

KOMATSU

HD785-7

ENGINE POWER
895 kW / 1.200 HP @ 1.900 rpm

MAXIMUM GVW
166.000 kg

BODY CAPACITY, HEAPED
60,0 m³

HD
785

OFF-HIGHWAY TRUCK



HD785-7

WALK-AROUND

Productivity features

- High performance Komatsu SAA12V140E-3 engine
- Variable horsepower control (VHPC)
- Two-speed selective reverse gears of RH and RL
- Anti-pitching 4-wheel oil-cooled multiple-disc retarder
- Automatic Idling Setting System (AISS)
- Auto Retard Speed Control (ARSC)
- High strength body
- Minimum turning radius: 10,1 m
- ABS (Anti-Lock Braking System) (Option)
- ASR (Automatic Spin Regulator) (Option)
- Payload meter function

Environment-friendly

- Meets EPA Tier 2
- Low operating noise
- Low fuel consumption
- Lead-free radiator
- Brake cooling oil recovery tank



ENGINE POWER
895 kW / 1.200 HP

MAXIMUM GVW
166.000 kg

BODY CAPACITY, HEAPED
60,0 m³

Operator environment

- Wide, spacious cab with excellent visibility
- Ergonomically designed cab
- Easy-to-see instrument panel
- Air suspension seat
- Tilttable, telescoping steering wheel and low effort pedals
- Electric body dump control lever
- K-ATOMiCS transmission with "Skip-Shift" function
- Synchronous control of engine and transmission
- Hydropneumatic suspension for all terrains
- Viscous cab mounts
- Built-in ROPS/FOPS
- Supplementary steering (Automatic)
- Pedal-operated secondary brakes
- Three-mode hydropneumatic suspension (auto-suspension) (Option)
- Front stairway with handrails

Reliability features

- Fully hydraulic brake system
- Reliable Komatsu manufactured major components
- High-rigidity frame
- Wet multiple-disc brakes (front and rear)
- Flat face-to-face O-ring seals
- Sealed DT-connectors
- Highly reliable hydraulic system



Easy maintenance

- Long oil change interval
- Centralized greasing points
- Centralized arrangement of filters
- Flanged type rims
- KOMTRAX™ - Komatsu satellite monitoring system
- KOMTRAX™ Plus (Vehicle Health Monitoring System)
- Satellite communication system for KOMTRAX™ Plus

PRODUCTIVITY & ECONOMY

High performance Komatsu SAA12V140E-3 engine

This engine delivers faster acceleration and higher travel speeds with high horsepower per ton. Advanced technology, such as High Pressure Common Rail injection system (HPCR), air-to-air aftercooler efficient turbo-charger gives high torque at low speed, impressive acceleration, and low fuel consumption for maximum productivity.

F7-R2 (RH/RL) fully automatic transmission

The transmission is configured with 7 forward and 2 reverse gears. Fully automatic control is applied to all forward gears and an optimum gear is automatically selected according to the travel speed and engine speed. The shifting point is automatically selected depending on the acceleration of the machine to reduce excessive fuel consumption.



Two-speed selective reverse gears (RH/RL)

In order to meet various operating conditions, two reverse gears are provided. The switch on the panel allows the operator to select optimum reverse gear of RH or RL depending on the job site conditions. Furthermore, the reverse gear is equipped with a lockup clutch, allowing the operator to reverse the machine without overheating.

RH: Suitable for normal operation. Thanks to the lockup clutch, the machine can be reversed at higher speed

RL: Suitable for operation in job sites where there are steep grades.

Variable horsepower control (VHPC) with mode selection system

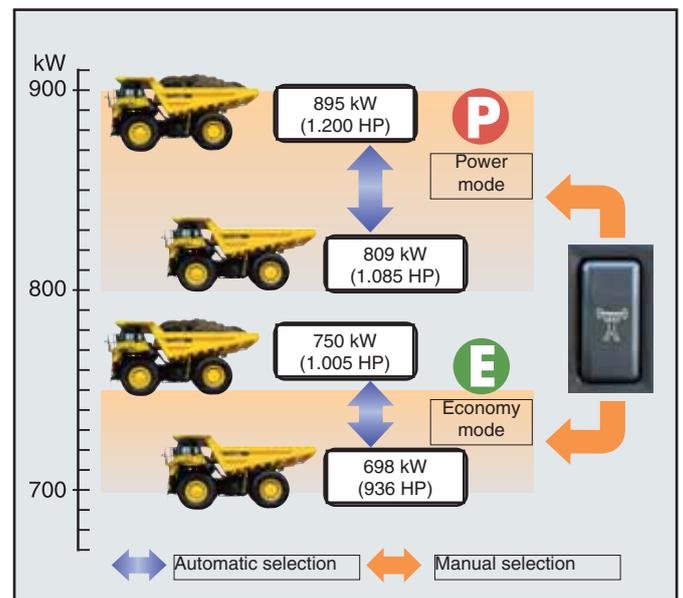
The system allows selection of the appropriate mode between two modes “Power mode ” or “Economy mode” according to each working condition. The mode is easily selected with a switch in the operator’s cab. When the key switch is turned on, Economy mode is selected automatically. Select Power mode by using the switch when needed.

VHPC (Variable horsepower control)

Both in Power and Economy modes, the VHPC system detects whether machine condition is loaded or unloaded and selects optimum horsepower setting mode, providing both high production and low fuel consumption.

Power mode: Makes best use of the horsepower to attain optimal production. This mode is suitable for operation in job sites including uphill travel with load where powerful hauling is top priority.

