

DUMP TRUCK HD785-5

KOMATSU



Model shown may include optional equipments.

HD785-5

Payload Capacity: 91 metric tons/100 U.S. tons.

Max. Gross Vehicle Weight: 166,000 kg

Excellent Productivity & Fuel Economy

- High-output Komatsu SA12V140 engine with low fuel consumption
- Seven-speed, fully automatic K-ATOMiCS (Komatsu Advanced Transmission with Optimum Modulation Control System) transmission
- Oil-cooled multiple-disc retarder and optional exhaust retarder

Operator Comfort & Safety

- K-ATOMiCS transmission provides smooth acceleration and deceleration
- Hydropneumatic suspension for a smoother ride
- Wide, sound-suppressing cab ensures comfortable operator environment
- Maintains constant downhill travel

speed (ARSC, Option)

More Uptime

- Sturdy, well-designed frame and tough body construction
- Monitoring system for operational safety and reliability
- Adjustment-free caliper discs used for front wheel brakes

EXCELLENT PRODUCTIVITY & FUEL ECONOMY

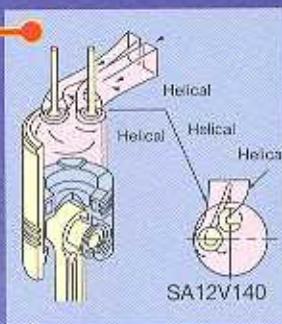
High-output Komatsu SA12V140 engine:



The 30.50-liter power plant with turbocharger and aftercooler maximizes output of 1050 HP(783kW) at 2000 RPM in it's class.

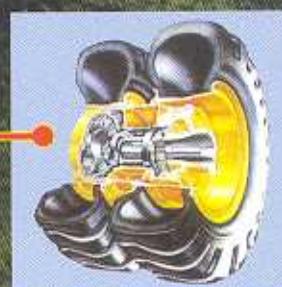
Low fuel consumption:

High injection pressure creates an ideal fuel-air mixture for better combustion efficiency, while the ductile cast-iron pistons greatly reduce friction loss. For even higher combustion efficiency, each cylinder has four valves—two for intake, two for exhaust. The two helical intake ports produce optimum swirl for excellent combustion. The exhaust gas is smoothly and quickly ejected from the combustion chamber through the exhaust ports. All this helps to make the Komatsu-built engine fuel efficient.



Seven-speed, fully automatic K-ATOMiCS transmission:

The K-ATOMiCS (Komatsu Advanced Transmission with Optimum Modulation Control System) automatically selects the optimum gear according to vehicle speed, engine speed and the shift position you've chosen. The result: the best gear for any driving situation.



Oil-cooled multiple-disc retarder and optional exhaust retarder:

The truck can be decelerated without frequent use of the brakes, allowing you to travel more safely at higher speeds, even down long, steep slopes.

A More Stable Ride in a More Manoeuvrable Truck

Long wheelbase and wide tread:

With an extra-long wheelbase, a wide tread and an exceptionally low center of gravity, the HD785-5 hauls loads at higher speeds for higher productivity, and delivers excellent driving comfort over rough terrain.

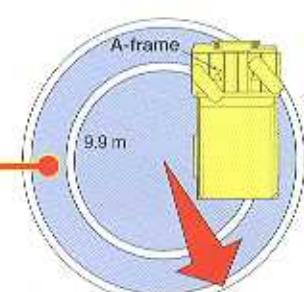


Big body:

A wide target area of 60m³ makes for easy loading with minimal soil spillage and more efficient hauling.

Small turning radius:

The MacPherson strut type front suspension has a special A-frame between each wheel and the main frame. The wider space created between the front wheels and the main frame increases the turning angle of the wheels. The larger this turning angle, the smaller is the turning radius of the truck.



