GROSS HORSEPOWER
895 kW
1,200 HP

NET HORSEPOWER
879 kW
1,178 HP

MAXIMUM GVW
166000 kg
366,000 lb

STANDARD EQUIPMENT FOR BASE MACHINE

ENGINE:
- Automatic Idling Setting System (AISS)
- Alternator, 90A/24V
- Batteries, 4 x 12V/170Ah
- EPA Tier 2 emission regulation certified engine, Komatsu SAA12V140E-3
- Mode selection system with VHPC
- Starting motor, 2 x 7.5 kW

CAB:
- Ashtray
- Cigarette lighter
- Cup holder
- Electronic dump control system with body positioner
- Electronic maintenance display/monitoring system
- Laminated glass, front
- Operator seat, reclining, suspension type with retractable 76 mm 3” width seat belt
- Passenger seat with retractable seat belt
- Power window (LH)
- ROPS cab with FOPS, sound suppression type
- Space for lunch box
- Steering wheel, tilt and telescopic

LIGHTING SYSTEM:
- Back-up light
- Hazard lights
- Headlights
- Indicator, stop and tail lights

GUARD AND COVERS:
- Cab guard
- Canopy spill guard
- Drive shaft guard (front and rear)
- Exhaust thermal guard
- Fire protective covers

SAFETY EQUIPMENT:
- Alarm, backup
- Anti-pitching 4-wheel oil-cooled multiple disc retarder (AP-FOUR)
- Automatic Retard Speed Control (ARSIC)
- Automatic supplementary steering
- Coolant temperature alarm and light
- Hand rails for platform
- Horn, electric
- Ladders, left and right hand sides
- Overrun warning system
- Rearview mirrors and under view mirrors

OTHER:
- Centralized greasing
- Electric circuit breaker, 24V
- Disc wheels (Flange type rims)
- Mud guards
- Vehicle health monitoring system (VHMS)

BODY:
- Body exhaust heating
- Cab guard, left side
- Split guard, 150mm 6”

TIRES:
- 27.00 R49

OPTIONAL EQUIPMENT

CAB:
- Air conditioner
- Heater and defroster
- Operator seat, air suspension type
- Power window (RH)
- ROPS cab with POPIS, sound suppression type
- Space for lunch box
- Steering wheel, tilt and telescopic

BODY:
- Body liners
- Platform guard, right hand side
- Muffler (without body heating)

LIGHTING SYSTEM:
- Buck-up light additional
- Back work lights, left and right sides
- Fog lights
- LED rear combination lights

SAFETY:
- Anti-lock Brake System (ABS)
- Automatic Spin Regulator (ASR)
- Exhaust retarder
- Rear view camera and monitor
- Tire stopper blocks

ARRANGEMENT:
- Batteries for cold area arrangement
- Cold area arrangement
- Sandy and dusty area arrangement

OTHER:
- Auto-greasing system
- Engine coolant heater
- Engine oil pan heater
- Engine side cover
- Engine underguard
- Fire extinguisher
- Fuel quick charge

PAYLOAD METER

Spare parts for first service
Three-mode hydropneumatic suspension
Tool kit
Transmission underguard
Vandalism protection
VHMS with satellite communication kit

TIRES:
- 31/90 R49

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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Machine shown may include optional equipment.

Materials and specifications are subject to change without notice

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**HD785-7 Off-Highway Truck**

**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 of 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) as standard

**Harmony with Environment**
- Komatsu SAA12V140E-3 engine is EPA Tier 2 emission regulation certified
- Lead-free radiator
- Low operation noise
- Low fuel consumption

**Operator Environment and Safety**
- 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 cab
- Parking brakes on 4-wheels
- Supplementary steering
- Pedal-operated secondary brake
- Three-mode automatic hydropneumatic suspension (Option)

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- Three-mode automatic hydropneumatic suspension (Option)

**Reliability Features**
- Flat face-to-face O-ring seals
- Sealed DT connectors

**Easy Maintenance**
- Oil-cooled multiple-disc brakes and fully hydraulic controlled braking system
- Extended oil change interval
- Disc Wheels (Flange type rims)
- Electric circuit breaker
- Vehicle Health Monitoring System (VHMS)

Machine shown 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 injection system (HPCR), air-to-air aftercooler efficient turbo-charger enables the engine to be North American EPA Tier 2 emission certified. 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 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 throughput takes top priority.

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

AP-FOUR (Anti-pitching 4-wheel oil-cooled multiple disc retarder)
The machine is equipped with 4-wheel retarder “AP-FOUR (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 body pitching since retarding force on front and rear wheels is controlled independently.

- Retarder absorbing capacity 1092 kW 1,464 HP (continuous descent)
- Brake surface area
  Front total : 37467 cm² 5,807 in²
  Rear total : 72414 cm² 11,956 in²

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 at hand. Furthermore, the reverse gear is equipped with a lockup clutch, just like forward gear, allowing the operator to reverse the machine without worrying about overheating.

- RH Suitable for normal operation. Thanks to the lockup clutch, the machine can be reversed at higher speed than the current machine while having the same rimpull.

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

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 0.6 MPH per click (±5 km/h 3.1 MPH of setting speed adjustment) to match the optimum speed for the slope. Also, since the retarder cooling oil temperature is always monitored, the speed is automatically lowered.
**Eliminating hydraulic losses & optimizing transmission control**

Hydraulic circuits such as brake cooling, steering, body dump control, etc. are thoroughly reviewed and the transmission control is 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 122°F or lower. Speed automatically returns to 750 rpm when coolant temperature reaches 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.

