STANDARD EQUIPMENT FOR BASE MACHINE

ENGINE:
- Alternator, 24 V/75 A
- Batteries, 2 x 12 V/160 Ah
- Engine, Komatsu SAA6D140E-5
- Starting motor, 11.0 kW

CAB:
- 2 x 12V electrical outlets
- Air conditioner
- Ashtray
- Cigarette lighter
- Cup holder
- Front wiper (with washer and intermittent)
- Machine monitor (color LCD)
- Operator seat, reclining, air suspension
- Passenger seat with 2-point retractable seat belt
- Power window (L.H)
- Rear wiper (with washer)
- Space for lunch box
- Steering wheel, tilt and telescopic
- Sun visor, front window
- Tiltable ROPS cab with FOPS, sound suppression type

LIGHTING SYSTEM:
- Back-up lamp
- Back work lamps, LH and RH side
- Hazard lamps
- Head lamps (High/Low)
- Stop, tail and turn signal lamps

GUARD AND COVERS:
- Engine underguard
- Exhaust muffler thermal guard
- Fire prevention covers
- Propeller shaft guards, front and rear
- Transmission underguard

SAFETY EQUIPMENT:
- Alarm, backup
- Anti-slip material on fenders
- Automatic supplementary steering
- Coolant temperature alarm and lamp
- Guard rails
- Horn, electric
- Komatsu Traction Control System (KTCS)
- Parking brake
- Protective grille for rear window
- Rearview mirrors
- Secondary brake
- Secondary engine shutdown switch

BODY:
- Electronic hand control system
- Steering joint locking assembly
- Step (right side) and ladder (left side)
- Under view mirrors

T I R E S:
- 29.5 R25

OTHER:
- Battery disconnect switch
- Centralized greasing
- Dump counter
- ECO Guidance and ECO Gauge
- Electric circuit breakers, 24 V
- KOMTRAX
- Mud guards
- Side markers
- Tool box

OPTIONAL EQUIPMENT

LIGHTING SYSTEM:
- Fog lamps
- Side lamps
- Stop, tail and turn signal lamps (LED)
- Yellow beacon

OTHER:
- Automatic Retarder with Acceleration Control (ARAC)
- Fast fill coupler for fuel tank
- Filter cap lock and cover lock
- Fire extinguisher
- Gas charge tool
- Payload meter
- Power cab lift
- Sand and dusty area arrangement
- Spare parts for first service
- Tool kit

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Materials and specifications are subject to change without notice.

KOMATSU®

GROSS HORSEPOWER
338 kW 453 HP/2000min⁻¹

NET HORSEPOWER
334 kW 448 HP/2000min⁻¹

MAXIMUM GVW
HM400-3R : 74005 kg

Photos may include optional equipment.
PRODUCTIVITY & ECONOMY FEATURES

- Increased body capacity
  Loading capacity: 40.0 metric ton
  Heaped capacity: 24.0 m³
- Easy-to-load body
  Low loading height: 3164mm
- Low fuel consumption
  Energy saving improvements in transmission and axles
  Sophisticated electronic engine control

- Increased cooling capacity and new arrangement of cooling system
  Separately installed Charge Air Cooler (CAC)
  Hydraulic driven cooling fans
  Optimal design of fan and related parts
- High performance Komatsu SAA6D140E-5 engine
  Gross horsepower: 338 kW (453 HP)
  EPA Tier 2 and EU Stage 2 emissions equivalent
- Engine mode selection system
- Komatsu Advanced Transmission (K-ATOMiCS)

OPERATOR COMFORT

- Ergonomic comfort
- Low noise
  Operator's ear noise (ISO 6396): 72 dB (A)
- Tilt-away steering column
- Center-located operator seat
- Hydro-pneumatic suspension

EASY MAINTENANCE

- Ground access to the filters
- Improved hitch height above the ground
- Tiltable cab
- Power cab tilt (optional)
- Reversing fan

INFORMATION & COMMUNICATION TECHNOLOGY

- ECO guidance
- ECO gauge
- Energy saving operation guide & report
- Machine monitor
- KOMTRAX
- Payload meter (PLM) (optional)

SAFETY FEATURES

- Komatsu Traction Control System (KTCS)
- All-around visibility
  Short nose
  Wide and balanced view
- Secondary engine shutdown switch
- Battery disconnect switch
- Hydraulically controlled wet multiple-disc brakes and retarder
  Retarder absorbing capacity (continuous descent): 510 kW (684 HP)
**ARTICULATED DUMP TRUCK**

**Increased body capacity and box section frame structure**

Increased the payload from 36.5 to 40.0 metric tons by increasing the body capacity.

