KOMATSU®

HD785-7

GROSS HORSEPOWER
895 kW **1,200 HP**

NET HORSEPOWER
879 kW **1,178 HP**

MAXIMUM GVW
166000 kg **366,000 lb**

HD 785

OFF-HIGHWAY TRUCK

Photos may include optional equipment

WALK-AROUND

Productivity and Economy Features

- High performance Komatsu SAA12V140E-3 engine
  Net horsepower 879 kW **1,178 HP**
- Mode selection system with Variable HorsePower Control (VHPC)
- Two-speed selective reverse gears, RH and RL
- Anti-pitching 4-wheel oil-cooled multiple-disc retarder (AP-FOUR)
  Retarder absorbing capacity 1092 kW **1,464 HP**
  (continuous descent)
- Automatic Retard Speed Control (ARSC) standard

Harmony with Environment

- Komatsu SAA12V140E-3 engine meets EPA Tier 2 emissions regulations
- Lead-free radiator
- Low operation noise
- Low fuel consumption

Reliability Features

- Flat face-to-face O-ring seals
- Sealed DT connectors

HD785-7

GROSS HORSEPOWER
895 kW **1,200 HP** @ 1900 rpm

NET HORSEPOWER
879 kW **1,178 HP** @ 1900 rpm

MAXIMUM GVW
166000 kg **366,000 lb**

Operator Environment and Control

- Spacious cab with excellent visibility
- Ergonomically-designed cab
- Easy-to-see instrument panel
- Synchronous control of engine and transmission
- Advanced K-ATOMiCS with “Skip-shift” function
- Viscous cab mounts
- Electric body dump control
- Built-in ROPS/FOPS, Level 2 cab
- Parking brakes on 4-wheels
- Supplementary steering
- Pedal-operated secondary brake
- Three-mode automatic hydropneumatic suspension (optional)

Easy Maintenance

- Oil-cooled multiple-disc brakes and fully hydraulic-controlled braking system
- Extended oil change interval
- Disc wheels (flange type rims)
- Electric circuit breakers
- KOMTRAX Plus

Photos may include optional equipment

PRODUCTIVITY & ECONOMY FEATURES

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 (HPCR) injection system and an efficient air-to-air aftercooler turbo-charger enables the engine to meet EPA Tier 2 emissions regulations. High torque at low speed, impressive acceleration, and low fuel consumption ensure maximum productivity.

Mode Selection System with VHPC

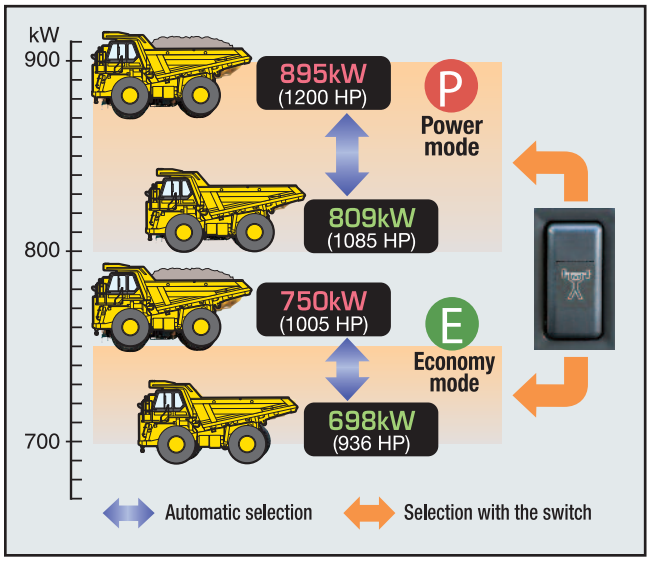
The system allows selection of the appropriate mode, <Power mode > or <Economy mode>, according to the working condition. The mode is easily selected with a switch in the operator's cab. When the key switch is turned on, Economy mode is selected automatically. Select Power mode when needed by using a switch on the dash.

Variable HorsePower Control (VHPC)

Both in Power and Economy modes, the VHPC system detects whether the truck is loaded or not loaded and selects the optimum horsepower setting mode, providing both high production and low fuel consumption.

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

- **Economy mode:** Sets the maximum horsepower at a lower level to reduce fuel consumption. The machine maintains sufficient power for normal operation in this mode.




Photos may include optional equipment.

