Dump Truck

- **Nominal Payload with Standard Equipment**: 59.0 tonnes (65.0 tons)
- **Maximum GMW**: 110 677 kg
- **Engine**: MTU Detroit Diesel 12 V Series 2000
  Rated Power 567 kW (760 HP)
Engineered for Performance, Designed for Comfort, and Built to Last.

Hitachi Technologies
Hitachi Trucks, like Hitachi Excavators are designed and manufactured using cutting edge technology. Trucks designed by Hitachi using Hitachi Electronic devices result in great electrical system reliability, efficiency and control.

High-Powered Engine
Strong, reliable power is provided by the MTU Detroit Diesel 12 V Series 2000 diesel engine. This engine features the latest in diesel engine development providing low fuel consumption while meeting the emission regulations of U.S. EPA Tier 2 and EU Stage II.

Long Frame Life
Frame rails are tapered from front to rear to distribute the load evenly over the entire length of the chassis. In place of castings, cold rolled steel is used as it is known to be more homogeneous and easier to repair. Weld joints are oriented longitudinally to the principal flow of stress for strength and long life. Proven design and manufacturing methods with state-of-the-art ultrasonic testing ensure a quality product.

Unique Body Design
The 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: EH1100 - & Excavators

<table>
<thead>
<tr>
<th>Excavator</th>
<th>ZX870LCH+</th>
<th>EX1200-D (BH)</th>
<th>EX1200-D (LI)</th>
<th>EX1900-D (BH)</th>
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<tbody>
<tr>
<td>Boom</td>
<td>7.1 m - BE Boom</td>
<td>8.4 m - H Boom</td>
<td>9.1 m - Boom</td>
<td>7.55 m - BE Boom</td>
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<tr>
<td>Arm</td>
<td>2.95 m - BE Arm</td>
<td>3.7 m - H Arm</td>
<td>3.4 m - Arm</td>
<td>3.4 m - BE Arm</td>
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<tr>
<td>Bucket Capacity (SAE, PCSA heaped)</td>
<td>4.3 m³</td>
<td>3.5 m³</td>
<td>5.0 m³</td>
<td>6.5 m³</td>
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<tr>
<td>Passes</td>
<td>8</td>
<td>10</td>
<td>7</td>
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</tbody>
</table>
Rugged Construction

Technologically Advanced

The EH1100 is designed to develop low cycle times and extra efficiency in the heavy duty applications of quarrying and mining. This truck provides low operating costs, unparalleled productivity and overall quality through its superior structure and systems designs.

Robust 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 yield high strength low alloy steel that is robotically welded to ensure consistently high quality welds.

Reinforced Body

Built for quarry and mining applications, the EH1100 body uses a 18 mm floor plate and 8 mm 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.

Fully Hydraulic Brake

The fully hydraulic brakes feature 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.

400 BRINELL STEEL
Ease of Operation

The Hitachi ACCU-TRAC suspension system delivers excellent maneuverability, even at higher speeds. The trailing arm layout offers greater ease of servicing while improving truck performance compared to suspended king-pin designs. The pivot mounting of the trailing arm design allows only axial input to the strut and allows wheel movement to the vertical plane only.

Features:
- Lateral forces that act on the front wheels are minimized, resulting in reduced tire scuffing.
- Dynamic friction (side-wall force) within the strut is low due to the features of the ACCU-TRAC design, allowing the use of a lighter strut engineered to a smaller diameter and longer stroke.
- The necessary frame bulk (horse-collar structure) needed to mount a suspended king-pin is non-existent.
- The elimination of the “horse-collar” member provides greater engine access.
- The NEOCON strut used with the ACCU-TRAC suspension, improves operator and component isolation, provides better hauler stability and predictable operational control.
- Locating the king-pin close to the wheel assembly and at a slight angle results in low “Dry Park Steering” effort.
- Development of the compressible media, NEOCON-E(TM) fluid (proprietary, silicone based, environmentally friendly) for use in the suspension strut with Helium gas, results in an improved energy absorption (isolation) system and an improved energy release (stability) system that responds favorably whether traveling empty or with payload in a wide range of ambient temperatures.

