

TARGET GMOW: 384 000 KG (846,561 LB) RATED POWER: 1864 KW (2500 HP)



### HITACHI AC TECHNOLOGY

Hitachi has been at the forefront of both Gate Turn Off (GTO) and IGBT propulsion technology for over 30 years. Our GTO and IGBT systems are powering Japan's famous bullet trains as well as similar trains throughout the world. Now, this IGBT expertise has been channeled into these Hitachi AC-drive trucks.

Unlike all other competitors, the entire AC-drive system is designed, built, and supported by the same company — Hitachi.

The new-generation Hitachi IGBT system outperforms previous and competitive systems through its simplicity, improved efficiency, and enhanced dependability. It couples the best GTO features with higher torque, faster acceleration, smoother retardation, and lower operating costs. All system components are manufactured by Hitachi in Japan under strict quality standards.







Extensive cooling efforts ensure higher availability.



Retarding grid boxes are Hitachi built. Each is equipped with an inverter-controlled variable-speed cooling fan.



■ Component and lubricant life is improved as a result of the circulation system that includes cooling and filtration.



■ Hitachi Dual-Path Epicyclic Planetary Design provides high efficiency, easy maintenance, and allows the first (outer) planetary carrier to travel at wheel speed which provides lower operating temperatures.

### EH4000ACII DIMENSIONS



#### STANDARD EQUIPMENT

General AC-drive system, auto cruise control AC-drive system, auto retarding control AC-drive system, brake blending control AC-drive system control cabinet, pressurized/liquid cooled, and lockable Automatic lubrication system (Lincoln) Battery isolation switch Body prop pins Deck-mounted muffler Deck-mounted stone guards Diagonal front stairway Electric-controlled hoist system Electric horns (4) Engine access ladders (2) Engine shutdown switch, beside engine (2) Engine shutdown switch, ground level, on bumper (1) Engine shutdown switch, inside rear axle (1) Fan and belt quards Fan clutch Fast fluid-filling system Fast fuel-filling system provision Final-drive lubricant cooling Final-drive lubricant filtration Front view mirror, LHS/RHS Fuel/Water separator Fuel tank, 2680 L (708 gal.) Ground level battery box Ground level relay box IGBT-controlled blower fan motors (2) IGBT-controlled final drive lubricant motor (1) IGBT-controlled grid fan motors (5) Load weighing system NEOCON suspension struts Operator arm guard Rear view camera Rear view mirrors (4) Rims, available for 40.00R57 & 46/90R57 tires Side view camera (RHS) Suction port shut off valve at hydraulic tank Supplementary front braking system, accumulators Supplementary rear braking system, accumulators Supplementary steering system, accumulators Tow hooks, front Tow lugs, rear

#### Cab

Air conditioner AM-FM radio Auxiliary outlet, 12 volt Camera monitor Engine shutdown switch Heater and defroster Integral ROPS/FOPS cab LCD system monitor Load and dump brake switch Seat with 2-point, 50 mm (2 in.) width seat belt Full size operator's seat, air suspension & 6 position Regular size trainer's seat, mechanical & adjustable Tinted safety glass, with roll-down windows 12-volt accessory connection **Display Monitor Indicators and Gauges** Brake/steering hydraulic oil-pressure gauge Central warning indicator Clock Coolant temperature gauge Drive-related warning indicator Engine oil pressure gauge Engine-related warning indicators Engine-stop warning indicator Fuel gauge Hour meter Hydraulic-related warning indicators HCM code Message SAF code Light indicators I oad meter Shift-lever position indicator Speedometer (Odometer included) Stop-valve warning indicator Tachometer Turn-signal indicator Wheel-motor temperature gauge Machine Lights Backup lights (2) Clearance lights (4) Combination stop and tail lights (2) Deck lights (2) Diagonal front stairway light Engine compartment lights (2) Halogen headlights (8) Payload external indicators, 2 locations of 2 lights each Rear-axle-compartment light

