

780A

Series V



MODEL	780A
Configuration	Articulated
Operating Weight	47,355 lbs (21 480 kg)
Net Power	210 hp (157 kW)

SPECIFICATIONS: 780A



BASE OPERATING WEIGHT (Standard Equipment)

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

Total 42,735 lbs. (19 385 kg)
On front wheels 13,285 lbs. (6 026 kg)
On rear wheels 29,450 lbs. (13 359 kg)
Weight adjustments for various options are listed.

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

780A 47,355 lbs. (21 480 kg)



PRODUCTIVITY (Standard Equipment)

Maximum blade pull
(no wheel slip) 26,505 lbs. (12 023 kg)
Blade down pressure
- cutting capability
(ISO 7134) 23,512 lbs. (10 665 kg)

Blade down pressure is the maximum downward force which may be applied at the cutting edge.



ENGINE DATA

Make/Model Cummins M11
Type 4 Cycle, Turbocharged
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 225 hp (168 kW)
Rated net brake
horsepower
@ 2100 RPM 210 hp (157 kW)
Torque
@ 1300 RPM 760 lb.-ft. (1 031 N-m)
Torque Rise (Net) 43%

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 can not be started if transmission is in gear. Single lever transmission controller contains an electronic self-diagnostic feature. 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			

Heavy duty 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

Oil-tight, oscillating tandem case has internal gusseting for maximum torsional strength. Field proven split ring/flanged sleeve tandem mounting and 1" (25mm) thick inner wall resists flexing from side loading during severe applications. Drive chain sized for long life.

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 10.0" (254 mm)
Bolt-on rims are interchangeable front and rear.



FRONT AXLE

Type ... Fully welded steel truss, gusseted for torsional strength oscillates on a single 3" (76 mm) diameter centre 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 cylinders with lock valve is standard equipment.



STEERING

Hydraulic power front wheel steering incorporating two steering cylinders. Full power assist supplemental steering, meets SAE J53 OCT. 84.

Minimum turning radius using front axle steering, 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. Double-lapped in high load areas. Lowered nose plate on front frame provides the best visibility in the industry to the front of the grader.

Minimum dimensions of box
section 10.0" x 12.0"
(254 mm x 305 mm)
Plate thickness 3.0" & 0.75"
(76 mm & 19 mm)
Vertical section modulus
(min.-max.) 163.3-293.2 cu.in.
(2 676-4 805 cm³)
Linear weight (min.-max.) 140.8-287.6 lbs/ft
(209.7-428.2 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" & 0.75"
(76 mm & 19 mm)

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



CIRCLE

Hardened teeth, cut on outside of circle for maximum leverage and minimum wear. Circle is machined after welding to ensure flatness. The circle is held positively in place at 10 points by five adjustable clamp plates

and five 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. DURAMIDE™ is a synthetic material that extends service life and reduces maintenance requirements.

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



CIRCLE DRIVE

Champion's patented dual cylinder circle drive system uses direct-acting hydraulic power for exceptional turning and holding capability under full load. 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° continuous



DRAWBAR

Fully welded box section. Narrow 'T' design permits optimum visibility to the work area. Drawbar connection provides an adjustment to compensate for different tire sizes. Blade lift cylinder anchors are straddle-mounted on drawbar to provide maximum strength and support.

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" (203 mm x 25 mm) boron steel
 Drilling - 6" (152 mm) Bolt dia. - 3/4" (19 mm)
 Slide rails supported with adjustable Za12 (Zinc aluminum) bearings for maximum wear resistance.

BLADE RANGE: HEAVY MOVEABLE BLADE CONTROL SYSTEM (Standard)

(Dimensions shown with standard moldboard)

	LEFT	RIGHT
Reach outside tires		
- articulated frame.....	118.0" (2 997 mm)	117.0" (2 972 mm)
Reach outside tires		
- straight frame.....	84.0" (2 134 mm)	86.0" (2 184 mm)
Blade slide	26.5" (673 mm)	26.5" (673 mm)
Circle side shift.....	11.5" (292 mm)	13.0" (330 mm)
Maximum blade sloping angle.....	90°	90°
Blade ground clearance.....	17.0" (432 mm)	
Blade cutting depth.....	34.5" (876 mm)	
Blade tilt range.....	46° forward; 13° back	
Number of moldboard tilt cylinders.....	2	



CAB & CONTROLS

Operator noise exposure is limited to 76 dB(A) per SAE J919 JUNE 86 (enclosed cab). Located in the pedestal head is the engine oil pressure, coolant temperature and fuel level gauges, transmission gear indicator and a three-level electronic monitoring system. 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. Cab door opening and closing is easy from either a seated position or while entering and exiting. Fixed front window enhances visibility by reducing window frame width.

Full Height Cab with ROPS INSIDE DIMENSIONS:

Height.....	74.0" (1 880 mm)
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.



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). Low standby pressure improves fuel-efficiency and reduces heat generation.

