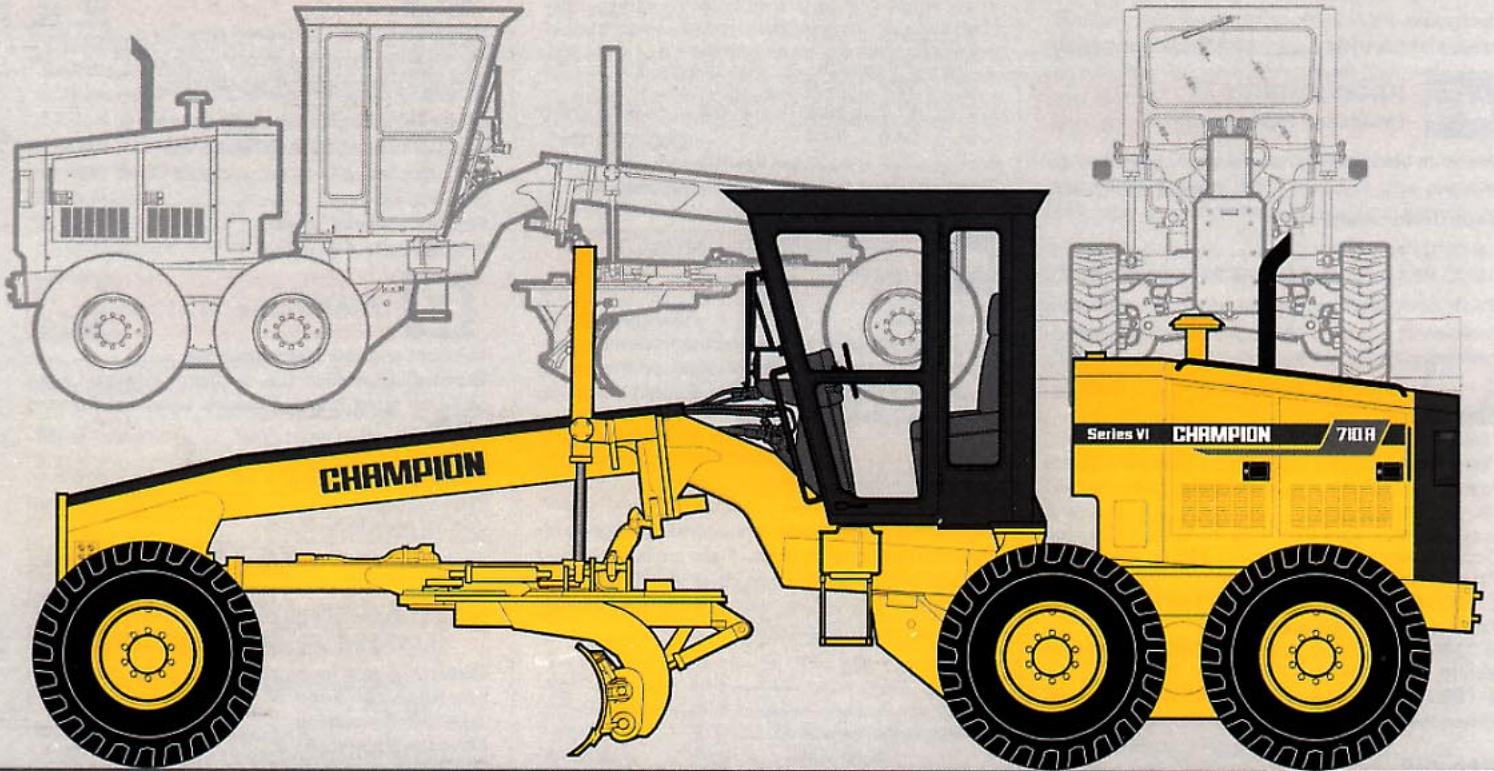


CHAMPION

Series VI

710A / 710A 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
- 12' (3 658 mm) moldboard
- Full range of front and rear mounted attachments

MODEL	710A	710A VHP
Configuration	Articulated Frame	Articulated Frame
Engine	Cummins 6B5.9	Cummins 6B5.9
Output (SAE J1349)	140 hp (104 kW)	135-160 hp (101-119 kW)
Base weight	30,630 lb. (13 894 kg)	30,630 lb. (13 894 kg)
Blade down pressure	16,494 lb. (7 482 kg)	16,494 lb. (7 482 kg)
Blade pull	19,109 lb. (8 668 kg)	19,109 lb. (8 668 kg)

CHAMPION[®] MOTOR GRADERS

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710A/710A VHP - Specifications



BASE OPERATING WEIGHT (Standard Equipment)

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

710A / 710A VHP

Total 30,630 lbs (13 894 kg)
On front wheels 9,400 lbs (4 264 kg)
On rear wheels 21,230 lbs (9 630 kg)

Weight adjustments for various options are listed.

