

EH700

HITACHI

EH700

Nominal Payload with Standard Equipment

34.5 tonnes (38.1 tons)

Maximum GMW

69 900 kg (154 000 lb)

Engine

Cummins QSX15

Rated Power 391 kW (525 HP)



Designed to Perform, Built to Last



Hitachi Technologies

Hitachi excavators have a reputation of being the most reliable excavators and redefined the standards of excellence for excavators. The new EH700-2 was designed and built to meet these same standards.



High-Powered Engine

The EH700-2 uses the high powered engine, 391 kW (525 HP) Cummins QSX15, providing long life while optimizing performance and reliability. Very low fuel consumption is another characteristic of this engine and it meets U.S. EPA Tier 2 and EU Stage II emission regulations.



Long Frame Life

Smooth frame transitions minimize stress concentrations and steel castings effectively distribute input loads. Proven design and manufacturing methods with state-of-the-art ultrasonic testing ensure a quality product.



Unique Body Design

The new single sloped floor evenly distributes material shedding during dumping. A continuously exhaust-heated body reduces carry-back of material, and muffles exhaust. Horizontal floor and side rail stiffeners distribute load shocks evenly over the entire body length, minimizing stress concentrations in any one area. Closely spaced floor stiffeners reduce wear due to impact loading.



Well Matched: EH700-2 & Excavators

Excavator	ZAXIS450	ZAXIS600	ZAXIS800		EX1200-5C	
	Std.	Std.	Std.	BE	Std.	BE
Bucket Capacity (SAE, PCSA heaped)	1.89 m ³ (2.47 yd ³)	2.7 m ³ (3.53 yd ³)	3.4 m ³ (4.45 yd ³)	4.3 m ³ (5.62 yd ³)	5.0 m ³ (6.54 yd ³)	6.5 m ³ (8.50 yd ³)
Passes	12 to 13 passes	8 to 9 passes	7 passes	5 to 6 passes	4 to 5 passes	3 to 4 passes

Note : The load indicators are optional.

Rugged Construction



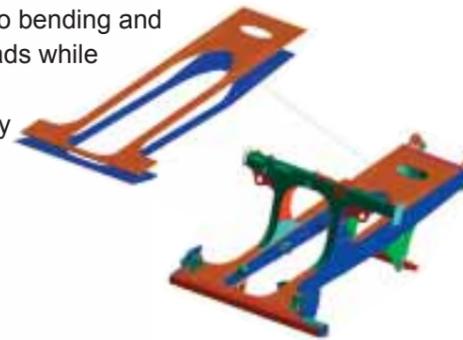
Technologically Advanced

The EH700-2 is designed for quarry and mining applications where hauling those several extra tons per trip really matters. It provides low operating costs, unparalleled productivity, and overall quality through its superior structure and systems designs.



Robust Frame

The frame and suspension are designed to work together to provide maximum structural integrity and operator comfort. The full fabricated box section main frame rail construction provides superior resistance to bending and torsional loads while eliminating unnecessary weight.



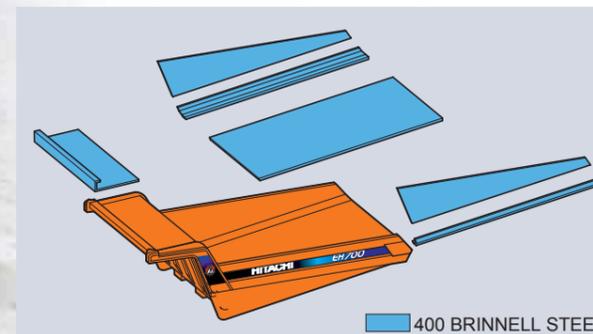
Fully Hydraulic Brake

The fully hydraulic brake features high reliability, durability and serviceability. Optimum brake force yields maximum available braking under tough ground conditions for best control. Unique variable front to rear brake proportioning maximizes stop performance under slippery road conditions.