The HM400-3R has the 24.0 m³ heaped capacity body. The low loading height of 3164 mm enables easy loading. The body is built of high strength wear-resistant steel with a Brinell hardness of 400, and the body shape provides excellent load stability. HM400-3R’s frame is designed using a rigid box structure used high tensile strength steel, and rugged enough for the toughest jobs.

**Low fuel consumption**

Realizes up to 14.0% better fuel consumption in the field compared to the HM400-2R.

New variable displacement piston pump for reducing Power Take-Off (PTO) pressure loss, improvements in transmission and axles for increasing energy saving, and the sophisticated electronic control of the engine operation to achieve optimal energy efficiency, all combined, realize maximum 14.0% better fuel consumption in the field compared to the HM400-2R.

**Increased cooling capacity and new arrangement of cooling system**

The arrangement of the cooling system is redesigned and the hydraulic driven cooling fans provide an air flow rate enough for the engine heat dissipation.

**Separately installed Charge Air Cooler (CAC)**

CAC (Aftercooler) positioned facing to the radiator is now installed separately from radiator, allowing the cooling system to increase its cooling capacity without increasing the size of radiator.

**Hydraulic driven cooling fans**

On-demand control of the hydraulic fan according to the temperatures of coolant, brake oil, etc. minimizes the engine power loss. The fan speed is automatically set to its maximum when brake is applied, improving brake cooling capacity.

**Optimal design of fan and related parts**

Tip clearances and fan/shroud overlapping are optimized to increase air flow.

**Disuse of noise reduction unit**

Hydraulic fan and optimal design of the fan and related parts realize low noise and short nose of machine (compared to HM400-2R) as well.

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**Fuel consumption maximum 14.0% reduction**

*Compared with the HM400-2R. Fuel consumption varies depending on job conditions.

**Engine power mode selection system**

<Power mode> or <Economy mode> is selectable according to working condition. The mode is easily selected by a switch in the operator’s cab.

**Power mode**

Great productivity can be attained by taking a full advantage of high output power. It is suitable for higher production and/or uphill-hauling.

**Economy mode**

Engine speeds of the maximum output, downshift, and uphill are set to lower levels. It is suitable for light work on flat ground.

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**High performance Komatsu SAA6D140E-5 engine**

Powerful turbocharged and air-to-air aftercooled Komatsu SAA6D140E-5 engine provides 338 kW 453 HP. This engine realizes high power with low fuel consumption by Common Rail Injection system (CRI), and thus it delivers higher travel speeds with high horsepower. In addition, high torque at low speed, impressive acceleration, and low fuel consumption ensure maximum productivity.

This engine is EPA Tier 2 and EU Stage 2 emissions equivalent.

**Komatsu designed electronically controlled countershaft transmission**

The Komatsu designed electronically controlled transmission called K-ATOMiCS has been a success in Komatsu’s rigid dump trucks. The electronic clutch modulation system ensures proper clutch pressure when the clutch is engaged. The total control system controls both the engine and the transmission by monitoring the vehicle conditions. This high technology system assures smooth shifts without shock and maximizes the power train life.
ARTICULATED DUMP TRUCK

SAFETY FEATURES

Komatsu Traction Control System (KTCS)
Komatsu has developed various shoe/wheel slip control technologies including Shoe Slip Control (SSC) system for bulldozers, Automatic Spin Regulator (ASR) for rigid type off-highway dump trucks, etc. These technologies are combined and upgraded to the evolutionally-advanced traction control system for articulated dump trucks. Komatsu Traction Control System (KTCS) allows easy traveling on soft ground and slippery road only by operating the accelerator. This also provides much better turning performance than the conventional differential lock up or the Limited Slip Differential (LSD).

Round halogen head lamps and optional fog lamps
Round halogen lamps are used for the head lamps. They are incorporated in the engine hood to give a sense of unity.

Access safety
A spike type hubbly-faced antiskid plate is used for boarding the HM400-3R. A guard rail around the engine hood has been added.

Built-in ROPS/FOPS cab
These structures conform to ISO 3471 ROPS (Roll-Over Protective Structure) standard, and ISO 3449 FOPS (Falling Objects Protective Structure: Level II) standard.

