

# HITACHI

## ***EH 4500 AOS***

**Maximum Payload**  
273,5 Tonne (301.5 Ton)

**Maximum Payload  
with Standard Liners**  
259,9 Tonne (286.5 Ton)

**Maximum GMW**  
469 153 kg (1,034,295 lb)

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



# Specifications: EH4500 AOS



## ENGINE

Make	Cummins				Detroit Diesel w/DDEC IV			
Model	QSK60-L				16V-4000			
Type	4 Cycle				4 Cycle			
Aspiration	Two stage (twin) turbocharged & low temperature aftercooled & intercooled				Turbocharged & low temperature aftercooled			
Gross Power @ 1900 rpm (SAE J1995)	kW	hp	2 013	2,700	kW	hp	2 013	2,700
Net Power @ 1900 rpm (SAE J1349)	kW	hp	1 963	2,633	kW	hp	1 973	2,646
Maximum Torque @ 1500 rpm (SAE 1995)	N-m	lb-ft	10 629	7,840	N-m	lb-ft	10 933	8,064
No. Cylinders	16				16			
Bore & Stroke	mm	159 x 190			mm	165 x 190		
	in	6.26 x 7.48			in	6.5 x 7.48		
Displacement	liters	in³	60,2	3,672	liters	in³	65,0	3,966
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.

	Standard
Planetary Ratio	40.789:1
Maximum Speed	km/h 58,6 mph 36.4



## TIRES

	Rim Width			
Standard - Front and Rear 50/90 R57(**)E4	mm	in	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

	m³	yd³
Struck (SAE)	90,81	118.77
Heap 3:1	126,74	165.77
Heap 2:1 (SAE)	144,05	188.41

Body size based on density of 1 899 kg/m³ 3,200lb/yd³.



## WEIGHTS

	Cummins		Detroit Diesel	
	kg	lb	kg	lb
Chassis with Hoist	153 137	337,606	151 177	333,284
Body	42 487	93,668	42 487	93,668
Net Machine Weight	195 625	431,274	193 664	426,952
Empty Axle Weights				
Front Axle	96 440	212,611	94 500	208,333
Rear Axle	99 185	218,663	99 164	218,619

Maximum GMW [50/90 R57(**)E4]				
Including Options, 50% Fuel, Operator & Payload Not to Exceed	469 153	1,034,295	469 153	1,034,295

Load Weight Distribution	Front - 33%	Rear - 67%	Front - 33%	Rear - 67%
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Maximum Payload	273 528	603,021	275 489	607,343
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**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	259 920	573,021	261 881	577,343
Floor	mm	in	19	3/4
Sides and front	mm	in	10	3/8
Corners	mm	in	19	3/4
Canopy	mm	in	6	1/4
Top Rails	mm	in	10	3/8



## 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 J/ISO 5010 and constant steering rate under all conditions. A tilt/telescopic steering wheel with 35° of tilt and 57,15 mm 2.25" telescopic travel is standard.

Steering Angle				42°
Turning Diameter (SAE)	m	ft in	28,47	93.4
Steering Pump Output (@ 1900 rpm)	l/m	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	969,0	256.0
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 J/ISO 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

Disc Diameter Each (2 discs/axle)	cm	in	122,0	48
Brake Surface Area Per Axle	cm²	in²	17 032	2,640
Lining Area Per Axle	cm²	in²	6 194	960
Brake Pressure (Max.)	kPa	psi	20 685	3,000

### Rear Axle - Oil-Cooled Wet Disc

Brake Surface Area Per Axle	cm²	in²	149 993	23,248
Brake Pressure (Max.)	kPa	psi	15 170	2,200

### 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 J/ISO 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.

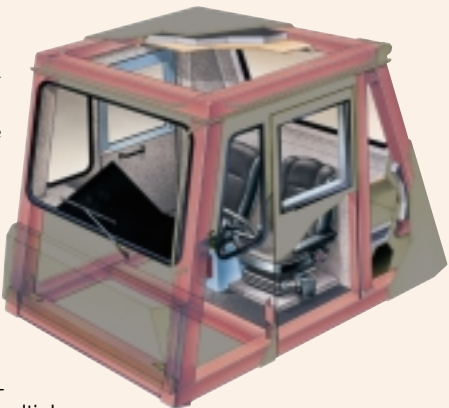
Maximum dynamic retarding with continuous rated blown grids:				
Standard	kW	hp	3 505	4,700
Optional	kW	hp	4 474	6,000



## COMMAND CAB III

### Integral ROPS/FOPS

Command Cab III integral ROPS (Rollover Protective Structure) is standard in accordance with J/ISO 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 L<sub>eq</sub> (Equivalent Sound Level) of 81 dB(A). 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.

