740A VHP
Series V

CHAMPION®
MOTOR GRADERS

MODEL	740A VHP	740 VHP
Configuration	Articulated	Rigid Frame
Operating Weight	38,022 lbs (17 247 kg)	36,902 lbs (16 739 kg)
Net Power – Gears 1-2	210 hp (157 kW)	210 hp (157 kW)
– Gears 3-8	235 hp (175 kW)	235 hp (175 kW)

740A VHP ☐ 740 VHP ☐

SPECIFICATIONS:

BASE OPERATING WEIGHT (Standard Equipment)

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

740A VHP

Total ..... 35,330 lbs. (16 026 kg)
On front wheels ..... 10,480 lbs. (4 754 kg)
On rear wheels ..... 24,850 lbs. (11 272 kg)

740 VHP

Total ..... 34,210 lbs. (15 518 kg)
On front wheels ..... 10,312 lbs. (4 678 kg)
On rear wheels ..... 23,898 lbs. (10 840 kg)

Weight adjustments for various options are listed.

Typically equipped operating weight: Includes 17.5 x 25, 12 pr., G2 tires on 14" (356 mm) rims, and 14' x 29" x 1" (4 267 mm x 737 mm x 25 mm) moldboard and scarifier.

740A VHP..... 38,022 lbs. (17 247 kg)
740 VHP..... 36,902 lbs. (16 739 kg)

PRODUCTIVITY (Standard Equipment)

Maximum blade pull (no wheel slip, 0.9 traction co-efficient) ..... 22,365 lbs. (10 145 kg)
Blade down pressure - cutting capability (ISO 7134) ..... 18,547 lbs. (8 413 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, 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)
- Gears Forward 3-8 and Reverse 2-4 ..... 235 hp (175 kW)

Torque @ 1300 RPM .....760-845 lb-ft. (1 031-1 146 N·m)
Torque rise (Net) 43-45%

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 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 Gears	mph	km/h	Reverse Gears	mph	km/h
1	2.6	4,2	1	2.6	4,2
2	3.6	5,8			
3	5.1	8,1	2	5.1	8,1
4	7.1	11,4			
5	9.9	15,9	3	9.9	15,9
6	13.8	22,2			
7	19.3	31,0	4	19.3	31,0
8	26.6	42,8			

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

DIFFERENTIAL / FINAL DRIVE

Make/Model ..... Champion SR40

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

Oil-tight, 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. 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 .....61.5" (1 562 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 ..... 14.00 x 24, G-2
Ply rating (pr.) 12
Rim size .....10" (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 3.5" (89 mm) diameter centre pivot pin
Wheel lean.....18° R & L
Oscillation ..... 16° up and down
Ground clearance .....24.0" (610 mm)

Twin 3" (76 mm) diameter wheel lean cylinders with lock valve is standard equipment.

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, wheel lean and unlocked differential:

740A VHP articulated frame.....25'7" (7 798 mm)
740 VHP conventional or straight frame.....35'1" (10 693 mm)
Steering arc.....72°
Frame articulation angle 740A.....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 ..... 0.75" (19 mm)
Vertical section modulus at arch .....163 cu.in. (2 676 cm^3)
Linear weight - min-max.....104.8-248.8 lbs/ft (156.0-370.5 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 ..... 1.0" (25 mm)

Choice of conventional (rigid) or articulated frames:

740A VHP..... Articulates behind cab.
740 VHP ..... Conventional
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 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. DURAMIDE™ is a synthetic material that extends service life and reduces maintenance requirements.

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

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 ..... 1.0" & 0.75" (25 mm & 19 mm)

MOLDBOARD

Standard moldboard
with replaceable end bits ..... 12' x 29" x 1" (3 658 mm x 737 mm x 25 mm)
Blade material ..... SAE 1050 high carbon steel
Edge: through hardened ..... 6" x 5/8" (152 mm x 16 mm) boron steel
Drilling - Bolt diameter...6" (152 mm) drilling - 5/8" (16 mm) bolts
Slide rails supported with DURAMIDE bearings.

