

160M2/ 160M2 AWD

Motor Graders

The M Series 2 continues the legacy of quality already established by Cat® Motor Graders. The extensive validation program, combined with improvements to the manufacturing process, allows Caterpillar to further enhance our quality.

The end result of this development process is a motor grader line with breakthrough technologies, tested in the field and built around real applications and real customer needs.

M Series 2 Motor Graders meet U.S. EPA Tier 4 Interim/ EU Stage IIIB emission standards.

Operator Station

A revolutionary cab design provides unmatched comfort, visibility and ease of use, making the operator more confident and productive.

Engine and Power Train

Combining power management with ACERT™ Technology delivers maximum power and efficiency while reducing the environmental impact. M Series 2 Motor Graders meet U.S. Tier 4 Interim/EU Stage IIIB emission standards.

Structures, Drawbar, Circle and Moldboard

Durable structures with fast and simple DCM adjustments deliver precise material control while lowering operating costs.



Hydraulics

The M Series 2 Motor Grader electro-hydraulics enable advanced machine controls with precise and predictable movements.

Integrated Technologies

Full systems integration optimizes machine performance and availability.

All Wheel Drive (AWD)

Maximum productivity with six powered wheels. Hydrostatic Mode powers only the front wheels, perfect for precise finish work. Steering Compensation adjusts the outside front tire speed for tighter turns, less scuffing and tire wear, and improved control.



160M2/160M2 AWD Motor Graders Specifications

Engine

Engine Model	Cat® C9.3 ACERT™ VHP	
Emissions	U.S. Tier 4 Interim/ EU Stage IIIB	
Base Power (1st gear) – Net	159 kW	213 hp
Base Power (1st gear) – Net (Metric)	216 hp	
VHP range – Net	158-181 kW	213-243 hp
VHP range – Net (Metric)	216-246 hp	
VHP Plus range – Net	158-196 kW	213-263 hp
VHP Plus range – Net (Metric)	216-267 hp	
AWD range – Net	166-211 kW	223-283 hp
AWD range – Net (Metric)	226-287 hp	
Displacement	9.3 L	567.5 in ³
Bore	115 mm	4.5 in
Stroke	149 mm	5.9 in
Torque rise	50%	
Max torque	1355 N·m	1,000 lb ft
Speed @ rated power	2,100 rpm	
Number of cylinders	6	
Derating altitude	3048 m	10,000 ft
Hi Ambient – Fan Speed		
Standard	1,400 rpm	
Max	1,550 rpm	
Min	500 rpm	
Standard Capability	43° C	109° F
Hi Ambient Capability	50° C	122° F
VHP – gear		
1F, Net	159 kW	213 hp
2F, Net	166 kW	223 hp
3F, Net	174 kW	233 hp
4-8F, Net	181 kW	243 hp
1R, Net	159 kW	213 hp
2R, Net	166 kW	223 hp
3-6R, Net	174 kW	233 hp
VHP Plus – gear		
1F, Net	159 kW	213 hp
2F, Net	166 kW	223 hp
3F, Net	174 kW	233 hp
4F, Net	181 kW	243 hp
5F, Net	185 kW	248 hp
6F, Net	189 kW	253 hp
7F, Net	192 kW	257 hp
8F, Net	196 kW	263 hp

- Net power is tested per ISO 9249, SAE J1349, and EEC 80/1269 Standards in effect at the time of manufacture.
- VHP Plus is an optional attachment for the 160M2; standard for the 160M2 AWD.
- Net power advertised is the power available at rated speed of 2,100 rpm, measured at the flywheel when engine is equipped with fan running at minimum speed, air cleaner, muffler and alternator.
- No engine derating required up to 3048 m (10,000 ft).
- Power as declared per ISO 14396
Rated rpm 2,100
VHP = 182 kW (244 hp)
VHP+ = 197 kW (264 hp)
AWD = 212 kW (284 hp)

Power Train

Forward/Reverse Gears	8 Fwd/6 Rev	
Transmission	Direct Drive Powershift	
Brakes		
Service	Multiple Oil Disc	
Service, surface area	23 000 cm ²	3,565 in ²
Parking	Multiple Oil Disc	
Secondary	Dual Circuit Control	

Hydraulic System

Circuit type	Parallel	
Pump type	Variable Piston	
Pump output	210 L/min	55.5 gal/min
Maximum system pressure	24 150 kPa	3,503 psi
Reservoir tank capacity	60 L	15.9 gal
Standby Pressure	4200 kPa	609 psi

- Pump output measured at 2,150 rpm.