Economy mode: Sets the maximum horsepower at low level to reduce fuel consumption. The machine maintains sufficient power for economical operation in this mode.



Anti-pitching 4-wheel oil-cooled multiple disc retarder

The machine is equipped with an anti-pitching 4-wheel oil-cooled multiple disc retarder that applies retarding force on all four wheels. With this retarder, the retarding force is shared between four wheels. This reduces the possibility of tire-lock and enables effective use of retarder capacity, allowing stable downhill travel. The machine descends slopes smoothly and comfortably without machine pitching since retarding force on front and rear wheels is controlled independently.



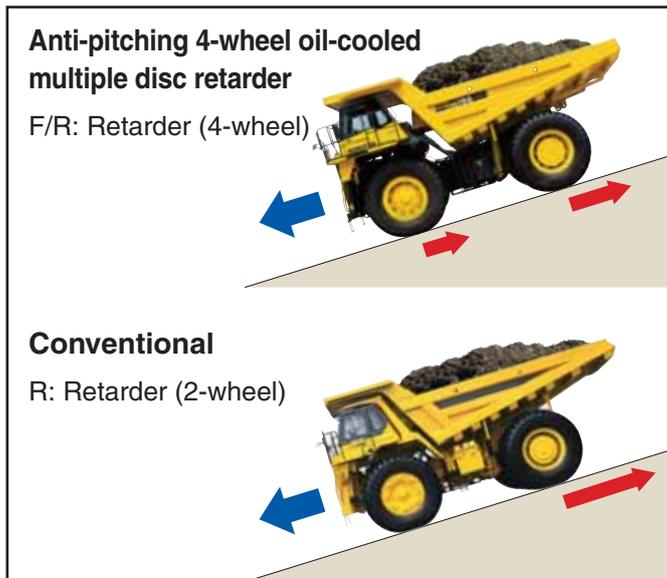
Front brake



Rear brake

Auto Retard Speed Control (ARSC)

ARSC allows the operator to simply set the downhill travel speed and go down slopes at a constant speed. As a result, the operator can concentrate on steering. The speed can be set at increments of 1 km/h per click to match the optimum speed for the slope. Also, when it is predicted that the retarder oil temperature becomes overheated, since the retarder oil temperature is always monitored, operator is informed this by warning lamp.



- Retarder absorbing capacity (continuous descent): 1.092 kW (1.464 HP)
- Brake surface
 Front total: 37.467 cm²
 Rear total: 72.414 cm²



PRODUCTIVITY & ECONOMY

Eliminating hydraulic losses & optimizing transmission control

Hydraulic circuits such as brake cooling, steering, body dump control, transmission control etc. are optimized to reduce fuel consumption. As a result, the fuel consumption for operation with medium and light load is improved.

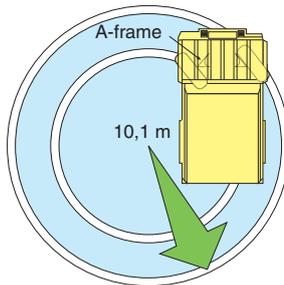
Automatic Idling Setting System (AISS)



This system facilitates quick engine warm-up and cab cooling/warming. When setting the system ON, engine idle speed is kept at 945 rpm when coolant temperature is 50 °C or lower. Speed automatically returns to 750 rpm when coolant temperature reaches 50 °C.

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 the turning radius of the truck.



Long wheelbase and wide tread

With an extra-long wheelbase, a wide tread and an exceptionally low center of gravity, the HD785-7 hauls the load at higher speed for greater productivity, and delivers superior driving comfort over rough terrain.

Large body

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

Heaped capacity: 60,0 m³

Target area (inside length x width):

7.065 mm x 5.200 mm



SAFETY FEATURES

Built-in ROPS/FOPS

These structures conform to ISO 3471 and SAE J1040 standards and ISO 3449 and SAE J231 FOPS standards.



Pedal-operated secondary brake

If there should be a failure on the foot brake circuit, both front and rear parking brakes are activated as a pedal operated secondary brake. In addition, when hydraulic pressure drops below the rated level, the parking brake is automatically actuated.



Parking brakes on 4 wheels

The machine is equipped with spring applied parking brakes on 4-wheels. Wet multiple disc brakes built in both front and rear axles apply braking force to all four wheels. These brakes are highly reliable require no periodic maintenance.

ABS (Anti-Lock Braking System) (Option)

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

ASR (Automatic Spin Regulator) (Option)

ASR automatically prevents the rear tyres on either side from slipping on soft ground for optimal traction. The steering angle is monitored in order to ensure smooth turning.

Supplementary steering and secondary brakes

Supplementary steering and secondary brakes are standard features.

Steering: ISO 5010, SAE J1511, SAE J53

Brakes: ISO 3450, SAE J1473



Front brake



Rear brake



Stairway

A stairway at the front of the radiator grill simplifies such everyday operations as getting on and off the machine.

OPERATOR ENVIRONMENT

Wide, spacious cab with excellent visibility

The wide cab provides a comfortable space for the operator and a full size trainer's seat. A large electrically operated window and the operator's seat positioned on the left hand side ensures superior visibility.

Ergonomically designed cab

The ergonomically designed operator's compartment makes it very easy and comfortable for the operator to use all the controls. The result is more confident operation by operators and greater productivity. A rear view camera and monitor system is supplied as standard.

Easy-to-see instrument panel

The instrument panel makes it easy to monitor critical machine functions. In addition, a caution light warns the operator of any problems that may occur. This Komatsu on-board monitoring system makes the machine very friendly and easy to service.

