

# 720A VHP

## Series V

# CHAMPION MOTOR GRADERS

A Volvo Construction Equipment Group Company



Model	720A VHP	726A VHP	720 VHP
Configuration	Articulated	Articulated - All Wheel Drive	Rigid Frame
Operating Weight	34,340 lbs.(15 577 kg)	34,750 lbs.(15 763 kg)	33,080 lbs.(15 005 kg) kg)
Net Power – Gears 1-2	170 hp (127 kW)	170 hp (127 kW)	170 hp (127 kW)
– Gears 3-8	195 hp (145 kW)	195 hp (145 kW)	195 hp (145 kW)

720A VHP  726A VHP  720 VHP

**SPECIFICATIONS:**



**BASE OPERATING WEIGHT  
(Standard Equipment)**

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

**720A VHP**

Total .....	32,610 lbs. (14 792 kg)
On front wheels .....	9,620 lbs. (4 364 kg)
On rear wheels .....	22,990 lbs. (10 428 kg)

**726A VHP**

Total .....	33,020 lbs. (14 978 kg)
On front wheels .....	9,860 lbs. (4 472 kg)
On rear wheels .....	23,070 lbs. (10 465 kg)

**720 VHP**

Total .....	31,350 lbs. (14 220 kg)
On front wheels .....	9,450 lbs. (4 287 kg)
On rear wheels .....	21,960 lbs. (9 961 kg)

Weight adjustments for various options are listed.

**Typically equipped operating weight:** Includes 14' x 25' x 7/8" (4 267 mm x 635 mm x 22 mm) moldboard and scarifier.

720A VHP .....	34,340 lbs. (15 577 kg)
726A VHP .....	34,750 lbs. (15 763 kg)
720 VHP .....	33,080 lbs. (15 005 kg)



**PRODUCTIVITY  
(Standard Equipment)**

**720A VHP**

Maximum blade pull (no wheel slip, 0.9 traction co-efficient) .....	20,691 lbs. (9 385 kg)
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Blade down pressure - cutting capability (ISO 7134) .....	16,730 lbs. (7 589 kg)
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Blade down pressure is the maximum downward force which may be applied at the cutting edge.



**ENGINE DATA**

Make/Model .....	Cummins GCT8.3
Type .....	4 Cycle, Turbocharged
No. of cylinders .....	In Line 6
Bore & stroke .....	4.49 x 5.32 in. (114 x 135 mm)
Displacement .....	504.5 cu. in. (8.27 L)
Rated gross brake horsepower @ 2200 RPM	
- Gears Forward, 1, 2 and	
Reverse 1 .....	183 hp (136 kW)
- Gears Forward 3-8 and	
Reverse 2-4 .....	205 hp (153 kW)
Rated net brake horsepower @ 2200 RPM	
- Gears Forward, 1, 2 and	
Reverse 1 .....	170 hp (127 kW)
- Gears Forward 3-8 and	
Reverse 2-4 .....	195 hp (145 kW)
726A VHP - Rated net brake horsepower, all wheel drive on, in all gears .....	195 hp (145 kW)
Torque @ 1500 RPM 500-636 lb-ft. (678-862 N-m)	
Torque Rise (Net) .....	20-36%

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 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, 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 2200 RPM with standard tires:

Forward			Reverse		
Gears	mph	km/h	Gears	mph	km/h
1 .....	2.7	4.3	1 .....	2.7	4.3
2 .....	3.8	6.1			
3 .....	5.3	8.5	2 .....	5.3	8.5
4 .....	7.4	12.0			
5 .....	10.4	16.7	3 .....	10.4	16.7
6 .....	14.4	23.2			
7 .....	20.2	32.5	4 .....	20.2	32.5
8 .....	27.9	44.8			

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.



**TANDEM**

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 .....	10.0" (254 mm)

Bolt-on rims are interchangeable front and rear on 720 VHP and 720A VHP models.