OPTIONAL EQUIPMENT Auxiliary dump connection Auxiliary steer connection Body liners (400BHN) Extreme cold-weather package includes Kim Hot coolant Fast fuel-filling system coupler Fuel tank, 4620 L (1,220 gal.) Fuel tank inlet access ladder Full-size operator's seat, air suspension, and 6 position with 2-point, 50 mm (2 in.) width seat belt Halogen front tire lights (2) Heated mirrors HID headlights (6) Tire guards Trolley-assist configulation \*\* \*\* engineered on request

(12 mm (.5 in.) thicknesses), sides & front and canopy (6 mm (.2 in.) thicknesses) 8201 kg (18,080 lb.) 4620 L (1,220 gal.) fuel tank with 100 % fuel (additional Loadweight display (1) 75 kg (165 lb.) Tire guards 248 kg (548 lb.)

# EH4000ACII SPECIFICATIONS

ENGINE	
Model	Cummins QSK60C
Configuration	4-cycle diesel with MCR fuel system, 16 cylinders
Aspiration	1 stage turbocharged and low-temperature aftercooled
Emission Certification	U.S. E.P.A Tier 2
Rated Output @ 1,900 min <sup>-1</sup> (rpm)	
Gross (SAE J1995)	1864 kW (2,500 hp)
Net	1771 kW (2,370 hp)
Maximum Torque (SAE J1995)	1004 kgf•m (7261 lbf•ft) (9839 N•m) at 1,500 min <sup>-1</sup> (rpm)
Bore & Stroke	159 x 190 mm (6 in. x 7.5 in.)
Displacement	60 L (3,661 cu. in.)
Starting	24-Volt Electric

#### HITACHI AC-DRIVE SYSTEM

AC-Control Cabinet		
Rectifier Number of units	1	
Rated capacity	1680 kW (2,252 hp)	
Inverter Number of units	2	
Rated capacity per unit	1000 kVA	
Chopper Number of units	2	
Rated capacity per unit	1950 kW (2,614 hp)	

Cabinet is pressurized to reduce dust and moisture. Equipped with a reliable liquid cooling system and lockable doors for safety. Equipped with auxiliary inverters to provide grid motors, blower motor for wheel motors, cabinet coolant pump, and final drive lubricant pump with adequate AC current. The AC drive motors can be controlled independently of engine speed, resulting in stable cooling performance on retarding or slowing down. Uniquely constructed for the Rigid Truck application.

Alternator	
Number of units	1
Capacity	1900 kVA at 1,900 min <sup>-1</sup> (rpm)
Equipped with an auxiliary alternator t	that provides AC current to grid motors, blower motors, cabinet coolant pump and final drive lubricant cooling & filtrating pump. Air cooled by an AC-drive blower.
AC Wheel Motor	
Number of units	2
Capacity per unit	720 kW (925 hp)
Air cooled by AC-drive blower.	
Retarding Grid Box	
Number of modules	5
Capacity per unit	625 kW (837.8 hp) (3 min.)
Equipped with inverter controlled v	variable speed cooling fan.
Axle	
Planetary Ratio	35.3:1
Maximum Speed	56 km/h (34.8 mph)

#### TIRES

Standard – Front and Rear Rim Width	46/90R57	736.6 mm (29 in)
Optional – Front and Rear Rim Width	40.00R57	736.6 mm (29 in)
Optional tires and tread patterns may be available. C	ertain job conditions may require higher TKPH (TMPH) in order to maintai	n maximum production. Hitachi recommends evaluating the job conditions and consult-

Uptional tires and tread patterns may be available. Certain job conditions may require higher IKPH (IMPH) in order to maintain maximum production. Hitachi recommends evaluating the job conditions and consulting with the tire manufacturer to make proper tire selection.

#### ELECTRICAL SYSTEM

Twenty-four-volt system. 140-ampere engine-driven alternator. Four 245H52, 12-volt, heavy-duty batteries connected in series/parallel.

BODY CAPACITIES		
Struck (SAE)	83.5 m <sup>3</sup> (109.2 yd <sup>3</sup> )	
Heap 3:1	117.0 m <sup>3</sup> (153.0 yd <sup>3</sup> )	
Heap 2:1 (SAE)	134.0 m <sup>3</sup> (175.3 yd <sup>3</sup> )	
Body capacity and payload subject to cha	ange based on customer specific material density and ap	plication.