BLADE RANGE: MOVEABLE BLADE CONTROL SYSTEM (Standard)
(Dimensions shown with standard moldboard)

	LEFT	RIGHT
Reach outside tires - articulated frame	117.0" (2 973 mm)	113.0" (2 870 mm)
Reach outside tires - straight frame	76.0" (1 930 mm)	73.5" (1 867 mm)
Blade slide	26.5" (673 mm)	26.5" (673 mm)
Circle side shift	26.0" (660 mm)	24.0" (610 mm)
Maximum bank sloping angle	90°	90°
Blade ground clearance	17.0" (432 mm)	
Blade cutting depth	30.0" (762 mm)	
Blade tilt range	48° forward	2.5° back

BLADE RANGE: FIXED POINT LIFT SYSTEM (Optional)
(Dimensions shown with standard moldboard)

Reach outside tires
- articulated frame ..... 105.8" (2 687 mm)
Reach outside tires
- straight frame ..... 67.7" (1 720 mm)
Blade slide ..... 53.5" (1 359 mm)
Circle side shift ..... 17.2" (437 mm)
Blade ground clearance ..... 17.25" (438 mm)
Blade cutting depth ..... 25.0" (635 mm)
Blade tilt range ..... 48° forward; 2.5° 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	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)	12.7	10.6	48,0
Engine oil	10.3	8.6	39,0

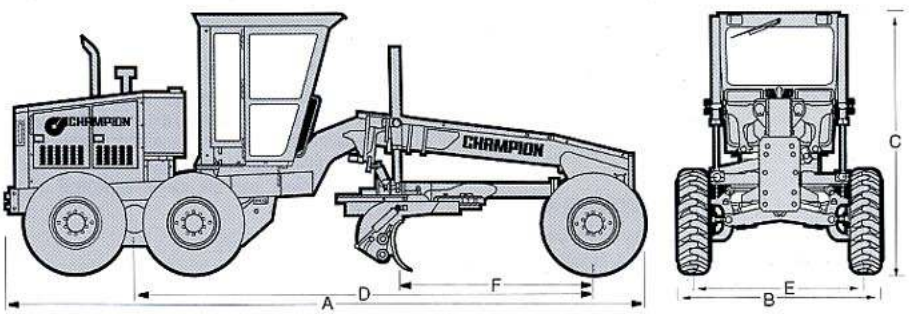
STANDARD FEATURES:

- 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
- Choice of rigid or articulating frames
- 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
Accumulators - blade lift (2)	130	59
- circle side shift	65	29
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)
Cab heater - 49,000 BTU	30	14
Cab pressurizer/filter	14	6
Defroster fan	3	1
Engine block heater	3	1
Engine precleaner - Turbo II	6	3
Engine side panels	50	23
Ether cold start	10	4
Exhaust rain cap	–	–
Fan - blower type (suction type is standard)	–	–
First user lifetime frame warranty	–	–
Fixed point lift system - deduct	(560)	(254)

OPTIONAL EQUIPMENT (cont'd)	lbs.	kg
Float control - Right and Left independent, electric	15	7
Hub odometer	–	–
Hydraulic tank heater	3	1
Jack - 20 ton (18.5 tonne)	35	16
Lights		
- back-up lights - 2	–	–
- beacon (amber or blue)	4	2
- clearance lights front & rear	2	1
- direction signals	–	–
- front-mounted plow lights - 2		
- high	120	54
- low	100	45
- Headlights with dimmer switch	–	–
- Moldboard lights - 2	2	1
- Rear flood lights - 2	2	1
- Snow wing lights - 2	2	1
Machine Monitor Plus package - M44 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	–	–
Mirrors - outside - right	2	1
- left	2	1
Moldboards		
- 13' x 29" x 1" (3 962 mm x 737 mm x 25 mm)	380	172
- 14' x 29" x 1" (4 267 mm x 737 mm x 25 mm)	300	136
Moldboard extensions R & L - 2' (610 mm)	200	91
Moldboard edges -Carbide 3/4" x 5"	–	–
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 - remote mount	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) multi-piece rims	120	54
- 17.5 x 25, 12 pr., G2, 14" (356 mm) rims	942	428
- 16.00 x 24, 12 pr., G2, 10" (254 mm) rims	1,452	659
Tire chains - pair	300	136
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	–	–



DIMENSIONS

A	Overall length	28'4" (8 636 mm)
B	Overall width	8'4" (2 540 mm)
C	Overall height with cab	11'2" (3 404 mm)
	- with Low Profile Cab	10'2" (3 099 mm)
D	Wheelbase	20'6" (6 248 mm)
E	Tread width	7'0" (2 136 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	2,100 lbs.	(953 kg)
Scarifier, front, with 11 teeth	1,450 lbs.	(657 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)
Windrow eliminator	1,300 lbs.	(590 kg)

Specifications subject to change without notice. Some items included in this brochure are optional.
™ 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.

CHAMPION®
MOTOR GRADERS

CANADA
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