

KOMATSU®

HM400-3R

GROSS HORSEPOWER
338 kW 453 HP/2000min⁻¹

NET HORSEPOWER
334 kW 448 HP/2000min⁻¹

MAXIMUM GVW
HM400-3R : 74005 kg

HM
400

ARTICULATED DUMP TRUCK



Photos may include optional equipment.

WALK-AROUND

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 power mode selection system**
- **Komatsu Advanced Transmission (K-ATOMiCS)**



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HM400-3R : 74005 kg

OPERATOR COMFORT

- Ergonomic comfort
- Low noise
Operator's ear noise (ISO6396) 72dB (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
- Tilttable 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

PRODUCTIVITY & ECONOMY FEATURES

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.

Fuel consumption maximum 14.0% reduction

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

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.

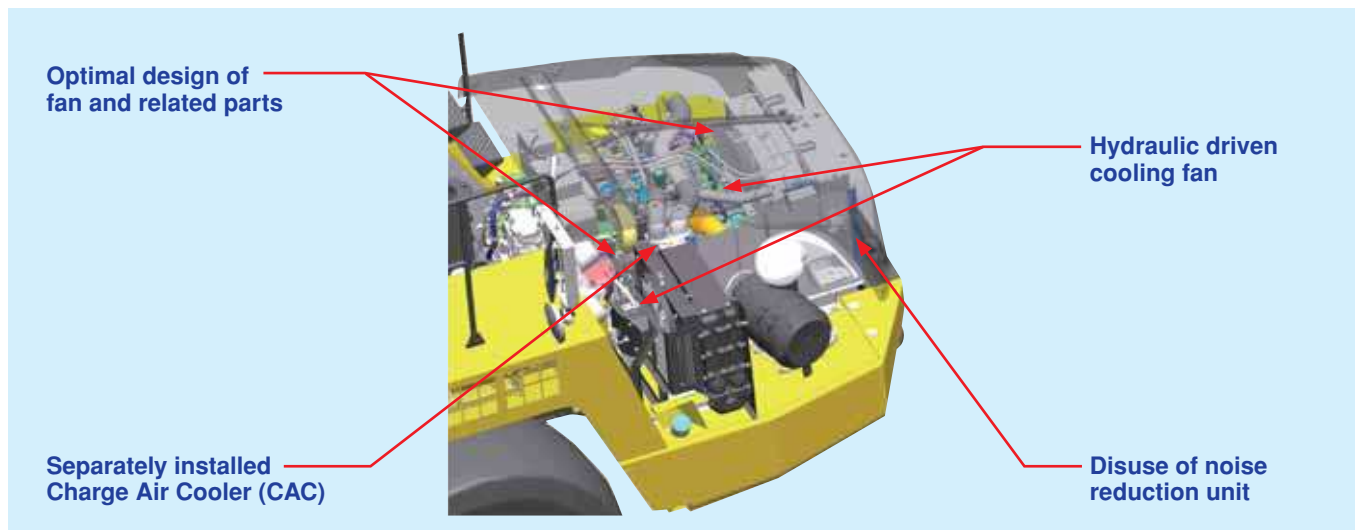
The fan speed is automatically set to its maximum when brake is applied, improving brake cooling capacity.

Optimal design of fan and related parts

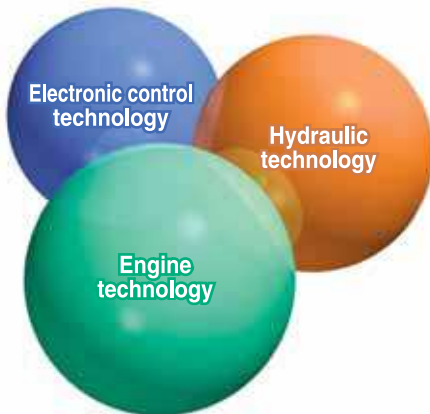
Tip clearances and fan/shroud overlapping are optimized to increase air flow.

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.



Komatsu technology



Komatsu develops and produces all major components such as engines, electronic and hydraulic components, in house. With this "Komatsu Technology," and by adding customer's feedback, Komatsu is achieving great advancement in technology.

To achieve both high productivity and economical performance, Komatsu has developed the main components with a total control system, resulting in a new generation machines with high performance and environmental friendliness.