#### STEERING SYSTEM

Closed-center, full-time hydrostatic power steering system using two double-acting cylinders and a variable displacement piston pump. Hitachi accumulators provide supplementary steering in accordance with ISO 5010 (SAE J1511), supplying a constant steering rate under all conditions. A tilt/telescopic steering wheel with 35 degrees of tilt and 57 mm (2.2 in.) telescopic travel is standard. Turning Diameter (ISO 7457) 30.2 m (99 ft. 1 in.)

#### HYDRAULIC SYSTEM

Two (2) Hitachi three-stage, double-acting cylinders	with electronic-controlled cushioning in retraction and extension, containing dual rod seals and urethane-energized scrapers, inverted and outboard mounted.
A tandem piston pump combines with four-position	electronic-pilot-controlled hoist valve. The electrical controller is mounted to the shift tower.
Body Raise Travel	57.5 degrees
Body Raise Time	18 sec.
Body Down Time (Float)	13 sec.

RAKE	SYSTEM	

Brake system complies with ISO 3450 (SAE J1473).

Service		
An all-hydraulic actuated braking system provides	precise braking control and quick system re-	sponse. The system is pressure proportioned, front to rear, for improved slippery road control.
Front Axle – Dry Disc		
Disc diameter each (2 discs/axle, 3 calipers/disc)	121.6 cm (4 ft.)	
Rear Axle – Oil-cooled Wet Disc		
Brake surface area per axle	75 760 cm <sup>2</sup> (81 ft <sup>2</sup> )	
Secondary		
Dual independent hydraulic circuits within the ser	vice-brake system provide fully modulated re	serve-braking capability. Both front and rear brakes are automatically applied when loss of supply
pressure is detected.		
Parking		
Two spring-on, hydraulic-off armature disc-brake	heads provide effective parking. The braking	system complies with ISO 3450 (SAE J1473).
Retarder		
Superior retardation to zero speed on grades is ac	hieved through AC-wheel motors in conjunct	ion with five Hitachi resistor grid packages. Service brake blending occurs at speeds below 0.5 km/h (0.3 mph).
Maximum dynamic retarding (Standard)	3 200 kW (4,289.6 hp)	
Load/Dump Brake Apply		
Through activation of a switch by the operator, a s	olenoid is energized, sending full brake press	sure to apply the rear wet disc brakes. For use during the load and dump cycles.
WEIGHTS (Approximate)		
Net machine weight stated below includes standard e	quipment	
Net machine weight changes will directly affect the N	ominal Payload	
Net machine weight changes will directly affect the w	46/90B57 (standard) Tires	
Chassis with Hoist	136 000 kg (200 828 lb )	
Body (excluding body parts)	26 000 kg (57 320 lb.)	
Net Machine Weight	162 000 kg (37,320 ib.)	
The Net Machine Weight includes operator and 100%	6 fuel	
Nominal Payload	222 tonnes (2// 7 tons)	
Target GMOW	384 000 kg (846 561 lb )	
The Nominal Payload specification is calculated using	the Hitachi Loading Policy Specific job site r	aquiraments may result in an adjustment to the Nominal Payload weight. Consult your Hitachi dealer for a truck
configuration which will match your baulage applicati	and Finacin Loading Folicy. Specific job site F	
Weight Distribution	Front	Roar
Empty	48%	52%
	33%	67%
	007	
	40,00857 (optional) Tires	
Chassis with Hoist	134 000 kg (295 420 lb )	
Body (excluding body parts)	26 000 kg (57 320 lb.)	
Net Machine Weight	160 000 kg (352 734 lb )	
The Net Machine Weight includes operator and 1009	6 fuel	
Nominal Pavload	206 tonnes (227 tons)	
Target GMOW	366 000 kg (806.878 lb.)	
The Nominal Pavload specification is calculated using	the Hitachi Loading Policy Specific job site r	equirements may result in an adjustment to the Nominal Payload weight. Consult your Hitachi dealer for a truck
configuration which will match your baulage application		
Weight Distribution	Front	Rear
Empty	48%	52%
Loaded	33%	67%

#### HI-TECH ROPS/FOPS CAB

New HI-TECH ROPS/FOPS Cab ROPS complies with ISO3471 and SAE J1040-May 94, FOPS complies with ISO3449.

