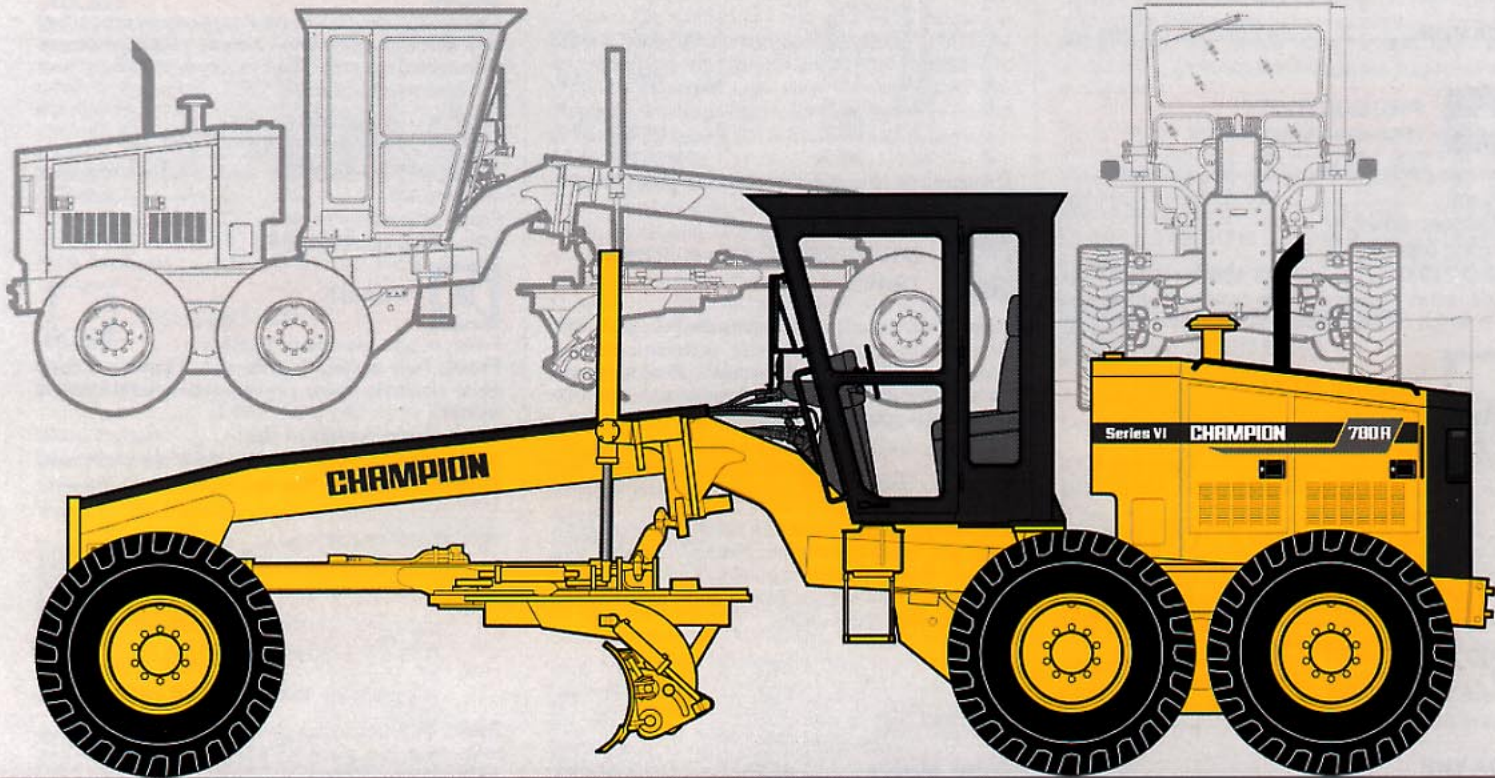


CHAMPION

Series VI

780A / 780A VHP

TANDEM DRIVE MOTOR GRADERS



KEY FEATURES:

- Low emission, high efficiency Cummins diesel engine
- 8400 Fully sequential direct drive powershift transmission with 13.5" (343 mm) clutch
- Choice of fully enclosed, quiet, comfortable ROPS cab in full height or low profile configuration, or ROPS canopy
- Moveable Blade Control System
- Load-sensing, closed center hydraulic system
- Fully-adjustable, low-effort controls
- Full front and rear frame sections for all attachment applications
- Single lever transmission control with "Smart Shifter" feature
- Hydraulically Boosted Dual Braking System with reserve power assist
- Heavy-duty lock/unlock differential
- Three level electronic operator warning system
- 14' (4 267 mm) moldboard
- Full range of front and rear mounted attachments

