

# 865 VHP

**MOTOR GRADER  
TIER III CERTIFIED**

## ENGINE - VHP

Model	Cummins QSB-6.7, Tier III certified Electronic control
Type	4-stroke, turbocharged and air to air cooled
Cylinders	6, in-line
Bore/Stroke	4.09 in x 5.20 in (104 mm x 132 mm)
Displacement	411 in <sup>3</sup> (6.7 L)
Fuel injection	Common rail
Fuel	Diesel
Cooling	Liquid
Variable horsepower per SAE J1995	
Gross	195/205/220 hp (145/153/164 kW) @ 2200 rpm
Net	180/190/205 hp (134/142/153 kW) @ 2200 rpm
Torque @ 1500 rpm	
Net	562/598/650 ft.-lbs (762/811/881 N·m)

## POWERTRAIN

Rear axle	Planetary
Differential	Hydraulic lock, operator controlled
Inboard brakes	Wet disc
Number of discs/brake	5
Brake surface area	1,560 in <sup>2</sup> (10 089 cm <sup>2</sup> )
Tandems —	
Type	Welded plate
Oscillation	20° each way
Front axle	High strength, welded steel
Oscillation	19° each direction
Wheel lean	17.5° left/right
Tires	14.0 x 24 12PR TL G2 Firestone
Rims	1-piece 9 in x 24 in (227 x 610 mm)

## HYDRAULICS

Type	Closed center, load sensing
Hydraulic pump	Load sensing piston pump, variable displacement, pressure and flow compensated
Rated flow @ 2200 rpm	49 gpm (187 L/min)
Control valve	9 section
Side shift and pitch	Hydraulic
Saddle	5 positions
Diagnostic quick couplers	8

## ALL WHEEL DRIVE-HYDRAULICS

Type	Closed center
Hydraulic pump	Load sensing piston pump, variable displacement, pressure flow compensated
Rated flow @ 2200 rpm	37.9 gpm (143.5 L/min)
Maximum operating pressure	6,092 PSI (420 Bar)
Drive motors	2

## TRANSMISSION

Type	Direct drive countershaft powershift w/ electronic shift control and inching pedal
Pump flow	@ 2200 rpm 24 gpm (91 L/min)
Sump	Integral
Speeds	8 forward/4 reverse
Shifting	Single lever, bump style automatic electronic control
Diagnostics	Onboard
Speeds— mph (km/h) —	
Forward	
1st	2.2 (3.6)
2nd	3.2 (5.1)
3rd	4.4 (7.2)
4th	6.2 (10.0)
5th	8.9 (14.3)
6th	12.4 (20.0)
7th	17.7 (28.5)
8th	26.6 (42.9)
Reverse	
1st	2.2 (3.6)
2nd	4.4 (7.2)
3rd	8.9 (14.3)
4th	17.7 (28.5)

## ELECTRICAL

Voltage	24 volts, negative ground
Alternator	80 amp
Batteries (2)	Low-maintenance 750 CCA – 100 Ah (20 hr rate)
Lighting —	
Headlights (2); Turn signals, front/rear; Stop/tail (2); Rear mounted floods (2); Front mounted floods (2); moldboard worklights (2)	
Backup alarm	Standard

## STEERING

Type	Hydrostatic power steering
Turns (lock-to-lock)	4.75
Pump capacity @ 2200 engine rpm	11.5 gpm (43.4 L/min)
Relief pressure	2,200 psi (151 bar) integral with priority valve
Cylinder (2) —	
2.5 in bore x 10.5 in stroke x 1.5 in rod dia. (63.5 mm x 266.7 mm x 38.1 mm)	
Supplemental steering	Integral

## ARTICULATION

Type	Hydraulic actuated (with lock valve)
Range	25° left/right
Controls	Hydraulic

## SERVICE CAPACITIES

Engine	4.4 gal (17.5 L)
w/filter change	4.7 gal (18.5 L)
Fuel	90 gal (341 L)
Transmission	5.0 gal (23 L)
w/filter change	6.6 gal (25 L)
Radiator	10.5 gal (40 L)
Hydraulic reservoir	25 gal (94.6 L)
Hydraulic system	50.2 gal (190 L)
Circle gearbox	3 qt (2.8 L)
Rear axle center	3.2 gal (12 L)
Total axle	4.9 gal (18.5 L)
Tandem case, each	7.6 gal (28.7 L)