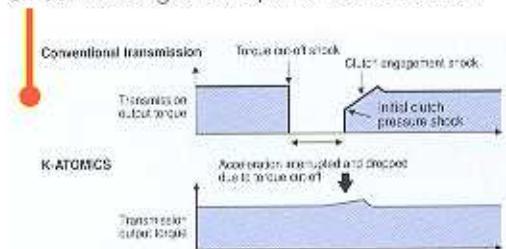
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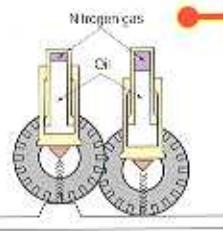
ENHANCED OPERATING COMFORT

K-ATOMiCS—smooth acceleration / deceleration:

An electronically controlled valve is provided for each clutch pack in the transmission, allowing independent clutch engagement/ disengagement. Moreover, it enables an ideal change in clutch modulation pressure and torque cut-off timing in response to traveling conditions. The result is smooth shifting and responsive acceleration.



Hydropneumatic suspension



All four wheels have hydropneumatic suspension with a fixed throttle damper control valve that greatly reduces pitching, rolling and bouncing over rough terrain.

Ideal driving position settings:

The five-way adjustable operator seat and the tilt-telescopic steering column ensure an optimum driving posture, for increased driving comfort and more control over the machine's operations.

See everything in quiet comfort:

Wide windows in the front, side and back, plus plenty of space in the richly upholstered interior, give you a quiet, comfortable environment from which to see and control every aspect of your work.



MORE UPTIME



Model shown may include optional equipment.

Sturdy, well-designed frame:

Cast-steel components are employed in the main frame in high-stress areas where loads and shocks are most concentrated.



Rigorous dump body design:

The standard dump body is made of 130 kg/mm^2 high-tensile-strength steel for excellent rigidity and reduced maintenance costs. The V-shape design also increases structural strength. The side and bottom plates of the dump section are reinforce with ribs for added strength.



Adjustment-free brakes:

The front service brakes are adjustment-free caliper disc type.

Easy maintenance:

Greasing points have been centralized at three locations. Fuel and engine oil filters are also located together on the left-hand remote mount, for easy inspection from the ground.

Reliable hydraulic system:

The oil cooler is installed below the retarder, improving the reliability of the hydraulic system during sudden temperature rises. Further, in addition to the main filter, a 52-micron line filter is located at the entrance to the transmission control valve. This system helps prevent secondary faults.

Excellent footwork and durable power line:

By adopting electronic modulation on all shifting points, peak torque when shifting is reduced, raising the endurance of the power line.

Electronic devices for excellent operation:

In the harness connection, a dual-lock connector is used to prevent loosening from vibrations and contact failure. Also, the base boards for controllers and other devices are fixed by molding (with resin), realizing high resistance to water, dust and vibration.

ADVANCED MONITORING SYSTEM



Vehicle monitoring system makes operation easier

The electronic display panel shows current vehicle conditions. If an abnormality occurs, the action code and service code are displayed. Thus, vehicle operation is easier and working efficiency is higher. At the same time monitoring data is saved for later troubleshooting.

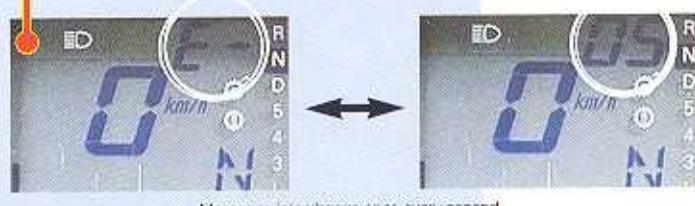
Service code display and memory function

The contents of each controller are displayed on the electronic display panel in service codes. The stored vehicle information can be downloaded to a personal computer (service tool). This enables a quick response to problems and shortens maintenance time. This also shows the truck's current condition and facilitates operation.

*OPTION

Action code display function

If an abnormality occurs on the truck, an 'E' appears on the electronic display panel with the appropriate action code, which notifies the operator how to deal with the situation. This means the operator never misses an abnormality and can take appropriate corrective action.