All-around visibility
Short nose
New layout of the cooling system allows for a shorter nose shape compared to the previous model increasing the field of view to the operator.

Wide and balanced view
The operator’s seat placed at the center of the cab provides wide and balanced view to the right and left.

Round under-mirror
The new round under-mirror provides a wider field of vision.

Secondary engine shutdown switch
New engine stop switch added in the cab for emergency use.

Battery disconnect switch
For machine service work a battery disconnect switch is standard on the HM400-3R.

Rear combination lamps
Long-life LED rear combination lamps (stop/tail/turn signal) are optionally available.

LED lamp (Optional) STD lamp

Hydraulically controlled wet multiple-disc brakes and retarder
Wet multiple-disc brakes with proven performance on rigid dump trucks are tailored for use in the HM400-3R. The large-capacity, continuously cooled, wet-multiple disc brakes also function as a highly responsive retarder which gives the operator greater confidence at higher speeds when travelling downhill. Retarder Absorbing Capacity (continuous descent): 510 kW 684 HP

Supplementary steering and secondary brakes
The supplementary steering system has a self check function. Supplementary steering and secondary brakes are standard features.
Steering: ISO 5010, SAE J1511
Brakes: ISO 3450
ARTICULATED DUMP TRUCK

OPERATOR COMFORT

Ergonomic comfort
Ergonomically designed round dashboard is incorporated. Switches are so arranged that they are easy to reach.

Low noise
New hydraulically driven fans and redesigned layout of the cooling system achieve a low noise level.

Operator's ear noise (ISO6396) 72 dB (A)

Air suspension seat
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.

Foldable passenger seat
The cushion and the back rest of the passenger seat are foldable. Folding the cushion allows the operator to come in and out of the cab and allows easy access to the recirculation filter of the air conditioner. Folding the backrest allows access to the glove compartment at the rear of the seat.

Tilt-away steering column
The tiltable steering column and telescopic steering wheel allows the operator to set the steering wheel to the desired position. The tilt mechanism is spring-assist type for easy access to the operator's seat.

Adopted two of DC12V electrical outlets
Two 12 volt DC outlets are included as standard in the operators cabin. A 12 volt cigarette lighter is on front of the right console and an additional 12 volt outlet is located at right side behind the operator seat.

Hydro-pneumatic suspension
Hydro-pneumatic suspension with proven performance in rigid trucks is tailored for use in the HM400-3R. The front hydro-pneumatic suspensions are employed on the front axle which is supported by "De Dion" type trailing arm, allowing the machine to ride more smoothly over bumps. The rear-axles are mounted on dynamic equalizer structures equipped with hydro-pneumatic suspensions. The entire vehicle's suspension system delivers a comfortable ride and maximizes productivity.

Electronic hoist control lever
The control lever is short in travel and can be operated with a light effort. "Kick-out function" provided for the lever facilitates the hoist operation, eliminating a need to hold the lever in "raise" position. Furthermore, body seating shock is significantly reduced because a sensor detects the body just before seating on the frame and reduces the lowering speed.

Viscous cab mounts
Viscous mounts reduce the noise transmitted to the cab and achieve a quiet noise level.

DC12V electrical outlet
ECO Guidance

The energy saving operation is supported by “ECO Guidance” in real time.

This new model is equipped with advanced Information & Communication Technology (ICT) devices such as multiple-purpose color monitor panel which provides the operator with energy saving machine operation guidance.

ECO Guidance

The ECO Guidance function displays the message to promote an energy-saving operation. For example, if the operator stops the machine for long period of time with the engine idling, a message of “Avoid Excessive Engine Idling” is displayed on the screen.

Energy saving operation guide & report

The operator can check the operation records, ECO Guidance records, and fuel consumption records. The Operation Records displays today’s operation status of the machine. The ECO Guidance Records displays the number of occurrences of each guidance message. During operation, it is requested to reduce the number of occurrences of each guidance message in order to achieved energy-saving operation.

The Average Fuel Consumption Logs displays a fuel consumption for recent 12 hours (based on service meter reading) and daily fuel consumption in the previous one week by bar charts.

Machine Monitor

The machine monitor display various machine information and allows for various settings of the machine. A 7-inch color TFT Liquid Crystal Display (LCD) unit displays maintenance information, operation records, ECO guidance records, etc.