Auto-Lubrication System (Optional)

A pump fed system automatically applies grease to lube points via plumbing. The lubricant is automatically delivered in time controlled and metered quantities to all connected lube points in the system.

Controller

Auto Lubricator

HI-TECH ROPS / FOPS Cab

The new HI-TECH (Hitachi Technology) ROPS/FOPS Cab features a center integrated, “flat panel” style dashboard that positions the display and controls within close view of the road ahead. The cab uses double-wall construction and a 3-point rubber iso-mount to absorb shocks and noise. The new high powered heater provides ample BTU’s for all environments and working conditions. The new Hitachi controller, built by Hitachi and also used in excavators, will perform its function of processing input and output information with reliability during the most rigorous haul cycle.

Controller

Auto Lubricator

Superior Suspension

The Hitachi ACCU-TRAC suspension system allows the front struts to be removed and installed without removing the trailing arms, brakes or tires. This relieves wear and tear on tools and equipment and allows a service crew to perform the repair, which aims to reduce the amount of hauler downtime, increasing productivity.

Spindle

Each spindle is controlled by a hydraulic steering cylinder, rotates around the king-pin and the outer end of the trailing arm to position the wheels for steering. The spindles are attached by one tie-rod.

King-Pin

Retains the spindle to the trailing arm. Spindle rotates around the king-pin, which is locked in position. The Neocon-E strut attaches to the top.

Trailing Arm

Main suspension member to which other suspension components are attached. The trailing arms hinge on a torque tube that is clamped to the front of the frame.

Neocon Strut

The energy absorption and release component of the ACCU-TRAC suspension system. Pinned to ball bushings at the frame and at the top of the king-pin to prevent bending movements from transferring to the strut. Receives only axial input.

With no horizontal deflection

Trailing Arm Suspension (Front)

Helium gas

NEOCON Strut (Front/Rear)

Impact

Lateral forces that act on the front wheels are minimized, resulting in reduced tire scuffing.
SPECIFICATIONS

ENGINE
- Model: MTU Detroit Diesel 12 V Series 2000
- Type: 24.00 RSDS
- Emission Certification: U.S. EPA Tier 2, E.U. Stage II
- Aspiration: Turbocharged / Aftercooled
- Rated Power:
  - SAE J1995, gross: 567 kW (760 HP) at 2 100 min⁻¹ (rpm)
  - SAE J1349, net: 520 kW (696 HP) at 2 100 min⁻¹ (rpm)
  - ISO 9249, net: 520 kW (696 HP) at 2 100 min⁻¹ (rpm)
  - EEC 80/1269, net: 520 kW (696 HP) at 2 100 min⁻¹ (rpm)
- Maximum Torque: 3 991 N·m (315 kgf·m) at 1 350 min⁻¹ (rpm)
- Final Drive: 23.3L
- Bore and Stroke: 130 x 155 mm
- Torque Rise: 20 %
- Starting: Electric

TRANSMISSION
- Model: Allison H6610A
- Design: Fully automatic, planetary type with integral lock-up converter
- Mounting/Position: Remote from engine and rear axle for servosafety
- Ranges: 6 forward, 2 reverse
- Control: Allison CEC2 electronics shift system with SEM (Shift Energy Management)

maximum speeds:
- Front: 39 degrees
- Rear: 43 degrees
- Turning Diameter (SAE): 17 in
- Turning Diameter (ISO): 468 L/min
- System Pressure: 18.9 MPa

ELECTRICAL SYSTEM
- Twenty-four volt starting, lighting and accessories system. Seventy-five ampere alternator with integral transistorized voltage regulator. Two 12 V heavy duty batteries capable of 1300 cold cranking amps, each, at -17 degree C (0 degree F).

BODY CAPACITY
- Struck (SAE): 28.2
- Haop: 1 (SAE): 38.7
- Body capacity and payload subject to change based on customer specific material density, options and application.

