

140H

Motor Grader

CAT



Global Version

Cat® 3176 ETA Engine

Base Power (all gears)	123 kW	165 hp
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Variable Horsepower Arrangement

- gears 1-3	123 kW	165 hp
- gears 4-8	138 kW	185 hp

Variable Horsepower Plus Arrangement

- gears 1-3	123 kW	165 hp
- gears 4-6	138 kW	185 hp
- gears 7-8	153 kW	205 hp

Weights

Gross Vehicle Weight - base	14 677 kg	32,357 lb
front wheels	4138 kg	9,123 lb
rear wheels	10 539 kg	23,234 lb

Moldboard

Blade Width	3658 mm	12 ft
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Engine

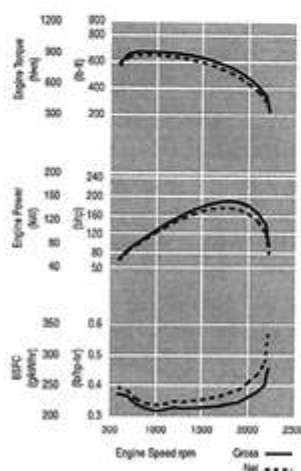
Engine Model	Cat 3176 ETA, Variable HP	
Base Power (all gears) Net	123 kW	165 hp
VHP - gears 1-3 Net	123 kW	165 hp
- gears 4-8 Net	138 kW	185 hp
VHP Plus - gears 1-3 Net	123 kW	165 hp
- gears 4-6 Net	138 kW	185 hp
- gears 7-8 Net	153 kW	205 hp
Base Power (all gears) Gross	136 kW	182 hp
VHP - gears 1-3 Gross	136 kW	182 hp
- gears 4-8 Gross	151 kW	202 hp
VHP Plus - gears 1-3 Gross	136 kW	182 hp
- gears 4-6 Gross	151 kW	202 hp
- gears 7-8 Gross	166 kW	222 hp
Displacement	10.3 L	629 in ³
Bore	125 mm	4.9 in
Stroke	140 mm	5.5 in
Torque rise	50 %	
Max torque @ 1000 rpm	1095 N.m	808 lb ft

Speed @ rated power	2000 RPM	
Number of cylinders	6	
Derating altitude	3048 m	10,000 ft
Std - Fan speed - max	1210 RPM	
- min	500 RPM	
Std - Ambient Capability	47°C	117°F
Hi Ambient - Fan speed - max	1300 RPM	
- min	500 RPM	
Hi - Ambient Capability	50°C	122°F

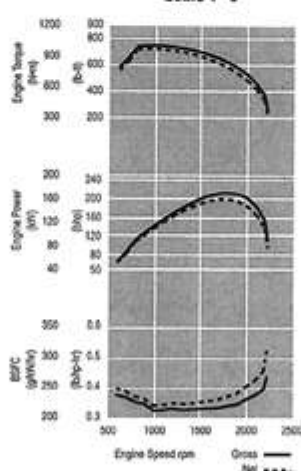
- Net power is tested per ISO 9249, SAE J1349, and EEC 80/1269 standards in effect at the time of manufacture.
- VHP and VHP Plus are optional arrangements.
- Net power advertised is the power available at rated speed of 2000 rpm, measured at the flywheel when engine is equipped with fan, air cleaner, muffler and alternator.
- No derating required up to 3048 m (10,000 ft) altitude. Deration rate of 1.5% per 304.8 m (1000 feet) above 3048 m (10,000 feet).

Base
VHP
VHP Plus

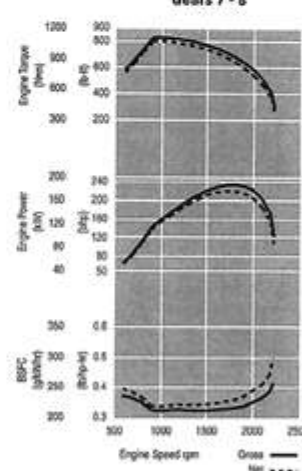
Gears 1 - 8
Gears 1 - 3
Gears 1 - 3



Gears 4 - 8
Gears 4 - 6



Gears 7 - 8



Power Train

Forward/Reverse Gears	8 fwd/6 rev	
Transmission	Direct drive, power shift	
Brakes - service	air-actuated, oil-disc	
- service, surface area	23 948 cm ²	3,712 in ²
- Parking	manual, multiple oil-disc	
- Secondary	air actuated, oil-disc	