Engine power mode selection system

<Power mode> or <Economy mode> is selectable according to each 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 upshift are set to lower levels. It is suitable for light work on flat ground.



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.

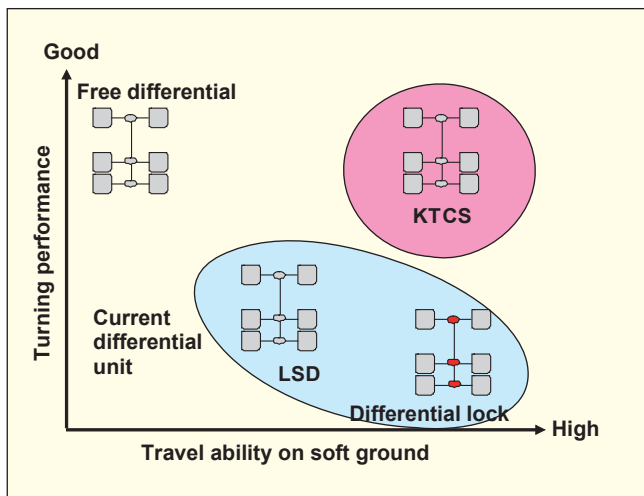


SAFETY FEATURES

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.

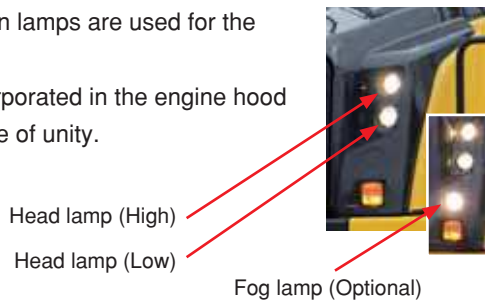
Komatsu Traction Control System (KTCS) allows easy traveling on soft ground and slippery road only by operating the accelerator. This also provides much better turning performance than the conventional differential lock-up or the Limited Slip Differential (LSD).



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.

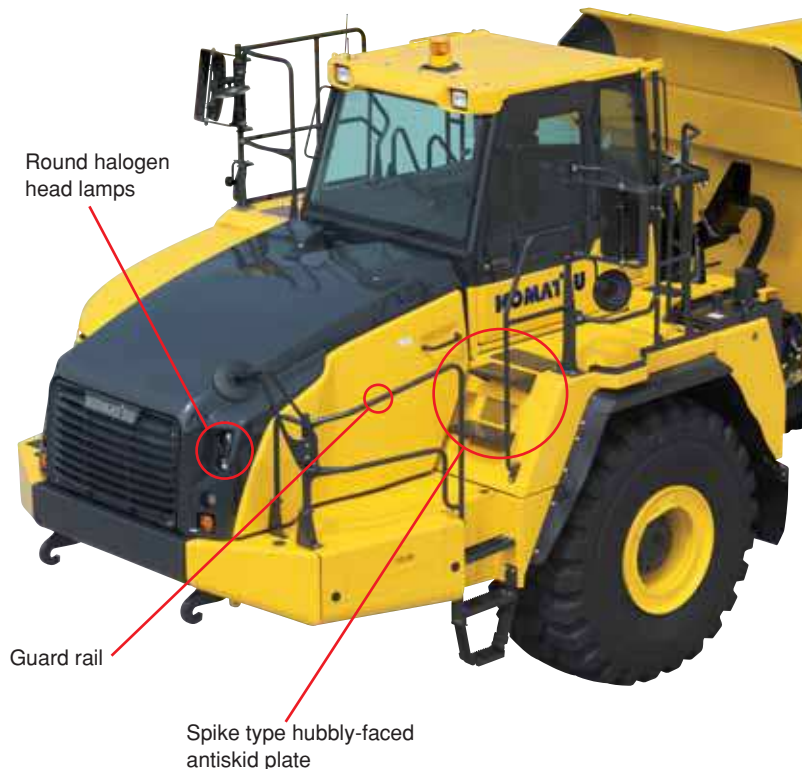


Built-in ROPS/FOPS cab

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

Access safety

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

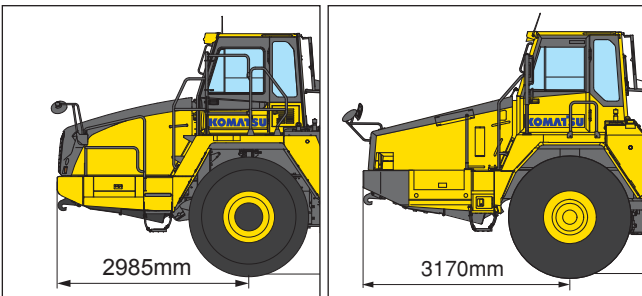




All-around visibility

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.



