations are among the operator and service friendly features.

## SAG160-5/180-5

- ◆ The highly reliable, Euro III Dongfeng Cummins engine with autpreheat and German Bosch fuel injection features extremely lowexhaust emissions.
- ◆ The reliable, ZF "Tiptronic" transmission contributes to operator comfort.
- ◆ Reliable and durable Meritor rear axles feature imported bearings and extra rigid drive chain.
- ◆ The high torque, overload protected circle drive motor and gearbox allow precise positioning of the moldboard and blade.
- ◆ High precision circle bearing is maintenance free.
- ◆ Ground level refueling point and centralized electrical component locations are among the operator and service friendly features.

## SAG200、SAG200-5

Composite transmission Intelligence and high efficiency Heavy load and reliability

- ◆ Integrated with the mechanical and hydraulic transmission featuring wide speeds, high power shift efficiency and powerful working ability.
- ◆ The highly reliable, Euro III Dongfeng Cummins engine with auto preheat and
- ◆ German Bosch fuel injection features extremely low exhaust emissions.
- ◆ Self-adaptive load control and steering technology eliminates frequent gear shifting and ensures high working efficiency.
- ◆ Reliable and durable Meritor rear axles feature imported bearings and extra rigid drive chain.
- ◆ The high torque, overload protected circle drive motor and gearbox allow precise
- ◆ positioning of the moldboard and blade.
- ◆ High precision circle bearing is maintenance free.
- ◆ Self-diagnosis function, centralized electrical components and filters are among the operator and service friendly features.





# TECHNICAL SPECIFICATIONS

## SAG Series Motor Grader Technical Specifications

Model		SAG120-5	SAG160-5	SAG180-5	SAG200	SAG200-5	
Basic Parameter	Engine Model	Cummins	Cummins	Cummins	Cummins		
		QSB3.9-C125(Tier III )	QSB4.5-C160(Tier III )	QSB6.7-C170(Tier III )	QSB6.7-C220(Tier III )		
	Rated Power (kW) /Speed (rpm)	93/2200	119/2200	129/2200	164/2200		
	Max. Torque (N.m) /Speed (rpm)	480/1350	949/1500	800/1500	949/1500		
	Dimensions (Standard) (mm)	6950×2280×3310	8950×2540×3220	8910×2540×3220	9254×2680×3260	9000×2680×3260	
	Dimensions(mm)	7604×2280×3310	10730×2540×3220	10815×2740×3220	10900×2740×3260		
Performance Parameter	Operating Weight (Standard) (kg)	8340	15200	15400	16000		
	Max. Operating Weight (kg)	8860	15950	17140	17120	17920	
	Top Speed Forward (km/h)	4/7/12/20/29	5/9/11/18/26/41	5/9/11/18/26/41	Working Mode: 3/5/7/9/13	Travelling Mode: 6/10/16/28/38	
	Top Speed Reverse (km/h)	4/7/12/20/29	5/11/26	5/11/26	Working Mode: 3/5/7/9/13	Travelling Mode: 6/10/16/28/38	
	Min. Turning Radius (m)	6.2	7.3	7.3	7.4		
	Max. Hydraulic Pressure (MPa)	18	18	18	18		
Working Device Parameter	Transmission System Pressure (MPa)	/	1.6 ~ 1.8	1.6 ~ 1.8	1.6 ~ 2.3		
	Max. Front Wheel Turning Angle(° )	±45	±50	±50	±50		
	Max. Front Wheel Tilt Angle(° )	±17	±17	±17	±17		
	Max. Oscillation Angle of Front Axle (° )	±15	±16	±16	±16		
	Max. Oscillation Angle of Tandem Box(° )	/	±15	±15	±15		
	Ground Clearance at Rear Axle (mm)	440	400	400	400		
	Blade Range	Moldboard Width × Arc Radius(mm)	3050×600	3660×620	3660×620	3660×620	
		Max. Lift above Ground (mm)	460	480	480	480	
		Max. Depth of Cut (mm)	420	715	715	715	
		Max. Blade Position Angle (° )	±56	±90	±90	±90	
		Blade Tip Range (° )	32 ~ 62	27 ~ 72	27 ~ 72	27 ~ 72	
	Ripper	Circle Rotation (° )	360	360	360	360	
		Max. Scarifying Depth (mm)	298	395	395	435	
		Max. Lift above Ground(mm)	510	577	577	595	
		Max. Departure Angle (° )	20	17	15	15	
Max. Working Width (mm)		1494	2300	2300	2060		
Dozer Blade	Max. Depth of Cut (mm)	/	160	207	229		
	Max. Lift above Ground (mm)	/	590	640	614		
	Max. Penetrating Angle (° )	/	65	63	63		
	Max. Working Width (mm)	/	2440	2740	2740		