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

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



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).....	11.9	9.9	45,0
Engine oil.....	10.3	8.6	39,0

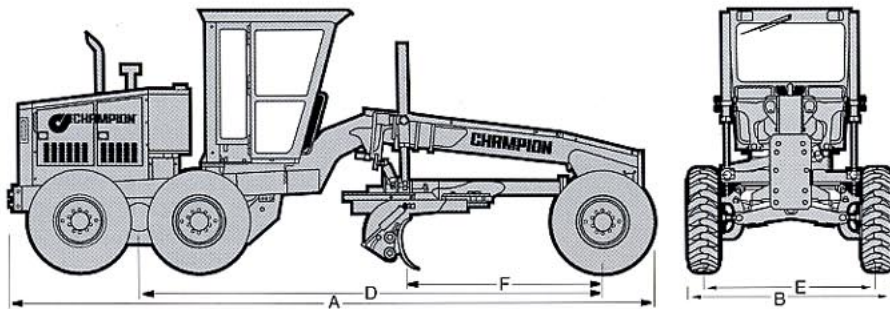
STANDARD FEATURES:

- Operator controlled, lock/unlock differential final drive
- 4-wheel, cross-over, dual braking system with reserve power assist
- Ratchet-type park brake with operator warning alarm and indicator
- Fully-sequential, powershift 8400 transmission, with guard
- 13.5" (343 mm) diameter, 4-plate, full oil clutch for operator control
- Full front and rear frame sections designed to absorb shock loading of attachment use
- Cab halogen headlights with dimmer includes directional and hazard lights
- Cushion valve circle drive protection to minimize impact damage
- Hardened circle teeth cut on outside of circle for maximum wear resistance
- 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, positioned in the industry-accepted arrangement. Hydraulically operated blade lift, circle turn, moldboard slide and tilt, circle shift and wheel lean functions.
- 100 gallon fuel capacity
- Horn
- Hinged radiator guard for easy trash clean out. Engine compartment fan guard included.
- Back-up alarm with automatic volume level
- Painted Champion Yellow, cab painted grey
- Lockable tool box with storage space for scarifier shanks

OPTIONAL EQUIPMENT (May vary)

	lbs.	kg
Air conditioner - 21,500 BTU		
- HFC-134a (non-CFC refrigerant)		
with cab pressurizer/filter.....	130	59
Brush guards.....	40	18
Cab		
- canopy shell with ROPS		
- deduct.....	(200)	(91)
- FOPS protection for ROPS cab.....	220	100
- low profile cab with ROPS		
- deduct.....	(200)	(91)

OPTIONAL EQUIPMENT (cont'd)	lbs.	kg		lbs.	kg		lbs.	kg
Cab heater - 49,000 BTU	30	14	- low	100	45	Radiator shutters - hinged	10	4
Cab pressurizer/filter	14	6	- Headlights with dimmer switch.....	-	-	Reflectors - rear	-	-
Defroster fan	3	1	- Moldboard lights - 2	2	1	Remote valve for attachments		
Engine block heater.....	3	1	- Rear flood lights - 2	2	1	- 3 or 5 bank - remote mount.....	25	11
Engine precleaner - Turbo II	6	3	- Snow wing lights - 2	2	1	Suspension seat	55	25
Engine side panels	50	23	Machine Monitor Plus package - M44			Tie-down brackets	100	45
Ether cold start	10	4	Audible and visual warnings for			Tires		
Exhaust rain cap.....	-	-	transmission and hydraulic filter			- 20.5 x 25, 12 pr., TL, L2 or L3,		
Fan - blower type			restriction, low engine oil pressure, high			17" (432 mm) rims	590	268
(suction type is standard)	-	-	coolant temperature, high transmission			Tire chains - pair	300	136
First user lifetime frame warranty	-	-	temperature, and low transmission clutch			Tool kit	-	-
Float control - Right and Left			pressure.....	-	-	Transmission sump heater.....	-	-
independent, electric	15	7	Mirrors - outside - right	2	1	Tropical protection	-	-
Hub odometer	-	-	- left.....	2	1	Vandalism protection	8	4
Hydraulic tank heater	3	1	Moldboards			Wheel weights front or rear		
Jack - 20 ton (18.5 tonne)	35	16	- 16' x 31" x 1"			- each	250	113
			(4 877 mm x 787 mm x 25 mm) 300	136		Window - opening - lower front	-	-
Lights			Moldboard extensions R & L			Window - opening sliders - left/right...	-	-
- back-up lights - 2	-	-	- 2' (610 mm)	200	91	Wiper and washer - front	-	-
- beacon (amber or blue)	4	2	Moldboard edges - Carbide 3/4" x 5" ..	-	-	Wiper and washer - rear.....	-	-
- clearance lights front & rear	2	1	Operator convenience package			Wiper and washer - lower front		
- direction signals	-	-	- lunch box, steel vacuum bottle			windows.....	-	-
- front-mounted plow lights - 2			and holder, ash tray	10	5			
- high	120	54	Paint - custom colors.....	-	-			



DIMENSIONS

A Overall length.....	28'6" (8 687 mm)
B Overall width.....	9'2" (2 794 mm)
C Overall height with cab ..	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 Blade base	
- ISO 7134	8'11" (2 718 mm)

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. (1 215 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)
Windrow eliminator.....	1,300 lbs. (590 kg)

Specifications subject to change without notice. Some items included in this brochure are optional. TM DURAMIDE is a registered trademark of Champion Road Machinery Limited. 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.



CANADA
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