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. To reduce fuel consumption, the shifting point is automatically selected depending on the acceleration of the machine.

Two-Speed Selective Reverse Gears (RH/RL)

In order to meet various operating conditions, two reverse gears are provided. By a setting found in the Electronic Machine Monitoring System (EMMS), an operator can select the appropriate gear for the application, RH or RL. Furthermore, the reverse gear is equipped with a lockup clutch, just like the forward gears, allowing the operator to reverse the machine without concern of overheating.

RH

Suitable for normal operation. With the lockup clutch, the machine can be reversed at higher speed than the current model while obtaining the same rimpull.

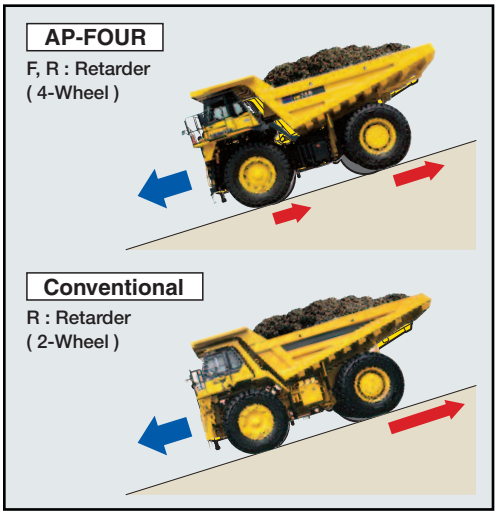
RL

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

AP-FOUR (Anti-Pitching 4-wheel Oil-Cooled Multiple Disc Retarder)

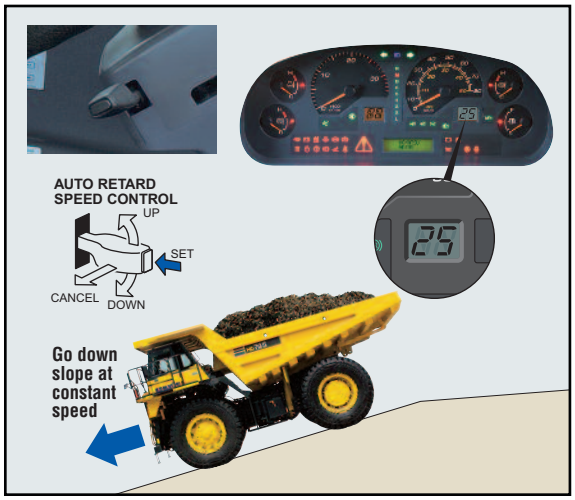
The HD785-7 is equipped with AP-FOUR that applies retarding force on all four wheels. This reduces the possibility of tire-lock and enables effective use of retarder capacity, allowing stable downhill travel. The machine descends slopes smoothly and comfortably without machine body pitching since retarding force on the front and rear wheels is controlled independently.

- Retarder absorbing capacity
  1092 kW **1,464 HP** (continuous descent)
- Brake surface area
  Front total : 37467 cm^2 **5,807 in^2**
  Rear total : 72414 cm^2 **11,224 in^2**



Auto Retard Speed Control (ARSC)

ARSC allows the operator to simply set the downhill travel speed and go down slopes at a constant speed. This allows the operator to concentrate on steering. The speed can be set at increments of 1 km/h **0.6 MPH** per click (±5 km/h **3.1 MPH** of setting speed adjustment) to match the optimum speed for the slope. The retarder cooling oil temperature is constantly monitored and the descent speed is automatically reduced, if necessary.



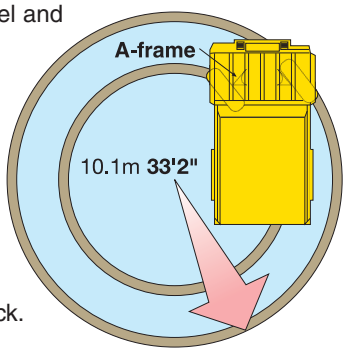

Photos may include optional equipment.

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 **122°F** or lower. Speed automatically returns to 750 rpm when coolant temperature goes above 50°C **122°F**.

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.



Photos may include optional equipment.

Long Wheelbase and Wide Tread

With an extra-long wheelbase, a wide tread, and an exceptionally low center of gravity, the HD785-7 hauls its 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 spillage and more efficient hauling.