## MAINFRAME

Type	All welded box
Front section —	
Size	10.0 in x 11.73 in (254 x 298 mm)
Weight	124.7 lbs-ft (172.8 kg/m)
Rear section —	
Size	4.75 in x 11.75 in (121 x 299 mm)
Weight (each side)	55.6 lbs-ft (84.0 kg/m)

## DRAWBAR

Type	"A" frame welded construction with center mounted circle turn motor
Ball and circle	Shim adjustable

## MOLDBOARD

Type	High-carbon steel
Shape	Involute curve
Length	13 ft 0 in (3962 mm)
Height	23.6 in (600 mm)
Thickness	0.875 in (22.2 mm)
End bits	2, interchangeable
Blade pitch positions —	
Normal pitch	47°
Minimum pitch	42°
Maximum pitch	87°
Blade shift —	
Right	27.0 in (686 mm)
Left	21.0 in (533 mm)
Max. bank cutting angle (right and left):	90°
Ground penetration (max.)	28 in (711.2 mm)
Lift above ground (max.)	17.5 in (444.5 mm)

## CIRCLE

Type	Welded construction
Diameter —	
Max. outside	69.0 in (1752 mm)
Vertical member	63.0 in (1600 mm)
Rotation	360°
Speed	1.1 rpm (6.8°/second)
Drive	Hydraulic motor
Type	Roller Geroter
Displacement	14.5 in <sup>3</sup> /Rev. (0.24 L/Rev)
Rated hydraulic flow	25 gpm (94.6 L/min)

## OPERATING WEIGHT

With 14 ft (4.27 m) moldboard, 175 lb (79 kg) operator, full fuel and standard equipment	32,265 lb (14 635 kg)
Weight, front axle	9,464 lb (4293 kg)
Weight, rear axle	22,822 lb (10 342 kg)
Blade pressure	16,768 lb (7606 kg)

## ATTACHMENTS

### SCARIFIER

Type	Front mounted
Width of cut	46 in (1168 mm)
Teeth	5 (11 optional)
Tooth spacing	9.0 in (229 mm) (4.5 in optional)
Lift above ground	20.75 in (527 mm)
Max. penetration	12.5 in (318 mm)
Weight (includes front attachment group)	1,256 lb (570 kg)

### PUSH BLOCK

Type	Front mounted
Weight	1,084 lb (492 kg)

