

14H Global Motor Grader



Engine

The Cat® 3176 DITA ATAAC is designed to handle the tough loads. Variable Horsepower matches torque curves to the gear, to maximize response, power and efficiency. Low fuel consumption reduces operating costs and reduces environmental impact.

Power Train

The power shift transmission takes full advantage of the powerful 3176 DITA ATAAC engine. The Variable Horsepower option uses specific torque curves for each gear range for optimum performance. Dual air system and multi-disc oil brakes assure reliable braking control.

Hydraulics

The load-sensing hydraulic system lowers power consumption and system heat. The advanced PPPC control valves provide low lever effort, balanced flow and consistent cylinder speeds for outstanding blade control. Blade float is incorporated into the blade lift valves.

Drawbar, Circle, Moldboard

Flexible positioning of the tall moldboard, large throat clearance and long wheelbase improve material handling. Rugged construction and replaceable wear parts minimize operation costs.

Structures

The 14H frame is designed and built to exceed the expectations of the customer.

Operator's Station

Low effort blade controls, electronic throttle control, EMS III monitoring system, and improved ventilation provide world-class operator control and comfort. Improved visibility to the front and rear increase operator confidence and productivity.



Serviceability

Caterpillar® re-engineered inspection and service points, grouping them into a convenient left-hand side, ground level 'service center.' Ground level fueling and extended engine and hydraulic oil change intervals help minimize downtime.

Environmentally Responsible Design

New engine arrangements and operator station designs reduce emissions and meet current and anticipated regulations for interior and exterior sound, emissions, and exhaust.

Customer Support

Your Cat dealer offers a range of services that help you operate longer with lower costs.

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Specifications

Engine		
Engine Model	Caterpillar 3176 DITA ATAAC, Variable HP	
Base Power (all gears) Net	164 kW	220 hp
VHP - gears 1-3 Net	164 kW	220 hp
VHP - gears 4-8 Net	179 kW	240 hp
Base Power (all gears) Gross	177 kW	237 hp
VHP - gears 1-3 Gross	177 kW	237 hp
VHP - gears 4-8 Gross	192 kW	257 hp
Displacement	10.3 L	629 in ³
Bore	125 mm	4.9 in
Stroke	140 mm	5.5 in
Torque rise	50 %	50 %
Max torque @ 1000 rpm	1282 N·m	946 lb ft
Speed @ rated power	2000 RPM	2000 RPM
Number of cylinders	6	
Derating altitude	3350 m	11,000 ft
Std - Fan speed - max	1210 RPM	1210 RPM
Std - Fan speed - min	500 RPM	500 RPM
Hi Ambient - Fan speed - max	1300 RPM	1300 RPM
Hi Ambient - Fan speed - min	500 RPM	500 RPM

- Net power is tested per ISO 9249, SAE J1349, and EEC 80/1269 standards in effect at the time of manufacture.
- VHP is an optional arrangement.
- 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 3350 m (11,000 ft) altitude. Deration rate of 0.5% per 304.8 m (1000 feet) above 3350 m (11,000 feet).

Power Train		
Forward/Reverse Gears	8 fwd / 8 rev	
Transmission	Direct drive, power shift, planetary	
Brakes - Service	air-actuated, oil-disc	
Brakes - Service, surface area	28 135 cm ²	4362 in ²
Brakes - Parking	manual, multiple oil-disc	
Brakes - Secondary	air-actuated, oil-disc	

Hydraulic System		
Circuit type	Closed center load sense	
Pump type	axial piston	
Pump output	243 L/min	64.1 gal/min
Maximum system pressure	24 150 kPa	3500 psi
Standby Pressure	3100 kPa	450 psi

Operating Specifications		
Top Speed - Fwd.	46.1 kph	28.7 mph
Top Speed - Rev.	51.1 kph	31.8 mph
Turning radius (outside front tires)	8 m	26.3 ft
Steering range - left/right	50 °	50 °
Articulation angle - left/right	20 °	20 °
Fwd. 1st	4 kph	2.5 mph
Fwd. 2nd	5.7 kph	3.5 mph
Fwd. 3rd	7.7 kph	4.8 mph
Fwd. 4th	11.1 kph	6.9 mph
Fwd. 5th	16.8 kph	10.4 mph
Fwd. 6th	23.5 kph	14.6 mph
Fwd. 7th	31.9 kph	19.8 mph
Fwd. 8th	46.1 kph	28.7 mph
Rev. 1st	4.5 kph	2.8 mph
Rev. 2nd	6.3 kph	3.9 mph
Rev. 3rd	8.5 kph	5.3 mph
Rev. 4th	12.3 kph	7.6 mph
Rev. 5th	18.6 kph	11.5 mph
Rev. 6th	26.1 kph	16.2 mph
Rev. 7th	35.3 kph	21.9 mph
Rev. 8th	51.1 kph	31.8 mph