Heaped capacity : 60.0 m^3 **78.5 yd^3**
Target area (inside length x width) :
7065 mm **23' 2"** x 5200 mm **17' 1"**

Photos may include optional equipment.

OPERATOR ENVIRONMENT

Spacious Cab with Excellent Visibility

Wide windows in the front, side, and back, plus plenty of space in the richly upholstered interior, provide a quiet, comfortable environment for better visibility and control over every aspect of operation. Front underview mirrors and optional rear view camera have been added to improve visibility.

Ergonomically Designed Cab

The comfortable and ergonomically-designed operator's compartment makes it very easy for the operator to reach all controls resulting in greater productivity.

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. Problems are recorded in the monitor and indicated as service codes. This makes the machine more user friendly and easier to service.

Ideal Driving Position Settings

The 5-way adjustable operator seat and the tilt-telescopic steering column provide an optimum driving posture for increased driving comfort and more control over machine operation. The suspension seat dampens vibrations transmitted from the machine and reduces operator fatigue. A 78 mm **3"** wide seat belt is provided as standard equipment.

Photos may include optional equipment

Synchronous Control of Engine and Transmission

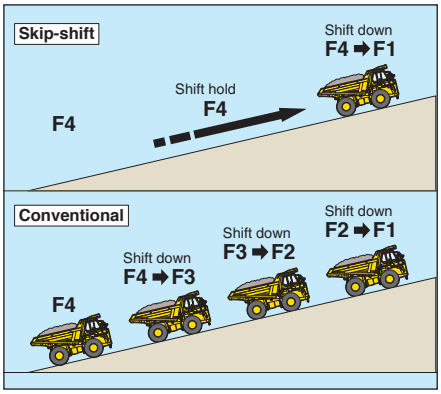
During gear shifting, the engine speed is controlled to coincide with transmission rotation speed which reduces shifting shocks. The synchronous control improves the durability of the power train by reducing torque fluctuation.

Advanced K-ATOMiCS

The electronically controlled all clutch modulation system, “K-ATOMiCS”, optimizes the clutch engagement oil pressure at every gear. This system optimizes the clutch lock-up process for smoother shifting with minimal torque shock.

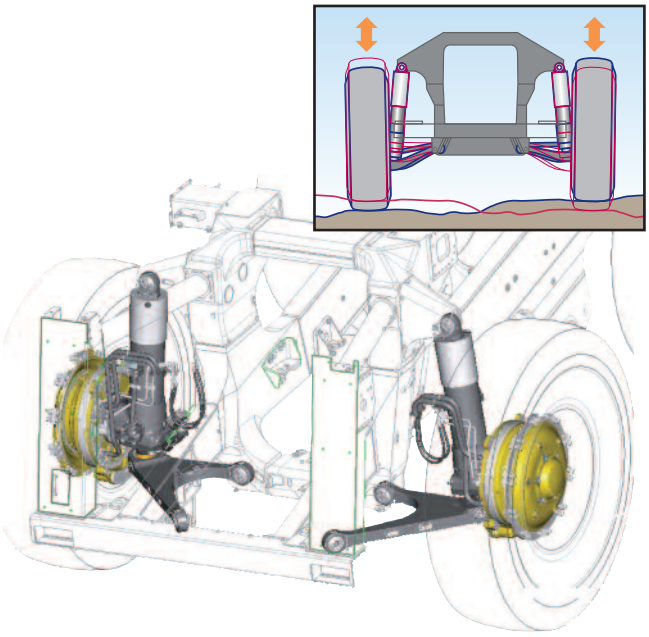
“Skip-shift” function

When driving uphill, the skip-shift function automatically selects the gear according to the slope of the grade. It reduces the number of down-shifts, makes the driving smoother, improves the operator’s comfort, and reduces spilling of material.



The MacPherson Strut-Type Front Suspension

The MacPherson-type independent suspension is utilized on the front wheels. This linkage arrangement allows the front wheel to follow the undulation of the road surface smoothly, realizing excellent riding comfort.



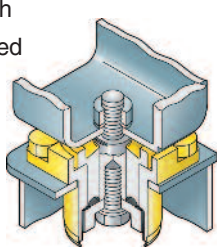
Three-Mode Automatic Hydropneumatic Suspension (Option)

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

Photos may include optional equipment.