### REAR RIPPER

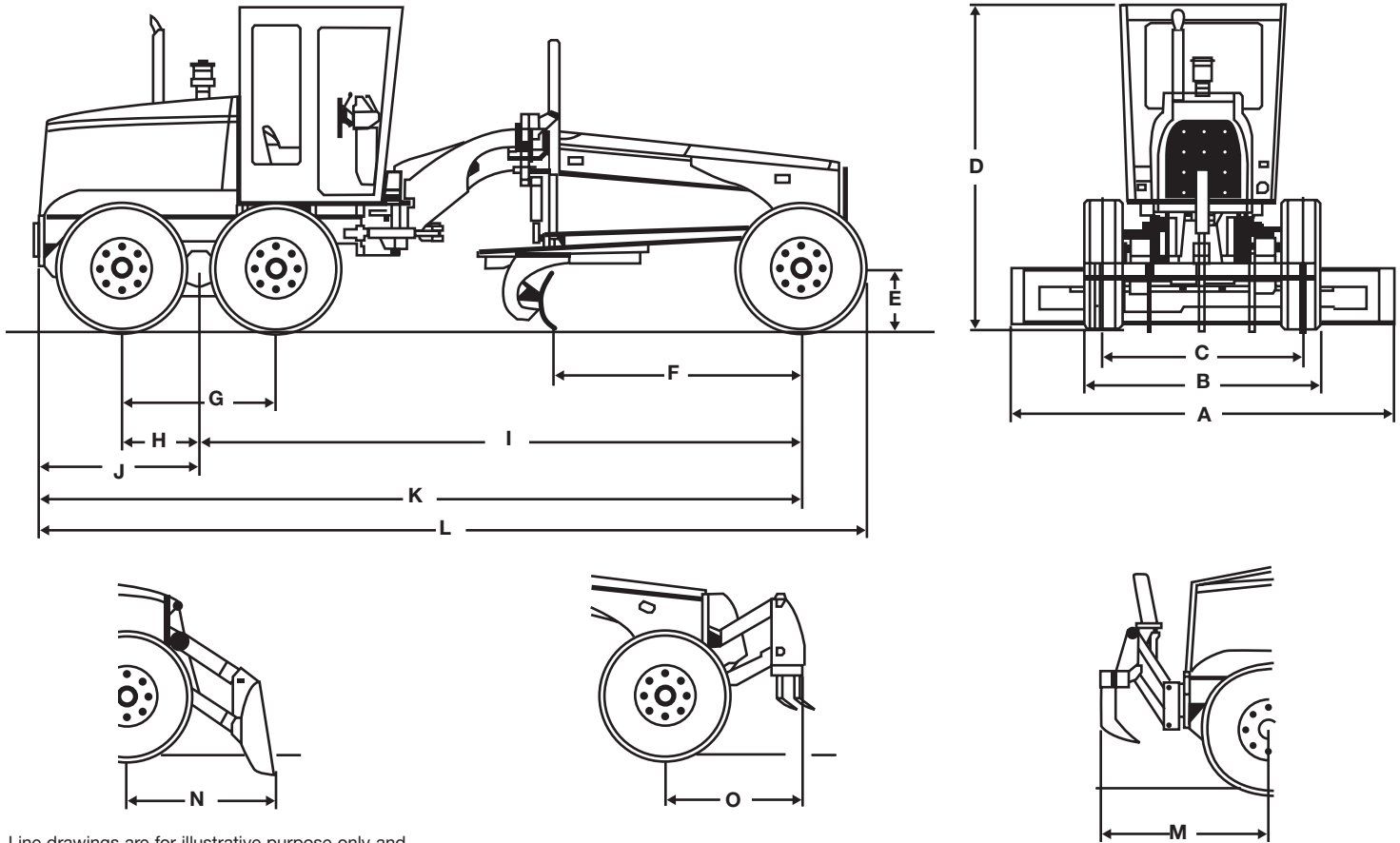
Type	Parallel
Ripper teeth	3 (5 optional)
Scarifier teeth	5 (9 optional)
Width of cut	86.4 in (2195 mm)
Lift above ground —	
Ripper teeth	20.38 in (518 mm)
Scarifier teeth	27.67 in (703 mm)
Max. penetration —	
Ripper teeth	17.22 in (437 mm)
Scarifier teeth	9.43 in (252 mm)
Weight	2,167 lb (985 kg)

### DOZER BLADE

Type	Front mounted
Width	109 in (2762 mm)
Height	37.5 in (953 mm)
Lift above ground	24.5 in (622 mm)
Penetration	6.5 in (165 mm)
Weight (includes front attachment group)	2,568 lb (1165 kg)

### COUNTERWEIGHT

Type	Front mounted
Weight	1,084 lb (492 kg)



Line drawings are for illustrative purpose only and may not be exact representation of unit.