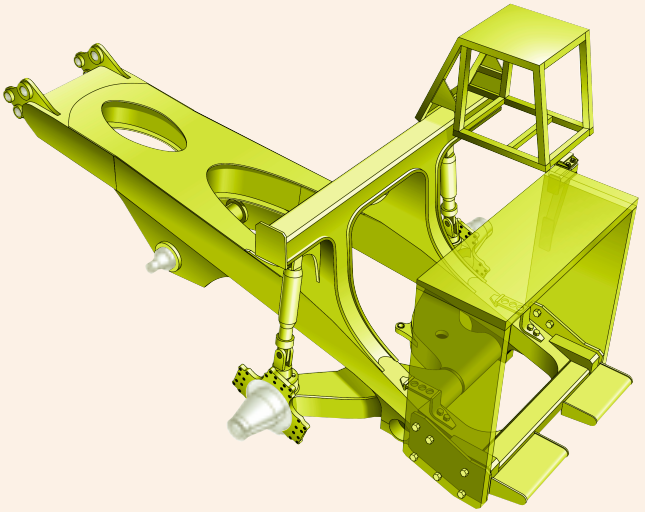




SUSPENSION

**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 AOS.

The new ACCU-TRAC suspension system features independent trailing arms for each front wheel with NEOCON struts, containing energy absorbing gas and compressible NEOCON-E™ 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.

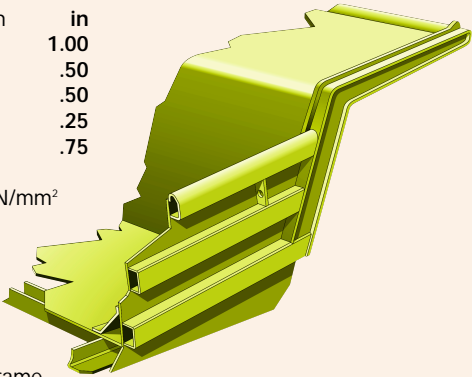


BODY

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	25	1.00
Front	13	.50
Sides	13	.50
Canopy	6	.25
Corners	19	.75

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

	liters	gallons
Accumulator	76,0	20.0
Crankcase (incl. filters)		
Detroit Diesel S-4000	220,7	58.3
Cummins QSK60-L	265,0	70.0
Cooling System		
Detroit Diesel S-4000	522,3	138.0
Cummins QSK60-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

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
  - Canopy spillguard extension
  - 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
- Guard rails around platform
  - HAULTRONIC II load weighing system
  - HID headlights
  - Hoist kickout
  - Ladder lights
  - Mirrors, right and left
  - Mud flaps
  - NEOCON 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, 50/90 R57(\*\*)E4
  - Tow hooks, front and rear
  - Two-speed overspeed setting
  - Wiggins fast fueling

- 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
- Load and hold switch
  - Modular instrumentation
  - Operator seat belt
  - Roll down windows
  - Rubber floor mat
  - Safety glass
  - Sun visor
  - Tilt/telescopic steering
  - Tinted glass all windows
  - Trainer seat belt
  - Windshield washer
  - Windshield wiper

- GAUGES AND INDICATORS**
- CONTRONIC II monitoring and alarm system, multi-function indicator lights:

- Air filter restriction
- Battery voltage level
- Body up indicator
- Brake supply pressure
- Brake temperature
- Central warning
- Engine oil pressure
- Engine coolant temperature
- High beam indicator
- Hoist 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

