

BH50M

REAR DUMP TRUCK



Salient Features

Performance :

- High power engine, AVTEC with CEC-2 system, planetary drive axle for optimum combination of speed and tractive effort.

Productivity :

- High power to weight ratio allows higher acceleration and gradeability. Wide target area, large volumetric capacity body and low loading height ensure high productivity.

Reliability :

- AVTEC Automatic power shift transmission with CEC-2 for ease of operation. AVTEC torque converter ensures steady engine revolutions in response to variation of load, eliminates and stalling of engine.

Serviceability :

- Easier to maintain and repair due to unitised design and easy accessibility.

Manoeuvrability :

- Orbitrol full time power steering, shorter turning radius provides higher manoeuvrability.

Control :

- Ideally located spacious cabin with ergonomically designed operator control offers maintenance comfort and operational ease.

Safety :

- Features include ROPS cabin, emergency steering, sealed oil cooled disc brake.



Max. Payload	: 45,500 kg
Capacity (heaped) (SAE / ISO 2:1)	: 30.5m ³
Flywheel Power (net)	: 483 kW (648 hp) @ 2100 rpm

BH50M



beml
NEW FRONTIERS, NEW DREAMS

BH50M REAR DUMP TRUCK

Technical Specifications



Engine

Make	Cummins	BEML Model
Type	KTTA 19-C	BSA6D170A-1
Flywheel power	Diesel, 4-stroke, 2 stage turbocharged and after cooled, direct injection, water cooled.	Diesel, 4-stroke, twin turbocharged and after cooled, direct injection, water cooled.
Maximum torque	483 kW (648 hp) @2100 rpm	483 kW (648 hp) @2100 rpm
No. of Cylinders	2731 Nm (279 kgm) @ 1400 rpm	2618 Nm (267kgm) @ 1400 rpm
Bore & Stroke	6 inline	6 inline
Displacement	φ159 x 159 mm	φ170 x 170 mm
Electricals	19 ℓ	23.15 ℓ
Alternator	24V, 75A	24V, 50A
Starting motor	24V, 9 kW	7.5 kW x 2 nos.
Battery	2 x 12 V, 200 Ah	2 x 12V, 200Ah



Power Train

Transmission

AVTEC M6610A

AVTEC electronic shift control (CEC-2), TC 683 Torque Converter, reverse and downshift inhibitor, Six Forward and two reverse speeds. Reverse is torque converter drive. First gear has both converter drive and direct drive. Gears second through sixth are direct for maximum efficiency (converter drive is used momentarily for smooth shifting).

Final drive

Planetary final drive with full floating axle shafts and plug-in differential carrier assembly.

RATIOS :

Bevel set (differential)	: 3.85 : 1
Planetary	: 5.70 : 1
Total reduction	: 21.93 : 1
Maximum speed	: 56.73 km/h

Travel speeds (km/h)

Range	1st	2nd	3rd	4th	5th	6th
Forward	9.5	14.2	18.2	28.2	38.1	56.7
Reverse	R1:- 7.4		R2:- 12.1			



Steering system

Orbitrol power steering control with pressure compensating steering pump and two double-acting steering cylinders. Front Hydrair suspensions serve as steering kingpins to provide excellent manoeuvrability. Automatic supplemental, accumulator steering is standard.

Turning circle radius	10.5 m
Vehicle clearance diameter	24 m
Steering pump capacity	85.9 ℓ /min

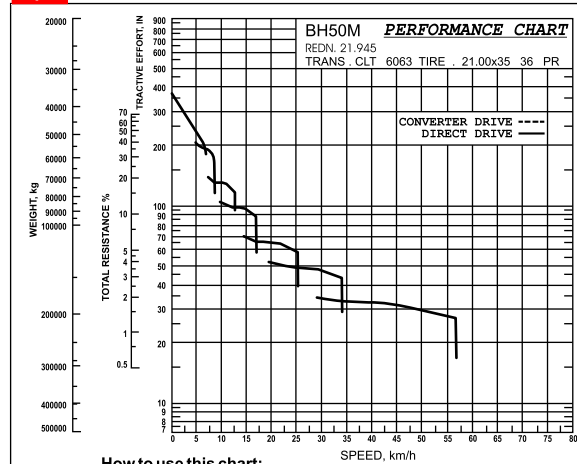


Tyres

Standard tyre	21.00 - 35, 36 PR(E-4), Rockgrip, tubeless
Optional	21.00 X 35, 40 PR (E-4) 24 X 35, 42 PR (E-4) 24 X 35, Radial
Rim	15.00-35.
BEML recommends the user to evaluate all job conditions and consult the tyre manufacture to make proper tyre selection.	