The switch panel is used to change LCD unit screens and to control the air conditioner. By using the switch panel, you can display various menus on the LCD unit screen and perform the settings of the machine.

LCD unit

The LCD unit has wider display area than that of the previous model and uses color LCD, it displays more information and is easy to read. For example, “Operation Records” menu displays various records of actual working hours, average fuel consumption, idling hours, and E mode operation rate, etc. These records can be displayed in a daily form or in a form of any time frame. These information contribute to improvement in machine operation management and energy saving operation. The “Maintenance Information” menu displays maintenance items such as oil and filters, their replacement intervals, and remaining hours to the next replacement, allowing for understanding maintenance status of the machine at a glance.

The LCD unit can also be used to operate and /or set various functions of the machine. For example, the language displayed on the LCD unit can be selected from 14 languages.

Machine Monitor

• Operation records
• ECO guidance records
• Average fuel consumption logs
• Configurations

Maintenance

• Check and reset of various maintenance times

Monitor setting

• 14 Languages
• Rear view monitor setting
• Measurement unit setting
• Screen brightness adjustment etc.
KOMTRAX assists customer’s equipment management and contributes to fuel cost cutting

Equipment management support
KOMTRAX terminal installed on your machine collects and sends information such as machine location, working record, machine conditions, etc. using wireless communication. You can review the KOMTRAX data remotely via the online application. KOMTRAX not only gives you the information on your machine, but also the convenience of managing your fleet on the Web.

Energy-saving operation support report
KOMTRAX can provide various useful information which includes the energy-saving operation support report created based on the operating information of your machine such as fuel consumption and idle time.

Payload meter (PLM) (optional)
PLM allows the production volume and the working conditions of the dump truck to be analyzed directly via a personal computer (PC). The PLM data can be downloaded directly from HM400-3R terminal to your PC by connecting the cable. The following PLM data are transmitted by KOMTRAX, and you can check them on the web:
- Carried load
- Cycle count
- Overload count (daily/monthly)
The loaded weight is indicated on the payload display (in the LCD unit) and the external display lamp while loading.

The HM400-3R is designed to minimize service down time.

Ground access to the filters
The oil filters of the transmission and the brake systems are located on the right side, allowing servicing from the ground.

Improved hitch height above the ground
The bottom face of the hitch is higher than the bottom face of the differential gear of the front axle. The hitch height above the ground is increased over the HM400-2R.
**SPECIFICATIONS**

**ENGINE**
- **Model**: Komatsu SAA6D140E-5
- **Type**: Turbo-charged, after-cooled, 4-cycle
- **Number of cylinders**: 6
- **Bore**: 140 mm
- **Stroke**: 165 mm
- **Piston displacement**: 15.24 L
- **Horsepower**: 338 kW (453 HP) ISO 9249 / SAE J1349
- **Rated rpm**: 2000 rpm
- **Max. torque**: 24.0 mN·m
- **Governor**: Electronically controlled

**BODY**
- **Capacity**:
  - **Struck**: 18.2 m³
  - **Heaped (2:1, SAE)**: 24.0 m³
- **Payload**: 40.0 metric tons
- **Material thickness**: 130 kg/mm²

**HYDRAULIC SYSTEM**
- **Torque converter**: 3-elements, 1-stage, 2-phase
- **Reverse**: Torque converter drive and direct drive in all gear,
  - **Shift control**: Electronic shift control with automatic clutch modulation in all gear

**WEIGHT (APPROXIMATE)**
- **Empty weight**: 33925 kg
- **Gross vehicle weight**: 74005 kg

**SUSPENSION SYSTEM**
- **Front**: Hydro-pneumatic suspension
- **Rear**: Combined hydro-pneumatic and rubber suspension system

**STEERING SYSTEM**
- **Type**: Articulated type, fully hydraulic power steering with two double-acting cylinders
- **Supplementary steering**: Automatically activated electrically powered
- **Minimum turning radius, wall to wall**: 8.80 m
- **Articulation angle**: 45° each direction

**TIRES**
- **Standard tire**: 29.5 R25

**SERVICE REFILL CAPACITIES**
- **Fuel tank**: 518 L
- **Engine oil**: 50 L
- **Torque converter, transmission and retarder cooling**: 125 L
- **Differentials (total)**: 108 L
- **Final drive (total)**: 92 L
- **Hydraulic system**: 167 L
- **Suspension (total)**: 20.4 L