HM400-3R

HM400-2R

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

OPERATOR COMFORT



Ergonomic comfort

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

Multi-switch panel



Machine monitor



Center-located operator seat

Provides a wide view by placing the seat at the center of operator's cabin.

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.



DC12V electrical outlet

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.

INFORMATION & COMMUNICATION TECHNOLOGY

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.



ECO gauge

The ECO gauge indicates a momentary fuel consumption rate during operation.

Operating the machine by keeping the gauge within the green zone leads to an energy-saving operation.

* Fuel consumption rate depends on the work load and accelerator pedal operation.



ECO gauge

Fuel consumption gauge



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 achieve 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.



Operation records



ECO guidance records



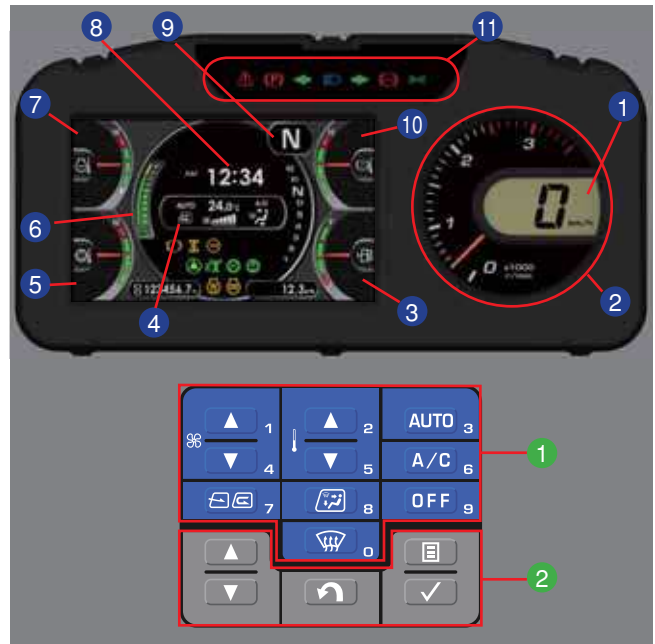
Average fuel consumption logs

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 user menus on the LCD unit screen and perform the settings of the machine.



Machine monitor

- | | |
|--|------------------------------------|
| 1 Speedometer | 7 Engine coolant temperature gauge |
| 2 Engine tachometer | 8 Clock |
| 3 Fuel gauge | 9 Shift indicator |
| 4 Air conditioner display | 10 Retarder oil temperature gauge |
| 5 Torque converter oil temperature gauge | 11 LED indicator |
| 6 ECO gauge | |

Switch panel

- 1 Air conditioner switches / Numeral key pad 2 Function switches

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.



1 ECO Guidance

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

2 Machine setting / information

- Radiator fan reverse mode
- CAC fan reverse mode
- TCS setting etc.