Performance



Brakes

Front : Hydraulically actuated Caliper disc type.

Rear :

Oil-cooled hydraulically actuated multiple disc brakes provide both service and dynamic retarding. Brakes are sealed for protection from environmental contaminants.

Automatic emergency brake system

Unique designed brake control module constantly monitors brake pressure in the dual brake accumulators and will activate an audio - visual alarm if pressure on either accumulator drops below a tolerable level. If pressure should continue to drop, service brakes will automatically apply

Manual emergency braking system :

In the event of failure of the brake pedal, the service brakes can be manually applied by an operator switch located on the instrument panel.

Parking brake :

Dry caliper disc-type mounted on axle input flange. Spring applied hydraulically released, the parking brake with automatically apply if hydraulic pressure is lost.

Dynamic retarder:

Constant speed retarder is provided by a separate foot pedal for the retarder function, allowing the operator to apply the retarder without removing his hands from the steering wheel. The foot operated valve controls the hydraulically actuated oil-cooled wet disc brakes on the rear axle.

Wheel brake lock

Controlled by a switch on control panel activates and locks brakes while loading and dumping.



Suspension

Hydrair

Variable rate independent oil pneumatic suspension cylinders with integral rebound control. Suspension stroke front and rear is 276 mm.

Load/Deflection rate	Front	Rear
Empty (kg/cm ²)	931.83	445.56
Loaded (kg/cm ²)	3300.32	7437.01



Body Hoist

Twin, two-stage hydraulic cylinders mounted outside frame rails for accessibility. Electro-hydraulic control provides quick response. Hydraulic system has dual full-flow, remote-mounted filters.

Pump capacity	316 ℓ/min
Relief valve setting	18.96 Mpa (193.34 kg/cm ²)
Body raise time	13 ± 2 seconds

V - Body

ROCK TYPE

V-Shaped body with single-slope falt floor provides optimum carrying capacity and smooth, controlled dumping. Wide horizontal bolsters provide rigid support for the high tensile, heat-treated steel side. Bolt-on body rubber pads cushion prevents the frame from loading shocks and are easily replaceable. Pivot exhaust heating is standard.

Material	Thickness
Floor Plates	20 mm
Front Plates	12 mm
Side Plates	10 mm
Volumetric Capacity	
Struck Capacity	23.8 m ³
Heaped Capacity (SAE/ISO) 2:1	30.5 m ³



Cabin

Integral ROPS cabin, engineered to provide superb working comfort, excellent visibility and maximum production efficiency. Features include tinted safety-glass, fully adjustable operator's seat with seat belt, fresh air fan, insulation for sound and temperature control, convenient gauge arrangement, left and right hand external mirrors and sun visor.

Masses

Net vehicle mass	40,959 kg	
Rated payload	45,500 kg	
Gross vehicle mass	86,459 kg	
Mass distribution	Empty (kg)	Loaded (kg)
Front axle	20,135	28,790
Rear axle	20,824	57,669



Frame

Box section main rails, proportioned to accommodate relative bending and torsional loads, are connected by tubular cross members, an integral front bumper and rugged, continuous horse collar. Cross member to frame joints use large radii to minimise stress. The frame rails and other structural plates are fabricated from high yield strength steel. Castings at the rear cross members incorporate the body pivot, body-up pins and rear suspension strut pivot, as well as the panhard rod attachment.