## SAG Series Motor Grader Standard and Optional Configurations

Model	Parts	Standard	Optional
SAG120-5	Moldboard	10ft	8ft
	HVAC	Air Conditioner	/
	Dozer Blade	/	/
SAG160-5	Ripper	/	Rear Ripper
	Moldboard	12ft	13ft
	HVAC	Air Conditioner	/
SAG180-5	Dozer Blade	/	/
	Ripper	/	Rear Ripper
	Moldboard	12ft	14ft
SAG200	HVAC	Air Conditioner	/
	Dozer Blade	/	Front Dozer Blade
	Ripper	/	Rear Ripper
SAG200-5	Moldboard	12ft	14 ft
	HVAC	Air Conditioner	/
	Dozer Blade	/	Front Dozer Blade
	Ripper	/	Rear Ripper

Size Code	Name	SAG120-5	SAG160-5	SAG180-5	SAG200	SAG200-5
A	Height to Top of Cab (mm)	3310	3220	3220	3260	3260
B	Height to Filter/Rain Shield (mm)	2680	2800	2800	3180	3180
C	Height to Top of Cylinders (mm)	2816	3150	3150	3110	3110
D	Length - Front Axle to Moldboard ( mm)	1987	2430	2430	2430	2430
E	Length - Front Axle to Mid Tandem ( mm)	5000	6175	6175	6279	6279
F	Length - Between Tandem Axles (mm)	/	1538	1538	1538	1538
G	Length - Front Tire to Rear of Machine (mm)	6950	8950/ 8530(India)	8910	9254	9000
H	Overall Length - Front Dozer Blade/Tire to Ripper(mm)	7604	10730	10815	10900	10900
I	Width - Tire Center Lines (mm)	1945	2178	2178	2273	2273
J	Width - Outside Front Tires (mm)	2280	2540	2540	2680	2680
L	Ground Clearance at Rear Axle (mm)	440	400	400	400	400



SAG120-5/160-5/180-5/200/200-5Motor Graders Specifications

# LEAN MANUFACTURING

We constantly strive to produce the best machines.  
We are constantly breaking the records that we set.  
Behind all of the honors is our dedication to our customers.



Unique design, optimized layout, revolutionary technology, attention to quality control, and modern manufacturing workflow.  
Digitalized production management, fully automated welding robots, AGV trolleys, automated 3-D parts depot.  
Continuous automation and smart technology research, extensive application of new technologies, equipment, and materials, combined with extremely strict quality control.  
All of these have made each and every one of our road machinery products border on perfection - able to excel in any demanding work environment. At Sany, we pursue a path of development based on technology and innovation, constantly setting new benchmarks in the industry.