**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 - 720/720A ..... 18° R & L  
- 726A ..... 15° R & L  
Oscillation ..... 16° up and down  
Ground clearance ..... 24.0" (610 mm)  
A single 4" (102 mm) diameter wheel lean cylinder with lock valve is standard equipment on 720 and 720A VHP. Two 3" (76 mm) diameter wheel lean cylinders and lock valve are available optionally, and are standard on the 726A VHP.



**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:

720A VHParticulated frame .....	25 6" (7 772 mm)
726A VHParticulated frame .....	24 4" (7 417 mm)
720 VHPconventional or straight frame .....	35 0" (10 688 mm)

Steering arc .....	72°
Frame articulation angle 720A/726A VHP .....	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 .....	0.5" (13 mm)
Vertical section modulus at arch .....	163.3 cu.in. (2 676 cm <sup>3</sup> )
Linear weight - min-max .....	71.6-233.4 lbs/ft (106.6-347.5 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 10.0" (102 mm x 254 mm)  
Plate thickness ..... 0.5" (13 mm)

Choice of conventional (rigid) or articulated frames:  
720A/726A VHP ..... Articulates behind cab.  
720 VHP ..... Conventional  
Twin 4.5" (114 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 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" (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 .....	44° forward	6.5° 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 .....	17.6" (447 mm)
Blade cutting depth .....	25.0" (635 mm)
Blade tilt range .....	44° forward; 6.5° back
Number of moldboard tilt cylinders .....	2



### CAB & CONTROLS

Operator noise exposure is limited to 77 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 2200 RPM .....	0-50.5 gpm (0-191 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
AWD hydraulic oil (726A VHP).....	10.0	8.3	37.9
Coolant Antifreeze protection to -58° F (-50° C).....	11.9	9.9	45.0
Engine oil.....	5.9	4.9	22.4



### ALL WHEEL DRIVE - 726A VHP

Completely independent from the main hydraulic system, Champion's All Wheel Drive system incorporates a variable displacement, load sensing piston pump, and a separate reservoir, oil cooler and filter. This allows the system to operate continuously without overheating, and eliminates potential fluid cross-contamination. Champion's AWD design automatically adjusts hydraulic flow and pressure to the drive system to match ground speed and tractive conditions. A positive on/off control allows the operator to concentrate on the task at hand, rather than trying to find the 'correct' AWD setting. No electronics or wheel speed sensors are used. The powered front axle has two variable displacement piston motors with double reduction planetary torque hubs.

Maximum system pressure ....	3,500 psi (241 Bar)
Stand-by pressure .....	175 psi (12 Bar)
Filtration.....	7 micron
Top speed .....	20.2 mph (32.5 km/h)

### 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

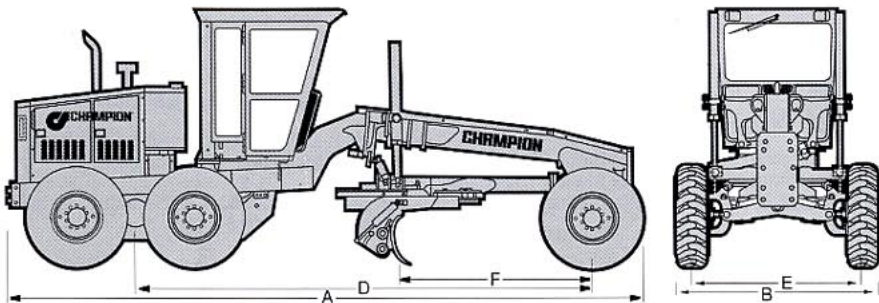
•Painted Champion Yellow, cab painted grey