Operating Specifications

Top Speed		
Fwd.	47.4 km/h	29.5 mph
Rev.	37.4 km/h	23.3 mph
Turning radius, outside front tires	7.6 m	24 ft 10 in
Steering range – left/right	47.5°	
Articulation angle – left/right	20°	
Fwd.		
1st	4.1 km/h	2.6 mph
2nd	5.6 km/h	3.5 mph
3rd	8.1 km/h	5.1 mph
4th	11.2 km/h	7.0 mph
5th	17.4 km/h	10.8 mph
6th	23.7 km/h	14.7 mph
7th	32.6 km/h	20.3 mph
8th	47.4 km/h	29.5 mph
Rev.		
1st	3.3 km/h	2.0 mph
2nd	6.1 km/h	3.8 mph
3rd	8.9 km/h	5.5 mph
4th	13.7 km/h	8.5 mph
5th	25.7 km/h	16.0 mph
6th	37.4 km/h	23.3 mph

160M2/160M2 AWD Motor Graders Specifications

Service Refill

Fuel Capacity	416 L	110 gal
Cooling system	56 L	14.8 gal
Hydraulic system		
Total	100 L	26.4 gal
Tank	64 L	16.9 gal
Engine Oil	30 L	7.9 gal
Trans./Diff./Final Drives	65 L	17.2 gal
Tandem housing (each)	64 L	16.9 gal
Front wheel spindle bearing housing	0.5 L	0.13 gal
Circle drive housing	7 L	1.8 gal

Frame

Circle		
Diameter	1530 mm	60.2 in
Blade beam thickness	40 mm	1.6 in
Drawbar		
Height	152 mm	6 in
Width	76.2 mm	3 in
Thickness	12.7 mm	0.5 in
Front-top/bottom plate		
Width	300 mm	11.8 in
Thickness	16 mm	0.63 in
Front frame structure		
Height	304.8 mm	12 in
Width	304.8 mm	12 in
Thickness	15.9 mm	0.63 in
Front axle		
Height to center	600 mm	23.6 in
Wheel lean, left/right	18°	
Total oscillation per side	32°	

- Front-top/bottom plate – width tolerance ± 2.5 mm (0.098 in).

Tandems

Height	506 mm	19.9 in
Width	210 mm	8.3 in
Sidewall thickness		
Inner	16 mm	0.63 in
Outer	18 mm	0.71 in
Drive chain pitch	50.8 mm	2 in
Wheel axle spacing	1523 mm	59.95 in
Tandem oscillation		
Front up	15°	
Front down	25°	

Moldboard

Blade width	4.2 m	14 ft
Moldboard		
Height	610 mm	24 in
Thickness	22 mm	0.87 in
Arc radius	413 mm	16.3 in
Throat clearance	166 mm	6.5 in
Cutting edge		
Width	152 mm	6 in
Thickness	16 mm	0.6 in
End Bit		
Width	152 mm	6 in
Thickness	16 mm	0.6 in
Blade Pull		
Base GVW	11 754 kg	25,913 lb
Max GVW	15 455 kg	34,072 lb
Blade Down Pressure		
Base GVW	7271 kg	16,030 lb
Max GVW	13 248 kg	29,207 lb