A three-point rubber ISO-mount arrangement to the high-arch cross member minimizes vibration transfer to the operator compartment.

New wider cab with double full-size seat available and enough trainer's leg space brings comfortable operating and training.

#### Comfort and Ease of Operation

New wrap-around style dashboard means controls are within easy reach and visual contact. A full complement of easy-to-read automobile-type color Liquid Crystal Display (LCD) monitor and warning system, a spacious environment, six-way adjustable operator's air suspension seat, tilt/telescopic steering wheel, filtered adjustable air vents, all contribute to operator safety and comfort.

**Monitoring System** 

A new Hitachi system monitor provides display information and diagnostics of all onboard systems and controls which include the engine and Hitachi AC drive. Data links offer complete integration, while a color Liquid Crystal Display (LCD) clearly details machine functions. Downtime is minimized with faster and more reliable troubleshooting and analysis. A new Hitachi load monitoring 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 as information that can help in developing higher productivity. The Hitachi load monitoring system is fully integrated with the Hitachi vehicle monitoring system and display interface, avoiding potential failure or error common in aftermarket systems.

#### Camera Monitoring System

Included as standard safety equipment, an analog monitor has been mounted to the dashboard to display live camera information of the rear and right front area.

#### **Excellent Serviceability**

A removable front cover of the cab allows easy access to the service brake valve and A/C filter. A removable cover located behind the seat provides easy access to the electric components, Hitachi controller, and all electrical junction points.

#### SUSPENSION Front Suspension

## Independent trailing arms make up the front axle. NEOCON struts containing energy-absorbing gas and compressible NEOCON-E<sup>TM</sup> fluid are mounted between the trailing arms and frame. Inherent in the NEOCON strut design is a variable damping and rebound feature.

#### Rear Suspension

"A" frame structure, integral with axle housing, links the drive axle to the frame at forward center point with pin and spherical bushing. A track rod provides lateral stability between the frame and drive axle. Heavyduty rear-mounted NEOCON struts containing energy-absorbing gas and compressible NEOCON-E<sup>TM</sup> fluid suspend the drive axle from the frame. Integral variable damping and rebound feature included.

#### FRAME

Full fabricated box-section main rails with section height tapered from rear to front. Narrow at the rear to support the load and wider at the front allowing truck stability and excellent engine access for servicing. 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 at frame junctions are blended and ground to minimize stress concentrations. Weld joints are oriented longitudinally to the principal flow of stress for greater durability and more strength.

The new "bolt-on" High Arch Design requires less assembling time and no welding. The design provides higher structural quality and better serviceability during engine overhaul.

#### BODY

An extended canopy protects the service	vice deck area. High tensile strength 400 BHN abra	ision and impact resistant alloy steel is used for the plate indicated below:
Floor	16 mm (.6 in.)	
Front	9 mm (.35 in.)	
Sides	9 mm (.35 in.)	
Canopy	6 mm (.2 in.)	
Corners	12 mm (.47 in.)	
High-strength 690 N/mm <sup>2</sup> (100 000)	psi) alloy steel is also used for the canopy side me	nbers and floor stiffeners. The body is rubber cushioned on the frame.
Optional Body Liners		
Floor & Corners	12 mm (.47 in.)	
Sides & Front	6 mm (.2 in.)	
Canopy	6 mm (.2 in.)	
Special plate thicknesses and par	rtial plates are available.	