Reinforced Body

Built for quarry and mining applications, the EH700-2 body uses a 16 mm (0.63") floor plate and 8 mm (0.31") side plates made of 400 BHN high-tensile steel. This provides high resistance to wear and impact. A low loading height and large target area allow easy, quick loading by a variety of loading tools.



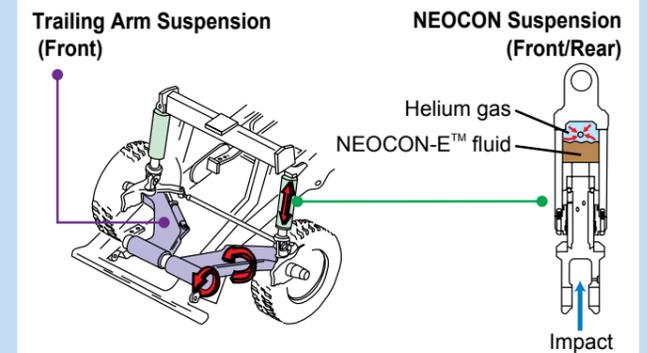
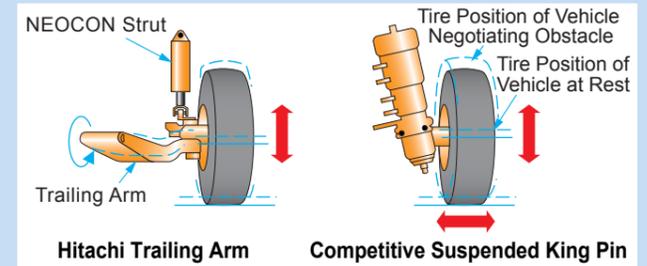
Note : The load indicators are optional.

Ease of Operation



Front Axle Trailing Arm Design with NEOCON™ Suspension

The independent front axle trailing arm coupled with NEOCON suspension cylinders reduces suspension-induced frame twisting while providing independent tire action.



Electronic Hoist Control

The electronic hoist control reduces operator effort when the body is raised and lowered. This decreases operator fatigue and increases productivity.



Load-and-Dump Brake

The load-and-dump brake is applied at the touch of a switch locking the rear brakes at full pressure.



Automatic Transmission

Combination of CECII and the new Shift Energy Management (SEM) system enables the transmission to control speed and torque conditions during upshifts, as well as shifts from Neutral to First or Neutral to Reverse. Benefits are reduced driveline torque spikes and potential for increased clutch life, all while providing smoother shifts with minimal performance loss. The system can be programmed for specific hauling applications, therefore improving the overall performance while reducing operating costs.



Foot-Operated Retarder

With the foot-operated retarder brake, the operator can keep his eyes on the road without taking his hand from the wheel. This air-less system provides consistent performance and faster response time while increasing reliability and reducing downtime.



Large Storage Box

A large storage box is provided in the cab, having hot and cool function and ample space enough to hold food and drink for long-hour operation.



HI-TECH ROPS / FOPS Cab

The new HI-TECH (Hitachi Technology) ROPS / FOPS Cab features increase window area thus providing better visibility. The cab uses double-wall construction and a 3-point rubber iso-mount to absorb shocks and noise. The new larger operator door allows easy boarding. The new high powered and reliable air conditioning unit offers a comfortable operator environment. The new Hitachi controller from Hitachi excavators, released from the need for multiple computers, has high reliability with the traveling mode changing and shift shock reduction system.



Note : The load indicators are optional.

Specifications: EH700-2



ENGINE

Model	Cummins QSX15-525
Configuration	4 Cycle, in-line, 6 cylinder diesel
Emission Certification	U.S. EPA Tier2, EU Stage II
Aspiration	Turbocharged/Aftercooled
Rated Power @ 2 100 min ⁻¹ (rpm)	
Gross power (SAE J1995)	391 kW (525 HP)
Net power (SAE J1349)	358 kW (480 HP)
Maximum Torque @ 1 400 min ⁻¹ (rpm)	2 440 N·m (249 kgf·m, 1 800 lbf·ft)
Bore & Stroke	137 x 170 mm (5.39 in x 6.70 in)
Piston Displacement	15 L (915 in ³)
Torque Rise	37 %
Starting	Electric



TRANSMISSION

Allison M5610A, planetary type, full automatic shift. Integral torque converter with automatic lock-up shifting in all ranges. Remote mounted, 6 forward speeds, 2 reverse. Allison Transmission Commercial Electronic Control (CEC II) shift system. Trim Boost Soft Shift (TBSS) provides smooth shifting to help reduce operator fatigue. Standard SEM (Shift Energy Management).