Messages interchange once every second

Network functions



Engine control (Electronic governor)*

Transmission control

Auto suspension*

PC (service tool)

PROTECTION FUNCTIONS SUPPORTED BY ELECTRONIC CONTROL

Item	Function
Downshift inhibitor	Even if the driver downshifts accidentally, a speed appropriate to the current gear is automatically set, preventing over-runs.
Over-run inhibitor	When descending grades, if the vehicle's speed surpasses the maximum for the current gear, the rear brakes automatically operate, preventing over-runs.
Reverse inhibitor	The vehicle is prevented from moving backward when operating the body.
Forward/Reverse shift inhibitor	This device makes it impossible to shift from forward to reverse when the vehicle's speed surpasses 4 km/hour.
Anti-hunting system	When running near a shift point, shifting is smooth and automatic.
Neutral safety	The engine is prevented from starting when the shift lever is not in neutral.

VALUE-ENHANCING OPTIONS

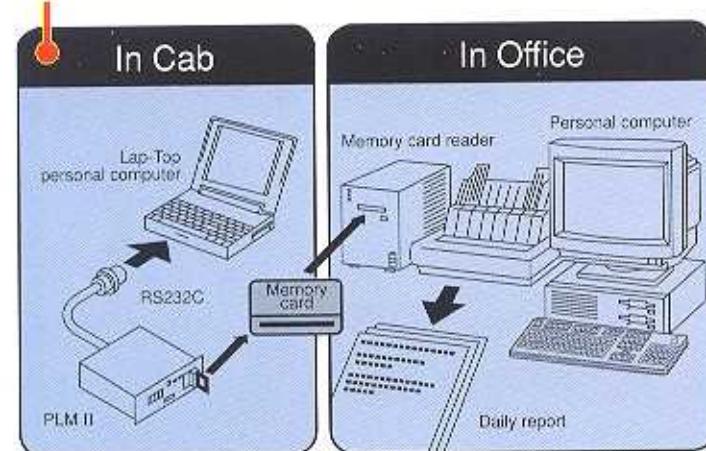
Maintaining constant downhill travel speed Auto Retard Speed Control (ARSC)

ARSC is available as an option. This allows you to simply set the downhill travel speed and go down slopes at a constant speed. As a result, you can concentrate on steering. The speed can be set at increments of 1 km/h per click (+5km/h of maximum speed adjusting) to match the optimum speed for the slope. Also, since the retarder cooling oil temperature is always monitored, the speed is automatically lowered to prevent overheating.



PLM II (Memory card payload meter)

This system allows the production volume and the working conditions on the dump truck to be analyzed and controlled directly via a personal computer. The system can store up to 2900 working cycles.



The memory card, card reader and software for data processing are available as options.

Mode-Changing System Electronic Engine Control Provides Superior Climbing Ability and Outstanding Fuel Economy

High-power mode, which offers superior operating power, should be selected at job sites where a high percentage of time is spent working on inclines. Economy mode, which reduces fuel consumption and operating noise, should be used when working on level sites or under conditions where the machine load is lighter.



Stairway

A stairway at the front of the radiator grill is available as an option. This stairway simplifies such everyday operations as getting on and off the machine. In addition, the stairway makes it easier to move parts and materials during machine maintenance.

Engine exhaust retarder:

The retarder capacity is 30% higher, permitting faster speeds on downhill slopes. This improves safety and hauling performance.

Three-mode hydropneumatic suspension:

To further enhance driving comfort, automatic three-mode suspension is available as an option. This enables the operator to select one of three cushioning effects (SOFT, MEDIUM or HARD), depending on road conditions, for improved camping control.

VALUE-ENHANCING OPTIONS

Antilock Braking System (ABS)

Using its outstanding electronics technology, Komatsu is the first in the industry to introduce ABS on construction machinery. This system prevents the tires from locking, causing skidding under slippery conditions while applying the service brake.

Powertrain Management Controller™

Electronic intelligence gives the operator increased control and reduces downtime.