# TEST SYSTEM



● SAG200-5 Motor Grader in blade-tip digging test



● SAG200-5 Motor Grader in reliability test



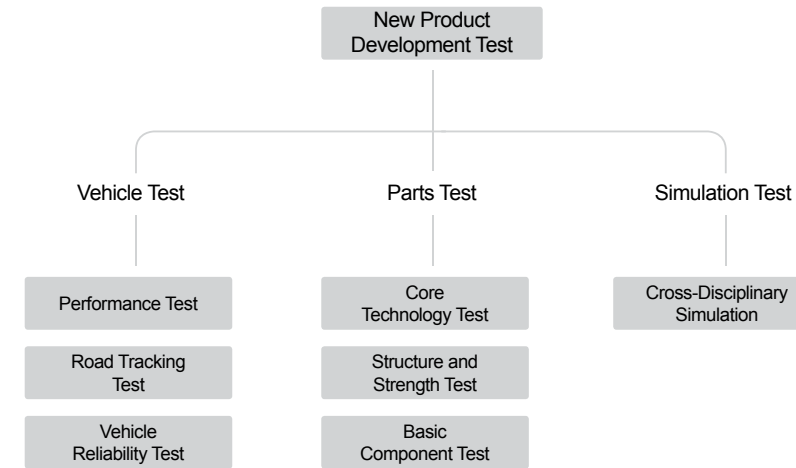
● SAG200-5 Motor Grader in Traction Performance Test



● SAG200-5 Motor Grader in Gradeability Test

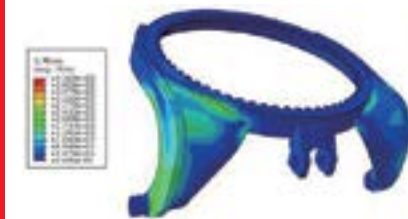


● SMG230 Motor Grader in Stress Test



## R&D and Test System

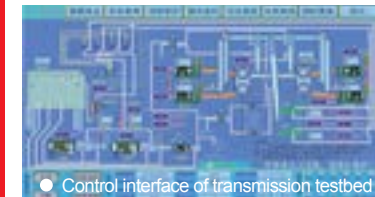
To build the leading road machinery R&D platform in the world, Sany Road Machinery has at its disposal 9 testing and checking centers and 58 labs to form a cross-disciplinary and cross-sector product development work flow. The 9 testing and checking centers include: the Construction Machinery Remote Monitoring Service and Fault-Diagnosis Lab, the Hydraulics Lab, the Mechanical-Electrical-Hydraulic and Simulation Lab, the Diesel Engine Lab, the Equipment Fatigue (Working Life) Lab, the Welding Lab, the Strength (Stress) Test Lab, the Wear Resistant Material Test Lab, and the Chassis Auto Check Lab. Through working on the testing process, new product development test, customer experience platform, and the work conditions simulation data base, we have put in place a three stage testing system comprising vehicle test, parts and components test, and simulation test. Our system has the capacity to develop asphalt batching plants, asphalt pavers, motor graders, rollers, and cold planers. The research and testing capacity of our core technologies has significantly enhanced our research abilities.



● Simulation analysis and test of the strength of key structural parts



● Gearbox performance testbed



● Control interface of transmission testbed



● Noise test



● Gearbox assembly line



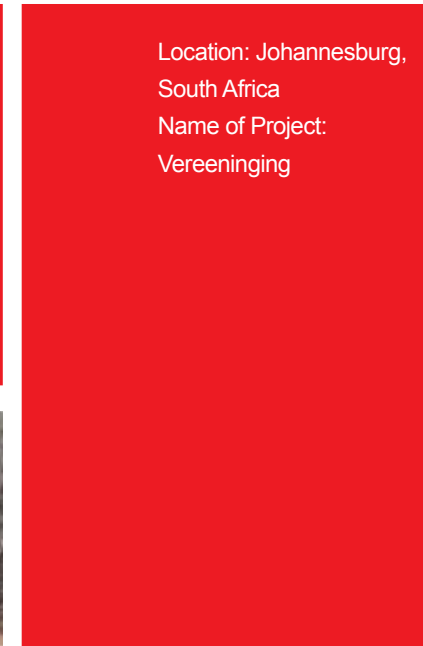
● Load testbed of transmission parts



# CASES



Location: Bangkok, Thailand  
Time: March, 2014  
Name of Project:  
Bangkok National  
Railway Station  
(Landmark Project)



Location: Johannesburg,  
South Africa  
Name of Project:  
Vereeninging



Location : New South Wales ,  
Australia  
Time: May, 2014  
Name of Project:  
Public Works Construction



Location: Johannesburg,  
South Africa  
Time: August 2014  
Name of Project:  
Municipal Construction Project



Location: Lima, Peru  
Time: July 2014  
Name of Project: Municipal  
Construction Project