Maximum Speeds @ Governed Engine Speed.

Differential	3.13 : 1	3.13 : 1	2.81 : 1
Planetary	5.25 : 1	6.00 : 1	5.25 : 1
Gear	Ratio	km/h (mph)	km/h (mph)
1	4.00	9.5 (5.9)	8.5 (5.3)
2	2.68	16.9 (10.5)	15.2 (9.4)
3	2.01	22.5 (14.0)	20.2 (12.6)
4	1.35	33.5 (20.8)	30.1 (18.7)
5	1.00	45.2 (28.1)	40.6 (25.3)
6	0.67	68.2 (42.5)	61.3 (38.1)
R1	5.12	6.8 (4.2)	6.1 (3.8)
R2	3.46	13.2 (8.2)	11.9 (7.4)



DRIVE AXLE

Full floating axle shafts, Model 2052 differential and single reduction planetary at each wheel. Balanced life gear design maximizes gear life.

Optional Active Traction Control (ATC) with Electronic Downhill Speed Control (EDSC) available.

Ratios	Standard	Optional	Optional
Differential	3.13:1	3.13:1	2.81:1
Planetary	5.25:1	6.00:1	5.25:1
Total Reduction	16.43:1	18.78:1	14.75:1
Maximum Speeds			
with 18.00R33 Tires	68.2 km/h (42.5 mph)	61.3 km/h (38.1 mph)	76.0 km/h (47.2 mph)



TIRES

Standard - Front and Rear	Rim Width
18.00R33(**) E4 Radial	330 mm (13 in)
Optional tires, brands and treads available.	



ELECTRICAL SYSTEM

Twenty-four volt lighting and accessories system. 75-ampere alternator with integral transistorized voltage regulator. Two 1155 A at 0 degree F, cold cranking, 12-volt, maintenance-free, heavy-duty batteries connected in series. Standard automobile type monitor, traveling mode system, central warning system and hoist control system with built-in diagnostics, controlled by Hitachi controller. Optional Haultronic II load monitoring system controlled by Hitachi controller.



BODY CAPACITY

	m ³ (yd ³)
Struck (SAE)	17.0 (22.2)
Heap 3:1	21.6 (28.2)
Heap 2:1 (SAE)	24.0 (31.4)

Body capacity and payload subject to change based on customer specific material density and application.



WEIGHTS

	kg	(lb)
Chassis with Hoist	24 400	(53 800)
Body	7 500	(16 500)
Net Machine Weight	31 900	(70 300)

Maximum GMW with Std. Tires 69 900 (154 000)
[18.00R33(**)E4]
Including Options, 50% Fuel, Operator & Payload Not to Exceed

Weights given are for standard options, standard body and tires. Net machine weight changes will directly effect the payload. Material density will determine body volume figures.

Weight Distribution	FRONT	REAR
Empty	49 %	51 %
Loaded	33 %	67 %

Payload with Standard Equipment 38.0 tonnes (41.9 tons)

Note: Nominal Payload on front cover shows 100/110 of Payload with Standard Equipment.

Major Options	
Approximate Change in Net Machine Weight:	
General Type Body Liners - Complete - 400 BHN Steel	2 230 (4 920)
Heavy Duty Type Body Liners - Complete	2 870 (6 330)



STEERING SYSTEM

Closed-center, full-time hydrostatic power steering system using two double-acting cylinders, pressure limit with unload piston pump and brake actuation/steering system reservoir. Accumulator provides supplementary steering in accordance with SAE J1511 and ISO 5010. Tilt/telescopic steering wheel with 35 degrees of tilt and 57.2 mm (2.25") telescopic travel is standard.