Hydraulic System

Circuit type	Closed center load sense	
Pump type	axial piston	
Pump output @ 2100 RPM	206 L/min	54.4 gal/min
Maximum system pressure	24 150 kPa	3,500 psi
Reservoir tank capacity	38 L	9.9 gal
Standby pressure	3100 kPa	450 psi

Operating Specifications

Top Speed - Fwd.	44 km/h	27.4 mph
- Rev.	34.7 km/h	21.6 mph
Turning radius (outside front tires)	7.5 m	24.6 ft
Steering range - left/right	50°	
Articulation angle - left/right	20°	
Fwd. 1st	3.8 km/h	2.3 mph
2nd	5.1 km/h	3.2 mph
3rd	7.4 km/h	4.6 mph
4th	10.3 km/h	6.4 mph
5th	16.2 km/h	10 mph
6th	22 km/h	13.7 mph
7th	30.3 km/h	18.8 mph
8th	44 km/h	27.4 mph
Rev. 1st	3 km/h	1.8 mph
2nd	5.6 km/h	3.5 mph
3rd	8.1 km/h	5 mph
4th	12.8 km/h	7.9 mph
5th	23.9 km/h	14.8 mph
6th	34.7 km/h	21.6 mph

Service Refill

Fuel tank	397 L	105 gal
Cooling system	38 L	10 gal
Hydraulic system - total	80 L	20.8 gal
- tank	38 L	9.9 gal
Engine oil	39 L	10.2 gal
Differential/Final drives	47 L	12.4 gal
Tandem housing (each)	64 L	16.9 gal
Circle drive housing	7 L	1.8 gal
Front wheel spindle bearing housing	0.5 L	0.13 gal

Frame

Circle - diameter	1530 mm	60.2 in
- blade beam thickness	30 mm	1.2 in
Drawbar - height	127 mm	5 in
- thickness	76 mm	3 in
Front-top/bottom plate - width	305 mm	12 in
- thickness	25 mm	1 in
Front-side plates - width	241 mm	9.5 in
- thickness	12 mm	0.5 in
Front-linear weights - min	165 kg/m	112 lb/ft
- max	213 kg/m	144 lb/ft
Front-section modulus - min	2083 cm ³	127 in ³
- max	4785 cm ³	291 in ³
Front axle - ground clearance	625 mm	24.6 in
- front wheel lean	18°	
- oscillation angle	32°	

Tandems

Height	506 mm	19.9 in
Width	201 mm	7.9 in
Sidewall thickness - inner	16 mm	0.63 in
- outer	18 mm	0.71 in
Drive chain pitch	51 mm	2 in
Wheel axle spacing	1522 mm	60 in
Tandem oscillation - forward	15°	
- reverse	25°	

Moldboard

Blade width	3658 mm	12 ft
Moldboard height	610 mm	24 in
Thickness	22 mm	0.87 in
Arc radius	413 mm	16.25 in
Throat clearance	120 mm	4.7 in
Cutting edge - width	152 mm	6 in
- thickness	10 mm	0.63 in
End bit - width	152 mm	6 in
- thickness	16 mm	0.63 in
Blade pull - max GVW	19 135 kg	42,184 lb
- base GVW	13 209 kg	29,121 lb
Down pressure - max GVW	13 017 kg	28,698 lb
- base GVW	7098 kg	15,648 lb

- Blade Pull calculated at 0.9 traction coefficient, which is equal to ideal no-slip conditions, and Gross Vehicle Weight (GVW).