MODEL	780A	780A VHP
Configuration	Articulated Frame	Articulated Frame
Engine	Cummins M11	Cummins M11
Output (SAE J1349)	210 hp (157 kW)	210-235 hp (157-175 kW)
Base weight	42,740 lb. (19 388 kg)	42,740 lb. (19 388 kg)
Blade down pressure	23,485 lb. (10 653 kg)	23,485 lb. (10 653 kg)
Blade pull	26,507 lb. (12 024 kg)	26,507 lb. (12 024 kg)

CHAMPION MOTOR GRADERS

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780A/780A VHP - Specifications



BASE OPERATING WEIGHT (Standard Equipment)

Weights shown include full cab with ROPS, all operating fluids and operator.

Total 42,740 lbs (19 388 kg)
On front wheels 13,288 lbs (6 028 kg)
On rear wheels 29,452 lbs (13 360 kg)

Typically equipped operating weight: includes 20.5 x 25, 12 pr., L2 tires on 17" (432 mm) rims and 16' x 31" x 1" (4 877 mm x 787 mm x 25 mm) moldboard, front push block and rear mounted ripper.

780A VHP 47,360 lbs (21 484 kg)



PRODUCTIVITY (Standard Equipment)

Maximum blade pull (no wheel slip, 0.9 traction coefficient) 26,507 lbs (12 024 kg)
Blade down pressure
- cutting capability
(ISO 7134) 23,485 lbs (10 653 kg)
Blade down pressure is the maximum downward force which may be applied at the cutting edge.



ENGINE DATA

780A
Make/Model Cummins M11
Type 4-Cycle, Turbocharged, Aftercooled
No. of cylinders In Line 6
Bore & stroke 4.92 x 5.79 in. (125 x 147 mm)
Displacement 660 cu. in. (10.8 L)
Rated gross brake horsepower
@ 2100 RPM 225 hp (168 kW)
Rated net brake horsepower
@ 2100 RPM 210 hp (157 kW)
Torque @ 1300 RPM 760 lb.ft. (1031 N.m)
Torque rise (Net) 43%

780A VHP
Make/Model Cummins M11
Type 4-Cycle, Turbocharged, Aftercooled
No. of cylinders In Line 6
Bore & stroke . 4.921 x 5.787 in. (125 x 147 mm)
Displacement 660 cu. in. (10.8 L)
Rated gross brake horsepower @ 2100 RPM
- Gears forward 1, 2 and
Reverse 1 225 hp (168 kW)
- Gears forward 3-8 and
Reverse 2-4 250 hp (187 kW)
Rated net brake horsepower @ 2100 RPM
- Gears forward 1, 2 and
Reverse 1 210 hp (157 kW)
Torque @ 1300 RPM 760 lb.ft. (1031 N.m)
Torque rise (Net) 43%
- Gears forward 3-8 and
Reverse 2-4 235 hp (175 kW)
Torque @ 1300 RPM 845 lb.ft. (1146 N.m)
Torque rise (Net) 45%

Engine equipped with a two stage, dual element, dry-type air cleaner with evacuator and dash-mounted service indicator. 24 volt starting and electrical system with 75 amp (1800 watt) brushless alternator with internal voltage regulator. Two heavy duty 12 volt maintenance-free batteries with 900 cold cranking amps (CCA) and 160 minutes reserve capacity per battery. System includes battery disconnect.

Performance: Rated net brake horsepower SAE standard J1349/ISO 3046-2 conditions with water pump, lubricating oil pump, fuel system, air cleaner, muffler, alternator, and cooling fan.



TRANSMISSION

Make/Model Champion 8400
Fully sequential, direct drive, powershift transmission. Engine cannot be started if transmission is in gear. Single lever transmission controller provides electronic self-diagnostics. The flywheel mounted, multi-disc master clutch is oil-cooled for long life.