Air suspension seat is standard

The air suspension, fabric-covered seat which is adjustable to the operator's weight is provided as standard. The air suspension seat dampens vibrations transmitted from the machine and reduces operator fatigue as well as holding the operator securely to assure confident operation.



Steering wheel and pedals

Low effort pedals reduce operator fatigue when working continuously for long periods. The tiltable, telescoping steering column enables operators to maintain an optimum driving position at all times.

Electric body dump control lever

The low effort lever makes dumping easier than ever. A positioning sensor is installed for dump body control which significantly reduces the shock made by the lowering of the dump body.

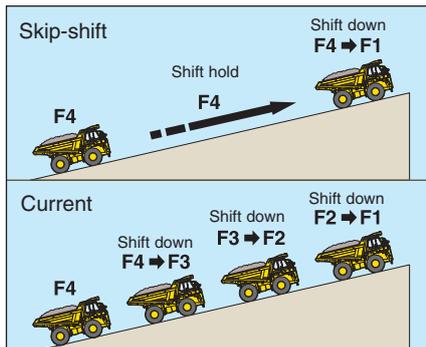


K-ATOMiCS with “Skip-Shift” function

The K-ATOMiCS (Komatsu Advanced Transmission with Optimum Modulation Control System) ensures proper clutch modulation pressure when the clutch is engaged. The total control system controls both the engine and transmission by monitoring the vehicle conditions. This system and newly added “skip-shift” function ensure smooth shifting and responsive acceleration.

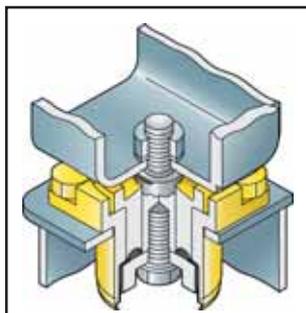
“Skip-shift” function

The optimum travel speed automatically selected in response to the angle of ascent. Reduced frequency of down shifts and smoother operation are provided.



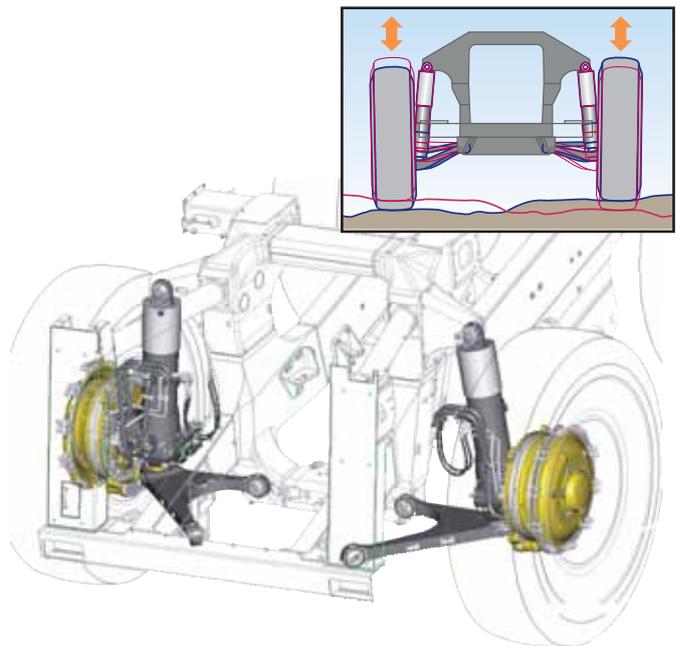
Viscous cab mounts

Viscous mounts reduce the noise transmitted to the cab and achieve a quiet 75 dB(A) noise level (SAE J1166).



The MacPherson strut type front suspension

The MacPherson type independent suspension is installed to the front wheels. The linkage arrangement with less friction allows the front wheel to follow the undulation of road surface smoothly, realizing excellent riding comfort.



Three-mode hydropneumatic suspension (Auto-suspension) (Option)

For a comfortable and stable ride, the suspension mode is automatically switched to one of three stages (soft, medium and hard) according to load and operating conditions.



ADVANCED MONITORING SYSTEM

Availability rate with vehicle monitoring system

The electronic display panel shows current vehicle condition and how to fix them with action codes and check results with service codes. Thus, vehicle management is easier and the working rate is higher. At the same time the monitoring data is saved to be used for later troubleshooting.

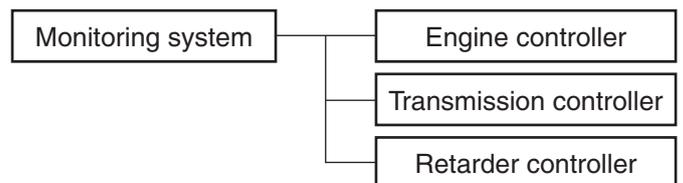


Equipment Management Monitoring System (EMMS)



This window is normally used as the service meter/odometer. If the dump truck has any abnormality or needs to be inspected or serviced, a message of proper remedy and an action code are displayed in this window. Each time the starting switch is turned on, the system is checked. If any filter or oil needs to be replaced at this time, the maintenance caution lamp flashes or lights up and the filter or oil to be replaced is displayed. If any abnormality occurs in the dump truck, a message is displayed on the character display to notify the operator of what action to take. Accordingly, the operator can take that action immediately. The abnormality is displayed as a fault code on the character display and stored so that it will be available for quick troubleshooting to shorten downtime.