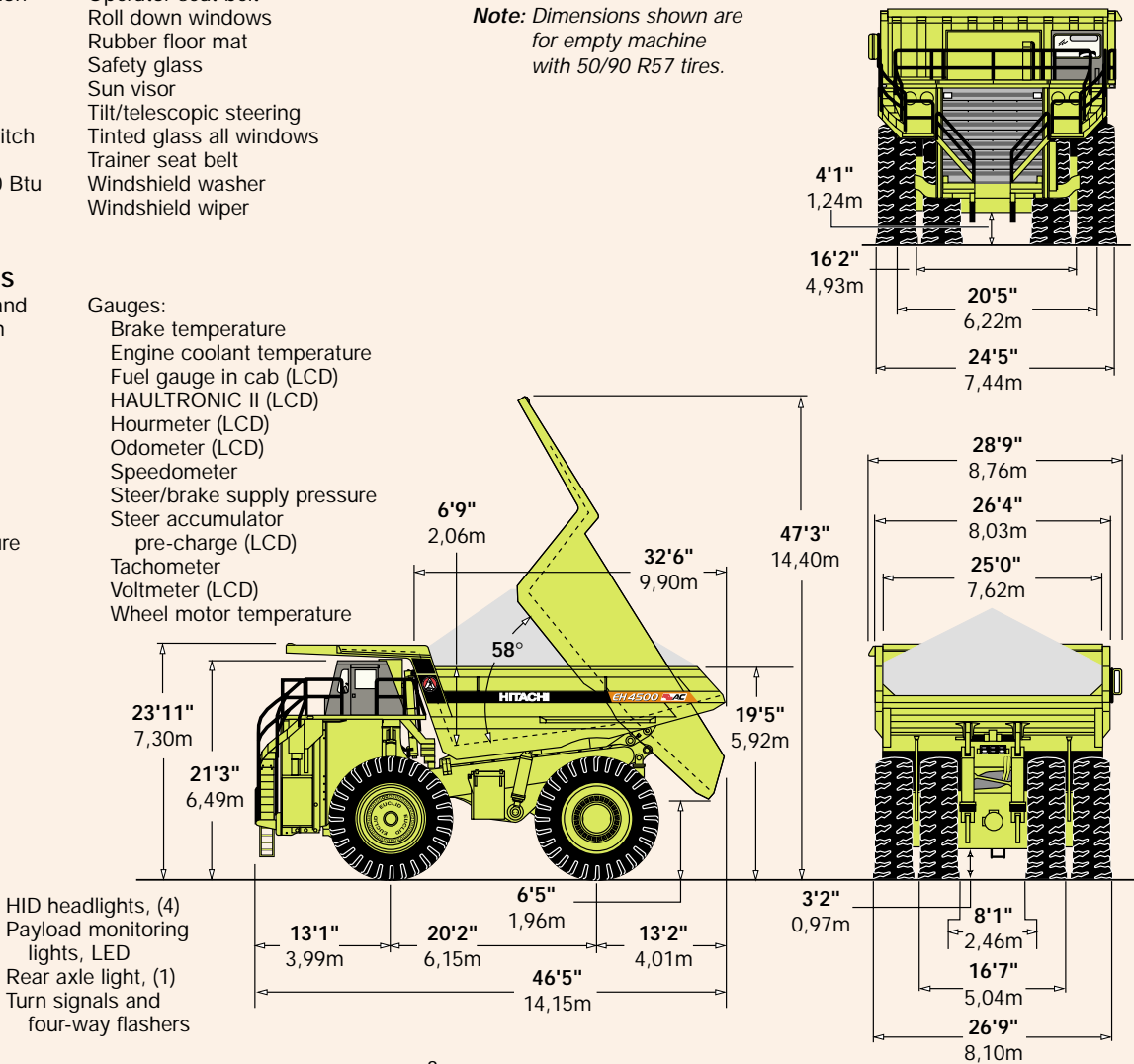
- MACHINE LIGHTS**
- Back-up lights, (2)
  - Clearance lights, LED (4)
  - Dual combination stop and tail lights, LED (2)
  - Dynamic retarding light, LED (1)
  - Engine compartment lights, (2)
  - HID headlights, (4)
  - Payload monitoring lights, LED
  - Rear axle light, (1)
  - Turn signals and four-way flashers

OPTIONAL EQUIPMENT

- Ansul centralized fire extinguishing system (16 nozzle)
- Auxiliary dump
- Auxiliary steer
- Body liners (400 BHN)
- Body prop cable
- Body side extensions
- Cab, acoustic package
- Engine coolant and oil heater (220 V AC)
- Hubodometer
- Keyless starter switch
- Mufflers
- Oil sampling connections
- Tires (size, type & rating)
- Trolley assist configuration