Typically equipped operating weight: includes 14.00 x 24, 12 pr., G2 tires on 10" (254 mm) rims and 14' x 25" x 7/8" (4 267 mm x 635 mm x 22 mm) moldboard.

710A / 710A VHP 31,360 lbs (14 225 kg)



PRODUCTIVITY (Standard Equipment)

Maximum blade pull (no wheel slip, 0.9 traction coefficient) 19,109 lbs (8 668 kg)

Blade down pressure

- cutting capability

(ISO 7134) 16,494 lbs (7 482 kg)

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



ENGINE DATA

710A

Make/Model Cummins 6B5.9
Type 4-Cycle, Turbocharged
No. of cylinders In Line 6
Bore & stroke 4.02 x 4.72 in. (102 x 120 mm)
Displacement 359 cu. in. (5.9 L)
Rated gross brake horsepower
@ 2200 RPM 148 hp (110 kW)
Rated net brake horsepower
@ 2200 RPM 140 hp (104 kW)
Torque
@ 1600 RPM 440 lb.ft (596 N.m)
Torque rise (Net) 30.4%

710A VHP

Make/Model Cummins 6B5.9
Type 4-Cycle, Turbocharged, Aftercooled
No. of cylinders In Line 6
Bore & stroke 4.02 x 4.72 in. (102 x 120 mm)
Displacement 359 cu. in. (5.9 L)
Rated gross brake horsepower @ 2200 RPM
- Gears forward 1, 2 and
Reverse 1 149 hp (111 kW)
- Gears forward 3-8 and
Reverse 2-4 174 hp (130 kW)
Rated net brake horsepower @ 2200 RPM
- Gears forward 1, 2 and
Reverse 1 135 hp (101 kW)
Torque @ 1200 RPM 422 lb.ft (572 N.m)
Torque rise (Net) 34.5%
- Gears forward 3-8 and
Reverse 2-4 160 hp (119 kW)
Torque @ 1500 RPM 590 lb.ft (800 N.m)
Torque rise (Net) 49.6%

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 50 amp (1200 watt) alternator with internal voltage regulator. Two heavy duty 12 volt maintenance-free batteries with 625 cold cranking amps (CCA) and 180 minutes reserve capacity per battery. 900 CCA batteries available optionally. 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, 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 2200 RPM with standard tires:

Forward			Reverse		
Gears	mph	km/h	Gears	mph	km/h
1	2.4	3.8	1	2.4	3.8
2	3.3	5.4	2	4.7	7.5
3	4.7	7.5	3	9.1	14.7
4	6.5	10.5	4	17.7	28.6
5	9.1	14.7	5	24.5	39.4
6	12.7	20.4			
7	17.7	28.6			
8	24.5	39.4			

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



DIFFERENTIAL / FINAL DRIVE

Make/Model Champion SR30
Single 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	61.5"	(1 562 mm)
Drive chain pitch	1.75"	(44 mm)
Oscillation	± 15°	



BRAKES

Service Brakes: Foot Operated
Fade resistant, hydraulically actuated, oil disc service brakes located at the four (4) tandem 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 13.00 x 24, G-2
Ply rating (pr.) 12
Rim size 9.0" (229 mm)
Bolt-on rims are interchangeable front and rear.



FRONT AXLE

Type Fully welded steel truss, gusseted for torsional strength, oscillates on a single 3.5" (89 mm) diameter center pivot pin

Wheel lean 18° R & L
Oscillation 16° up and down
Ground clearance 23.5" (597 mm)
A single 4" (102 mm) diameter wheel lean cylinder with lock valve is standard equipment. Two 3" (76 mm) diameter wheel lean cylinders with lock valve are available optionally.



STEERING

Hydraulic power front wheel steering incorporating two steering cylinders. Meets SAE J1511 OCT. 90 with optional supplemental steering.

Minimum turning radius using front axle steering, articulation, wheel lean and unlocked differential: 25'5" (7747 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 section 10.5" x 14" (267 mm x 356 mm)
Plate thickness 0.75" (19 mm)
Vertical section modulus

..... at arch 119 cu.in. (1950 cm³)
..... min. 101.5 cu.in. (1663 cm³)
..... max. 212 cu.in. (3474 cm³)

Linear weight - min-max
..... 107.1 - 232.5 lbs/ft (159.4 - 346.0 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 10.0" (102 mm x 254 mm)
Plate thickness 0.375" (9.5 mm)



ARTICULATION

Twin 4.5" (114 mm) hydraulic cylinders articulate the frame 22° right and left. Anti-drift lock valve.



CIRCLE

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

The circle is held 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 clamp 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 provide maximum service life.

DURAMIDE™ is a synthetic bearing material that maximizes service life and reduces circle system maintenance requirements.

Diameter 66.25" (1 683 mm)
Thickness 1.25" (32 mm)
Adjustable guide shoes 3
Adjustable Clamp plates 3

710A/710A 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.