Ground speeds at 2100 RPM with standard tires:

Forward	Reverse
Gears ..mph ... km/h	Gears ..mph ... km/h
1 2.3 3.7	1 2.3 3.7
2 3.2 5.2	
3 4.5 7.3	2 4.5 7.3
4 6.3 10.2	
5 8.8 14.2	3 8.8 14.2
6 12.3 19.8	
7 17.2 27.7	4 17.2 27.7
8 23.7 38.2	

Transmission guard is standard equipment and is hinged for easy access.



DIFFERENTIAL / FINAL DRIVE

Make/Model Champion Twin Bull Gear
Double reduction final drive with an operator controlled lock/unlock differential. Rear axles are case hardened, full floating design, supported on double row spherical roller bearings.



TANDEMS

Oscillating tandem case has internal gusseting for maximum torsional strength. Field-proven split ring/flanged sleeve tandem mounting and 1" (25 mm) thick inner wall resists flexing from side loading during severe applications.

Depth	24.5"	(622 mm)
Width	8.25"	(210 mm)
Thickness	- inner wall . 1.0"	(25 mm)
	- outer wall 0.75"	(19 mm)
Center distance	65.5"	(1 657 mm)
Drive chain pitch	2.0"	(51 mm)
Oscillation		± 15°



BRAKES

Service Brakes: Foot Operated
Fade resistant, hydraulically actuated, oil disc service brakes located at the four (4) tandem drive wheels are self-adjusting, fully sealed and maintenance-free. System features cross-over dual braking circuits for even braking on both sides of the grader. Includes reserve power assist and operator warning system (visual and audible).

Parking Brake: Hand Operated
Independent, disc-type hand brake on transmission output shaft and effective on all four (4) tandem drive wheels. Includes visual and audible operator warning system for parking brake on, transmission in gear condition.

Braking systems to:
SAE Recommended Practice J1473 OCT. 90, and J1152 APR. 80; ISO 3450-1993-01-28. Champion uses asbestos-free brake components.



WHEELS & TIRES (Standard Equipment)

Tire size 16.00 x 24, G-2
Ply rating (pr.) 12
Rim size 10" (254 mm)
Bolt-on rims are interchangeable between the front wheels and the tandem wheels.



FRONT AXLE

Type Fully welded steel truss, gusseted for torsional strength, oscillates on a single 3" (76 mm) diameter center pivot pin

Wheel lean 18° R & L
Oscillation 16° up and down
Ground clearance 27.5" (698 mm)
Twin 4" (102 mm) diameter wheel lean cylinder with lock valve.



STEERING

Hydraulic power front wheel steering incorporating two steering cylinders. Includes reserve power assist and operator warning system (visual and audible), meets SAE J53 OCT. 84.

Minimum turning radius using front axle steering, articulation, wheel lean and unlocked differential: 25'5" (7 747 mm)
Steering arc 72°
Frame articulation angle 22°
Articulation lock standard.



FRAME

Full front and rear frame sections.
Front: Fully welded box section. Lowered nose plate on front frame provides excellent forward visibility.

Minimum dimensions of box
box section 10.5" x 14.0" (267 mm x 356 mm)
Plate thickness Top and Bottom 1.5" (38 mm)
..... Sides 1.25" (32 mm)

Vertical section modulus
..... at arch 185 cu. in. (3 032 cm³)
..... min. 157.9 (2 588 cm³)
..... max 324.3 (5 314 cm³)

Linear weight
- min-max 178.0 - 285.8 lbs/ft
(264.9 - 425.3 kg/m)

Rear: Full rear frame permits modular powertrain mounting for ease of service and simplifies attachment mounting.

Minimum dimensions of rear frame 4.0" x 11.0" (102 mm x 279 mm)
Plate thickness 3.0" x 0.75" (76 mm x 19 mm)



CIRCLE

Hardened teeth, cut on the outside of the circle for maximum leverage and minimum wear. Circle is fabricated from high tensile steel and running surfaces are precision machined.

The circle is held positively in place at six points by three adjustable clamp plates and three adjustable guide shoes, providing optimum circle support and load distribution. The primary set of clamps and guide shoes is located at the front of the circle where greatest loading occurs. DURAMIDE™-faced clamp and guide shoes prevent metal to metal contact and provides maximum service life. DURAMIDE is a synthetic bearing material that maximizes service life and reduces circle system maintenance requirements.