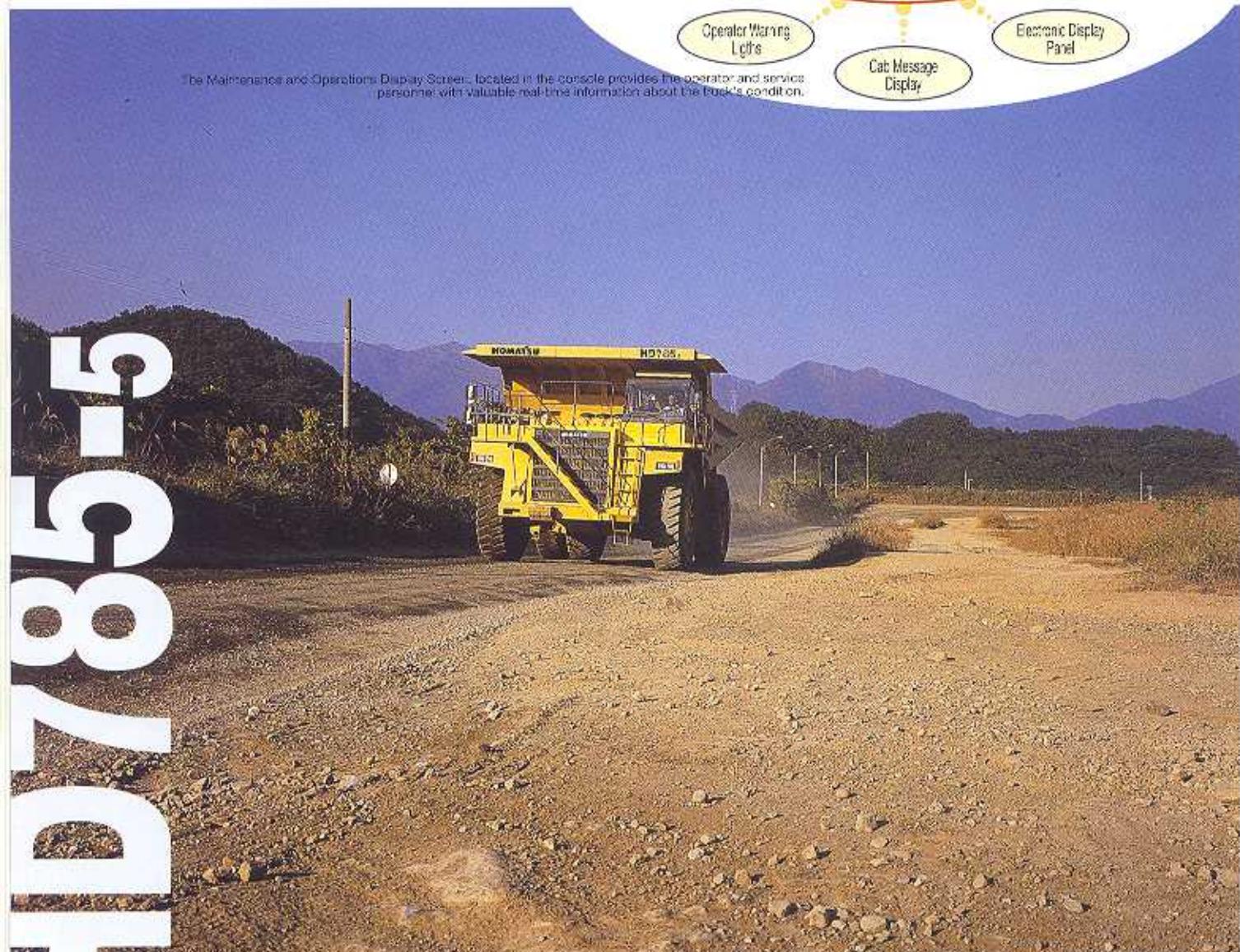
The HD785's superior electronic systems monitor all critical machine functions, and all monitoring systems are then integrated into one—the Komatsu Powertrain Management Controller™ (PMC). The PMC keeps the operator informed about the machine's status at all times, and service technicians

can access valuable systems and function information for quick downloading and analysis through a computer interface connection right on the truck. The PMC monitors more than two hundred and fifty items, including historical performance data, to help keep the HD785 operating at top form. The PMC software organizes the downloaded information into usable management data and reports. Operators can quickly check primary systems including:

- 1) Engine
- 2) Transmission
- 3) Payload meter II (option)

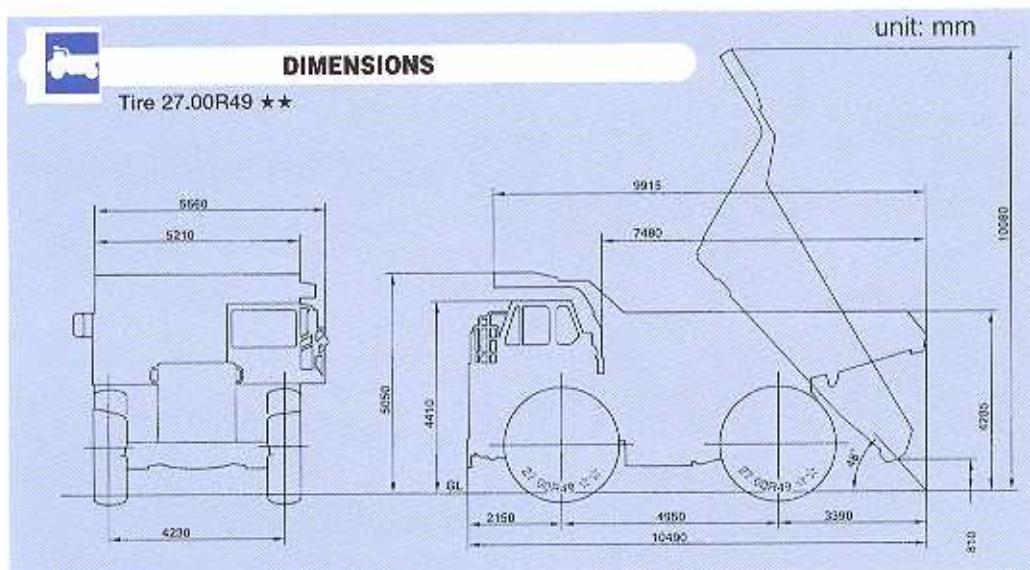


The Maintenance and Operations Display Screen, located in the console provides the operator and service personnel with valuable real-time information about the truck's condition.



KOMATSU

DIMENSIONS



STANDARD EQUIPMENT

HD785-5

Engine:

- Engine, Komatsu SA12V140, mechanical governor
- Alternator, 75-ampere
- Batteries, 4X12-volt 200 ah
- Starting motor, 2X7.5-kW

Body:

- Body 60m³ general purpose (body-heated)
- Spill guard, 300 mm

Cab:

- Cab, steel, sound suppression type
- Electronic display/monitor system (EDIMOS)
- Seat, suspension type with reclining and headrest, fabric material

- Seat, passenger, fabric material
- Steering wheel, tilttable & telescopic
- Seat belt, 78 mm width
- Seat belt, 50 mm width for passenger seat
- Air Conditioner
- Cigarette lighter and ashtray
- Sun visor, additional
- Windows and windshield glass tinted safety glass

Lighting system

- Hazard light system
- Work lights, RF and LH side

Safety:

- Brakes with brake oil flow control valve (BCV)
- Emergency brake: actuates all service brakes (front, rear and parking, 3 way)
- Cab guard
- Catwalk with hand rails
- Hand rails for platform
- Roll-over protective structure (ROPS)
- Mud guards (frame mounted front)
- Horn, air
- Ladders, LH and RH side
- Rear view mirrors
- Under view mirror
- Emergency steering, automatic

Others:

- Automatic idling setting system (AIS)
- Body positioner
- Electric circuit breaker, 24 volt
- Engine side covers
- Full automatic transmission with all-speed electronic modulation
- General tool kit
- Hot area arrangement (-20°C thru +50°C)
- Spare parts for first service
- Vandalism protection
- PM. Service connectors
- Rims for 27.00R49 tyres