Monitoring network

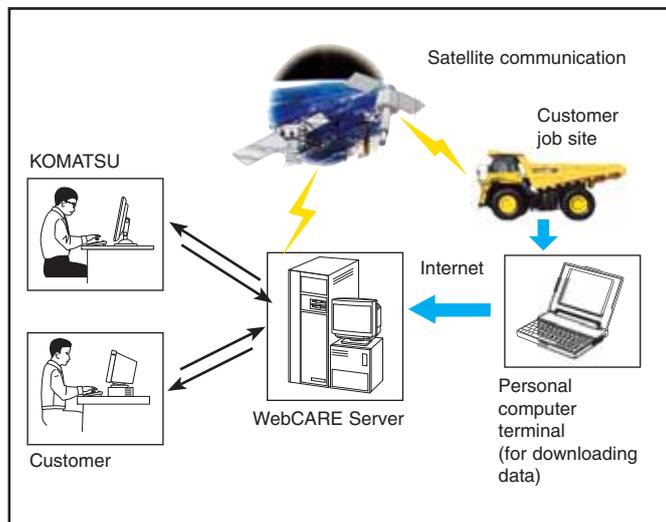


EASY MAINTENANCE

KOMTRAX™ Plus (Vehicle Health Monitoring System)

The KOMTRAX™ Plus controller monitors the health conditions of major components and enables analysis of the machine and its operations. The KOMTRAX™ Plus controller monitors and stores all data received from the engine and transmission controller and various additional sensors on the major components. This way, it's possible to record the evolution of the machine's health condition. This data can be downloaded via a portable computer or via satellite communication. In both cases, customers and Komatsu specialists can analyse this downloaded data and follow up trends in the machine's condition. When using the satellite communications, the Komatsu specialist can inform you whenever an abnormal condition occurs. This way, repair and maintenance costs can be optimised, and maximum machine availability can be maintained.

The Komatsu satellite monitoring system, KOMTRAX™ lets you pin-point the precise location of your machines.



Payload meter function on KOMTRAX™ Plus

The payload is indicated on the Equipment Management Monitor. This option allows the production volume and the working conditions on the dump trucks to be analyzed directly via a personal computer. The system can store up to 2.900 working cycles.



Centralized greasing points

Greasing points are centralized at three locations.



Centralized arrangement of filters

The filters are centralized so that they can be serviced easily.



Flange type rims

Flange type rims provide easy removal/installation of the tyres.



Electric circuit breaker

A circuit breaker is adopted in important electric circuits that should be restored in a short time when a problem occurs in the electrical system.

Extended service intervals

In order to minimize operating costs, service intervals have been extended:

- Engine oil 500 hours
- Hydraulic oil 4.000 hours

Brake cooling oil recovery tank

To protect the environment, a tank is installed to recover brake cooling oil in the event of brake floating seal leakage.

RELIABILITY FEATURES

Komatsu components

Komatsu manufactures the engine, torque converter, transmission, hydraulic units, and electrical parts on this dump truck. Komatsu dump trucks are manufactured with an integrated production system under a strict quality control system.

High-rigidity frames

Front support is integrated with the frame. The frame rigidity is increased drastically. As a result, flexural rigidity and torsional rigidity that are indicators of drivability and riding quality are significantly improved.

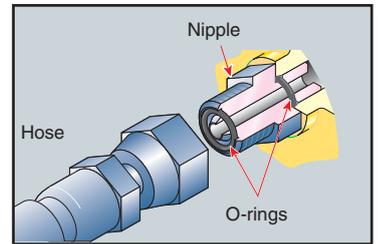


Wet multiple-disc brakes and fully hydraulic braking system

For lower maintenance costs and higher reliability. Wet disc brakes are fully sealed. Contaminants are kept out, reducing wear and maintenance. Brakes require no adjustments for wear, meaning even lower maintenance. The new parking brake is also an adjustment-free, wet multiple-disc for high reliability and long life. Added reliability is designed into the braking system by the use of three independent hydraulic circuits. Provides hydraulic backup should one of the circuits fail. Fully hydraulic brakes system means no air system to bleed, or condensation of water that can lead to contamination, corrosion, and freezing.

Flat face-to-face O-ring seals

Flat face-to-face O-ring seals are used to securely seal all hydraulic hose connections and to prevent oil leakage.



Sealed DT-connectors

Main harnesses and controller connectors are equipped with sealed DT-connectors providing high reliability, water resistance and dust resistance.



Reliable hydraulic system

A large capacity oil cooler is installed in each hydraulic circuit, improving the reliability of the hydraulic units during sudden temperature rises. Further, in addition to the main filter, a 10-micron line filter is located at the entrance to the transmission control valve. This system helps to prevent secondary faults.



Rugged and durable dump body design

The standard dump body is made of high-tensile-strength steel with a Brinell hardness of 400 for excellent rigidity and reduced maintenance cost. The V-shape and V-bottom design also increase structural strength.

The side and bottom plates of the dump section are reinforced with ribs for added strength.

A quarry body with a 25 mm Hardox bottom plate with a Brinell hardness of 450 is also available.