Diameter 66.62" (1 692 mm)
Thickness 2.0" (51 mm)
Adjustable guide shoes 5
Adjustable Clamp plates 5



ARTICULATION

Twin 5" (127 mm) hydraulic cylinders articulate frame 22° right and left. Anti-drift lock valve ensures stable operation.

780A/780A VHP - Specifications



CIRCLE DRIVE

Champion's dual cylinder circle drive system uses hardened drive pinions and direct-acting hydraulic power for exceptional turning and holding capability under full load. The circle drive system is fully protected against impact damage by an overload cushion valve as standard equipment.

Hydraulic drive cylinders 2
Points of leverage 2
Rotation 360°



DRAWBAR

Fully welded box section. Narrow 'T' design permits optimum visibility to the work area. Drawbar ball stud provides an adjustment to compensate for different tire sizes. Blade lift cylinder anchors are straddle-mounted on drawbar to provide maximum strength and support. Circle/drawbar is protected against severe impact damage by means of nitrogen charged accumulators plumbed into blade lift cylinders.

Dimensions of box section 6.5" x 6.5" (165 mm x 165 mm)
Plate thickness 1.5" & 0.75" (38 mm & 19 mm)



MOLDBOARD

Standard moldboard with replaceable end bits 14' x 31" x 1" (4 267 mm x 787 mm x 25 mm)
Blade material SAE 1050 high carbon steel
Edge: through hardened 8" x 1" boron steel (203 mm x 25 mm)
Bolt diameter spacing 6" (152 mm) - drill size 3/4" (19 mm)
Slide rails supported with adjustable Za12 (Zinc aluminum) bearings for maximum wear resistance.



BLADE RANGE: MOVEABLE BLADE CONTROL SYSTEM

(Dimensions with standard moldboard)

LEFT RIGHT

Reach outside tires- articulated frame 123.5" (3137 mm) 123" (3124 mm)
Reach outside tires - straight frame 91" (2 311 mm) 90.5" (2 299 mm)
Blade slide 26.5" (673 mm) 26.5" (673 mm)
Circle side shift 30" (762 mm) 29.5" (749 mm)
Maximum bank sloping angle 90° 90°
Blade ground clearance 17.0" (432 mm)
Blade cutting depth 33" (838 mm)
Blade tilt range 46° forward 13° back
Superior blade mobility permits steep ditch cutting angles and back sloping outside overall machine width.



CAB & CONTROLS

All controls and gauges are housed in a fully adjustable steering pedestal or right hand console. Located in the pedestal head are the engine oil pressure, coolant temperature and fuel level gauges, transmission gear indicator and a three-level electronic monitoring display. Pedestal located switches include: differential lock/unlock, independent moldboard floats (optional) and combination turn signal, hazard lights, and high beam headlight switch. Heater and wiper/washer controls, lighting and accessory switches are grouped in the operator's right hand console. This console also contains the ignition key and access to the circuit breaker panel. An accelerator/decelerator foot pedal and slider type hand throttle are standard equipment. Outside mounted rear view mirrors (L&R) are standard. Inside operator noise exposure is limited to 75dB(A) per SAE J919 JUNE 86 (enclosed cab).

CAB OPTIONS:

- High capacity heater/air conditioner c/w adjustable vents, temperature control and 3 speed fan.
- Fully adjustable, suspension seat
- Lower opening vent windows
- Rear windshield wipers and washers
- Lower front window wipers and washers
- Modular, 24 volt radio and cassette player with remote control
- Operator Convenience Package (lunch box, Thermos bottle, ashtray)
- 24 volt to 12 volt converters for electrical accessories or two way radio installations

Full Height Cab with ROPS

INSIDE DIMENSIONS:

Height 74.0" (1 880mm)
Width @ controls 56.0" (1 422 mm)
Depth @ controls 55.5" (1 410 mm)

An optional Low Profile Cab is available with an inside height of 62" (1 575 mm). All Champion cabs and canopies are designed to meet or exceed SAE J1040 APR. 88, ISO 3471/1-1986(E), and 86/295/EEC ROPS requirements. The seat belt is 3" (76 mm) wide and meets SAE J386 JUNE 93; ISO 6683-1981(E). A cushioned vinyl covered bucket seat with fore & aft and height adjustment is standard.