OPTIONAL EQUIPMENT

HD785-5

Engine:

- Engine, Komatsu SA12V140, electronic governor

Cab:

- Heater and defroster
- AM-FM stereo with cassette

Body:

- Body 60m³ rock body (body-heated)
- Steel liners (welded) [7870kg]
- Exhaust box with muffler (body heated)
- Muffler (no body heated)

Tyre:

- 27.00R49 2S tyres
- 27.00-49-48PR tyres

Lighting system:

- Fog lights

Safety:

- Anti-lock brake system (ABS)
- Automatic spin regulator (ASR) (together with ASR)
- Fire extinguisher
- Front brake cut-off system
- Retarder, engine exhaust
- Roll-over protective structure with Fops [1095kg]
- Rear view mirror, additional (R.H.)
- Stairway [250kg]
- Wheel blocks

Gauge:

- Power-train management controllerTM (PMC)
- Payload meter I, printer type
- Payload meter II, IC card type
- Card reader for payload meter II
- Memory card for payload meter II

Guard:

- Engine under guard [75kg]
- Transmission under guard
- Propeller shaft guard, front
- Propeller shaft guard, rear
- Platform guard, RH side (welded)

Others:

- Air dryer
- Air tank automatic drain
- Alcohol injector
- Alternator, 50/90-ampere
- Auto greasing system
- Centralised greasing
- Batteries, 4X12Volt 250-ah, large capacity
- Differential lock [110kg]

Engine oil & coolant heater, electric

- Fast fill coupler for fuel tank
- First aid kit
- Radiator shutter, canvas type
- Suspensions, automatic three mode selection (with EDIMOS)
- Auto retard speed control system
- Max speed control (F4, F5, F6)
- Transmission shift control (at body-up)

[] shows the amount of increased weight

SPECIFICATIONS

HD785-5**ENGINE**

Model	KOMATSU SA12V140
Type	Water-cooled, 4-cycle
Aspiration	Turbocharged and aftercooled
No. of cylinders	12
Bore x stroke	140 mm x 165 mm
Piston displacement	30.48 ltr.
Performance:	
Gross horsepower	1050 HP 783 kW
Flywheel horsepower	1010 HP 753kW (SAE J1349)
Rated RPM	2000 RPM
Max. torque	425 kg-m / 4.17 kN-m at 1400 RPM
Fuel system	Direct injection
Governor	Mechanical
Lubrication system	
Lubrication method	Gear pump, force-lubrication
Filter	Ful-flow type
Air cleaner	Dry type with double elements and pre-cleaner, plus dust indicator

**TRANSMISSION**

Torque converter	3-elements, 1-stage, 2-phase
Lockup clutch	Wet, double-disk clutch
Transmission	Full-automatic, planetary gear type hydraulically actuated
Speed range	7 speeds forward and one reverse
Forward	Torque converter drive in 1st gear, direct drive in 1st lockup and all higher gears
Reverse	Torque converter drive
Shift control	Electronic shift control with automatic clutch modulation in all gear
Max. travel speed	65 km/h

**AXLE AND FINAL DRIVES**

Final drive type	Planetary
Rear Axle	Ful-floating
Ratios:	
Differential	3.467
Planetary	6.500

**SUSPENSION**

Independent, hydropneumatic suspension cylinder with fixed throttle to dampen vibration.

**STEERING**

Type	Fully hydraulic power steering with two double-acting cylinder
Emergency steering	Manual control
Min. turning radius	9.9 m

**BRAKES**

Service brakes:	
Front	Air-over-hydraulic, caliper disc type
Rear	Air-over-hydraulic, oil-cooled, multiple-disc type
Parking brake	Spring applied, caliper disc type actuates on drive shaft
Retarder	Air-over-hydraulic, oil-cooled, multiple-disc type rear brakes act as retarders
Emergency brake	An emergency relay valve automatically actuates the service brakes when air pressure drops below the rated level. Manual operation is also possible.