Blade Range

Circle centershift		
Right	728 mm	28.7 in
Left	695 mm	27.4 in
Moldboard sideshift		
Right	660 mm	26 in
Left	510 mm	20.1 in
Maximum blade position angle	90°	
Blade tip range		
Forward	40°	
Backward	5°	
Maximum shoulder reach outside of tires		
Right	2278 mm	89.7 in
Left	2090 mm	82.3 in
Maximum lift above ground	452 mm	17.8 in
Maximum depth of cut	750 mm	29.5 in

Ripper

Ripping depth, maximum	426 mm	16.8 in
Ripper shank holders	5	
Ripper shank holder spacing	533 mm	21 in
Penetration force	9386 kg	20,693 lb
Pryout force	12 602 kg	27,783 lb
Machine length increase, beam raised	1031 mm	40.6 in

160M2/160M2 AWD Motor Graders Specifications

Scarifier

Front, V-Type: Working width	1205 mm	47.4 in
Front, V-Type, 5 or 11 tooth		
Working width	1031 mm	40.6 in
Scarifying depth, maximum	467 mm	18.4 in
Scarifier shank holders	5/11	
Scarifier shank holder spacing	116 mm	4.6 in
Mid, V-Type		
Working width	1184 mm	46.6 in
Scarifying depth, maximum	292 mm	11.5 in
Scarifier shank holders	11	
Scarifier shank holder spacing	116 mm	4.6 in
Mid, straight		
Working width	1800 mm	70.9 in
Scarifying depth, maximum	317 mm	12.5 in
Scarifier shank holders	17	
Scarifier shank holder spacing	111 mm	4.4 in
Front, V-Type		
Scarifying depth, maximum	1031 mm	40.6 in
Scarifier shank holders	5/11	
Scarifier shank holder spacing	467 mm	18.4 in
Rear		
Working width	2133 mm	84 in
Scarifying depth, maximum	426 mm	16.8 in
Scarifier shank holders	9	
Scarifier shank holder spacing	267 mm	10.5 in

Weights

Gross Vehicle Weight, base		
Total	17 296 kg	38,131 lb
Front axle	4236 kg	9,339 lb
Rear axle	13 060 kg	28,792 lb
Gross Vehicle Weight, max		
Total	24 888 kg	54,869 lb
Front axle	7715 kg	17,009 lb
Rear axle	17 173 kg	37,860 lb
Operating Weight, typically equipped		
Total	19 620 kg	43,255 lb
Front axle	5515 kg	12,158 lb
Rear axle	14 105 kg	31,096 lb

Weights – AWD

Gross Vehicle Weight, base		
Total	18 188 kg	40,098 lb
Front axle	4713 kg	10,390 lb
Rear axle	13 475 kg	29,707 lb
Gross Vehicle Weight, max		
Total	24 888 kg	54,869 lb
Front axle	7715 kg	17,009 lb
Rear axle	17 173 kg	37,860 lb
Operating Weight, typically equipped		
Total	20 512 kg	45,221 lb
Front axle	5992 kg	13,210 lb
Rear axle	14 520 kg	32,012 lb

- Base operating weight calculated on standard machine configuration with 14.0R24 tires, full fuel tank, coolant, lubricants and operator.
- Typically equipped operating weight is calculated on base weight, plus ripper, push block, transmission guard, and 17.5R25 performance tires with multi-piece (MP) rims.