Steering Angle	42°
Turning Diameter (SAE)	16.15 m (53'00")
Steering Pump Output	95.8 L/min (25.3 gpm)
System Pressure	19.0 MPa (2 750 psi)



HYDRAULIC SYSTEM

Two two-stage, double-acting cylinders, with cushioning in retraction, inverted and outboard-mounted. Separate Hoist/Brake Cooling reservoir and independent tandem gear pump. Control valve mounted on reservoir.

Body Raise Time (@ 1 700 min ⁻¹ (rpm))	13.9 s
Body Float Down Time	14.0 s
Brake Cooling Pump Output (@ 2 100 min ⁻¹ (rpm))	200 L/min (52.9 gpm)
Hoist Pump Output (@ 2 100 min ⁻¹ (rpm))	301 L/min (79.6 gpm)
System Relief Pressure	17.2 MPa (2 500 psi)



BRAKE SYSTEM

Brake system complies with SAE J1473/ISO 3450.

All-hydraulic actuated braking system provides precise braking control and quick system response. The brake controller has a unique variable front to rear brake proportioning that maximizes the stopping performance under all road conditions.

Service

All hydraulic actuated front dry disc brakes, and rear wet disc brakes.

Front Axle – Dry Disc

Disc Diameter Each (2 discs/axle)	673 mm (26.5 in)
Brake Surface Area Per Axle	0.413 m ² (640 in ²)
Lining Area Per Axle	0.139 m ² (216 in ²)
Brake Pressure (Max.)	15.9 MPa (2 300 psi)

Rear Axle – Oil-Cooled Wet Discs

Brake Surface Area Per Axle	3.72 m ² (5 767 in ²)
Brake Pressure (Max.)	8.3 MPa (1 200 psi)

Optional Increased Capacity

Brake Surface Area Per Axle	4.96 m ² (7 680 in ²)
Brake Pressure (Max.)	8.3 MPa (1 200 psi)

Secondary

Two independent circuits within the service brake system provide fully modulated reserve braking capability. System also incorporates automatic application when loss of pressure is detected.

Parking

Dry disc mounted on differential input shaft. Controlled by a toggle switch on the dash. Automatically applied if brake hydraulic pressure is lost.

Size (Diameter)	558 mm (22 in)
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Retarder

Foot-operated valve controls all-hydraulic actuation of oil-cooled wet disc brakes on rear axle. System provides modulated pressure to rear brakes for constant speed control.

Continuous	484 kW (649 HP)
Intermittent	969 kW (1 300 HP)

Load/Dump Brake Apply

Through activation of a switch by the operator, a solenoid is energized, sending full brake pressure to apply the rear Wet Disc brakes. For use during the load and dump cycles.



WET DISC BRAKE

The 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, secondary braking, and retarding. The brakes are a multi-plate design, and continuously oil-cooled. The sealed design protects against environmental contamination for prolonged service life. The wet disc brake is designed with automatic retraction to prevent drag. Separate pedals activate the service braking and retarding functions.



HI-TECH ROPS/FOPS CAB

HI-TECH ROPS/FOPS Cab

ROPS complies with ISO3471 and SAE J1040-May 94. FOPS complies with ISO3449. Double wall construction of 11 gauge inner and outer steel panels, lends itself to a more structurally sound cab. Multiple layered floor mat acts to absorb sound and control interior temperature. A three-point rubber isomount arrangement to the deck surface minimizes vibration to the operator compartment.

Excellent Serviceability

A removable front panel allows easy access to service brake valves, retarder valve and heater assembly. The operator's console utilizes four (4) removable gauge panels that house gauges and customer options, each individually accessible. A removable cover located behind the seat provides easy access to the Transmission Controller (TCU), Central Controller (CCU), 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, automobile type monitor with warning system, a spacious environment, six-way adjustable mechanical seat, tilt/ telescopic steering wheel, filtered ventilation, door locks, and a padded trainer seat, all contribute to operator convenience and comfort.