**FRAME**

Type	Box-sectioned construction
Main frame material	High-tensile-strength steel plate

**BODY**

Structure	V-shape body with V-bottom
Material	130 kg/mm ² /20.6 MPa high-tensile-strength steel
Heating	Exhaust heating
Material thickness:	
Floor	19 mm
Front	12 mm
Sides	9 mm
Target area (inside length x width)	7480 mm x 4880mm

**BODY HOIST**

Hoist cylinder	Twin, 2-stage telescopic type
Hydraulic pump capacity	668 ltr./min.
Relief valve setting	210 kg/cm ² / 20.6 MPa
Hoist time	13 sec.

**CAPACITY**

Standard body:	
Struck	40 m ³
Heaped (2:1, SAE)	60 m ³
Payload, maximum	91 metric tons 100 U.S. tons

**WEIGHT (approximate)**

Empty weight	68230 kg
Max. gross vehicle weight	166000 kg
Not to exceed Max. gross vehicle weight, including options, fuel and payload.	

Notes: 1. Remain under max. gross vehicle weight and ton-kilometers per hour which are determined by tires
2. Select tires that are appropriate for vehicle operating conditions.
Weight distribution:

Weight distribution:	
Empty, front axle	47%
rear axle	53%
Loaded, front axle	33%
rear axle	67%

**SERVICE REFILL CAPACITIES**

Coolant	228 ltr.
Fuel tank	1250 ltr.
Engine oil	132 ltr.
Torque converter and transmission	102 ltr.
Differential	132 ltr.
Final drive (left and right)	118 ltr.
Retarder cooling	246 ltr.
Hydraulic system	153 ltr.
Suspension (total)	75 ltr.

**CAB AND ROPS**

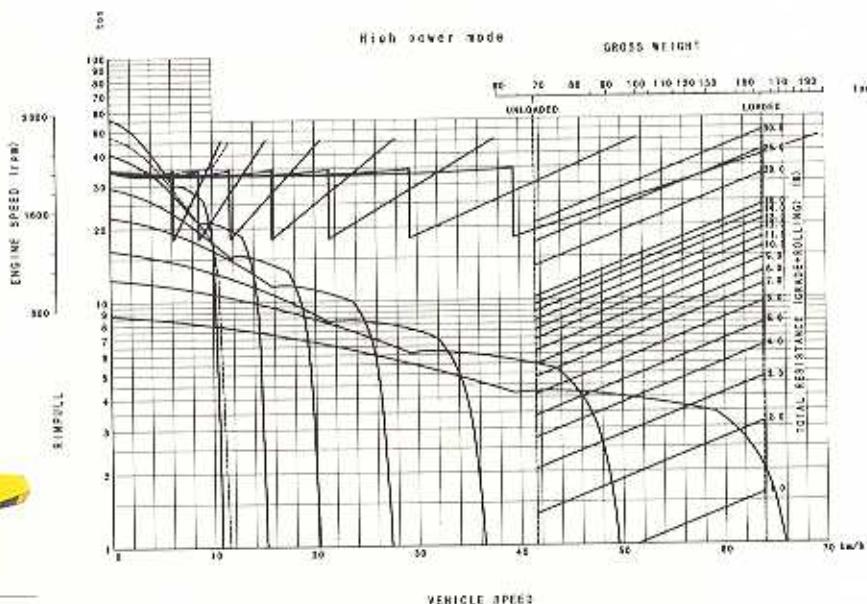
Dimensions comply with ISO 3471 and SAE J1040-1988c. ROPS (Roll-Over Protective Structure) standards. The cab is mounted on rubber pads and well insulated.