## DIMENSIONS

	<b>865 DHP</b>
<b>A.</b> Blade width	13 ft 0 in (3962 mm)
<b>B.</b> Distance between outside edges of tires	8 ft 3 in (2510 mm)
<b>C.</b> Wheel tread	7 ft 0 in (2134 mm)
<b>D.</b> Height to top of cab — high profile	10 ft 11 in (3340 mm)
<b>D.</b> Height to top of cab — low profile	10 ft 4 in (3150 mm)
<b>E.</b> Tire radius — when static	2 ft 0 in (610 mm)
<b>F.</b> Blade base	8 ft 5 in (2562 mm)
<b>G.</b> Distance between tandem axles	5 ft 2 in (1594 mm)
<b>H.</b> Distance between tandem center and wheel	2 ft 7 in (797 mm)
<b>I.</b> Wheelbase	20 ft 5 in (6219 mm)
<b>J.</b> Distance between tandem center and rear end of machine	5 ft 5 in (1650 mm)
<b>K.</b> Distance between front axle and rear end of machine	25 ft 10 in (7869 mm)
<b>L.</b> Overall length	28 ft 0 in (8534 mm)
<b>M.</b> Distance between rear tires & rear ripper	6 ft 8 in (2028 mm)
<b>N.</b> Distance between front tires & front scarifier	5 ft 0 in (1520 mm)
<b>O.</b> Distance between front tires & front dozer blade	5 ft 4 in (1626 mm)
Outside tire turning radius	23 ft 9 in (7250 mm)
Ground clearance (rear axle)	14.9 in (380 mm)
Ground clearance (front axle)	24.5 in (622 mm)

All units equipped with 14.0 x 24-10 PR tires, ROPS cab with heater & A/C, std. battery, full fuel, 175 lb (79 kg) operator. Specifications per JISO 7134.

## STANDARD EQUIPMENT

### OPERATOR'S COMPARTMENT

ROPS cab  
Adjustable operator's console  
Adjustable cloth suspension seat with  
3 in (76 mm) retractable seat belt  
Front/rear wipers w/washer  
Safety glass  
Dome light  
Inside rear view mirror  
Outside rear view mirrors  
Sunshade – front & rear  
Cup holder  
Storage tray  
12-volt outlet  
Ashtray  
Radio ready (12 volt)  
Master switch  
Heater/defroster/pressurizer  
Air conditioner  
Cab doors - left/right  
Steps – left/right  
Steering wheel knob

## OPTIONAL EQUIPMENT

### POWERTRAIN

All wheel drive with creep speed

### MOLDBOARDS

12 ft x .875 in (3658 x 22 mm)  
Extensions – 2 ft (610 mm)  
Front Float Control  
Moldboard Float Control  
Lift cylinder/side shift accumulator  
Lift cylinder accumulator

### POWERTRAIN

Hydraulic differential lock

### ENGINE

Charge air cooler  
Grid heater  
Electronic injection

### HYDRAULICS

Closed center, load sensing hydraulic system  
Controls for all functions  
9 section control valve  
Front attachment piping  
Hydraulic moldboard side shift and pitch  
5-position saddle  
14 ft x .875 in (4267 x 22 mm) moldboard  
Rear pull hook  
8 hydraulic diagnostic quick couplers  
Hydraulic driven cooling fan

### TIRES

14.0 x 24-12 PR

### TIRES

13.0 x 24-12 PR  
14.0 x 24-10 PR  
14.0 x 24 XGLA  
16.0 x 24-12 PR  
17.5 x 25-12 PR  
17.5 x 25-16 PR

### ELECTRICAL

Heavy duty batteries 1010 CCA

### INSTRUMENTS

Analog LED Instruments:

Speedometer; Tachometer;  
Gear shift display; Hourmeter; Engine oil  
pressure; Engine coolant temperature;  
6 WD (optional); Creep speed (optional)

Monitor Functions:

Engine oil pressure; Engine coolant tempera-  
ture; Transmission oil pressure; Transmission  
oil temperature; Transmission filter restriction;  
Brake oil pressure; Battery voltage;  
Hourmeter; Tachometer; Parking brake  
applied; Air and hydraulic oil filter restriction;  
Hydraulic oil temperature; Emergency flash-  
ers; High beams; Supplemental steering

### ELECTRICAL

Electronic Systems Monitor  
Horn  
Backup alarm

### OTHER

Reversible cooling fan  
Temperature controlled cooling fan  
Fire Extinguisher  
Front lower windshield washer and wiper  
Strobe Light  
Tool Box (w/o tools)  
Deluxe Tool Box (w/tools)  
Cab recirculation fans

NOTE: All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.

NOTE: All engines meet current EPA emissions requirements.

IMPORTANT: CNH America LLC reserves the right to change these specifications without notice and without incurring any obligation relating to such change. CNH America LLC does not warrant the safety or reliability of attachments from other manufacturers.

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