**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 : 60.0m³ 78.5yd³
- Target area (inside length x width) : 7065mm 23’ 2” x 5200mm 17’ 1”

**Spacious cab with excellent visibility**

Wide windows in the front, side and back, plus plenty of space in the richly upholstered interior, provide quiet, comfortable environment from which to see and control every aspect of operation. Front under view mirrors have been added to improve safety.

**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 and 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 user friendly and easy 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 as well as holding the operator securely to assure confident operation. 78mm 3” width seat belt is provided as standard equipment.
Electric body dump control
Electric lever is used for body dump control. The lever is short in control travel and can be operated with light control effort. "Kick-out function" provided for the lever 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.

Advanced K-ATOMiCS
The electronically controlled all clutch modulation system “K-ATOMiCS” that optimizes the clutch engagement oil pressure at every gear is further improved so that the oil pressure at lockup clutch engagement is optimized to realize smooth shifting without torque off.

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

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

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 comfortable cab space with superb quietness and less vibrations. Noise level at operator’s ear 75 dB(A)

Synchronous control of engine and transmission
At the time of gear shifting, the engine speed is controlled to coincide with transmission rotation speed to reduce shifting shocks. The synchronous control contributes to improve durability of power train since it reduces torque fluctuation.

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.

Viscous cab mounts

Built-in ROPS/FOPS cab
These structures conform to ISO3471 ROPS standard, and ISO 3449 FOPS standard.

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.

Supplementary steering and secondary brake
Supplementary steering and secondary brakes are standard features.
Steering: ISO 5010, SAE J1511
Brakes: ISO 3450

Antilock Braking System (ABS) (Option)
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 minimizes skidding under slippery conditions while applying the service brake.

Automatic Spin Regulator (ASR) (Option)
ASR automatically prevents the rear tires on either side from slipping on soft ground for optimal traction.

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.

Safety

Front brake
Rear brake
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 strict quality control system guidelines.

High-rigidity frame
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.

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.

Protection functions supported by electronic control

<table>
<thead>
<tr>
<th>Item</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downshift inhibitor</td>
<td>Even if the driver downshifts accidentally a speed appropriate the current gear is automatically set, preventing over runs.</td>
</tr>
<tr>
<td>Overrun inhibitor</td>
<td>When descending grades if the vehicle speed surpasses the maximum for the current gear, the retarder automatically operates, preventing over runs.</td>
</tr>
<tr>
<td>Reverse inhibitor</td>
<td>The vehicle is prevented from moving backward when operating the body.</td>
</tr>
<tr>
<td>Forward/Reverse shift inhibitor</td>
<td>This device makes it impossible to shift from forward to reverse when the vehicle’s speed surpasses 4 km/hour.</td>
</tr>
<tr>
<td>Anti-hunting system</td>
<td>When running near a sharp point, smooth automatic shifting takes place.</td>
</tr>
<tr>
<td>Neutral safety</td>
<td>The engine is prevented from starting when the shift lever is not in neutral.</td>
</tr>
</tbody>
</table>

ECOLOGY

Lead-free radiator
In addition to compliance with emission regulations, a lead-free aluminium 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.

EASY MAINTENANCE

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, β0 = 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.

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 multiple-disc brakes and fully hydraulic controlled braking systems
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 through the use of three independent hydraulic circuits providing hydraulic backup should one of the circuits fail. Fully hydraulic braking systems eliminate the air system so 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 serviced easily.

Payload Meter (PLM) (Option)
PLM allows the production volume and the working conditions on the dump truck to be analyzed and controlled directly via a personal computer. And also the loadage is indicated with the outside lamp. The system can store up to 2900 working cycles.

Disc wheels (Flange type rims)
Disc wheels (Flange type rims) provide easy removal/installation for the tires.

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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.

Grade distance: Continuous Descent
Grade distance: 450 m (1,480 ft)
HD785-7 OFF-HIGHWAY TRUCK

SPECIFICATIONS

ENGINE
Model . Komatsu SAA12V140E-3
Type . Turbo-charged, after-cooled
Aspiration . Water-cooled, 4-cycle
Number of cylinders . 12
Bore x Stroke . 140 mm x 165 mm
Piston displacement . 3,048 ltr
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 . Gear pump, force-lubrication
Method . Full-flow type
Air cleaner . Dry type with double elements and prefilter

TRANSMISSION
Torque converter . 3-elements, 1-stage, 2-phase
Transmission . Full-automatic, planetary-shaft type
Lockup clutch . Wet, multiple-disk 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 . Meets ISO 5010, SAE J1511
Minimum turning radius . 10.1 m, 332"
Maximum steering angle . 41°

CAB
Dimensions comply with ISO 3471 ROPS (Roll-Over Protective Structure) standard, and ISO 3449 FOPS standard.

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.
   When hydraulic pressure drops below the rated level, parking brake is automatically actuated.
   Brake surface:
   Front . 3,746 cm², 5.807 in²
   Rear . 7,241 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, 232" x 171"
Dumping angle . 48°
Height at full dump . 10080 mm, 331"
Heating . Exhaust heating

HYDRAULIC SYSTEM
Hoist cylinder . Twin, 2-stage telescopic type
Relief pressure . 20.6 MPa, 210 kg/cm²
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
Gear control . 36 ltr, 9.5 U.S. Gal
Suspension (total) . 93 ltr, 24.6 U.S. Gal