WEIGHTS (Approximate)
- Chassis with Host: 33325
- Body: 12488
- Net Machine Weight: 45813
- Maximum GMW with Std. Tires (24.00 RSDS [*] E4): 110677
- "This specification is not to be exceeded and includes all options, customer installed attachments, 50% fuel, with operator and payload.
- Payload with Standard Equipment: 64.9 tonnes (71.5 tons)

STEERING SYSTEM
- Closed-center, full-time hydrostatic steering system using two double-acting cylinders, pressure limit with unload piston pump and brake actuation/steering system reservoir. An accumulator provides supplementary steering in accordance with SAE J1511 and ISO 2010. The Operators steering wheel offers 35 degrees of tilt and 57.2 mm of tilt travel.
- Steering Angle: 39 degrees
- Turning Diameter: (SAE): 19.28 m
- Turning Steer Pump Output*: 96.7 L/min
- System Pressure: 18.9 MPa
- "Steering Pump Output at 2 100 min⁻¹ (rpm): 96.7 L/min

HYDRAULIC SYSTEM
- Two 2-stage, double-acting cylinders, with cushioning in retraction, inserted and outboard mounted. Separate Host/Brake Cooling reservoir and independent tandem gear pump. Control valve mounted on reservoir.
- Body Raise Travel: 60 degrees
- Body Raise Time (at 2100 min⁻¹ (rpm): 12.5 s
- Body Down Time (at idle): 16.5 s
- Brake Cooling Pump Output (at 2100 min⁻¹ (rpm): 176 L/min
- Host Pump Output (at 2100 min⁻¹ (rpm): 468 L/min
- System Relief Pressure*: 17.2 MPa
- "System Relief Pressure (Host): 17.2 MPa

BREAK BRAKE SYSTEM
- Brake system complies with SAE J4437/ISO 4350.

WEIGHT DISTRIBUTION
Weight given are for standard options, standard body and tires.
- Chassis with Host: 33 325
- Body: 12 488
- Net Machine Weight: 45 813

DRIVE AXLE
- Modal Differential: 2354
- Axle Design: Full floating axle shafts using a modular 2354 differential and single reduction planteris at each wheelhousing
- Traction Control: An optional electronic feature that includes the Electronic Downhill Speed Control feature

SPECIFICATIONS

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>STANDARD</th>
<th>FINAL DRIVE</th>
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<tbody>
<tr>
<td>DRIVE AXLE</td>
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<td></td>
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<tr>
<td>Model</td>
<td>2354</td>
<td></td>
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<tr>
<td>Axle Design</td>
<td>Full floating axle shafts using</td>
<td></td>
</tr>
<tr>
<td>a modular 2354 differential</td>
<td>and single reduction planteris</td>
<td></td>
</tr>
<tr>
<td>at each wheelhousing</td>
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<tr>
<td>Traction Control</td>
<td>An optional electronic feature</td>
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<tr>
<td>that includes the Electronic</td>
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<td>Downhill Speed Control feature</td>
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DIFFERENTIAL AND FINAL DRIVE RATIO

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<th>STANDARD</th>
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<td>Ratios</td>
<td>3.64:1</td>
<td>5.80:1</td>
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<tr>
<td>Total Reduction</td>
<td>21.11:1</td>
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</tr>
<tr>
<td>Maximum Speeds</td>
<td>57.9 km/h</td>
<td></td>
</tr>
</tbody>
</table>

| DIFFERENTIAL              |                      |                      |
| Ratios                    | 3.64:1               |                      |
| Planetary                 | 5.80:1               |                      |
| Total Reduction           | 21.11:1              |                      |
| Maximum Speeds            | 57.9 km/h            |                      |

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>STANDARD</th>
<th>FINAL DRIVE</th>
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</thead>
<tbody>
<tr>
<td>TIRES</td>
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<td></td>
</tr>
<tr>
<td>Front</td>
<td>24.00 RSDS (*</td>
<td>(Standard)</td>
</tr>
<tr>
<td>Rear</td>
<td>24.00 RSDS (*</td>
<td>(Standard)</td>
</tr>
<tr>
<td>Rm Width</td>
<td>432 mm (17 in)</td>
<td>Optional tires and tread patterns</td>
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<tr>
<td></td>
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<td>may be available.</td>
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</tbody>
</table>

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: 650 kW (880 HP)
- Intermittent: 1 260 kW (1 700 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.