Viscous Cab Mounts

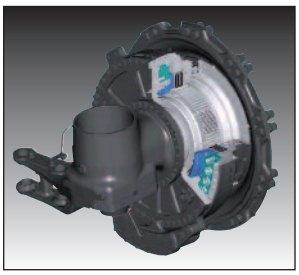
Large capacity viscous cab mounts with excellent damping performance are used to mount the cab. They reduce cab vibration significantly and provide a comfortable cab environment with superb quietness and less vibration. Noise level at operator's ear is 75 dB(A).

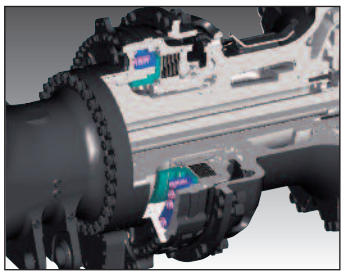


Integral Four-Post ROPS/FOPS Level 2 Cab Structure

Parking Brakes on 4-Wheels

The HD785-7 is equipped with spring applied parking brakes on all 4-wheels. Wet multiple disc brakes, built in both front and rear axles, apply braking force to all four wheels. The brakes require minimal periodic maintenance.


Front brake


Rear brake

Supplementary Steering

Automatic supplementary steering is provided as a standard feature.

Electric Body Dump Control

An electric lever is used for body dump control. The lever is short in control travel and can be operated with light hand effort. The "kick-out function" facilitates body dump operation, eliminating the need to hold the lever in dump position. Furthermore, body seating shock is significantly reduced because a sensor detects the body just before reaching the seat and reduces speed of decent.

Pedal-Operated Secondary Brake

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.

Antilock Braking System (ABS) (optional)

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, thus helps limit skidding under slippery conditions while applying the service brake.

Automatic Spin Regulator (ASR) (optional)

ASR automatically maximizes traction by preventing the rear tires from slipping on either side.

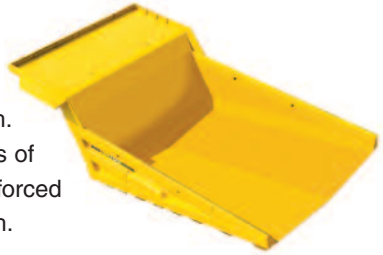
Photos may include optional equipment.

DASH-7 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 strict quality control system guidelines.

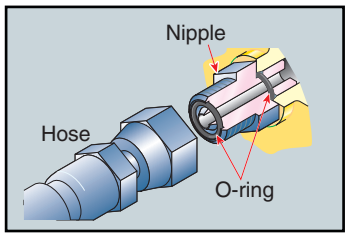
High-Rigidity Frame
Front support is integrated with the frame. The frame rigidity has been substantially increased. As a result, flexural rigidity and torsional rigidity, which are indicators of drivability and ride quality, are significantly improved.

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.



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 $\beta_{10}=3$ (min) line filter is located at the entrance to the transmission control valve. This system helps prevent secondary faults.

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.

Protection Function Supported by Electronic Control

Item	Function
Downshift inhibitor	Even if the driver downshifts accidentally, a speed appropriate to the current gear is automatically set, limiting potential 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, limiting potential 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 4km/hr **2.5 mph**.
Anti-hunting system	When running near a shift point, smooth automatic shifting takes place.
Neutral safety	The engine is prevented from starting when the shift lever is not in neutral.

Ecology

Lead-Free Radiator
In addition to compliance with emission regulations, a lead-free aluminum core is used for the radiator to meet global environmental requirements.

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.

OPERATOR STATION

Advanced Monitoring System

The Komatsu advanced monitoring system identifies maintenance items, reduces diagnostic times, indicates oil and filter replacement hours and displays abnormality codes. This monitor system helps to maximize machine production time.

Wet multi-disc brakes and fully hydraulic controlled braking systems realize lower maintenance costs and higher reliability. Wet disc brakes are fully sealed to keep contaminants out, reducing wear and maintenance. Brakes require no adjustments for wear, meaning even lower maintenance. The parking brake is also an adjustment-free, wet multiple-disc system for high reliability and long life. Added reliability is designed into the braking system by the use of three independent hydraulic circuits providing hydraulic backup. Fully hydraulic braking systems eliminate the air system; air bleeding is not required, and water condensation that can lead to contamination, corrosion and freezing is eliminated.