Dimensions of
box section 6.5" x 6.5" (165 mm x 165 mm)
Plate thickness . 1.0" & 0.75" (25 mm & 19 mm)



MOLDBOARD

Standard moldboard with replaceable end bits 12' x 25" x 7/8" (3 658 mm x 635 mm x 22 mm)
Blade material SAE 1050 high carbon steel
Edge: through hardened 6" x 5/8" boron steel (152 mm x 16 mm)
Bolt spacing 6" (152 mm) - drilling size 5/8" (16 mm) bolts
Slide rails supported by DURAMIDE™ bearings.



BLADE RANGE: MOVEABLE BLADE CONTROL SYSTEM

(Dimensions with standard moldboard)
LEFT **RIGHT**

Reach outside tires- articulated frame 119.5" (3 035 mm) 120.5" (3 061 mm)
Reach outside tires - straight frame 79.5" (2 019 mm) 80.5" (2 045 mm)
Blade slide ... 26.5" (673 mm) 26.5" (673 mm)
Circle side shift 30.5" (775 mm) 29.5" (749 mm)
Maximum bank sloping angle 90° 90°
Blade ground clearance 17" (432 mm)
Blade cutting depth 32.5" (826 mm)
Blade tilt range 47° forward 5° 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	6.0	5.0	23,0
Tandems (ea.)	26.4	22.0	100,0
Hydraulic oil tank	23.8	19.8	90,0
Coolant antifreeze protection			
to -58° F (-50° C)	11.6	9.7	44,0
Engine oil	4.3	3.6	16,4



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, articulation and scarifier (optional). 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.

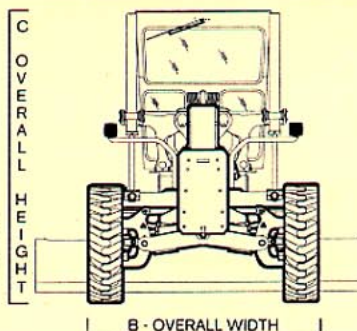
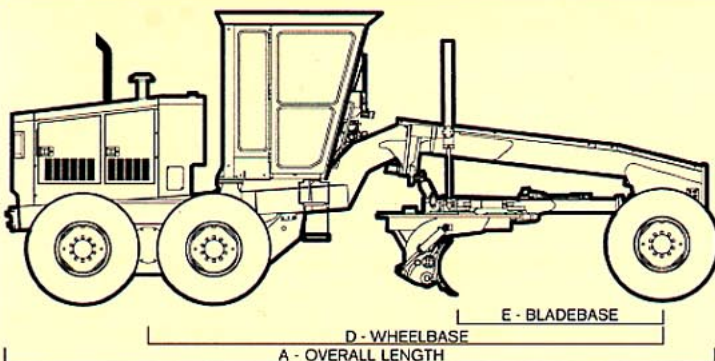
Maximum pressure 2,500 psi (172 Bar)
Output at 2200 RPM 0-50.5 gpm (0-191 lpm)
Filtration 7 micron spin-on type



CHAMPION 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.	(1216 kg)
Scarifier, front, with 11 teeth	1,725 lbs.	(782 kg)
Snow wing		
- front-mounted	2,900 lbs.	(1 317 kg)
- 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 .. 27' 9" (8 458 mm)
B	Overall width 8' 2" (2 489 mm)
C	Overall height .. 11' 1" (3 378 mm)
	- with Low Profile Cab 10' 1" (3 073 mm)
D	Wheelbase 20' 0" (6 096 mm)
E	Tread width 6' 10" (2 083 mm)
F	Bladebase
	- ISO 7134 8' 7" (2 616 mm)

710A/710A 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

Circle drive cushion valve protects circle drive against impact damage

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

Hardened circle drive pinions for maximum wear resistance

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

Adjustable steering control 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

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 levels

Painted High Gloss Champion Yellow, and Grey

Lockable tool box with storage space for scarifier shanks

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) .	130	59
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
Float 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)	10	4
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		
- 14' x 25" x 7/8"		
(4 267 mm x 635 mm x 22 mm) ...	280	127
- 12' x 29" x 1"		
(3 658 mm x 737 mm x 25 mm) ...	340	154
- 13' x 29" x 1"		
(3 962 mm x 737 mm x 25 mm) ..	490	222
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
Dual leaning wheel cylinder	25	11
Supplemental steering (power		
assisted)meets SAE J53 OCT.84	61	28
Suspension seat	55	25
Tie-down brackets	100	45
Tires		
-14.00 x 24, 12 pr., G2,		
10" (254 mm) rims	450	204
-15.5 x 25,12pr., L2,		
13" (330 mm) rims	840	381
-17.5 x 25,12pr., L2,		
14" (356 mm) rims	1032	468
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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