SPECIFICATIONS



ENGINE

Model Komatsu SAA12V140E-3
 Type Common rail direct injection, water-cooled, turbocharged, after-cooled diesel

Engine power
 at rated engine speed 1.900 rpm
 ISO 14396 895 kW/1.200 HP
 ISO 9249 (net engine power) 879 kW/1.179 HP

No. of cylinders 12
 Bore x stroke 140 x 165 mm
 Displacement 30,48 ltr
 Max. torque 518 kgf-m
 Governor Electronically controlled

Lubrication system:
 Lubrication method Gear pump, force lubrication
 Filter Full flow
 Air filter Dry type with double elements and precleaner (cyclonpack type), plus dust indicator



TRANSMISSION

Torque converter 3-elements, 1-stage, 2-phase
 Transmission Full-automatic, planetary type
 Speed range 7 speeds forward and 2 reverse (RH/RL)
 Lock-up clutch Wet, multiple-disc clutch
 Forward Torque converter drive in 1st gear, direct drive in 1st lockup and all higher gears
 Reverse Torque converter drive (lockup)
 Shift control Electronic shift control with automatic clutch modulation in all gears
 Max. travel speed 65 km/h



AXLES

Final drive type Planetary gear
 Rear axle Full floating

Ratios:
 Differential 3,357
 Planetary 6,333



SUSPENSION

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

Effective cylinder stroke:
 Front suspension 320 mm
 Rear suspension 127 mm
 Rear axle oscillation 6,5°



STEERING SYSTEM

Type Fully hydraulic power steering with two double-acting cylinders
 Supplementary steering Automatically and manually controlled (meets ISO 5010, SAE J1511 and SAE J53)
 Minimum turning radius, centre of front tyre 10,1 m
 Maximum steering angle (outside tyre) 41°



BRAKES

Brakes meet ISO 3450 and SAE J1473 standards.

Service brakes:
 Front Full-hydraulic control, oil-cooled multiple-disc type
 Rear Full-hydraulic control, oil-cooled multiple-disc type
 Parking brake Spring applied, multiple-disc type, acting on all wheels
 Retarder Oil-cooled, multiple-disc front and rear brakes act as retarder
 Retarder capacity (continuous) 1.092 kW / 1.464 HP
 Secondary brake Manual pedal operation
 When hydraulic pressure drops below the rated level, parking brake is automatically actuated.

Brake surface:
 Front 37.467 cm²
 Rear 72.414 cm²



HYDRAULIC SYSTEM

Hoist cylinder Twin, 2-stage telescopic type
 Relief pressure 20,6 MPa/210 kg/cm²
 Hoist time (at high idle) 13 sec
 Lowing time (float) 14 sec



CAB

Dimensions comply with ISO 3471 and SAE J1040-1988c ROPS (Roll-Over Protective Structure) standards and ISO 3449 and SAE J231 FOPS (Falling Object Protective Structure) standard.



MAIN FRAME

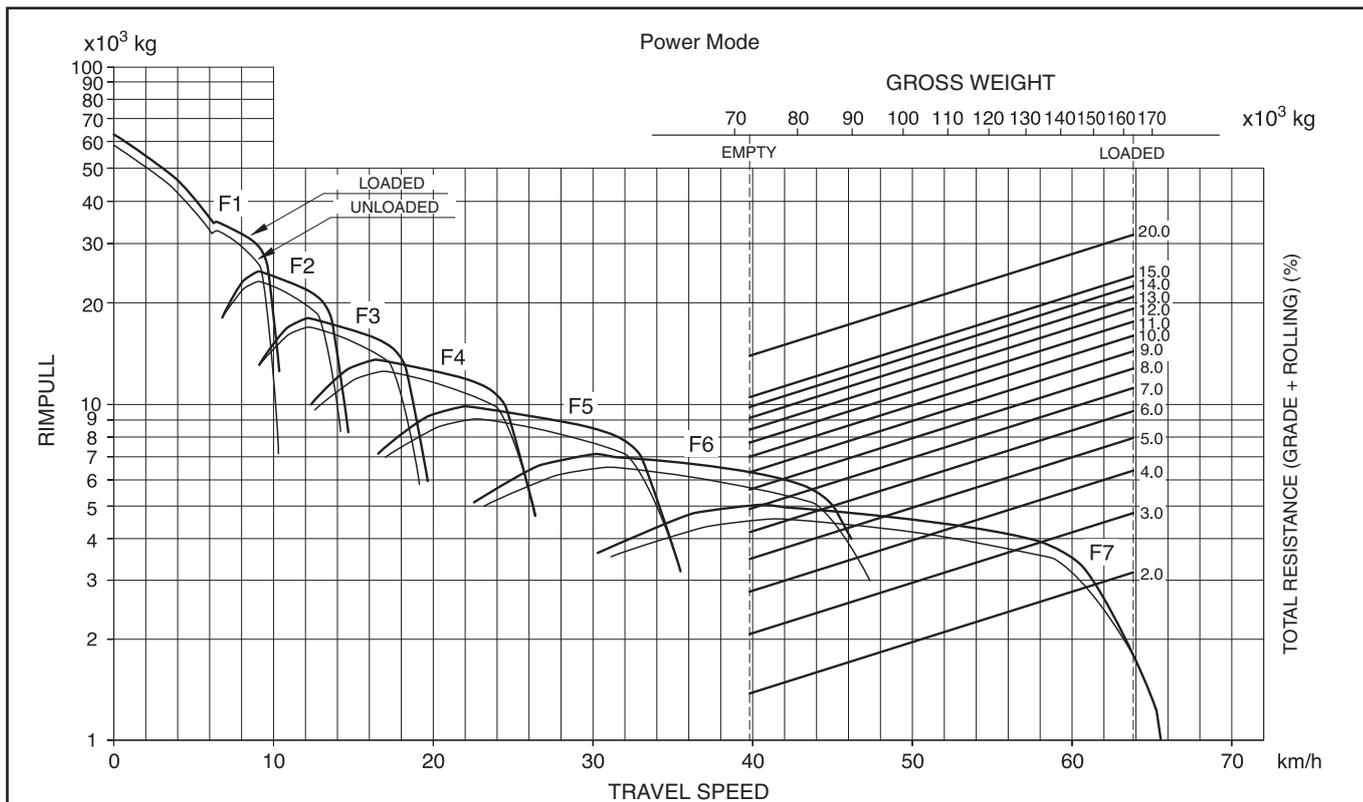
Type Box-sectioned construction
 Integral front bumpers