•Lockable tool box with storage space for scarifier shanks

•Outside left & right mirrors

**OPTIONAL EQUIPMENT (May vary)**

	lbs.	kg		lbs.	kg		lbs.	kg
Accumulators - blade lift (2)	130	59	clearance lights front & rear	2	1	Paint - custom colors	-	-
- circle side shift	65	29	- front-mounted plow lights - 2			Radiator shutters - hinged	10	4
Air conditioner - 21,500 BTU			- high	120	54	Reflectors - rear	-	-
- HFC-134a (non-CFC refrigerant)			- low	100	45	Remote valve for attachments		
with cab pressurizer/filter	130	59	- Headlights with dimmer switch	-	-	- 3 or 5 bank - remote mount	25	11
Brush guards	40	18	- Moldboard lights - 2	2	1	Second leaning wheel cylinder		
Cab			- Rear flood lights - 2	2	1	- right side (standard on 726A)	25	11
- canopy shell with ROPS - deduct	(200)	(91)	- Snow wing lights - 2	2	1	Supplemental steering (power assisted) meets SAE J53 OCT. 84	61	28
- FOPS protection for ROPS cabs	220	100	Machine Monitor Plus package - M44			Suspension seat	55	25
- low profile cab with ROPS - deduct	(200)	(91)	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	-	-	Tie-down brackets	100	45
Cab heater - 49,000 BTU	30	14	Mirrors - outside - right	2	1	Tires		
Cab pressurizer/filter	14	6	- left	2	1	- 14.00 x 24, 12 pr., G2, 10" (254 mm) multi-piece rims	360	161
Defroster fan	3	1	Moldboards			- 17.5 x 25, 12 pr., G2, 14" (356 mm) rims	942	428
Engine block heater	3	1	- 14' x 25' x 7/8" (4 267 mm x 635 mm x 22 mm)	280	127	Tire chains - pair	300	136
Engine precleaner - Turbo II	6	3	- 12' x 29' x 1" (3 658 mm x 737 mm x 25 mm)	340	154	Tool kit	-	-
Engine side panels	50	23	- 13' x 29' x 1" (3 962 mm x 737 mm x 25 mm)	490	222	Transmission sump heater	-	-
Ether cold start	10	4	- 14' x 29' x 1" (4 267 mm x 737 mm x 25 mm)	640	290	Tropical protection	-	-
Exhaust rain cap	-	-	Moldboard extensions R & L			Vandalism protection	8	4
Fan - blower type (suction type is standard)	-	-	- 2' (610 mm)	200	91	Wheel weights front or rear - each	250	113
First user lifetime frame warranty	-	-	Moldboard edges -Carbide 3/4" x 5"	-	-	Window - opening - lower front	-	-
Fixed point lift system - deduct	(560)	(254)	Operator convenience package - lunch box, steel vacuum bottle and holder, ash tray	10	5	Window - opening sliders - left/right	-	-
Float control - Right and Left independent, electric	15	7				Wiper and washer - front	-	-
Hub odometer	-	-				Wiper and washer - rear	-	-
Hydraulic tank heater	3	1				Wiper and washer - lower front windows	-	-
Jack - 20 ton (18.5 tonne)	35	16						
Lights								
- back-up lights - 2	-	-						
- beacon (amber or blue)	4	2						



**DIMENSIONS**

A	Overall length	27'10" (8 484 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	20'0" (6 096 mm)
E	Tread width	6'10" (2 083 mm)
F	Blade base	
	- ISO 7134	8'6" (2 591 mm)

**CHAMPION MATCHED ATTACHMENTS**

A-Frame	850 lbs. (386 kg)	Push block	1,050 lbs. (476 kg)	V plow	
Dozer blade		Ripper-scarifier, rear	2,100 lbs. (953 kg)	- 9' (2 743 mm)	2,560 lbs. (1 161 kg)
- 8' (2 438 mm)	1,600 lbs. (726 kg)	Scarifier, front, with 11 teeth	1,450 lbs. (657 kg)	- 10' (3 048 mm)	2,720 lbs. (1 234 kg)
- 9' (2 743 mm)	1,650 lbs. (749 kg)	Snow wing			
One-way plow	2,350 lbs. (1 067 kg)	- front-mounted	2,900 lbs. (1 317 kg)		
		- rear-mounted	3,100 lbs. (1 407 kg)		

Specifications subject to change without notice. Some items included in this brochure are optional. <sup>TM</sup> 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**

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