System Refill Capacities

System	Capacity (ℓ)
Engine lube oil	49.2
Cooling systems	181.7
Fuel tank	770
Hydraulic tank	360
Transmission (sump plus ext. filters, lines, etc.,)	79.6
Final drive	212.2
Front spindle grease (EP-2)	13 kg

Standard equipments

Cab

- Operator seat
- Rubber floor mat
- Sun visor
- Windshield safety glass
- Windshield wiper and washer
- **General equipment**
- Air cleaner, dry type
- Alternator
- Body position indicator
- Brakes, caliper disc (front)
- Brakes oil disc (rear)
- Cold weather start aid (BEML Engine)
- Drive line protector
- Electric system - 24 Volt
- Fan
- Guard, engine & transmission belly
- Mirrors, rectangle LH, convex RH
- Mud flaps for deck and tanks
- Rock ejectors
- Starter, electric
- Starter key switch
- Tow hooks, front & rear
- Tow pins, rear

Lighting

- Back-up light
- Dual combination stop and tail
- Four headlamps with dimmer all Halogen
- Turn signal + Hazard

Instrumentation gauges

- Brake oil temperature
- Hourmeter
- Engine coolant temperature
- Engine oil pressure
- Speedometer
- Tachometer
- Transmission oil pressure
- Transmission oil temperature
- Voltmeter

Warning lights with Alarming

- Brake lock
- Brake/Hydraulic oil temperature
- Coolant temperature
- Low Brake pressure
- Emergency steering
- Engine oil pressure
- Filter restriction-hydraulic, transmission and torque converter
- Parking brake
- Steering accumulator pre-charge
- Reverse flash

Standard safety equipments

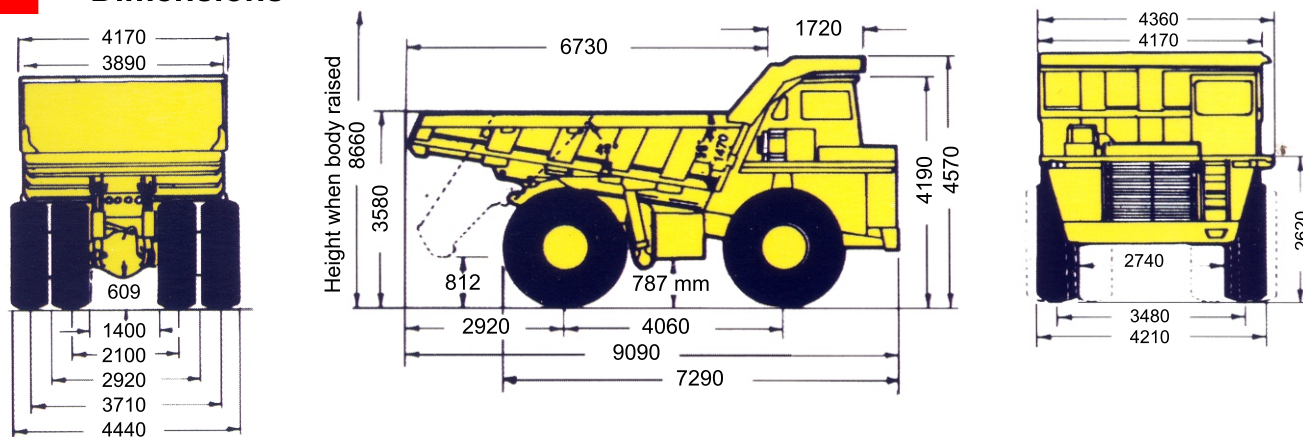
- Battery relay
- Back-up alarm (Audio - Visual)
- Body prop pin and storage
- Brakes, emergency-manual & automatic

Standard safety equipments

- Brake, wheel lock
- Brake, parking
- Fan guard
- Handrails
- Horn electric
- Retarder
- Seat belts, operator and passenger seat
- Engine coolant level
- Automatic lubrication system
- Electrically operated emergency steering system
- **Optional equipment & accessories**
- Automatic fire suppression system
- Air conditioner system
- Coolant level - Engine
- Cab heater
- Coal body
- Body wear bars
- Cold weather starting aid
- Tyre inflation kit
- Suspension and accumulator charging kit
- Body lock
- Steering lock
- On board payload system
- Rear view Camera
- VIMS (Vital Information Management System)
- Driver fatigue monitor system
- 100Ah zero maintenance batteries

Dimensions

in mm



1. Illustrations may include optional equipment & accessories and may not include all standard accessories.
2. Materials and specifications are subject to change without notice.
3. All the specifications meet relevant ISO standards.



