

# Equipment & Dimensions: EH4500

EH4500

HITACHI

# EH4500

**Maximum Payload**  
255.4 m tons (281.6 U.S. tons)

**Maximum Payload with Standard Liners**  
241.8 m tons (266.6 U.S. tons)

**Maximum GMW**  
435 456 kg (960 000 lb)

**Engine**  
Cummins QSK60-L  
Detroit Diesel 16V-4000  
Rated Power 2 013 kW (2 700 hp)

## STANDARD EQUIPMENT

**GENERAL**  
Access ladders  
Air conditioning  
Air cleaner protection  
All-hydraulic braking  
Automatic lubrication system  
Battery box, on deck  
Battery isolation switch  
Body down indicator, mechanical  
Body prop pins  
Centralized service panel  
Continuous heated body  
Cruise control, propel/retard  
Electric horn, dual  
Electronic hoist control  
Electric start  
Engine access ladders (2)  
Engine self load test  
Extended body canopy  
Fan guard  
Fast fueling system, on tank  
Fuel gauge on tank  
Ground level engine shutdown switch

**CAB**  
Acoustical lining  
Air filtration/replaceable element  
Air suspension seat, 6 position  
Ash tray  
Auxiliary outlet, 12 volt  
Cab interior light  
Cigar lighter  
Door locks  
Engine starter/shutdown switch  
Full trainer seat  
Heater and defroster 26,000 Btu  
Integral ROPS/FOPS cab  
ISO driver envelope

**GAUGES AND INDICATORS**  
Contronic II monitoring and alarm system, multi-function  
indicator lights:  
Air filter restriction  
Alternator  
Body up indicator  
Blower loss  
Brake supply pressure  
Central warning  
Engine oil pressure  
Engine coolant temperature  
High beam indicator  
Host filter restriction  
Hoist oil temperature  
Hoist supply pressure  
Parking brake applied  
Payload monitoring  
Steering filter restriction  
Steering oil temperature  
Traction system fault  
Turn signals/hazard  
Wheel motor temperature

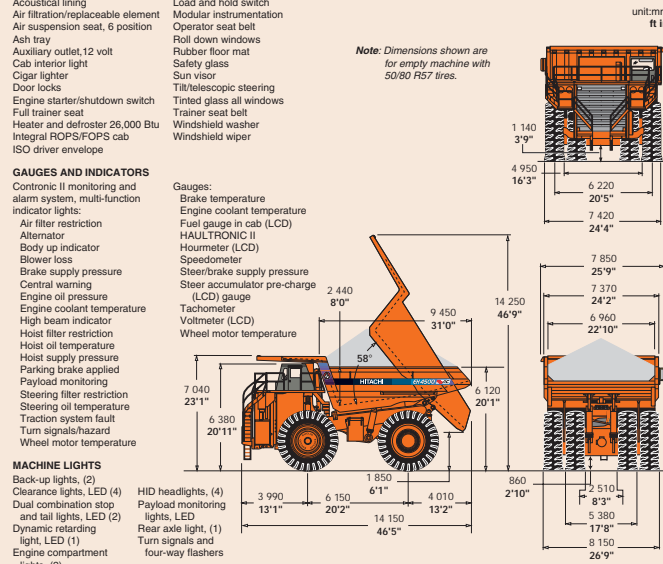
**MACHINE LIGHTS**  
Back-up lights, (2)  
Clearance lights, LED (4)  
Dual combination stop and tail lights, LED (2)  
Dynamic retarding light, LED (1)  
Turn signals and engine compartment lights, (2)

## OPTIONAL EQUIPMENT

Guard rails around platform  
**HAULTRONIC II**  
load weighing system  
HID headlights  
Hoist kickout  
Ladder lights  
Mirrors, right and left  
Mud flaps  
Neocoon suspension struts  
Operator arm guard  
Propulsion interlock, body up  
Radiator grille guard  
Retarder grid package, 14 element  
Reverse alarm  
Rock ejector bars  
Supplementary steering system, accumulator  
Thermatic fan  
Tires, 50/80 R57(\*\*)E4  
Tow hooks, front and rear  
Two-speed over-speed setting  
Wiggins fast fueling

Standard and optional equipment may vary from country to country. Special options provided on request. All specifications are subject to change without notice.