Equipment & Dimensions: EH700-2



SUSPENSION

Front and Rear Suspension

The 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 axle housing has an A-frame mounting. The rear NEOCON struts are mounted in a more vertical position which allows a more pure axial loading and reduces the tractive and braking 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 increased productivity. Improved stability means more consistent dynamic response of the machine to fluctuating load energy, resulting in predictable machine performance. And improved control means better machine maneuverability.

The 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.

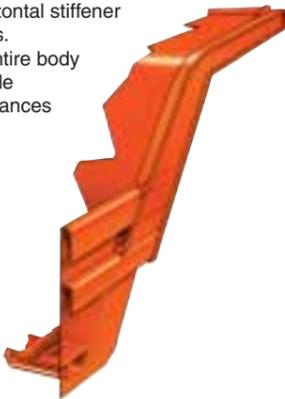


BODY

Body is a flat chute type, sloped floor. It is rubber cushioned and continuously exhaust-heated. High tensile strength 400 BHN abrasion-resistant alloy steel is used in thickness of:

	mm	(in)
Floor	16	(0.63)
Front	8	(0.31)
Sides	8	(0.31)
Canopy	5	(0.20)
Body Liners, Complete		
Floor & Corners	10	(0.39)
Sides, front, end protection	6	(0.24)
Top rails	10	(0.39)

High yield strength alloy steel is also used for canopy side members and floor stiffeners. The horizontal stiffener design minimizes stress concentrations. Load shocks are dissipated over the entire body length. Closely spaced stiffeners provide additional protection by minimizing distances between unsupported areas.



SERVICE CAPACITIES

	L	(US gal)
Crankcase (includes filters)	61.0	(16.0)
Transmission	70.0	(18.5)
Cooling System	159	(42.0)
Fuel Tank	454	(120)
Hydraulics		
Hoist System	178	(47.0)
Steering System	97	(25.6)
Drive Axle	50.3	(13.1)
Windshield Washers	5.7	(1.5)



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 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. Frame utilizes 345 MPa 50 000 psi yield high strength low alloy steel that is robotically welded to ensure consistently high quality welds.



STANDARD EQUIPMENT

GENERAL

- ACCU-TRAC suspension system
- All-hydraulic braking
- Allison M5610A transmission
- Automatic transmission shifting
- Battery disconnect switch
- Body down indicator, mechanical
- Body down cushioning
- Body up speed restriction
- Body prop pins
- Canopy spill guard
- Continuous heated body
- Cooling system sight gauge
- Cooling system surge tank
- Driveline guard, front
- Electric horns
- Electric start
- Electronic hoist
- Engine belt protection
- Fan guard
- Fenders
- Fixed steering stops
- Front brake cut-off switch
- Fuel tank sight gauge
- Guard rails

- Hoist interlock
- Hoist tank sight gauges
- ISO decals
- Load/dump brake
- Mirrors right and left, hand adjustable
- Mud flaps
- NEOCON suspension struts
- Park brake-dry disc
- Park brake interlock
- Radiator grill guard
- Reverse alarm and light
- Rock ejector bars
- Steering accumulator
- Steering tank sight gauge
- Swing out front grille
- Tires, 18.00R33(**)E4
- Tow points front/rear
- Transmission guard
- Transmission sight gauge
- Two speed reverse

CAB

- Air conditioning
- Air filtration/replaceable element
- Ash tray
- Cab interior light
- Cigar lighter, 24-volt
- Door locks
- Foot rest (left and right)
- Hot and cool box
- Heater and defroster
- Integral ROPS/FOPS cab
- ISO driver envelope
- Integrated engine diagnostics connector
- Integrated transmission diagnostics connector

- Modular instrumentation
- Quick connect test ports
- Roll down window (operator side)
- Rubber floor mat
- Safety glass
- Seat belts, retractable (operator/trainer)
- Seat, mechanical 6 position
- Sunvisor
- Tilt/telescopic steering wheel
- Tinted glass all windows
- Trainer seat
- 12-volt accessory connection
- Windshield washer
- Windshield wiper, intermittent