3 Maintenance

- Check and reset of various maintenance times



4 Monitor setting

- 14 Languages



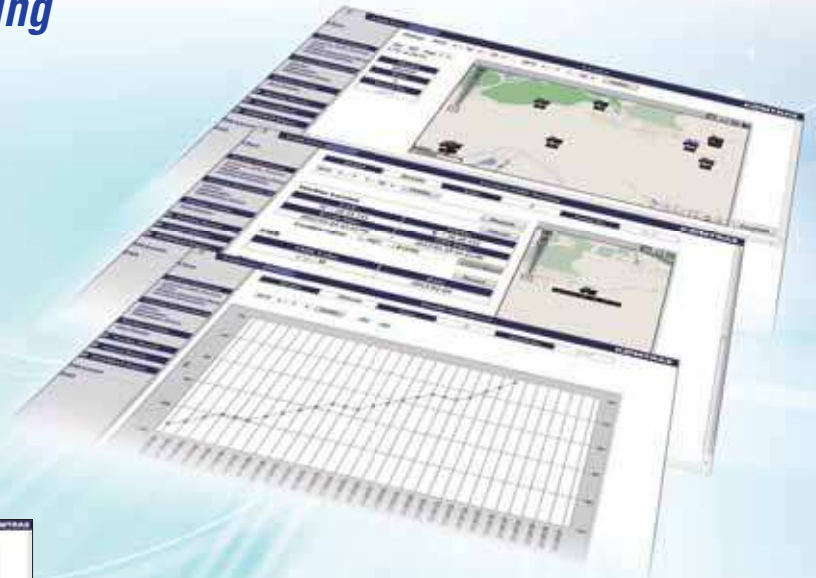
- Measurement unit setting
- Screen brightness adjustment etc.



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.



Machine monitoring



Location



Monthly SMR record



Monthly working record



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.



*KOMTRAX may be unable to be used in some countries or the areas. Please consult your Komatsu distributor.

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 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.



Payload display

Loaded weight



External display lamp

EASY MAINTENANCE

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.



Tiltable cab

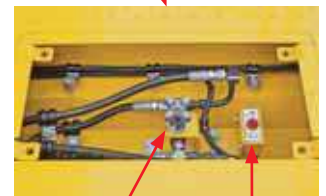
The cab can be tilted rearward by 32 degrees to provide easy maintenance/service of the engine and the transmission.

Power cab tilt (optional)

Electrically-operate cab tilt is optionally available.



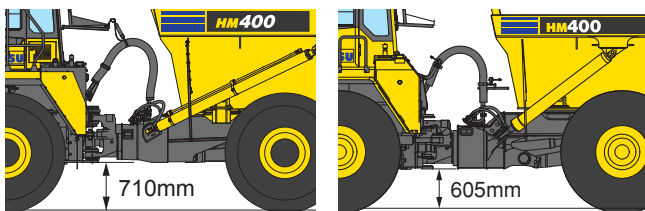
Pump and motor



Valve Switch

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.



HM400-3R

HM400-2R

Easy draining of transmission oil

Two drain ports are added to facilitate draining of the oil in the piping.

Round design engine hood and grille

The engine hood design is completely changed. The lightweight resin hood is easy to open and close. The CAC cover is also made of resin.

Reversing fan

The radiator fan or Charge Air Cooler (CAC) fan is driven hydraulically.

You can reverse the rotation of the radiator fan or CAC fan to blow off dirt and dust accumulated on respective cores.

Fan reverse mode can be controlled through the monitor.



Fan reverse indicator

SPECIFICATIONS



ENGINE

Model Komatsu SAA6D140E-5
 Type Water-cooled, 4-cycle
 Aspiration Turbo-charged, after-cooled
 Number of cylinders 6
 Bore 140 mm
 Stroke 165 mm
 Piston displacement 15.24 L
 Horsepower
 SAE J1995 Gross 338 kW 453 HP
 ISO 9249 / SAE J1349 Net 334 kW 448 HP
 Rated rpm 2000 min⁻¹
 Fan drive type Hydraulic
 Maximum torque Gross 2089 N·m 213 kg·m
 Fuel system Direct injection
 Governor Electronically controlled
 Lubrication system
 Method Gear pump, force-lubrication
 Filter Full-flow type
 Air cleaner Dry type with double elements and
 precleaner, plus dust indicator
 *Net horsepower at the maximum speed of radiator cooling fan is 307 kW 411 HP.

EPA Tier 2 and EU Stage 2 emissions equivalent.



TRANSMISSION

Torque converter 3-elements, 1-stage, 2-phase
 Transmission Full-automatic, counter-shaft type
 Speed range 6 speeds forward and 2 reverse
 Lockup clutch Wet, single-disk clutch
 Forward Torque converter drive in 1st gear,
 direct drive in 1st lockup and all higher gears
 Reverse Torque converter drive and direct drive in all gear
 Shift control Electronic shift control with automatic
 clutch modulation in all gear
 Maximum travel speed 56.0 km/h



AXLES

Full time all wheel drive
 Final drive type Planetary gear
 Ratios:
 Differential 3.727
 Final drive 4.941