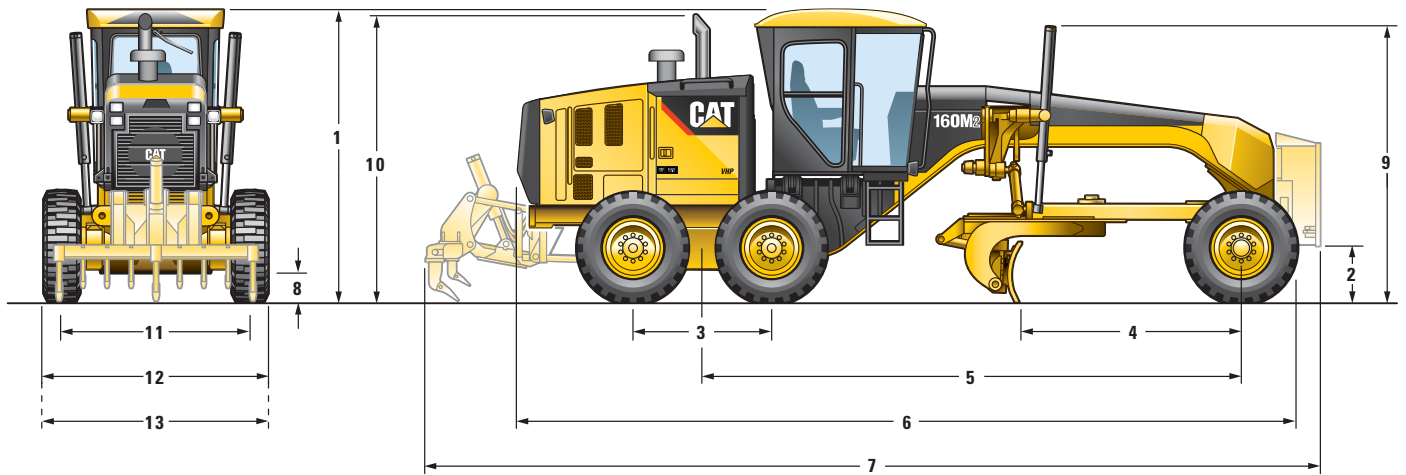
Standards

ROPS/FOPS	ISO 3471/ISO 3499
Steering	ISO 5010
Brakes	ISO 3450, ISO 10265
Sound	ISO 6394; ISO 6395

- The static sound operator sound pressure level measured according to ISO 6394:1988 for a cab offered by Caterpillar, when properly installed, maintained and tested with doors and windows closed and engine cooling hydraulic fan at maximum speed is 71 dB(A).
- The dynamic spectator sound power level for the standard machine when equipped with optional sound suppression package and engine cooling hydraulic fan running at 70% of maximum speed, machine sound measured is less than 107 dB(A) for 160M2 and 108 dB(A) for 160M2 AWD, complying with EU 2000/14/EC requirement.

160M2/160M2 AWD Motor Graders Specifications

Dimensions



1	Height – Top of Cab	3287 mm	129.4 in
2	Height – Front Axle Center	600 mm	23.6 in
3	Length – Between Tandem Axles	1523 mm	60 in
4	Length – Front Axle to Moldboard	2557 mm	100.7 in
5	Length – Front Axle to Mid Tandem	6126 mm	241 in
6	Length – Front Tire to Rear of Machine	8898 mm	350.3 in
7	Length – Counterweight to Ripper	10 140 mm	399.2 in
8	Ground Clearance at Rear Axle	344 mm	13.5 in
9	Height to Top of Cylinders	3043 mm	119.8 in
10	Height to Exhaust Stack	3242 mm	127.6 in
11	Width – Tire Center Lines	2141 mm	84.3 in
12	Width – Outside Rear Tires	2581 mm	101.6 in
13	Width – Outside Front Tires	2581 mm	101.6 in

Optional Tire Arrangements

Wheel Group		Tires	Tire Arrangement Weight (Total – 6 Tires)	
10x24 MP	14.00R24	Michelin XGLA2 1 Star	1035 kg	2,276 lb
10x24 MP	14.0R24	Bridgestone VSW 1 Star	1222 kg	2,687 lb
10x24 MP	14.0R24	Bridgestone VKT 1 Star	1249 kg	2,747 lb
14x25 MP	17.5R25	Michelin XTLA 1 Star	1264 kg	2,780 lb
14x25 MP	17.5R25	Michelin XSNO Plus 1 Star	1137 kg	2,502 lb
14x25 MP	17.5R25	Michelin XHA 1 Star	1396 kg	3,071 lb
14x25 MP	17.5R25	Bridgestone VKT 1 Star	1463 kg	3,219 lb
14x25 MP	17.5R25	Bridgestone VSW 1 Star	1499 kg	3,297 lb

For a complete list of tire options, contact your local Cat dealer.