Hi-TECH ROPS / FOPS CAB
- Hi-Tech ROPS / FOPS Cab
- ROPS complies with EC 2254 and SAE J1040-May 94. FOPS complies with ISO 3449. Double wall construction of 11 gauge inner and outer steel panels, lends itself to a more structurally sound cab. Multiple layered floor mats act to absorb sound and control interior temperature.
- A properly maintained cab from Hitachi, tested with doors and windows closed per work cycle procedures in ISO 6394: 1998 (dBA), results in an operator sound exposure level (Equivalent Sound Level) of 81 (dBA). A three-point rubber iso-mount arrangement to the deck surface minimizes vibration to the operator compartment.

Comfort and Ease of Operation
- A flat panel 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, multiple position adjustable seat, full-hydraulic steering wheel, filtered cab ventilation and door locks all contribute to operator convenience, control and comfort.

Specifications Reference:
- MTU Detroit Diesel 12 V Series 2000
- Allison H6610A
- SAE J4437/ISO 4350
- ISO 3449
- EC 2254
- SAE J1040-May 94
- ISO 6394: 1998
SUSPENSION
Front and Rear Suspension
For years, Hitachi 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 EH1100. To make sure it was fine tuned to the limit, Lotus Engineering, a world leader in suspension design, was contracted to review the entire system to assure optimized ride and handling performance.

The ACCU-TRAC suspension system features independent trailing arms for each front wheel with NEOCON struts, containing energy absorbing gas and compressible NEOCON™ 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 axle loading and reduces the tractive and braking forces transmitted to the nose cone.

NECON 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. The improved control means better machine maneuverability.

The Hitachi 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 ridge struts are mounted with spherical bushings, eliminating external 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.

The horizontal stiffener design of the Hitachi body minimizes stress concentrations in any one area. Load shocks are dissipated over the entire body length. The closely spaced floor stiffeners provide additional protection by minimizing distance between unsupported areas.

BODY
The body has been made to the flat floor, flat tail chute design. The rear hinge has been designed to cause the hinge pin to float when the body is in the fully lowered position. The weight of the body and payload is distributed across rubber body pads that are evenly spread across the length of the body rail that rests on the truck frame.

SERVICE CAPACITIES

<table>
<thead>
<tr>
<th>Component</th>
<th>Capacity</th>
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<tbody>
<tr>
<td>Crankcase (includes filter)</td>
<td>83.3</td>
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<tr>
<td>Transmission, Cooler and Lines</td>
<td>224.5</td>
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<tr>
<td>Fuel Tank</td>
<td>700</td>
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<tr>
<td>Hydraulics</td>
<td>256</td>
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<tr>
<td>HOIST Tank and System</td>
<td>112</td>
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<tr>
<td>Steering Tank and System</td>
<td>103</td>
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<tr>
<td>Drive Axle (2 wheels and differential)</td>
<td>5.7</td>
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<tr>
<td>Windshield Washer Fluid</td>
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Gauges

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<tr>
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<td>Engine oil pressure</td>
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Machine Lights

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<tr>
<td>Back-up light</td>
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<tr>
<td>Clearance light - front</td>
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<td>Clearance light - rear</td>
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INDICATOR LIGHTS

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<td>Battery charge</td>
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<tr>
<td>Head up</td>
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<tr>
<td>Brake system oil pressure</td>
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<tr>
<td>Central warning (caution)</td>
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<td>Central warning (stop)</td>
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CAB

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<tr>
<td>Air filter/replaceable element</td>
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OPTIONAL EQUIPMENT

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<td>Active Tractor Control (ATC) with Electronic Downhill Speed Control (EDSC)</td>
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<tr>
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<tr>
<td>Suspension air seat / w/ lumbar</td>
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<tr>
<td>Suspension seat, semi-active, w/ heat / w/ lumbar, 3 point seat belts</td>
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MISCELLANEOUS

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<tr>
<td>Extra parts manual - hardcopy</td>
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</tbody>
</table>

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**Performance Data**

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

1. Find the total resistance on diagonal lines on right-hand border of rimpull 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 rimpull 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 with some differences in color and features.
Before use, read and understand the Operator’s Manual for proper operation.

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**Hitachi Construction Machinery**
www.hitachi-c-m.com

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