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 actuated, electrically powered
 Standard ISO5010, SAE J1511
 Minimum turning radius, wall to wall 8.80 m
 Articulation angle 45° each direction



BRAKES

Service brakes Full-hydraulic control, oil-cooled
 multiple-disc type on front and center axles
 Standard ISO3450
 Parking brake Spring applied, caliper disc type
 Retarder Front and center axle brakes act as retarder



MAIN FRAME

Type Articulated type, box-sectioned
 construction on front and rear
 Connected by strong torque tubes



BODY

Capacity:
 Struck 18.2 m³
 Heaped (2:1, SAE) 24.0 m³
 Payload 40.0 metric tons
 Material 130 kg/mm²
 high tensile strength steel
 Material thickness:
 Bottom 16 mm
 Front 8 mm
 Sides 12 mm
 Target area
 (inside length x width) 5667 mm x 3194 mm
 Heating Exhaust heating (optional)



HYDRAULIC SYSTEM

Hoist cylinder Twin, telescopic type
 Relief pressure 28.4 MPa 290 kg/cm²
 Hoist time 12 s



CAB

Comply with ISO 3471 ROPS (Roll-Over Protective Structure)
 standard, and ISO 3449 FOPS (Falling Objects Protective Structure
 : Level II) standard.



WEIGHT (APPROXIMATE)

Empty weight 33925 kg
 Gross vehicle weight 74005 kg
 Weight distribution:
 Empty: Front axle 56.7%
 Center axle 23.2%
 Rear axle 20.1%
 Loaded: Front axle 29.3%
 Center axle 35.4%
 Rear axle 35.3%