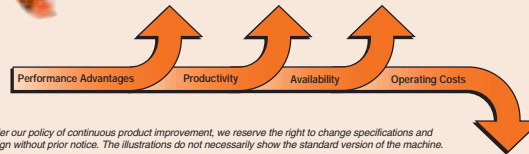
*Note: Dimensions shown are for empty machine with 50/80 R57 tires.*



## EH4500 AC WHEEL MOTOR

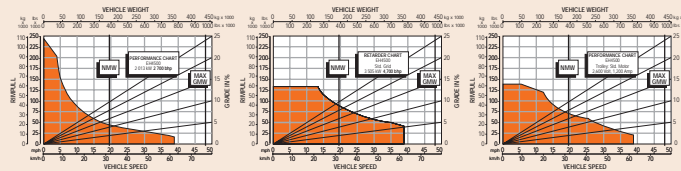


- System efficiency is significantly higher than DC
- Full retarding capability, down to zero speed, equal to or greater than the starting rimpull
- Higher operating speed
- Increased retarding capability reduces brake wear
- AC motors are brushless, and essentially maintenance free



Under our policy of continuous product improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.

## Performance Data: EH4500



### INSTRUCTIONS:

Diagonal lines represent total resistance (Grade % plus rolling resistance %). Charts based on 0% rolling resistance, standard tires and gearing unless otherwise stated.

1. Find the total resistance on diagonal lines on right-hand border of performance or retarder chart.
2. Follow the diagonal line downward and intersect the NMW or GMW weight line.

**NOTE:** Photos and illustrations throughout may show optional equipment.

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KR-E127P

04.03(KA/KA\_FT)

Printed in Japan



# Specifications: EH4500

## ENGINE

Make	Detroit Diesel w/DDEC IV	Cummins	m <sup>3</sup>	yd <sup>3</sup>
Model	16V-4000	OSK60-L	105.4	137.9
Type	4 Cycle	4 Cycle	134.3	175.6
Aspiration	Turbocharged & low temperature aftercooled	Two stage (twin) turbocharged & low temperature aftercooled & intercooled	147.6	193.1
Gross Power @ 1900 rpm (SAE J1995)	kW <b>hp</b> 2 013 <b>2 700</b>	kW <b>hp</b> 1 963 <b>2 633</b>		
Net Power @ 1900 rpm (SAE J1349)	kW <b>hp</b> 1 973 <b>2 646</b>	kW <b>hp</b> 1 963 <b>2 633</b>		
Maximum Torque @ 1500 rpm (SAE 1995)	N-m <b>lb-ft</b> 10 933 <b>8 064</b>	N-m <b>lb-ft</b> 10 629 <b>7 840</b>		
No. Cylinders	16	16		
Bore & Stroke	mm 165 x 190	mm 159 x 190		
Displacement	L in <sup>3</sup> 6.5 x 7.48	L in <sup>3</sup> 6.26 x 7.48		
Starting	Electric	Electric		

## ELECTRIC DRIVE

**Controls and Alternator**  
Euclid AC drive technology uses Siemens controls and proven GTO inverter phase modules. Dynamic retarding capacity to zero speed using solid state technology. Alternator direct mounted to engine.

**Wheel Motors**  
Euclid AC drive technology, developed in conjunction with Siemens, provides superior performance with higher top speeds, better gradeability and stronger retardation. Brushless operation reduces maintenance and running costs. Long life to overhaul means less downtime and reduced running costs.

Planetary Ratio	Standard	Optional
	35.816:1	40.789:1

Maximum Speed	km/h 62.0	mph 39.0
	km/h 54.4	mph 34.0

## TIRES

Standard - Front and Rear	Rim Width	
	mm	in
50/80 R57(“)E4 Radials	864	34
Optional - Front and Rear	mm	in
50/90 R57	864	34

Certain job conditions may require higher TKPH (TMPH) in order to maintain maximum production. Euclid recommends evaluating the job conditions and consult the tire manufacturer to make proper tire selection. Optional rims available.

## ELECTRICAL SYSTEM

Twenty-four volt system. 250 amp battery charger. Eight 12-volt, heavy-duty batteries connected in series/parallel.

## BODY CAPACITY

Struck (SAE)	105.4	137.9
Heap 2.1	134.3	175.6
Heap 2.1 (SAE)	147.6	193.1

## WEIGHTS

	Detroit Diesel		Cummins	
	kg	lb	kg	lb
Chassis with Hoist	148 017	326 322	149 512	329 617
Body	31 996	70 540	31 996	70 540
Net Machine Weight	180 014	396 862	181 508	400 157
Empty Axle Weights				
Front Axle	90 391	199 278	90 611	199 764
Rear Axle	89 623	197 584	90 897	200 393

Maximum GMW [50/80 R57(“)E4] Including Options, 50% Fuel, Operator & Payload Not to Exceed 435 456 **960 000** 435 456 **960 000**  
Load Weight Distribution Front - 34% Rear - 66%  
Maximum Payload 255 442 **563 138** 253 948 **559 843**

Note: Maximum GMW subject to EUCLID-HITACHI approval for a given application.