TYRES

Standard tyres 27.00 R49

SPECIFICATIONS



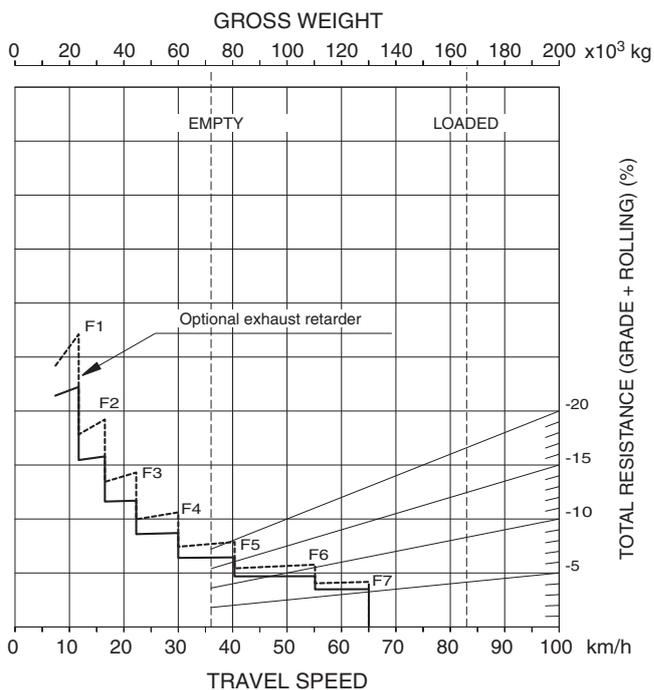
TRAVEL PERFORMANCE

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.

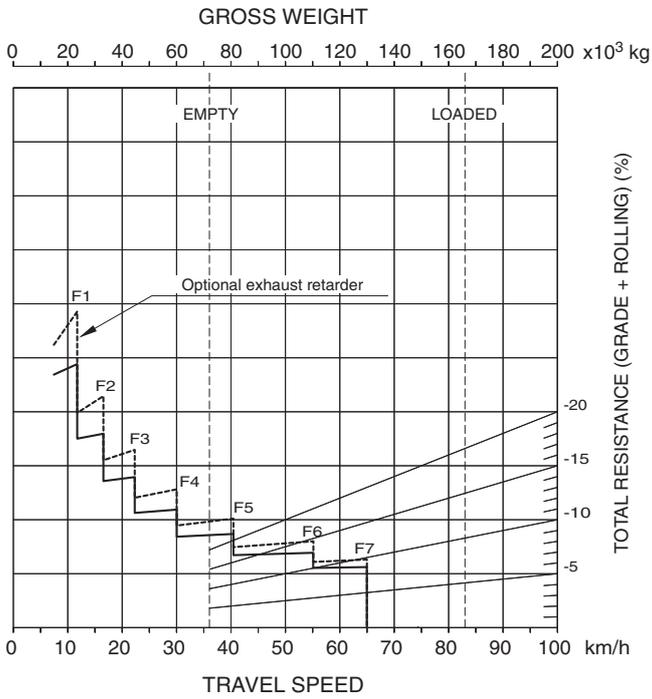
RETARDER PERFORMANCE

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.