TIRES

Standard tire 29.5 R25



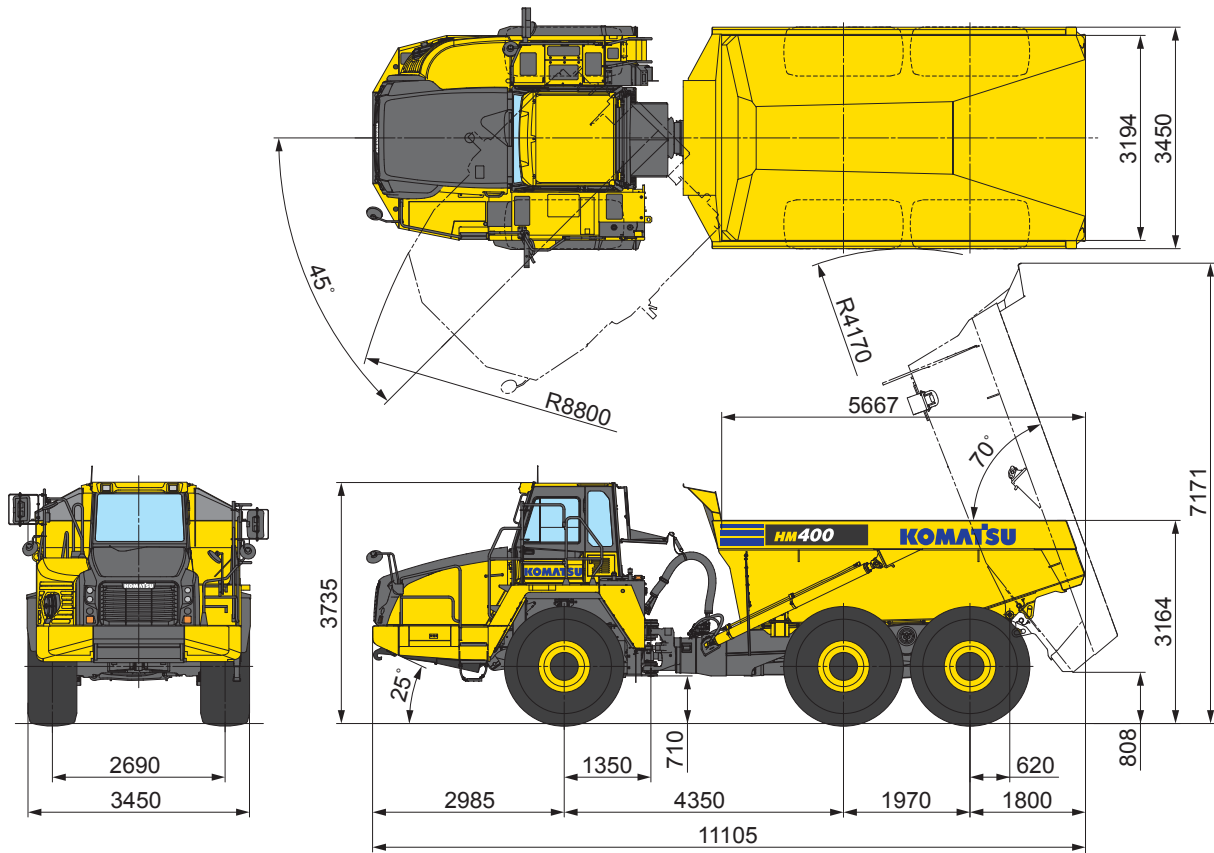
SERVICE REFILL CAPACITIES

Fuel tank 518 L
 Engine oil 50 L
 Torque converter, transmission and
 retarder cooling 125 L
 Differentials (total) 108 L
 Final drives (total) 32 L
 Hydraulic system 167 L
 Suspension (total) 20.4 L

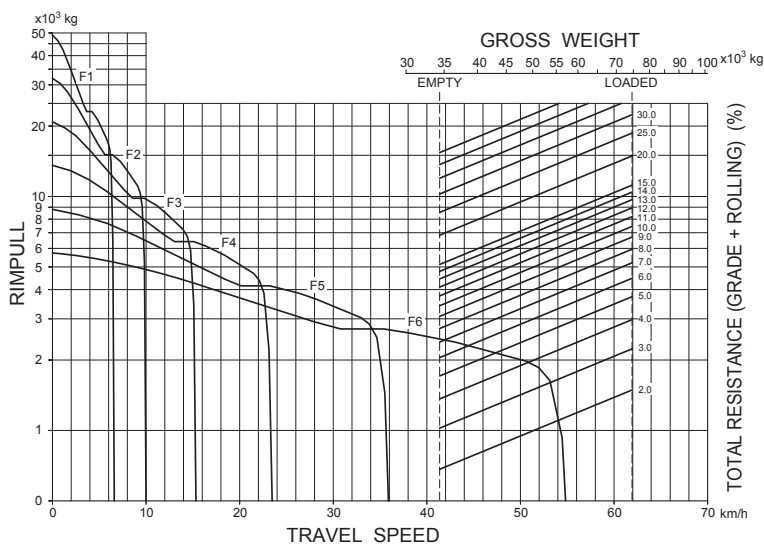


DIMENSIONS

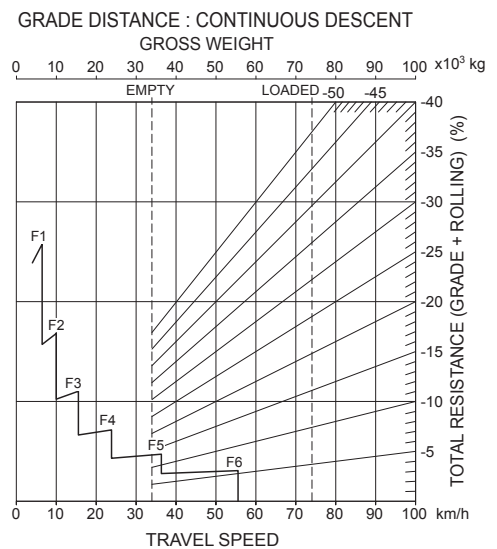
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TRAVEL PERFORMANCE (Power mode)



BRAKE PERFORMANCE





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×DC12V electrical outlets
- Air conditioner
- Ashtray
- Cigarette lighter
- Cup holder
- Front wiper (with washer and intermittent)
- Machine monitor (color LCD)
- Operator seat, reclining, air suspension type with 2-point retractable seat belt
- 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
- Tilttable 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

- Steering joint locking assembly
- Step (right side) and ladder (left side)
- Under view mirrors

BODY:

- Electronic hoist control system

TIRES:

- 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

BODY:

- Body exhaust heating
- Overhung tail gate, wire type
- Upper side extension, 200 mm

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 tilt
- Sandy and dusty area arrangement
- Spare parts for first service
- Tool kit

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