SERVICE CAPACITIES		
Main Accumulator	85 L (22.5 gal.)	
Crankcase (includes filters)	260 L (68.6 gal.)	
Engine Cooling System	619 L (163.5 gal.)	
Fuel Tank (Standard)	2 680 L (708 gal.)	
Fuel Tank (Optional)	4 620 L (1,220.5 gal.)	
Hydraulic System	750 L (198.1 gal.)	
Brake cooling system	250 L (66 gal.)	
Planetary Drives (L&R)	300 L (79.3 gal.)	
Front Wheels (L&R)	34 L (9 gal.)	
Windshield Washer	20 L (5.3 gal.)	
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### BASIC COMPONENT WEIGHTS

### INFORMATION FOR BUILDING SHIPPING LOADS (DOES NOT INCLUDE BODY OR TIRES)

SKID/CASE	DESCRIPTION	WEIGHT	DIMENSIONS: Length	Width	Height
#1 Steel Skid:		43 076 kg (94,965 lb.)	11 430 mm (37 ft. 6 in.)	4370 mm (14 ft. 4 in.)	4020 mm (13 ft. 2 in.)
#2 Steel Skid:	Front Axle	14 171 kg (31,241 lb.)	7400 mm (24 ft. 3 in.)	3000 mm (9 ft. 10 in.)	1750 mm (5 ft. 9 in.)
#3 Steel Skid:	Cab	2680 kg (5908 lb.)	2700 mm (8 ft. 10 in.)	1700 mm (5 ft. 7 in.)	2450 mm (8 ft.)
#4 Steel Skid:	Cab Support	2190 kg (4828 lb.)	7130 mm (23 ft. 5 in.)	1890 mm (6 ft. 2 in.)	1200 mm (3 ft. 11 in.)
#5 Steel Skid:	Left Fender	370 kg (816 lb.)	2080 mm (6 ft. 10 in.)	1480 mm (4 ft. 10 in.)	1100 mm (3 ft. 7 in.)
#6 Steel Skid:	Right Fender	337 kg (743 lb.)	2370 mm (7 ft. 9 in.)	1480 mm (4 ft. 10 in.)	1200 mm (3 ft. 11 in.)
#7 Steel Skid:	Right Bumper	134 kg (295 lb.)	1120 mm (3 ft. 8 in.)	840 mm (2 ft 9 in.)	1640 mm (5 ft. 5 in.)
#8 Steel Skid:	Battery Box	503 kg (1109 lb.)	2270 mm (7 ft. 5 in.)	860 mm (2 ft. 10 in.)	710 mm (2 ft. 4 in.)
#9 Steel Skid:	Grid Box (2 p)	868 kg (1914 lb.)	1780 mm (5 ft. 10 in.)	860 mm (2 ft. 10 in.)	1570 mm (5 ft. 2 in.)
#10 Steel Skid:	Grid Box (2 p)	868 kg (1914 lb.)	1780 mm (5 ft. 10 in.)	860 mm (2 ft. 10 in.)	1570 mm (5 ft. 2 in.)
#11 Steel Skid:	Grid Box (1 p)	460 kg (1014 lb.)	1780 mm (5 ft. 10 in.)	860 mm (2 ft. 10 in.)	950 mm (3 ft. 1 in.)
#12 Case:	Control Cabinet	2868 kg (6323 lb.)	3080 mm (10 ft. 1 in.)	1580 mm (5 ft. 2 in.)	2480 mm (8 ft. 2 in.)
#13 Steel Skid:	Right Deck 1	408 kg (899 lb.)	2100 mm (6 ft. 11 in.)	2100 mm (6 ft. 11 in.)	1500 mm (4 ft. 11 in.)
#14 Steel Skid:	Right Deck 2	270 kg (595 lb.)	2200 mm (7 ft. 3 in.)	2100 mm (6 ft. 11 in.)	700 mm (2 ft. 4 in.)
#15 Steel Skid:	Handrail, Deck, etc	913 kg (2013 lb.)	4500 mm (14 ft. 9 in.)	2000 mm (6 ft. 7 in.)	1560 mm (5 ft. 1 in.)
#16 Steel Skid:	Steps, Ejector	517 kg (1,140 lb.)	5500 mm (18 ft. 1 in.)	970 mm (3 ft. 2 in.)	1370 mm (4 ft. 6 in.)