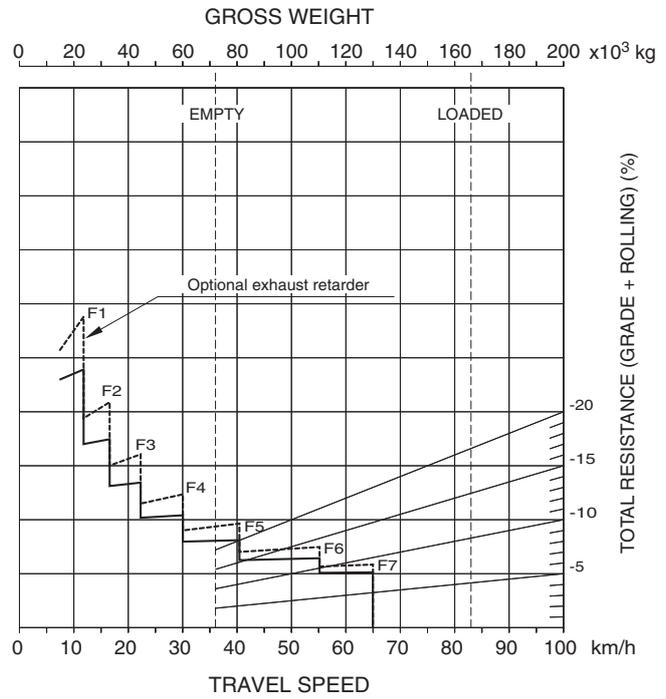
GRADE DISTANCE: CONTINUOUS DESCENT



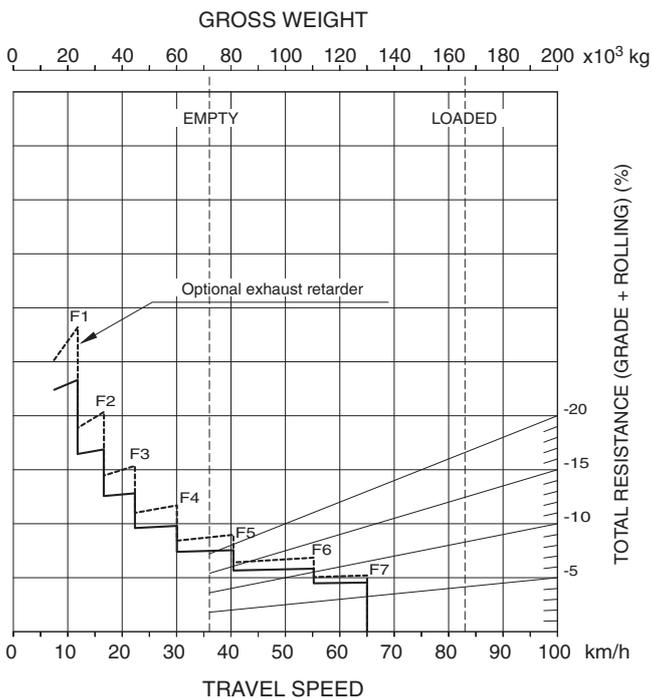
GRADE DISTANCE: 450 m



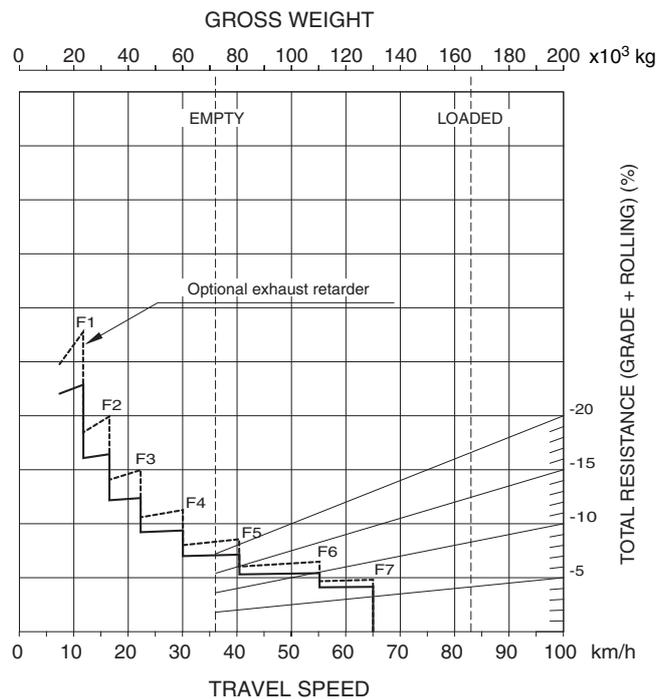
GRADE DISTANCE: 600 m



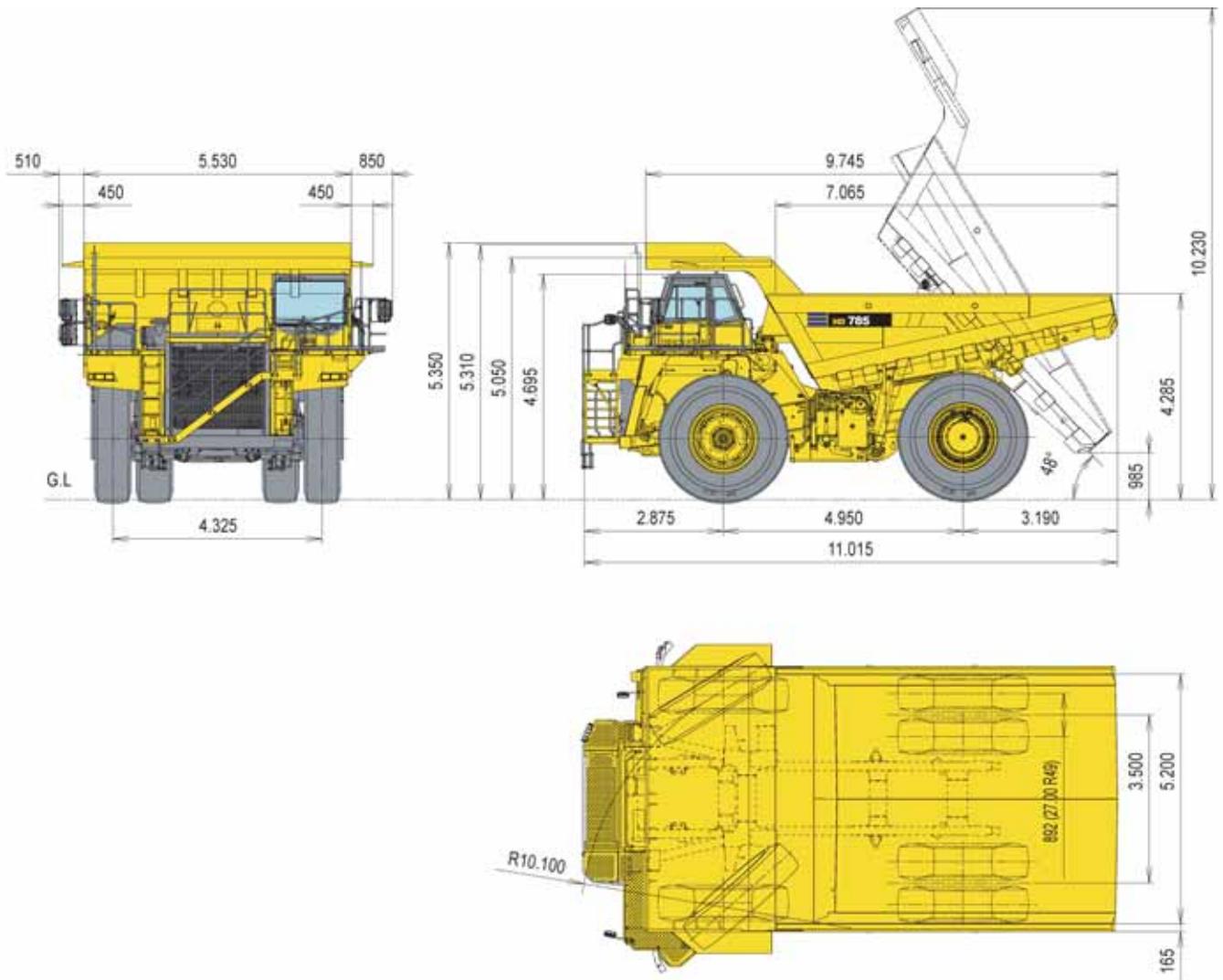
GRADE DISTANCE: 900 m



GRADE DISTANCE: 1.500 m



MACHINE DIMENSIONS



SERVICEABILITY AND CUSTOMER SUPPORT

The Komatsu dealer network guarantees you the lowest operating costs

When you purchase Komatsu equipment, you gain access to a broad range of programmes and services that have been designed to help you get the most from your investment. These all support substantial productivity, long and useful equipment lifetime, low operating costs, and a high trade-in or resale value.

- Many of the vital components in the HD785-7 have been installed and proven totally reliable in other heavy-duty Komatsu earthmoving equipment.
- Komatsu's extensive parts warehouses and logistics system across Europe and around the globe ensure unparalleled parts availability.
- Continuous training programmes for Komatsu service personnel guarantee that your equipment is serviced properly and maintained in top running condition.
- The Komatsu Oil Wear Analysis (KOWA) programme offers sophisticated oil analysis to identify problems to be followed up during preventative, scheduled maintenance.
- KFWP (Komatsu's Flexible Warranty Programme) is available, providing a range of extended warranty options on the machine and its components. These can be chosen, based on individual needs and activities. This programme is designed to help reduce total operating costs.
- A Komatsu Repair & Maintenance Contract is a way to establish a fixed operating cost and ensure optimal machine availability for the duration of the contract.



OFF-HIGHWAY TRUCK

STANDARD EQUIPMENT

ENGINE

- Komatsu SAA12V140E-3 engine, EPA Tier II compliant
- AISS (Automatic Idling Setting System)
- Engine power mode selection system with VHPC
- Alternator 90 A/24 V
- Batteries 4 × 12 V/170 Ah
- Starting motor 2 × 7,5 kW

CAB

- ROPS cab with FOPS, sound suppression type
- Two doors, left and right
- Air conditioner
- Electronic maintenance display/monitoring system
- Electronic hoist control system
- Operator seat, reclining, air suspension type with retractable 78 mm width seat belt