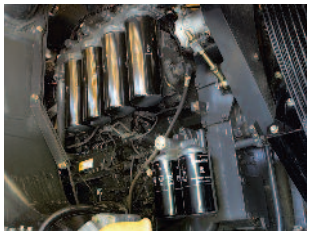
Extended Oil Change Intervals

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

- Engine oil 500 hours
- Hydraulic oil 4000 hours

Centralized Arrangement of Filters

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



Disc Wheels (flange-type rims)

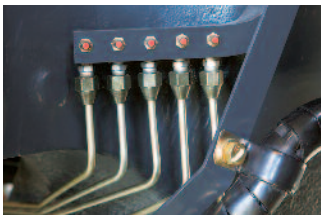
Disc wheels (flange-type rims) allow for easy removal and installation of tires.

Electric Circuit Breaker

A circuit breaker is adopted for important electric circuits which need to be restored quickly when a problem occurs in the electrical system.

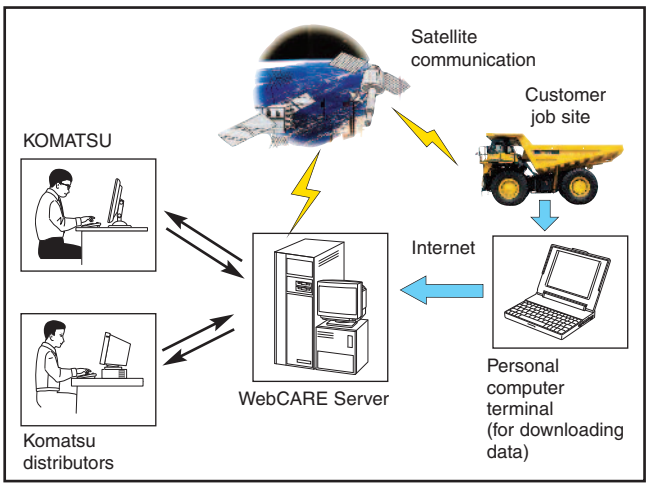
Centralized Greasing Points

Greasing points are centralized at three locations enabling ground level servicing.



KOMTRAX Plus

KOMTRAX Plus monitors the health conditions of major components, enables remote analysis of the machine and its operation. This process is supported by the Komatsu distributors, factory and design team.



Payload Meter (PLM)

PLM allows the production volume and working conditions on the dump truck to be analyzed and controlled directly via a personal computer. The payload is indicated both in the operator's cab and with a lamp on the outside of the truck. The system can store up to 2900 working cycles.

Photos may include optional equipment.

SPECIFICATIONS

ENGINE

Model . . . . . Komatsu SAA12V140E-3
Type . . . . . Water-cooled, 4-cycle
Aspiration . . . . . Turbo-charged, after-cooled
Number of cylinders 12
Bore x Stroke . . . . . 140 mm x 165 mm **5.51" x 6.50"**
Piston displacement . . . . . 30.48 ltr **1,860 in³**
Horsepower
  SAE J1995 . . . . . Gross 895 kW **1,200 HP**
  ISO 9249 / SAE J1349 . . . . . Net 879 kW **1,178 HP**
  Rated rpm . . . . . 1,900 rpm
Fan drive type . . . . . Mechanical
Maximum torque . . . . . 518 kg•m **3,747 lb ft**
Fuel system . . . . . Direct injection
Governor . . . . . Electronic control
Lubrication system
  Method . . . . . Gear pump, force-lubrication
  Filter . . . . . Full-flow type
Air cleaner . . . . . Dry type with double elements and pre-cleaned, with dust indicator

TRANSMISSION

Torque converter 3-elements, 1-stage, 2-phase
Transmission . . . . . Full-automatic, planetary-shaft type
Speed range . . . . . 7 speeds forward and 2 reverse (RH, RL)
Lockup 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, direct drive (lockup)
Shift control . . . . . Electronic shift control with automatic clutch modulation in all gear
Maximum travel speed . . . . . 65 km/h **40.4 mph**

AXLES

Rear axles . . . . . Full-floating
Final drive type . . . . . Planetary gear
Ratios:
  Differential 3.357
  Planetary 6.333

SUSPENSION SYSTEM

Independent, hydropneumatic suspension cylinder with fixed throttle to dampen vibration.
Effective cylinder stroke:
  Front suspension . . . . . 320 mm **12.6"**
  Rear suspension . . . . . 127 mm **5.0"**
Rear axle oscillation . . . . . 6.5°