**TRAVEL PERFORMANCE**
- **GROSS WEIGHT**:
  - **GROSS WEIGHT**:
  - **GRADE DISTANCE / CONTINUOUS DESCENT**:
  - **TOTAL RESISTANCE (GRADE + ROLLING)** (%)
  - **TOTAL RESISTANCE (GRADE + ROLLING)** (%)

**BRAKE PERFORMANCE**
- **Empty weight**: 33925 kg
- **Gross vehicle weight**: 74005 kg

**DIMENSIONS**
- **Unit**: mm
- **Overall**:
  - **Length**: 3345 mm
  - **Width**: 3194 mm
  - **Height**: 3735 mm

**Analysis**
- **Engine details**: The engine is a Komatsu SAA6D140E-5 model, featuring turbo-charging and after-cooling, with a 6-cylinder configuration. It produces 338 kW (453 HP) at 2000 rpm, with a maximum torque of 24.0 mN·m.
- **Body capacity**: The struck capacity is 18.2 m³, and the heaped (2:1, SAE) capacity is 24.0 m³. The payload is 40.0 metric tons.
- **Hydraulic system**: The torque converter is a 3-elements, 1-stage, 2-phase type. It features electronic shift control with automatic clutch modulation in all gear.
- **Weight**: The empty weight is 33925 kg, and the gross vehicle weight is 74005 kg.
- **Suspension**: The suspension system includes hydro-pneumatic and combined hydro-pneumatic and rubber suspension systems.
- **Steering**: The steering is an articulated type, fully hydraulic power steering with two double-acting cylinders, with an automatic actuation system.
- **Tires**: The standard tire size is 29.5 R25.
- **Refill capacities**: Key refill capacities include fuel tank at 518 L, engine oil at 50 L, and torque converter, transmission, and retarder cooling at 125 L.
- **Travel performance and brake performance** are presented with graphs showing grade distances, continuous descents, and total resistances.
ARTICULATED DUMP TRUCK

GROSS HORSEPOWER
338 kW 453 HP/2000 min⁻¹

NET HORSEPOWER
334 kW 448 HP/2000 min⁻¹

MAXIMUM GVW
HM400-3R : 74,005 kg

STANDARD EQUIPMENT FOR BASE MACHINE

ENGINE:
- Alternator, 24 V/75 A
- Batteries, 2 x 12 V/160 Ah
- Engine, Komatsu SAA6D140E-5
- Starting motor, 11.0 kW

CAB:
- 24 VDC/12V electrical outlets
- Air conditioner
- Ashtray
- Cigarette lighter
- Cup holder
- Front wiper (with washer and intermittent)
- Machine monitor (color LCD)
- Operator seat, reclining, air suspension
- Passenger seat with 2-point retractable seat belt
- Power window (L.H)
- Rear wiper (with washer)
- Space for lunch box
- Steering wheel, tilt and telescopic
- Sun visor, front window
- Tiltable ROPS cab with FOPS, sound suppression type

LIGHTING SYSTEM:
- Back-up lamp
- Back work lamps, LH and RH side
- Head lamps
- Head lamps (High/Low)
- Stop, tail and turn signal lamps

GUARD AND COVERS:
- Engine underguard
- Exhaust muffler thermal guard
- Fire prevention covers
- Propeller shaft guards, front and rear
- Transmission underguard

SAFETY EQUIPMENT:
- Alarm, backup
- Automatic Supplementary steering
- Coolant temperature alarm and lamp
- Guard rails
- Horn, electric
- Komatsu Traction Control System (KTCS)
- Parking brake
- Protective grille for rear window
- Rearview mirrors
- Secondary brake
- Secondary engine shutdown switch

BODY:
- Electronic hold control system

TIRE:
- 29.5 R25

OTHER:
- Battery disconnect switch
- Centralized greasing
- Komatsu TRACON
- Silent mode
- Tire inflation monitoring system (KOMTRAX)
- Tool box

OPTIONAL EQUIPMENT

CAB:
- AM/FM radio

LIGHTING SYSTEM:
- Fog lamps
- Side lamps
- Stop, tail and turn signal lamps (LED)
- Yellow beacon

OTHER:
- Automatic Retarder with Acceleration Control (ARAC)
- Fast fill coupler for fuel tank
- Filler cap lock and cover lock
- Fire extinguisher
- Gas charge tool
- Payload meter
- Power cab lift
- Sandy and dusty area arrangement
- Spare parts for first service
- Tool kit

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