Options: Approximate change in Net Machine Weight:

	kg	lb
Body Liners, Complete	13 608	30 000
Max. Payload with Body Liners Complete	241 834	533 138
241 340	529 843	
Floor	mm	in
Sides and front	mm	in
Corners	mm	in
Canopy	mm	in
Top Rails	mm	in

## STEERING SYSTEM

Flow-amplified, closed-center hydrostatic power steering system using two double-acting cylinders with pressure unloading type compensated piston pump and a brake actuation/steering system reservoir. Accumulators provide supplementary steering in accordance with JISO 5010 and constant steering rate under all conditions. A tilt/telescopic steering wheel with 35o of tilt and 57,15 mm 2.25" telescopic travel is standard.

Steering Angle	m		ft in		42°	
Turning Diameter (SAE)					28.47	93.4
Steering Pump Output (@ 1900 rpm)	L/min	gpm	249.0	65.8		
System Pressure	kPa	psi	20 685	3 000		

Filtration - Pressure line Beta G rating = 200  
Beta 10 ratio = 800

## HYDRAULIC SYSTEM

Two (2) Euclid three-stage, double-acting cylinders with cushioning in retraction, containing dual rod seals and urethane energized scrapers, inverted and outboard mounted. Separate reservoir and tandem gear pump connects with a four position electronic pilot controlled hoist valve. Electric controller is mounted to operator's seat.

Body Raise Time	s	22.2
Hoist Pump Output @ 1900 rpm	L/min	gpm
System Relief Pressure	kPa	psi
18 961	2 750	
Filtration - Pressure line Beta G rating = 200		
Beta 10 ratio = 800		

## BRAKE SYSTEM

Brake systems meet or surpass SAE J150 3450.

**Service**  
All-hydraulic actuated braking system provides precise braking control and quick system response. The system is pressure proportioned, front to rear, for improved slippery road control.

The Euclid wet disc brake is engineered for long service life, even in the most extreme environments. The wet disc brakes are located on the rear axle and provide service braking and secondary braking functions. The brakes are of a multi-plate design and continuously oil-cooled.

Front Axle - Dry Disc		kg	lb
Disc Diameter Each (2 discs/axle)	cm	in	122.0
Brake Surface Area Per Axle	cm <sup>2</sup>	in <sup>2</sup>	17 032
Lining Area Per Axle	cm <sup>2</sup>	in <sup>2</sup>	6 194
Brake Pressure (Max.)	kPa	psi	20 685

Rear Axle - Oil-Cooled Wet Disc		kg	lb
Brake Surface Area Per Axle	cm <sup>2</sup>	in <sup>2</sup>	149 993
Brake Pressure (Max.)	kPa	psi	15 170

**Secondary**  
Dual independent hydraulic circuits within the service brake system provide fully modulated reserve braking capability. Both front dry disc and rear wet disc are automatically applied when loss of pressure is detected.

**Parking**  
Four spring on, hydraulic off armature disc brake heads provide parking capabilities. The braking system complies with JISO 3450.

**Retarder**  
Superior retardation to zero speed on grades is achieved through AC wheel motors in conjunction with the Siemens resistor grid package. A recessed grid box, located on the service deck, enhances operator visibility. Cooling for the grid package is achieved with forced air flow provided by a blower driven by a single electric motor.

Maximum dynamic retarding with continuous rated blown grids:			
Standard	kW	hp	3 505
Optional	kW	hp	4 474

## COMMAND CAB III

### Integral ROPS/POPS

Command Cab III integral ROPS (Rollover Protective Structure) is standard in accordance with JISO 3471.

Double wall construction of 11 gauge inner and outer steel panels produces a more structurally sound cab. Foam rubber lining material along with foam rubber-backed carpeting and multiple layered floor mat act to absorb sound and control interior temperature. A properly maintained cab from Euclid, tested with doors and windows closed per work cycle procedures in SAE J1166, results in an operator sound exposure Leq (Equivalent Sound Level) of 81 dBA. A three-point rubber iso-mount arrangement to the deck surface minimizes vibration to the operator compartment.

**Monitoring System**  
CONTRONIC II monitors and diagnoses all onboard systems including Siemens drive system and engine. Data links offer complete integration, while a single multi-language Liquid Crystal Display (LCD) clearly details machine functions. Downtime is minimized with faster and more reliable troubleshooting and analysis.