STEERING SYSTEM

Type . . . . . Fully hydraulic power steering with two double-acting cylinders,
Supplementary steering . . . . . Electro-hydraulic motor
Minimum turning radius . . . . . 10.1 m **33'2"**
Maximum steering angle . . . . . 41°

CAB

Integral four-post ROPS/FOPS Level 2 cab structure

MAIN FRAME

Type . . . . . Box-sectioned structure
Integral front bumper

BRAKES

Brakes meet ISO 3450 standard.
Service brakes:
  Front . . . . . Fully hydraulic control, oil-cooled multiple-disc type
  Rear . . . . . Fully hydraulic control, oil-cooled multiple-disc type
Parking brake . . . Spring applied, multiple-disc type(actuates on all wheels)
Retarder . . . Oil-cooled, multiple-disc front and rear brakes act as retarder.
Secondary brake . . . . . Manual pedal operation. When hydraulic pressure drops below the rated level, parking brake is automatically actuated.
Brake surface
  Front . . . . . 37467 cm² **5,807 in²**
  Rear . . . . . 72414 cm² **11,224 in²**

BODY

Capacity:
  Struck . . . . . 40 m³ **52.3 yd³**
  Heaped (2:1, SAE) . . . . . 60 m³ **78.5 yd³**
Payload . . . . . 91.0 metric tons **100.3 U.S. tons**
Material . . . . . 400 Brinell hardness high tensile strength steel
Structure . . . . . V-shape body with V-bottom
Material thickness:
  Bottom . . . . . 19 mm **0.75"**
  Front . . . . . 12 mm **0.47"**
  Sides . . . . . 9 mm **0.35"**
Target area
  (inside length x width) . . . . . 7065 mm x 5200 mm **23'2" x 17'1"**
Dumping angle . . . . . 48°
Height at full dump . . . . . 10080 mm **33'1"**
Heating . . . . . Exhaust heating

HYDRAULIC SYSTEM

Hoist cylinder . . . . . Twin, 2-stage telescopic type
Relief pressure . . . . . 20.6 MPa 210 kg/cm² **2,990 psi**
Hoist time
  Raise . . . . . 13 sec
  Lower . . . . . 14 sec

WEIGHT (APPROXIMATE)

Empty weight . . . . . 72000 kg **158,800 lb**
Max. gross vehicle weight . . . . . 166000 kg **366,000 lb**
  Not to exceed max. gross vehicle weight, including options, fuel and payload.
Weight distribution:
  Empty: Front axle 47%
  Rear axle 53%
  Loaded: Front axle 31.5%
  Rear axle 68.5%