#17 Steel Case:	Misc. Parts (1)	1095 kg (2414 lb.)	2260 mm (7 ft. 5 in.)	1150 mm (3 ft. 9 in.)	740 mm (2 ft. 5 in.)
#18 Steel Case:	Misc. Parts (2)	827 kg (1823 lb.)	1150 mm (3 ft. 9 in.)	1130 mm (3 ft. 8 in.)	550 mm (1 ft. 10 in.)
#19 Steel Case:	Misc. Parts (3)	577 kg (1272 lb.)	2260 mm (7 ft. 5 in.)	1150 mm (3 ft. 9 in.)	740 mm (2 ft. 5 in.)
#20 Steel Skid:	Fuel Tank	1287 kg (2837 lb.)	1700 mm (5 ft. 7 in.)	1400 mm (4 ft. 7 in.)	2500 mm (8 ft. 2 in.)
#21 Steel Skid:	Front Strut x 2	1071 kg (2361 lb.)	2290 mm (7 ft. 6 in.)	770 mm (2 ft. 6 in.)	580 mm (1 ft. 11 in.)
#22 Steel Skid:	Accumulator (1)	556 kg (1226 lb.)	3000 mm (9 ft. 10 in.)	370 mm (1 ft. 3 in.)	520 mm (1 ft. 8 in.)
#23 Steel Case:	Accumulator (2), etc	396 kg (873 lb.)	2260 mm (7 ft. 5 in.)	1150 mm (3 ft. 9 in.)	740 mm (2 ft. 5 in.)
#24 Steel Case:	Piping Intakes, etc	267 kg (589 lb.)	2260 mm (7 ft. 5 in.)	1150 mm (3 ft. 9 in.)	740 mm (2 ft. 5 in.)
#25 Steel Skid:	Muffler	282 kg (622 lb.)	1900 mm (6 ft. 3 in.)	1400 mm (4 ft. 7 in.)	920 mm (3 ft.)
#26 Steel Skid:	Spacer x 2	470 kg (1036 lb.)	1350 mm (4 ft. 5 in.)	1350 mm (4 ft. 5 in.)	1200 mm (3 ft. 11 in.)
#27 Steel Skid:	Travel Device	15 469 kg (34,103 lb.)	3300 mm (10 ft. 10 in.)	1700 mm (5 ft. 7 in.)	1900 mm (6 ft. 3 in.)
#28 Steel Skid:	Travel Device	15 469 kg (34,103 lb.)	3300 mm (10 ft. 10 in.)	1700 mm (5 ft. 7 in.)	1900 mm (6 ft. 3 in.)
#29 Steel Skid:	Optional Fuel Tank	1340 kg (2954 lb.)	2120 mm (6 ft. 11 in.)	1700 mm (5 ft. 7 in.)	2380 mm (7 ft. 10 in.)

### EXCAVATOR MATCH

### PASSES TO FILL EH4000ACII\*

EX3600-6 Excavator		EX5500-6	EX8000-6 Excavator	
Shovel	Backhoe	Shovel	Backhoe	Shovel
21 m <sup>3</sup> (27.4-cuyd.) Bucket**	22 m³ (28.7-cuyd.) Bucket***	27 m³ (35.3-cuyd.) Bucket**	29 m³ (37.9-cuyd.) Bucket***	40 m3 (52.3-cuyd.) Bucket**
6 Passes	6 Passes	5 Passes	4 Passes	3 Passes
*SAE 2:1 148.2 m <sup>3</sup> (193.8-cuyd.).				

\*\*Bucket Capacity (SAE 2:1 heaped). \*\*\*Bucket Capacity (SAE 1:1 heaped).

### OUR NAME LOOKS GOOD ON ORANGE.

It's our color. It's our brand. New product-support initiatives and our strengthened dealer network are more proof that we are as passionate as ever about this industry. We are dedicated to building the best equipment in the world and keeping it painted Hitachi Orange.

# HITACHI

www.hitachimining.com

Specifications and design subject to change without notice.