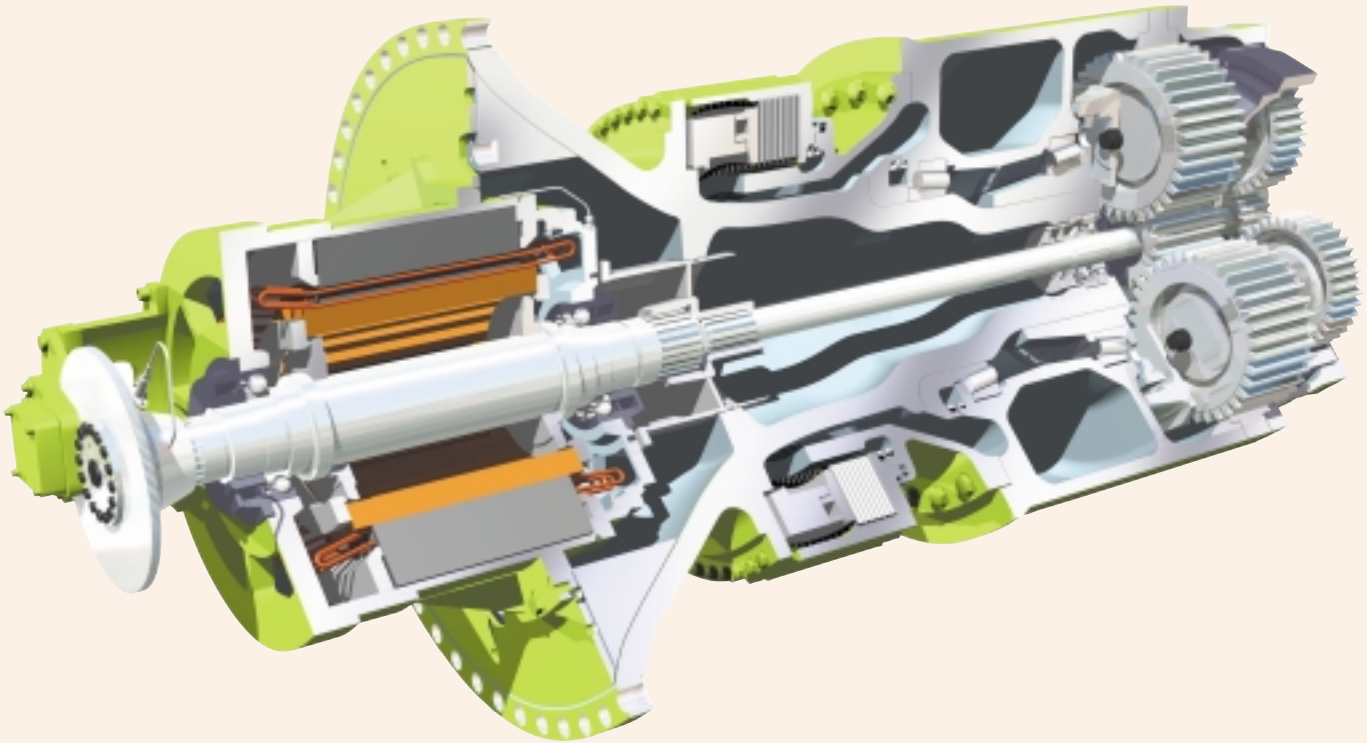
Standard and optional equipment may vary from country to country. Special options provided on request. All specifications are subject to change without notice.

*Note: Dimensions shown are for empty machine with 50/90 R57 tires.*

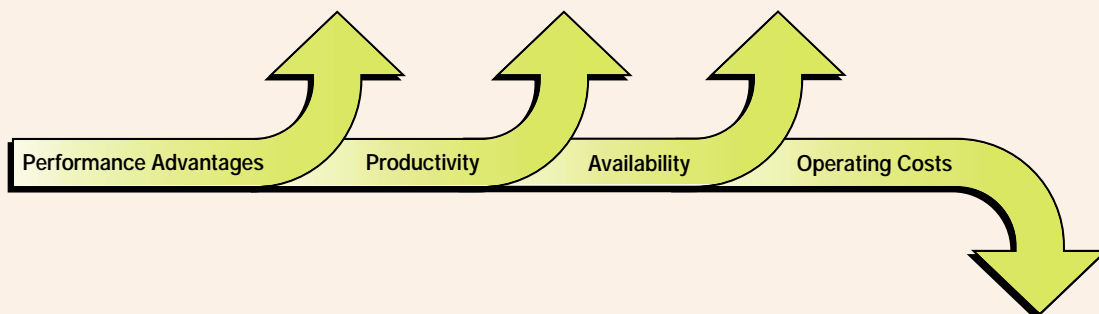




## EH4500 AC WHEEL MOTOR



- 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.*