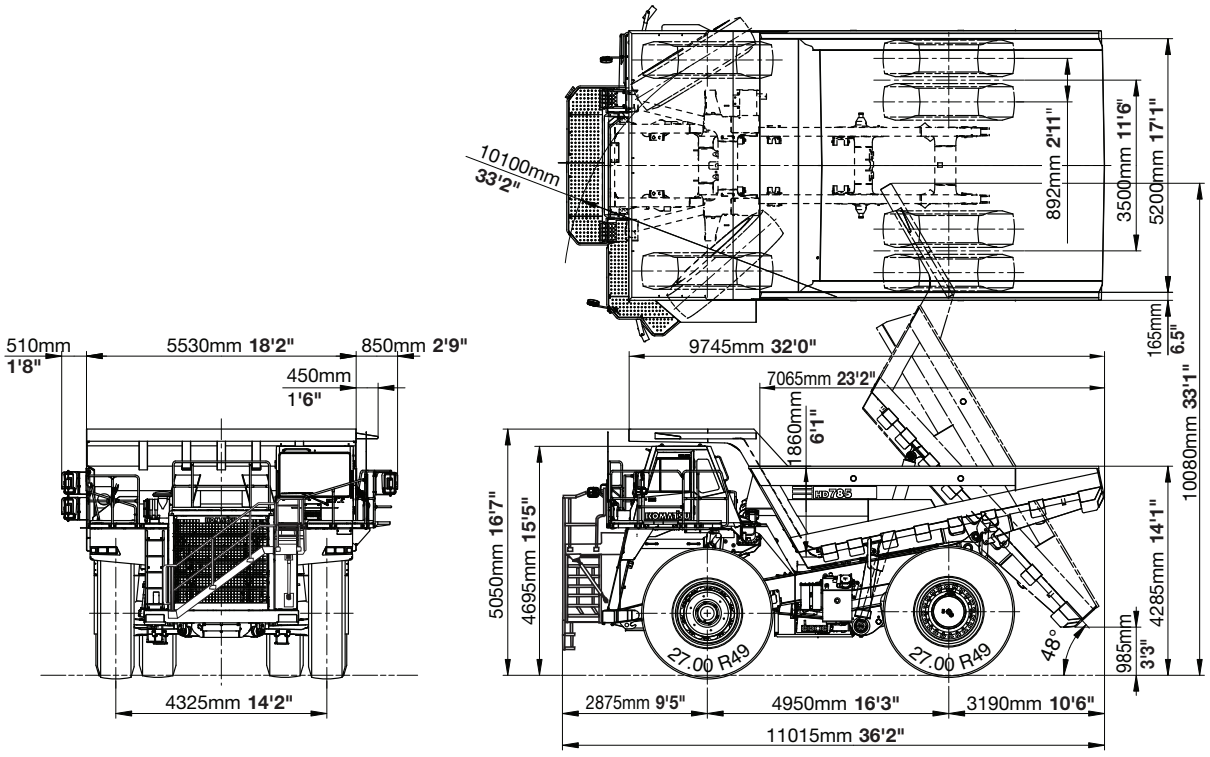
TIRES

Standard tire 27.00 R49

SERVICE REFILL CAPACITIES

Fuel tank	1308 ltr.	**345.6 U.S. Gal**
Engine oil	129 ltr.	**34.1 U.S. Gal**
Torque converter, transmission and retarder cooling	205 ltr.	**54.2 U.S. Gal**
Differentials	137 ltr.	**36.2 U.S. Gal**
Final drives (total)	128 ltr.	**33.8 U.S. Gal**
Hydraulic system	175 ltr.	**46.2 U.S. Gal**
Brake control	36 ltr.	**9.5 U.S. Gal**
Suspension (total)	93 ltr.	**24.6 U.S. Gal**
Engine coolant	283 ltr.	**74.8 U.S. Gal**

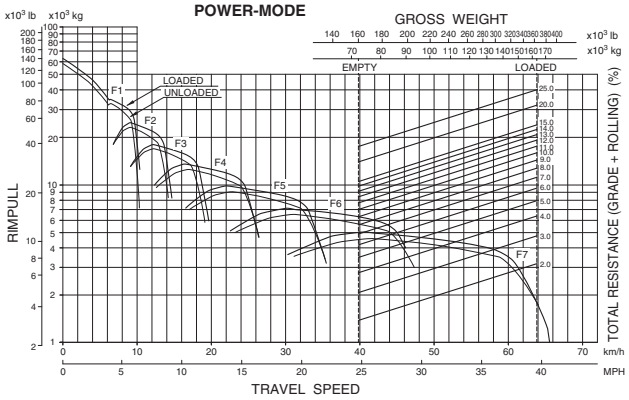
DIMENSIONS



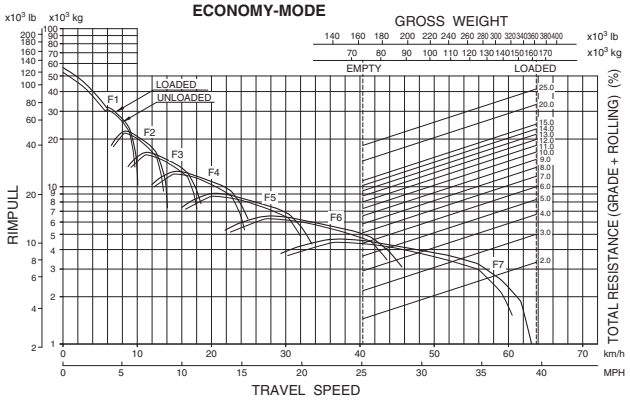
TRAVEL PERFORMANCE

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.