HAULTRONIC II load weighing system offers benefits such as better equipment utilization on the jobsite, accurate unit and fleet production results, and benchmark unit statistics against fleet results. Cycle time, distance and cycle count can all be measured and recorded to further improve job productivity. HAULTRONIC II is fully integrated with CONTRONIC II vehicle monitoring system and display interface, avoiding potential failure or error common in aftermarket systems.

**Excellent Serviceability**  
A removable front closure allows easy access to the service brake valve and heater connections. The upper dash utilizes four (4) removable panels that house gauges and customer options, each individually accessible. A removable closure located behind the seat provides easy access to the shifting control, CONTRONIC II, and all electrical junction points.

**Comfort and Ease of Operation**  
A wrap-around style dashboard positions controls within easy reach and visual contact. A full complement of easy-to-read gauges, CONTRONIC II monitoring and warning system, a spacious environment, six-way adjustable air seat, tilt/telescopic steering wheel, filtered ventilation, door locks, and a full size trainer seat, all contribute to operator safety and comfort.

## SUSPENSION

### Front and Rear Suspension

For years, Euclid haulers have enjoyed an industry-wide reputation for superior suspension systems. That experience and knowledge has now been pushed to the next level, to develop the truly advanced ACCU-TRAC suspension for the EH4500.

The new ACCU-TRAC suspension system features independent trailing arms for each front wheel with NEOCON struts, containing energy absorbing gas and compressible NEOCON-ETM fluid, mounted between the king pins and the frame. This arrangement allows a wider front track that provides a better ride, improved stability and a reduced turning circle. The rear NEOCON struts are mounted in a more vertical position which allows a more pure axial loading and reduces the tractive and breaking forces transmitted to the nose cone.



NEOCON struts outperform competitive strut designs by improving isolation, stability, and control. Improved isolation means reduced impact loading on the structural members of the machine and greater operator comfort, resulting in longer equipment life and productivity. Improved stability means more consistent dynamic response of the machine to fluctuating load energy, resulting in predictable machine performance. Improved control also means better machine maneuverability.

The Euclid frame and ACCU-TRAC suspension system are designed to work in unison to provide maximum structural integrity and operator comfort. The fabricated rectangular frame rail construction provides superior resistance to bending and torsional loads while eliminating unnecessary weight. The unique ACCU-TRAC independent trailing arm suspension absorbs haul road input, minimizing suspension-induced frame twisting while providing independent tire action. NEOCON ride struts are mounted with spherical bushings, eliminating extreme sidewall forces by ensuring a purely axial input to the ride strut. The wide track stance of the ACCU-TRAC suspension system and the long wheel base assure a more stable, comfortable ride.

## FRAME

Full fabricated box section main rails with section height tapered from rear to front. Wider at the rear to support the loads and narrower at the front to allow for engine accessibility. One piece top and bottom flanges that eliminate cross member tie in joints and provide a large exposed center area for access to major components. Large radii minimize stress concentrations. Welded joints are oriented longitudinally to the principal flow of stress for greater durability and more strength. Frame utilizes 345 N/mm<sup>2</sup> 50 000 psi yield strength alloy steel that is robotically welded to ensure high quality welds.

## BODY

Flat chute type, sloped floor, continuously exhaust-heated. Extended canopy protects service deck area. High tensile strength 400 BHN abrasion resistant alloy steel is used in thicknesses of:

	mm	in
Floor	19	0.75
Front	10	0.39
Sides	10	0.39
Canopy	6	0.24
Corners	16	0.63

High strength 690 N/mm<sup>2</sup>

100 000 psi alloy steel is also used for the canopy side members and floor stiffeners. The body is rubber cushioned on the frame.

The Euclid horizontal stiffener design minimizes stress concentrations, by dissipating load shocks over the entire body length. Closely spaced stiffeners provide additional protection by minimizing distances between unsupported areas.

## SERVICE CAPACITIES

	L	U.S.gal
Accumulator	78.0	20.0
Crankcase (incl. filters)		
Detroit Diesel S-4000	220.7	58.3
Cummins OSK60-L	265.0	70.0
Cooling System		
Detroit Diesel S-4000	522.3	138.0
Cummins OSK60-L	522.3	138.0
Fuel Tank	3 785	1 000
Hydraulics		
Hoist System	780.0	206.0
Steering System	231.0	61.0
Euclid Planetary Drives	257.4	68.0
Front Wheels	27.0	7.0
Windshield washer	7.6	2.0