**TYRES**

Standard, front and rear	27 COR49**
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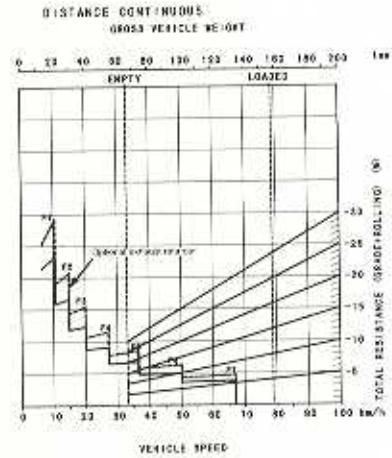
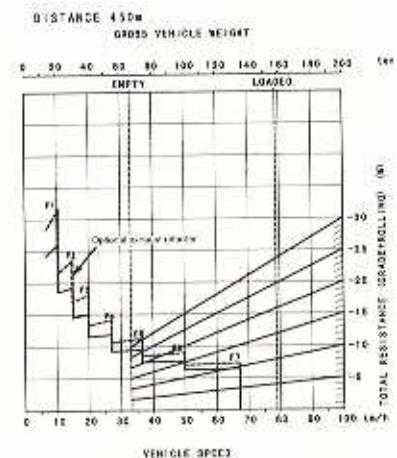
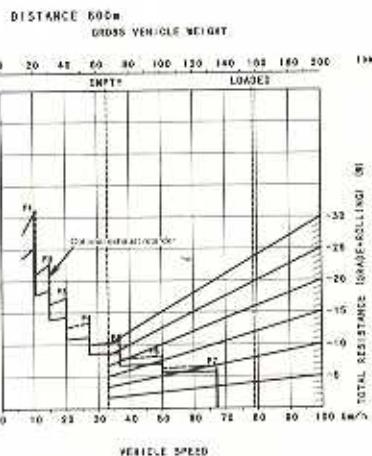
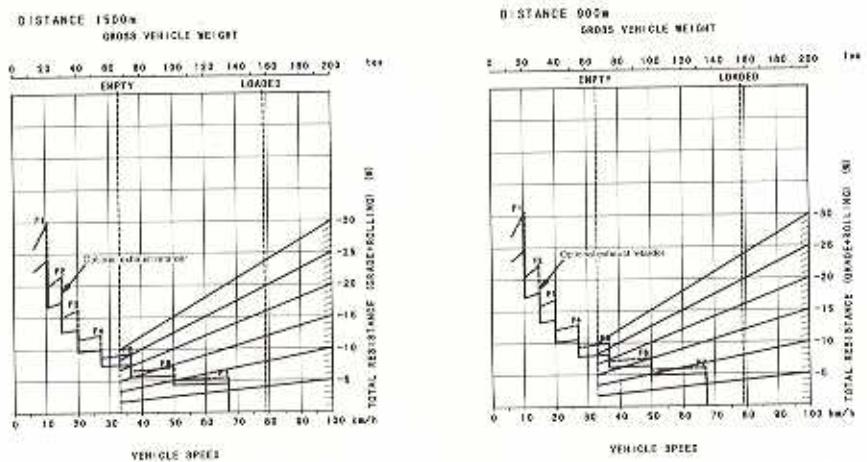
TRAVEL PERFORMANCE

To determine travel performance: Read from gross weight down to the percent of total resistance. From this weight-resistance point, read horizontally to the curve with the highest obtainable speed range, then down to maximum speed. Usable rimpull depends upon traction available and weight on drive wheels.



BRAKE PERFORMANCE

To determine brake performance: These curves are provided to establish the maximum speed and gearshift position for safer descents on roads with a given distance. Read from gross weight down to the percent of total resistance. From this weight-resistance point, read horizontally to the curve with the highest obtainable speed range, then down to maximum descent speed the brakes can safely handle without exceeding cooling capacity.



KOMATSU



Standard equipment may vary for each country, and this specification sheet may contain attachments and optional equipment that are not available in your area. Please consult your Komatsu distributor for detailed information.

KOMATSU

Komatsu Europe
International nv

Mechelsesteenweg 586
B-1800 VILVOORDE (Belgium)
N. Tel. (32) 2 255 24 11
N. Fax (32) 2 252 19 81
www.komatsueurope.com