BEML LIMITED

MARKETING NETWORK

- Corporate Office** : BEML Soudha, 23/1, 4th Main, SR Nagar, Bangalore-560 027. PH: +91-80-22963240 FAX: +91-80-22963164
Email: edc@beml.co.in; agmpr@beml.co.in
- International Division** : BEML Soudha, 23/1, 4th Main, SR Nagar, Bangalore-560 027. Ph. No. +91-80-22233350, 22222730
 Fax No. +91-80-22224874 **Email:** office@export.beml.co.in
- Marketing Division** : 5th floor, Unity Building, J C Road, Bangalore-560 002. Ph. No. +91-80-22963501/02/05, 22963507/09/10
 Fax No. +91-80-22963541 **Email:** mmoffice@sales.beml.co.in

REGIONAL OFFICES

BILASPUR :

1/A, Sector C, Sirgitti Industrial Area, PO: Tifra, Bilaspur - 495 223. Ph. No. 07752-252082, Fax No. 07752-252065. E-mail : bilaspur@rm.beml.co.in

CHENNAI :

Flat No. 10 & 11, Supriya Estates, Sterling Road, Nungambakkam Road, Chennai - 600 034
 Telefax No. 044 - 28257319 E-mail : chennai@rm.beml.co.in

HYDERABAD :

3-6-114, Himayat Nagar, Hyderabad - 500 029.
 Ph. No. : 040-23227032, Fax No. : 040-23221794
 E-mail : hyderabad@rm.beml.co.in

KOLKATA :

Flat No. 9, 10 & 11, 5A, Lord Sinha Road, Kolkata - 700 071.
 Ph. No. 033-22826314, Fax No. 033 - 22821033
 E-mail : kolkatta@rm.beml.co.in

MUMBAI :

Rajmahal, 1st Floor, 84, Veer Nariman Road, Churchgate, Mumbai-400 020. Ph. No. : 022-22852017,
 Fax No. : 022 - 22852633. E-mail: mumbai@rm.beml.co.in

NAGPUR :

33, Cement Road, Shivaji Nagar, Nagpur - 440 010.
 Ph. No. 0712 - 2248435, Fax No. 0712 - 2248343
 E-mail : nagpur@rm.beml.co.in

NEW DELHI :

Flat No. E.F.G.H, 'Vandana', 11, Tolstoy Road, New Delhi - 110 011. Ph. No. : 011-23316500
 Fax No. 011-23325085
 E-mail : delhi@rm.beml.co.in

RANCHI :

712C, Circular Road, Ranchi - 834 001.
 Ph. No. 0651 - 2560370, Fax No. 0651 - 2560197
 E-mail : ranchi@rm.beml.co.in

SAMBALPUR :

BEML Complex, NH-6, Baraipalli, Sambalpur - 786 150
 Ph. No. 0663 - 2521604, Fax No. 0663 - 2521603
 E-mail : sambalpur@rm.beml.co.in

SINGRAULI :

PB No. 5, Jhingurdha Colliery, PO : Sidhi, Singrauli - 486 889.
 Ph. No. 07805 - 266668, Fax No. 07805 - 267282
 E-mail : singrauli@rm.beml.co.in

DISTRICT OFFICES

AHMEDABAD :

266-1, Dilbaug Villa, Darshan Society Road, Navrangpura, Ahmedabad - 380 009, Ph. No. 079 - 26445523,
 Fax No. 079-26423950, E-mail : ahmedabad@rm.beml.co.in

ASANSOL :

3, Burnpur Road, Asansol - 713 304, Ph. No. 0341-2252480,
 Fax No. 03410-2250601 E-mail: asansol@rm.beml.co.in