CAPACITIES

	U.S.Gal.	Imp.Gal.	Litres
Fuel tank	100.0	83.3	378.5
Transmission	10.2	8.5	38.8
Final drive	9.0	7.5	34.0
Tandems (ea.)	27.7	23.1	105.0
Hydraulic oil tank	23.8	19.8	90.0
Coolant antifreeze protection to -58° F (-50° C)	11.89	9.9	45.0
Engine oil	10.3	8.6	39.0



LOAD SENSING HYDRAULICS

Closed center hydraulic system senses load requirements and maintains system pressure 250 psi (17,25 Bar) above the load pressure.

When hydraulic pressure is not required, system pressure is only 90 psi (6,2 Bar).

System features industry standard control arrangement c/w low effort, feathering type, short throw levers located on a fully adjustable steering pedestal.

System incorporates lock valves to prevent cylinder drift under load in the following circuits: blade lift, moldboard tilt, circle shift, wheel lean and articulation. All hoses and fittings are equipped with o-ring seals.

Pump design features include cast iron end covers and center housing, and one-piece gear and shaft assembly to ensure reliability and long service life.

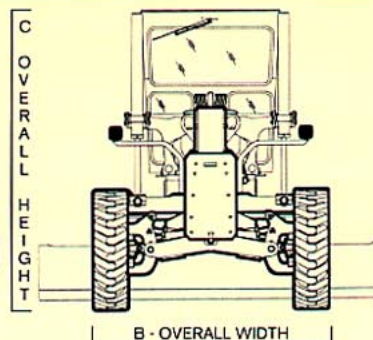
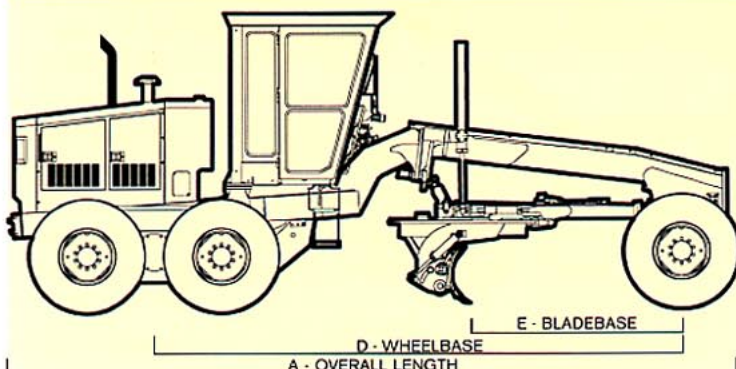
Maximum pressure 2,500 psi (172 Bar)
Output at 2100 RPM 0-48.3 gpm (0-183 lpm)
Filtration 7 micron spin-on type



CHAMPION MATCHED ATTACHMENTS

A-Frame 850 lbs. (386 kg)
Dozer blade - 8' (2 438 mm) 1,600 lbs. (726 kg)
- 9' (2 743 mm) 1,650 lbs. (749 kg)
One-way plow 2,350 lbs. (1 067 kg)
Push block 1,050 lbs. (476 kg)
Ripper-scarifier, rear 2,680 lbs. (1 216 kg)
Snow wing - rear-mounted . 3,100 lbs. (1 407 kg)
V-plow - 9' (2 743 mm) 2,560 lbs. (1 161 kg)
- 10' (3 048 mm) 2,720 lbs. (1 234 kg)
Fully Hydraulic Wing
- Hi-bench 4800 lbs. (2 177 kg)
- Low bench 4000 lbs. (1 814 kg)

DIMENSIONS



A Overall length 28' 6" (8 687 mm)
B Overall width 9' 2" (2 794 mm)
C Overall height 11' 6" (3 505 mm)
- with Low Profile Cab 10' 6" (3 200 mm)
D Wheelbase 20' 6" (6 248 mm)
E Tread width 7' 7" (2 311 mm)
F Bladebase
- ISO 7134 8' 11" (2 718 mm)

780A/780A VHP - Specifications

STANDARD FEATURES

Operator controlled, lock/unlock differential final drive

4-wheel, cross-over, dual braking system with reserve power assist

Hand operated park brake with operator warning alarm and indicator

Fully-sequential, direct drive, powershift 8400 transmission, with transmission guard

13.5" (343 mm) diameter, 4-plate, full oil master clutch

Moveable blade control system for optimum blade mobility

Full front and rear frame sections designed to absorb shock loading of rear attachments