160M2/160M2 AWD Motor Graders Standard Equipment

Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

POWER TRAIN

- Air cleaner, dual stage, dry type, diesel, with automatic engine derate and automatic dust ejector, service indicator through Cat Messenger
- Air-to-air after cooler (ATAAC)
- Belt, serpentine, automatic tensioner
- Brakes, oil disc, four-wheel, hydraulic
- Demand fan, hydraulic, swing-out
- Differential Lock/Unlock, Automatic
- Drain, engine oil, ecology
- Electronic over speed protection
- Engine, C9.3 with ACERT Technology, Tier 4 Interim and Stage IIIB emission standards
- Fuel tank, 416 L (110 gal), ground level access and sediment drain
- Parking brake – multi-disc, sealed, oil-cooled
- Priming pump, fuel
- Rear axle, modular
- Sediment drain, fuel tank
- Tandem drive
- Transmission, 8F/6R, power shift, direct drive
- VHP (Variable Horsepower)

ELECTRICAL

- Alarm, back up
- Alternator, 150 ampere, sealed
- Batteries, maintenance free, heavy duty, 1125 CCA
- Breaker panel, ground accessible
- Cab harness and electrical hydraulic valves
- Electrical system, 24V
- Grade Control Ready – Cab harness, software, electrical hydraulic valves, bosses and brackets
- Lights, roof-mounted roading, reversing, LED stop and tail
- Product Link Ready
- Starter, electric

OPERATOR ENVIRONMENT

- Accelerator
- Air conditioning with heater
- Arm and wrist rest, electronically adjustable
- Articulation, automatic Return-to-Center
- Ashtray and lighter
- Cat® Messenger operator information system
- Centershift pin indicator
- Coat hook
- Cup holder
- Display, digital speed and gear
- Doors, left and right side with wiper
- Gauge, machine level
- Gauge cluster (analog) – fuel, articulation, engine coolant temp, engine rpm, hydraulic oil temp, regen
- Hour meter, digital
- Joystick hydraulic controls right/left blade lift with float position, circle drive, blade sideshift and tip, centershift, front wheel lean, articulation and power steering
- Joystick, adjustable armrests

- Joystick gear selection
- Joystick hydraulic power steering
- Ladders, cab, left and right side
- Lights, night time cab
- Mirror, inside rearview, wide angle
- Power port, 12V
- Radio Ready, Entertainment
- ROPS cab, sound suppressed 70 dB(A)
- Seat, cloth-covered, comfort suspension
- Seat belt, retractable 76 mm (3 in)
- Storage area for cooler/lunchbox
- Throttle control, electronic
- Windows, laminated glass:
 - fixed front with intermittent wiper
 - side and rear (3)

FLUIDS

- Antifreeze
- Extended Life Coolant to –35° C (–30° F)

TIRES, RIMS AND WHEELS

- Partial allowance for tires on 254 × 607 mm (10 × 24 in) multi-piece rims is included in the base machine price and weight

OTHER STANDARD EQUIPMENT

- Accumulators, brake, dual certified
- Anti-glare paint
- Bumper, rear, integrated with hitch
- CD ROM Parts Book
- Clutch, circle drive slip
- Cutting edges
 - 152 × 16 mm (6 × 5/8 in)
 - curved DH-2 steel
 - 19 mm (3/4 in) mounting bolts
- Doors (3), engine compartment, locking
- Drawbar – 6 shoes, replaceable wear strips
- Electrical hydraulic valves, hydraulic lines for base 8 functions
- Endbits
 - 16 mm (5/8 in) DH-2 steel
 - 19 mm (3/4 in) mounting bolts
- Fluid check, ground level
- Frame, articulated, with safety lock
- Ground level engine shutdown
- Hammer (emergency exit)
- Horn, electric
- Hydraulic lines for base functions
- Lockout, hydraulic implement (for roading and servicing)
- Moldboard
- Mounting, cab roof accessories
- Pump, hydraulic, high capacity, 98 cm³ (6 in³)
- Radiator, cleanout access (both sides with swing doors)
- Secondary steering
- Serviceability, LH side
- S•O•SSM ports: engine, hydraulic, transmission, coolant, fuel
- Tandem walkway/guards
- Tool box
- Tow hitch