Blade Range

Circle centershift - right	728 mm	28.7 in
- left	695 mm	27.4 in
Moldboard sideshift - right	660 mm	26 in
- left	524 mm	20.6 in
Maximum blade position angle	90°	
Blade tip range (forward)	40°	
(backward)	5°	
Maximum shoulder reach outside of tires		
- right	1978 mm	77.9 in
- left	1896 mm	74.6 in
Maximum lift above ground	480 mm	18.9 in
Maximum depth of cut	715 mm	28.1 in

Ripper

Ripping depth, maximum	462 mm	18.2 in
Ripper shank holders	5	
Ripper shank holder spacing	533 mm	21 in
Penetration force	8047 kg	17,740 lb
Pryout force	9281 kg	20,460 lb
Machine length increase, beam raised	970 mm	38.2 in

Scarifier

Front, 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
Front, straight: Working width	1800 mm	71 in
Scarifying depth, maximum	317 mm	12.5 in
Scarifier shank holders	17	
Scarifier shank holder spacing	111 mm	4.38 in
Rear: Working width	2300 mm	91 in
Ripping depth, maximum	411 mm	16.2 in
Scarifier shank holders	9	
Scarifier shank holder spacing	267 mm	10.5 in

Weights

Gross Vehicle Weight - max	21 261 kg	46,872 lb
- front wheels	7590 kg	16,733 lb
- rear wheels	13 671 kg	30,139 lb
Gross Vehicle Weight - base	14 677 kg	32,357 lb
- front axles	4138 kg	9,123 lb
- rear axles	10 539 kg	23,234 lb

- Base operating weight calculated on standard machine configuration with 14.00-24 10PR (G-2) tires, full fuel tank, coolant, lubricants and operator.

Cab

ROPS (Rollover Protective Structure) meets the following criteria: SAE J396, SAE J1040 APR 88, ISO 3471:1986, ISO 3471:1974

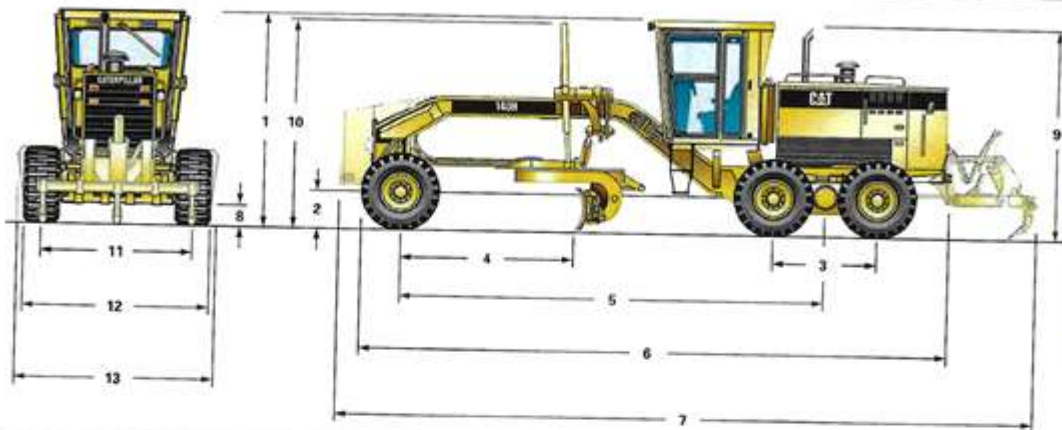
FOPS (Falling Object Protective Structure) meets the following criteria: SAE J231 JAN 81, ISO 3449:1984, ISO 3449:1992 Level II

Brakes

Brakes meet the following standards: SAE J1473 OCT 90.

Dimensions

All dimensions are approximate.



1	Height - low profile cab	3131 mm	123 in	7	Length - counterweight to ripper	10 097 mm	398 in	
	- high profile cab	3356 mm	132 in		8	Ground clearance at trans. case	344 mm	13.5 in
	- no cab	3103 mm	122.2 in			9	Height to exhaust stack	3103 mm
2	Height to axle	600 mm	23.6 in	10	Height to top of cylinders		3028 mm	119.2 in
3	Length - between tandem axles	1523 mm	60 in		11	Width - tire center lines	2077 mm	81.8 in
4	Length - front axle to moldboard	2561 mm	100.8 in	12		Width - outside rear tires	2443 mm	96.2 in
5	Length - front axle to mid tandem	6169 mm	242.9 in		13	Width - outside front tires	2464 mm	97 in
6	Length - front tire to end of rear frame	8713 mm	343 in					