Cab halogen headlights with dimmer includes directional and hazard lights

Circle drive cushion valve protects against impact damage

Hardened circle teeth cut on outside of circle for maximum turning power

Hardened circle drive pinions for maximum pinion life

Isolation-mounted cab, transmission and engine for reduced noise and vibration

Adjustable steering pedestal with tilt head for maximum operator comfort

Gauges include: coolant temperature, engine oil pressure, fuel, hourmeter, dash-mounted air cleaner service indicator, articulation angle indicator, three-level electronic monitoring system - M4 - with visual and audible warnings

Load-sensing, closed-center hydraulic system with short-throw, low effort control levers. Hydraulically operated blade lift, circle turn, moldboard slide and tilt, circle shift and wheel lean functions.

Feathering type controls for precise blade adjustments

100 gallon fuel capacity

Nitrogen-charged blade lift accumulators

DURAMIDE™ wear strips on circle guide and clamp plates prevent metal-to-metal contact for maximum service life

Hinged radiator guard for easy trash clean out.

Back-up lights

Back-up alarm with automatic volume level

Painted Champion High Gloss Yellow, Grey

Lockable tool box

Engine side panels c/w locks

OPTIONAL EQUIPMENT

	lbs.	Kg
Accumulators - blade lift (2)	130	59
Air conditioner - 29,000 BTU -HFC-134a (non-CFC refrigerant)		
Brush guards	40	18
Cab		
- Canopy shell with ROPS - deduct(200)	(91)	
- FOPS protection for ROPS cabs ...	220	100
- Low Profile cab with ROPS - deduct(200)	(91)	
Cab heater - 49,000 BTU - with cab		
pressurizer and replaceable filter	30	14
Defroster fan	3	1
Engine block heater	3	1
Engine precleaner - Turbo II	6	3
Exhaust aspirated precleaner	6	3
Ether cold start	10	4
Exhaust rain cap	-	-
Fan - blower type		
(suction type is standard)	0	0
First user lifetime frame warranty	0	0
load control - Right and Left		
independent, electric	15	7
Hub odometer	0	0
Hydraulic manifold cover	10	4
Hydraulic tank heater	3	1
Jack - 20 ton (18.5 tonne)	35	16
24 volt radio/cassette player	6	3
Lights		
- beacon (amber or blue)	4	2
- clearance lights front & rear	2	1
- front-mounted plow lights - 2		
- high-mount	120	54
- low-mount	100	45
- Headlights with dimmer switch	0	0
- Moldboards lights - 2	2	1
- Rear flood lights - 2	2	1
- Snow wing lights - 2	2	1
Machine Monitor Plus system - M44	0	0

(Audible and visual warnings for transmission and hydraulic filter restriction, low engine oil pressure, high coolant temperature, high transmission temperature, and low transmission clutch pressure)

OPTIONAL EQUIPMENT (continued)

	lbs.	Kg
Moldboards		
- 16' x 31" x 1"		
(4 877 mm x 787 mm x 25 mm)	300	136
Moldboard extensions		
R & L - 2' (610 mm)	200	91
Moldboard edges - Carbide 3/4" x 5"		
(19 mm x 127 mm)	-	-
Operator convenience package		
- lunch box, steel vacuum bottle		
and holder, ash tray	10	5
Paint - custom colors	-	-
Radiator shutters - hinged	10	4
Reflectors - rear		
Remote valve for attachments		
- 3 or 5 bank	25	11
Suspension seat	55	25
Tie-down brackets	100	45
Tires		
-20.5 x 25, 12 pr., TL, L2 or L3,		
17" (432 mm) rims	822	373
Tool kit	-	-
Transmission sump heater	-	-
Tropical protection	-	-
Vandalism protection	8	4
Wheel weights front or rear - each	250	113
Window -opening - lower front	-	-
Window -opening sliders - left/right	-	-
Wiper and washer - front	-	-
Wiper and washer - rear	-	-
Wiper and washer - lower front windows-	-	-

CHAMPION MOTOR GRADERS

A Company within the Volvo Construction Equipment Group

Goderich, Ontario, Canada

www.championroad.com

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 Your safety and the safety of those around you depends on using care and judgement when operating and servicing your grader. Do not operate the grader until you read and understand the warnings and instructions in the operator's manual.

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