160M2/160M2 AWD Motor Graders Optional Equipment

Optional Equipment

Optional equipment may vary. Consult your Cat dealer for details.

	kg	lb		kg	lb		kg	lb
ELECTRICAL			POWER TRAIN			WORK TOOLS/G.E.T.		
Alternator, 280 ampere	2	5	All Wheel Drive	590	1,300	Blade extension, left hand, 610 mm (2 ft)	113	249
Batteries:			Engine, variable horsepower plus (VHP Plus)	00	00	Cutting Edges, curved	43	95
extreme duty, 1,400 CCA	14	30	Fuel tank, fast fill	14	31	Endbits, overlay	24	52
Converter, communication (CB)	5	11	Oil, Hydraulic, Biodegradable Synthetic	00	00	Front lift group, mounting	5	11
Lights:			Precleaner, snow	2	4.4	Front lift group, mechanical	680	1,500
Headlights, high	5	11	Starter, Heavy Duty, 1,000 Amp	10	22	Grader bit, narrow and super penetration	181	400
Headlights, low	5	11	Transmission, autoshift	2	5	Mid-Mount Scarifier, Package	942	2,077
Working lights, basic	9	20	OTHER ATTACHMENTS			Mid-Mount Scarifier, Mounting	57	125
Working lights, plus	10	22	AccuGrade ARO	39	85	Moldboard		
Warning: Beacon or Strobe	2	5	Accumulators, blade lift	77	170	4877 × 686 × 25 mm (16 ft × 27 in × 1 in)	472	1,040
Mounting for Warning Light	5	11	Camera, rearview	9	20	4267 × 686 × 25 mm (14 ft × 27 in × 1 in)	295	650
GUARDS			Cat Product Link 321SR	5	10	4267 × 610 × 22 mm (14 ft × 24 in × 7/8 in)	157	347
Fenders, Front	56	123	Drain, ecology, engine Wiggins	2	5	Push plate, counterweight	1285	2,833
Fenders, Rear	34	75	Fenders, front, AWD	56	124	Ripper, mounting	32	70
Sound suppression (Bottom)	110	243	Fenders, rear	119	262	Ripper, rear	962	2,120
Sound suppression (Enclosure)	110	243	Heater, engine coolant:			Ripper tooth	28	61
Transmission	141	311	120V	1	3	Scarifier, front	434	956
OPERATOR ENVIRONMENT			220V	1	3	Snow Arrangement	161	355
Fan, defroster, rear window	2	4	Hydraulic arrangements with one or more additional hydraulic valves are available for rear ripper, dozer, snow plow and snow wing.			Snow Wing Ready Package	114	355
Mirrors, outside:			Snow wing mounting, frame ready	91	200	MACHINE ARRANGEMENTS		
heated 24V	15	33	Sound suppression	15	32	Canadian Arrangement	2	4
mounted	15	33	Starting aid, Ether	0.5	1	European Arrangement	289	637
Precleaner, HVAC	5	10				European Roding Arrangement	451	994
Radio ready, AM/FM	9	20						
Seat, air suspension, cloth	2	5						
Shade, sun	2	5						
Wiper/washer, rear	2	4						

160M2/160M2 AWD Motor Graders

Materials and specifications are subject to change without notice.

Featured machines in photos may include additional equipment.

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com.

© 2011 Caterpillar Inc.
All Rights Reserved.

CAT, CATERPILLAR, ACERT, SAFETY.CAT.COM, their respective logos, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

Product ID: 160M2/160M2 AWD

AEHQ6295-01
(Replaces AEHQ6295)

December 2011