BHILAI :

Room No. 22/C, BSP Building, Near Ispat Bhavan, Bhilai - 490 001 (CG), Ph. No. 0788-2223882
 Fax No. 0788-2250055, E-mail : bhilai@rm.beml.co.in

BHUBANESWAR :

91/A1, Shaheed Nagar, Bhubaneswar - 751 007,
 Telefax No. 0674-2545227
 E-mail : bhubaneswar@rm.beml.co.in

CHANDRAPUR :

Mamidwar Tiles Factory Compound, Ghugus Road, Padoli, Chandrapur - 442 406(MS) Ph. No. 07172-287230
 Fax No. 07172-287760, Email : chandrapur@rm.beml.co.in

DHANBAD :

Kamal Kunj, Kola Kusuma, Saraidhela, Dhanbad - 828 127,
 Ph. No. 0326-2208982, Fax No. 0326-2200182.
 E-mail : dhanbad@rm.beml.co.in

GUWAHATI :

RG Baruah Road, 9, Bylane (West), Thinali, Guwahati-781 024, Telefax No. 0361-2454696,
 E-mail: guwahati@rm.beml.co.in

HOSPET :

No. 243, Sri Daruka Nilaya, No. 42, 1st Main Road, Basaveswara Badavane, Hospet-583 201(Karnataka)
 Mobile No. 09448489606

JAMMU :

62C, Block D/C, Gandhinagar, Jammu Tawi - 180 004,
 Ph. No. 0191-2430447, Fax No. 0191-2450764 (PP), E-mail : jammu@rm.beml.co.in

KOTHAGUDEM :

5-25/1, Balaji Complex, Lakshmidivipalli, Kothagudem-507 101 (AP),
 Ph. No. 08744-242489, Fax No. 08744-245572,
 E-mail : kothagudem@rm.beml.co.in

MADURAI :

9 - 4/49, Kalai Nagar, 2nd Main Road, Madurai - 625 017.
 Tele No. 0452-2649458 / 2649125 / 2649125

NEYVELI :

F4, Rajendra Prasad Road, Block 27, Neyveli - 607 803,
 Telefax No. 04142-268517, E-mail : neyveli@rm.beml.co.in

PANJIM :

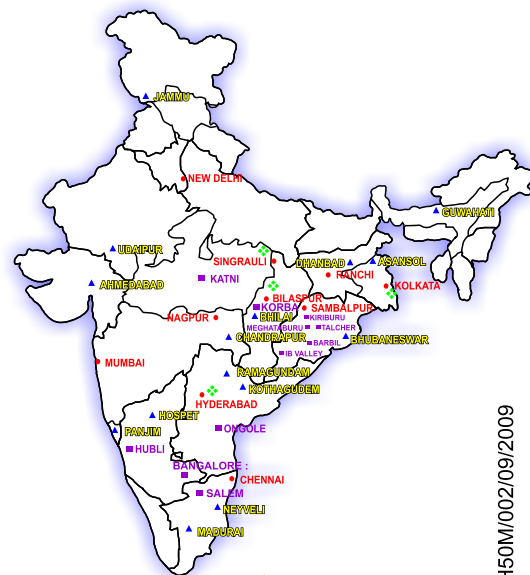
67-12, Dattaprasad Building, III Floor, MG Road, Panjim-403 001,
 Telefax No. 0832-2225135, E-mail : goa@rm.beml.co.in

RAMAGUNDAM :

Opp. SCCL 11 A Mines, (PO) Jallaram, Godavari Khani - 505184, (via-Manthani), Karimnagar Dist (AP),
 Telefax No. 08728 - 244578, E-mail : ramagundam@rm.beml.co.in

UDAIPUR :

No - 20 - B, Uchhab Bhavan, Bedla Road, Fatehpura, Udaipur - 313004, Rajasthan,
 Ph. No. 0294-2452053/2452055, Telefax No. 0294-2452054



- ◆ Zonal Offices
- Regional Offices
- ▲ District Offices
- Activity Centres

Form No. : BH50M/002/09/2009