GAUGES AND INDICATORS

- Battery charge
- Body up
- Brake system oil pressure
- Central warning (caution)
- Central warning (stop)
- Engine oil pressure
- Engine coolant level
- Engine other malfunctions
- Filter restriction
- High beam
- Parking brake applied
- Steering oil pressure
- Steering oil temperature
- Transmission malfunction
- Transmission oil pressure
- Turn signals/hazard

- Gauges:
- Brake oil temperature
- Converter oil temperature
- Engine coolant temperature
- Hourmeter, engine
- Odometer
- Speedometer
- Steering/brake oil pressure
- Tachometer
- Fuel gauge

MACHINE LIGHTS

- Back-up light
- Clearance light - front (2)
- Clearance light - rear (2)
- Halogen head lights, (4)
- Stop & tail, (2)
- Amber turn signals and four-way flashers

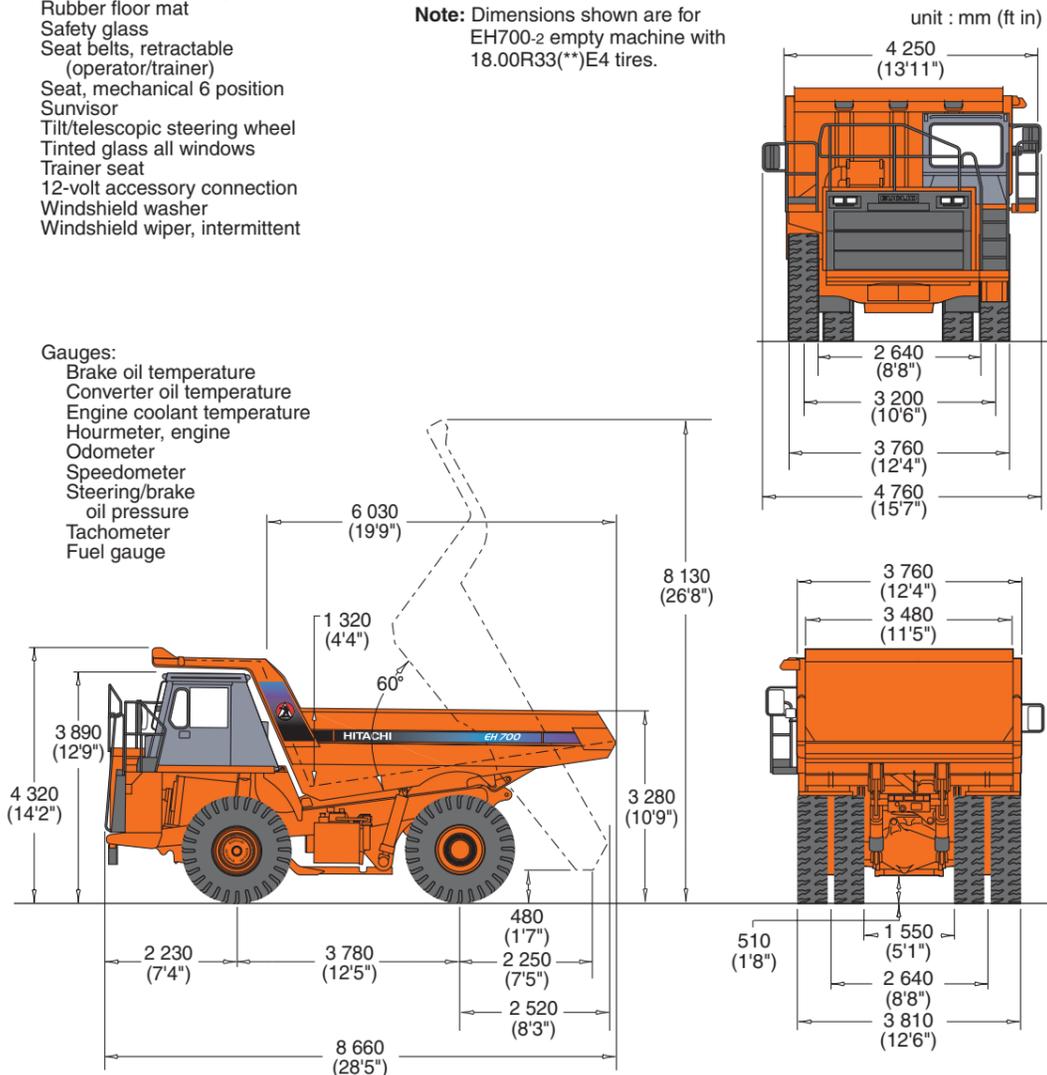
OPTIONAL EQUIPMENT

- ACTIVE TRACTION CONTROL (ATC) w/ELECTRONIC DOWNHILL SPEED CONTROL (EDSC)
- Air suspension seat
- Air suspension, electrical heated seat
- AM-FM radio, selectable by region
- Body liners (400 BHN) plates, light or heavy duty
- Body sideboard extensions
- Brake system oil pressure
- Canopy spill guard extension
- Cold start aid
- Differential, 2.81:1 ratio
- Driveline guard, rear
- Electrical heated mirrors
- Electrical heated seat
- Engine compartment lights
- Engine compartment step