- Passenger seat with seat belt
- Power window (l.h.)
- Steering wheel, tilt and telescopic

- Sun visor
- Sun visor, additional
- Tinted glazing
- Pre radio installation
- Cigarette lighter, ashtray, cup holder, space for lunch box
- Windshield washer and wiper (with intermittent feature)

LIGHTING SYSTEM

- Back-up light
- Hazard lights
- Headlights with dimmer switch
- Indicator, stop and tail lights

GUARDS AND COVERS

- Exhaust thermal guard
- Fire prevention covers
- Engine underguard
- TM underguard
- Drive shaft guard (front and rear)
- Engine side covers
- Lockable fuel cap and covers

SAFETY EQUIPMENT

- Anti-pitching 4-wheel oil-cooled multiple-disc retarder (AP-FOUR)
- Back-up alarm
- Horn, electric
- Coolant temperature alarm and light
- Hand rails for platform
- Ladders, left and right hand side
- Supplementary steering, automatic
- Overrun warning system
- ARSC (Auto Retard Speed Control)
- Rearview mirrors
- Underview mirrors
- Rear view camera and monitor
- Front stairway with handrails

OTHER

- Centralized greasing
- Electric circuit breaker, 24 V
- PM service connections
- Poor fuel arrangement (water and dust)
- Fuel tank with fast fill coupler
- KOMTRAX™ - Komatsu satellite monitoring system

- KOMTRAX™ Plus (Vehicle Health Monitoring System)
- Satellite communication system for KOMTRAX™ Plus
- Payload meter function on KOMTRAX™ Plus

REGULATIONS

- Complies with EC requirements

BODY

- Body exhaust heating
- Cab guard (left hand side)
- Spill guard, 300 mm
- Platform guard (right hand side)

TYRES

- 27.00-R49

OPTIONAL EQUIPMENT

CAB

- Heater and defroster
- Cassette-radio
- Power window (r.h.)

BODY

- Body liners
- Muffler without body heating
- Muffler with body heating
- Quarry body

LIGHTING SYSTEM

- Rear working lights, left and right
- Fog lights
- Back-up light, additional
- LED combination lights, rear

SAFETY EQUIPMENT

- ABS (Anti-lock Braking System)
- ASR (Automatic Spin Regulator)
- Exhaust retarder
- Tyre stopper block

ARRANGEMENTS

- High-capacity batteries
- Cold area arrangement (-30 °C to 40 °C)
- Sandy and dusty area arrangement

OTHER

- Auto greasing system
- Engine coolant heater
- Engine oilpan heater
- Three-mode automatic hydropneumatic suspension

TYRES

- 31/90 R49

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