TRAVEL PERFORMANCE CURVE
POWER-MODE



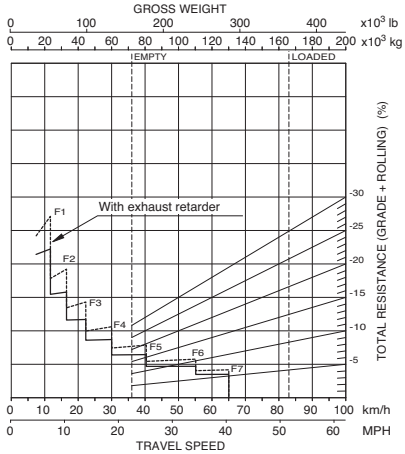
TRAVEL PERFORMANCE CURVE
ECONOMY-MODE



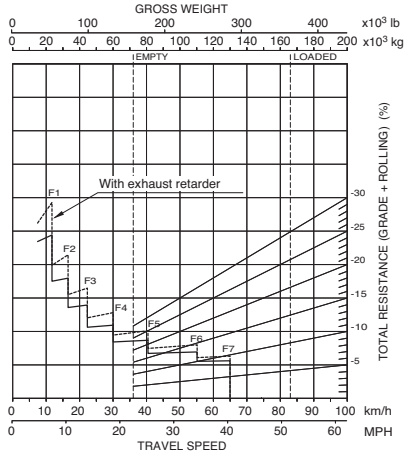
BRAKE PERFORMANCE

To determine brake performance: These curves are provided to establish the maximum speed and gearshift position for 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 (1,480 ft)



STANDARD EQUIPMENT FOR BASE MACHINE

ENGINE
- Automatic Idling Setting System (AISS)
- Alternator, 90A/24V
- Batteries, 4 x 12V/170Ah
- Engine pre-lube system
- Komatsu SAA12V140E-3 engine meets EPA Tier 2 emissions regulations
- Mode selection system with VHPC
- Starting motor, 2 x 7.5 kW

CAB
- Air conditioner
- Ashtray
- Cigarette lighter
- Cup holder
- Electronic dump control system with body positioner
- Electronic maintenance display/monitoring system
- Glass, tempered, sides and back
- Heater and defroster
- Integral ROPS/FOPS Cab Level 2
- Laminated glass, front
- Operator seat, reclining, air suspension type with retractable 78 mm **3"** width seat belt
- Passenger seat with retractable 78 mm **3"** width seat belt
- Power windows (LH & RH)
- Radio, AM/FM with cassette
- Space for lunch box
- Steering wheel, tilt and telescopic
- Sun visor (2)
- Two doors, left and right
- Windshield washer and wiper (with intermittent feature)

LIGHTING SYSTEM
- Back-up light
- Hazard lights
- Headlights
- Indicator, stop and tail lights (LED type)

COVERS
- Exhaust thermal covers

OPERATOR ENVIRONMENT AND CONTROL
- Alarm, backup
- Anti-pitching 4-wheel oil-cooled multiple disc retarder (AP-FOUR)
- Automatic Retard Speed Control (ARSC)
- Automatic supplementary steering
- Coolant temperature alarm and light
- Exhaust retarder
- Guardrails for platform
- Horn, electric
- Overrun warning system
- Rearview mirrors and underview mirrors (left & right side)
- Rear view camera and monitor

BODY
- Body exhaust heating
- Cab guard, left side
- Platform guard, right hand side
- Spill guard, 150 mm **6"**

OTHER
- Centralized greasing
- Diagonal stairway
- Disc wheels (Flange type rims)
- Drive shaft guard (front and rear)
- Electric circuit breaker, 24V
- Engine underguard
- Fire extinguisher
- Fuel quick charge
- Komtrax Plus
- Ladder, right hand side
- Mud guards
- Payload meter
- Spare parts for first service
- Transmission underguard

OPTIONAL EQUIPMENT

BODY
- Body liners
- Mufflers (without body heating)

LIGHTING SYSTEM
- Back-up light additional
- Back work lights, left and right sides
- Fog lights

OPERATOR ENVIRONMENT AND CONTROL
- Antilock Brake System (ABS)
- Automatic Spin Regulator (ASR)
- Tire stopper blocks

ARRANGEMENT
- Batteries for cold area arrangement
- Cold area arrangement, -30ºC
- Sandy and dusty area arrangement

TIRES
- 27.00 R49
- 31/90 R49

OTHER
- Engine coolant heater
- Engine oil pan heater
- Engine side covers
- Three-mode hydropneumatic suspension
- Tool kit
- Vandalism protection

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.

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