Service Refill		
Fuel Capacity	416 L	110 gal
Cooling system	48.3 L	12.8 gal
Hydraulic system - total	125 L	32.5 gal
Hydraulic system - tank	63 L	16.4 gal
Engine Oil	39 L	10.2 gal
Differential / Final Drives	83 L	21.6 gal
Tandem housing (each)	98 L	25.5 gal
Front wheel spindle bearing housing	.9 L	.24 gal
Circle drive housing	6 L	1.6 gal

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Specifications

Frame		
Circle - diameter	1822 mm	71.75 in
Drawbar - height	165 mm	6.5 in
Drawbar - thickness	89 mm	3.5 in
Front-top/bottom plate - width	330 mm	13 in
Front-top/bottom plate - thickness	25 mm	1 in
Front-side plates - width	286 mm	11.2 in
Front-side plates - thickness	12 mm	.5 in
Front-linear weights - min	182 kg/m	122 lb/ft
Front-linear weights - max	228 kg/m	153 lb/ft
Front-section modulus - min	2649 cm ³	162 in ³
Front-section modulus - max	5091 cm ³	310 in ³
Front axle - ground clearance	625 mm	24.6 in
Front axle - front wheel lean	18 °	18 °
Front axle - oscillation angle	32 °	32 °
Circle - blade beam thickness	45 mm	1.75 in

Tandems		
Height	616 mm	24.25 in
Width	214 mm	8.4 in
Sidewall thickness - inner	20 mm	.8 in
Sidewall thickness - outer	20 mm	.8 in
Drive chain pitch	57 mm	2.24 in
Wheel axle spacing	1656 mm	66 in
Tandem oscillation - forward	15 °	15 °
Tandem oscillation - reverse	25 °	25 °

Moldboard		
Blade Width	4267 mm	14 ft
Moldboard Height	686 mm	27 in
Thickness	25 mm	1 in
Arc radius	413 mm	16.25 in
Throat clearance	90 mm	3.5 in
Cutting edge - width	203 mm	8 in
Cutting edge - thickness	16 mm	.63 in
End Bit - width	152 mm	6 in
End Bit - thickness	16 mm	.63 in
Blade Pull - max GVW	23 886 kg	52,658 lb
Blade Pull - base GVW	16 928 kg	37,319 lb
Down Pressure - max GVW	15 657 kg	34,517 lb
Down Pressure - base GVW	9532 kg	21,015 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	520 mm	20.5 in
Circle centershift - left	650 mm	25.5 in
Moldboard sideshift - right	790 mm	31.1 in
Moldboard sideshift - left	650 mm	25.6 in
Maximum blade position angle	90 °	90 °
Blade tip range (forward)	40 °	40 °
Blade tip range (backward)	5 °	5 °
Maximum shoulder reach outside of tires - right	2082 mm	82 in
Maximum shoulder reach outside of tires - left	2057 mm	81 in
Maximum lift above ground	419 mm	16.5 in
Maximum depth of cut	438 mm	17.3 in

Ripper		
Ripping depth, maximum	401 mm	15.8 in
Ripper shank holders	7	
Ripper shank holder spacing - min	373 mm	15 in
Ripper shank holder spacing - max	472 mm	19 in
Penetration force	10 676 kg	23,541 lb
Pryout force	11 804 kg	26,028 lb
Machine length increase, beam raised	1130 mm	44.5 in

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Specifications

Weights

Gross Vehicle Wt, max - total	26 540 kg	58,509 lb
Gross Vehicle Wt, max - front axle	8811 kg	19,425 lb
Gross Vehicle Wt, max - rear axles	17 729 kg	39,084 lb
Gross Vehicle Wt, base - total	18 809 kg	41,465 lb
Gross Vehicle Wt, base - front axle	5305 kg	11,695 lb
Gross Vehicle Wt, base - rear axles	13 504 kg	29,770 lb

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

Dimensions

Height - low profile cab	3341 mm	131 in
Height - high profile cab	3556 mm	140 in
Height - no cab	3170 mm	125 in
Length - counterweight to ripper	10 765 mm	424 in
Width - Outside front tires	2817 mm	111 in
Length - front axle to mid tandem	6557 mm	258 in
Length - front tire to end of rear frame	9342 mm	368 in
Length - front axle to moldboard	2860 mm	113 in
Length - between tandem axles	1656 mm	65 in
Width - outside rear tires	2745 mm	108 in
Width - tire center lines	2316 mm	91 in
Height to axle	645 mm	25.4 in
Height to exhaust stack	3170 mm	125 in
Height to top of cylinders	2844 mm	112 in
Ground clearance at trans. case	378 mm	14.9 in

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Materials and specifications subject to change without notice.

Featured machines in photo may include additional equipment.

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Product ID: 14K COSA