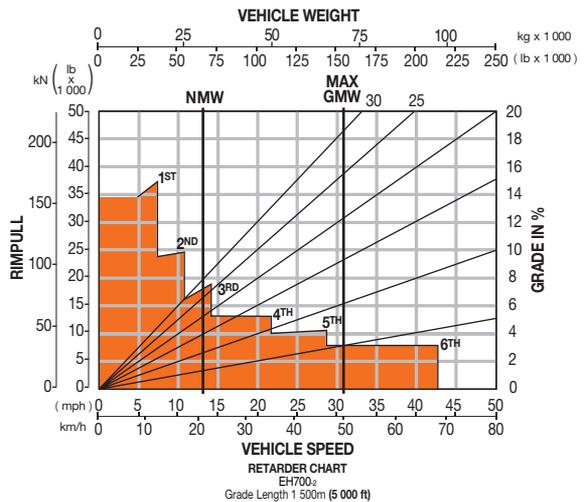
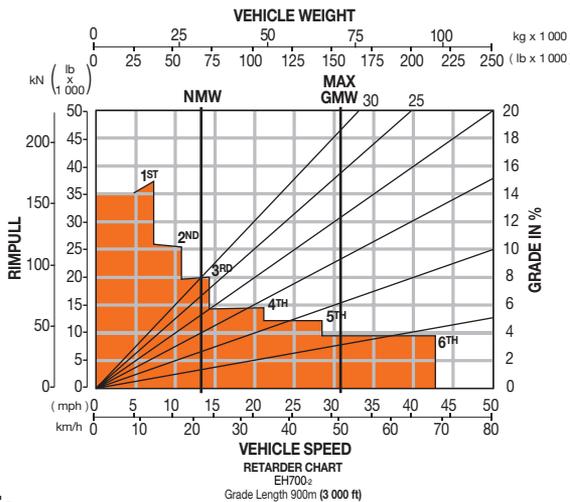
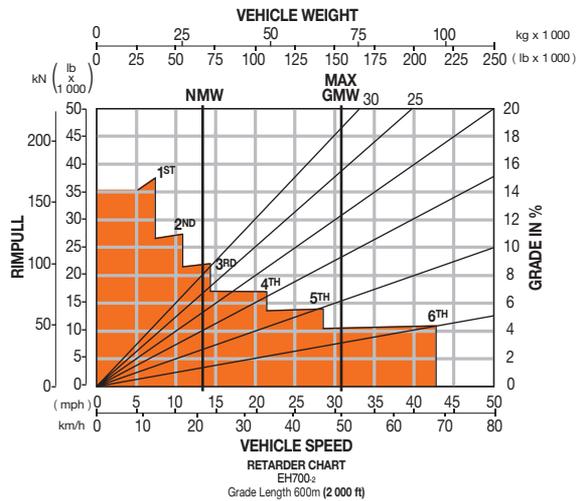
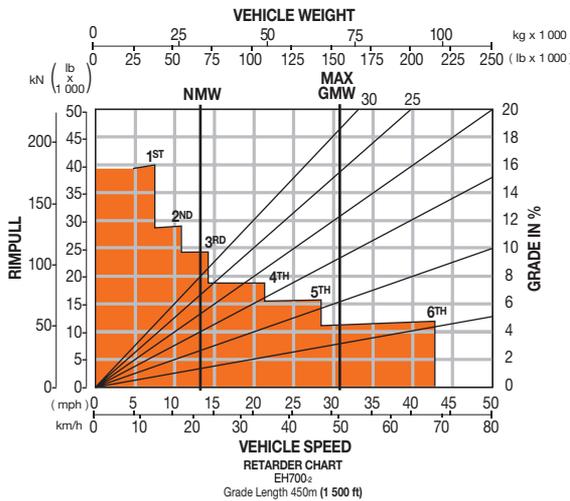
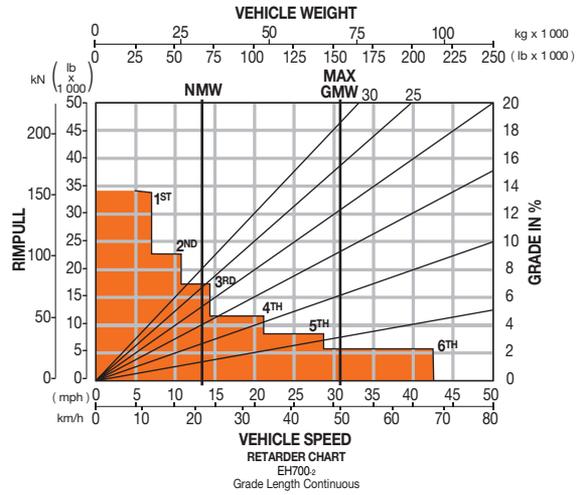
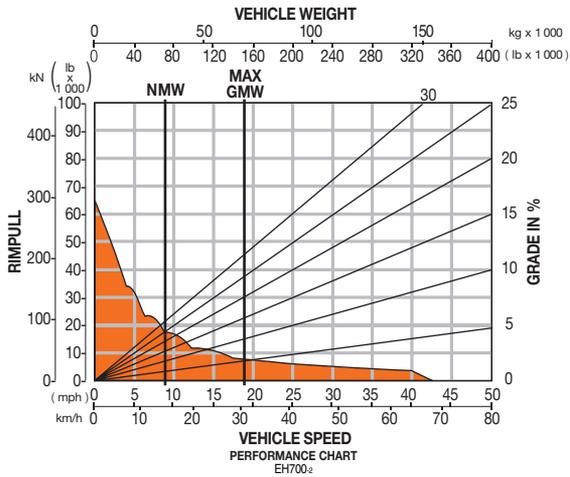
- Engine heater (oil & coolant)
- Extra headlights
- Extra reverse lights onto front fenders
- Extra reverse light onto tail light mount bracket
- Fire extinguisher mount bracket
- HAULTRONIC II-load monitoring system
- HID headlights
- LED taillight
- Lube system, automatic
- Lube system, centralized
- Muffler, deck mounted
- Planetary, 6.00 : 1 ratio
- Radio & CD player
- Radio & tape player
- Starter lock-out switch
- Tires (size, type & rating)
- Unit sound suppression

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 EH700-2 empty machine with 18.00R33(**)E4 tires.



Performance Data: EH700-2



NOTE:

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.
3. From intersection, read horizontally right or left to intersect the performance or retarder curve.
4. Read down for machine speed.

These specifications are subject to change without notice.

Illustrations and photos show the standard models, and may or may not include optional equipment, accessories, and all standard equipment.

Before use, read and understand Operator's Manual for proper operation.

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