

KOMATSU

HM400-3R



Photos may show equipments not available in your area

Articulated dump truck

Engine power
338 kW / 453 HP @ 2000 rpm

Max. payload
40 metric tons

Body capacity, heaped
24.0 m³

HM400-3R

Walk-around



Engine power

338 kW / 453 HP @ 2000 rpm

Max. payload

40 metric tons

Body capacity, heaped

24.0 m³



Performance

- Increased body capacity and box section frame structure
- High performance Komatsu SAA6D140E-5 engine
- Low fuel consumption
- Komatsu Traction Control System (KTCS)
- Komatsu designed electronically controlled countershaft transmission
- Increased cooling capacity and new arrangement of cooling system
- Engine power mode selection system
- Payload meter (optional)

Safety

- All-around visibility
- Hydraulically controlled wet multiple-disc brakes and retarder
- Secondary engine shutdown switch
- Round halogen head lamps and optional fog lamps
- Supplementary steering and secondary brakes
- Built-in ROPS/FOPS cab
- Battery disconnect switch
- Access safety

Operator environment

- Air suspension seat & foldable passenger seat
- Tilt-away steering column
- Electronic hoist control lever
- Viscous cab mounts & low noise
- Hydro-pneumatic suspension
- Two 12 V DC electrical outlets

ICT* & Komtrax

- Large multi-lingual high resolution Liquid Crystal Display (LCD) monitor
- ECO guidance & ECO gauge
- Energy saving operation guide & report
- Equipment Management Monitoring System
- Komtrax

Easy maintenance

- Ground access to the filters
- Fan reverse mode
- Tilttable cab
- Disc wheels (flange type rims)
- Improved hitch height above the ground
- Easy draining of transmission oil

Performance

Increased body capacity and box section frame structure

Increased the payload 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

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.

Fuel consumption maximum 14% reduction

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

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. 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.

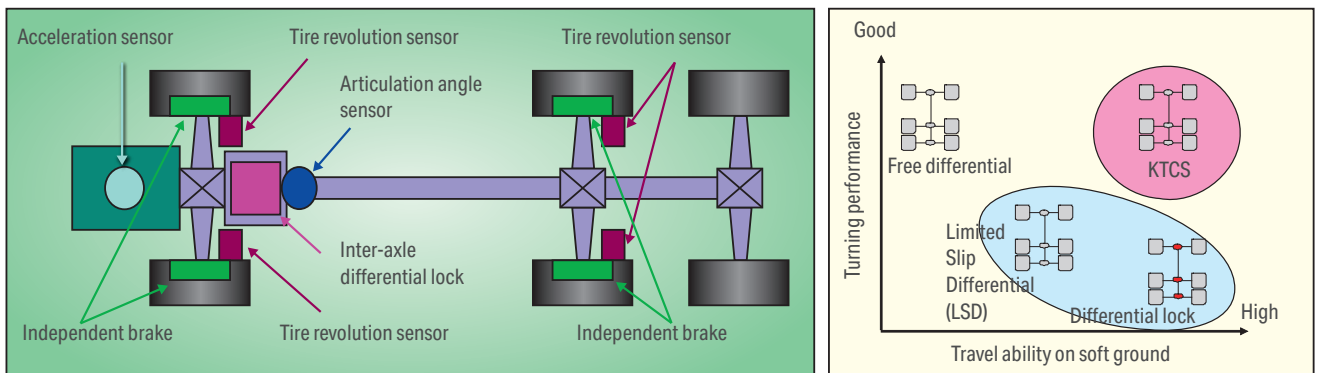
Carried load · Cycle count · Overload count (daily/monthly)

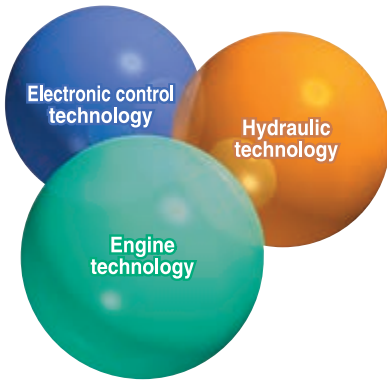
The loaded weight is indicated on the payload display (in the LCD unit) and the external display lamp while loading.



Komatsu Traction Control System (KTCS)

Komatsu has developed various shoe/wheel slip control technologies including traction control system in 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. 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).





Komatsu technology

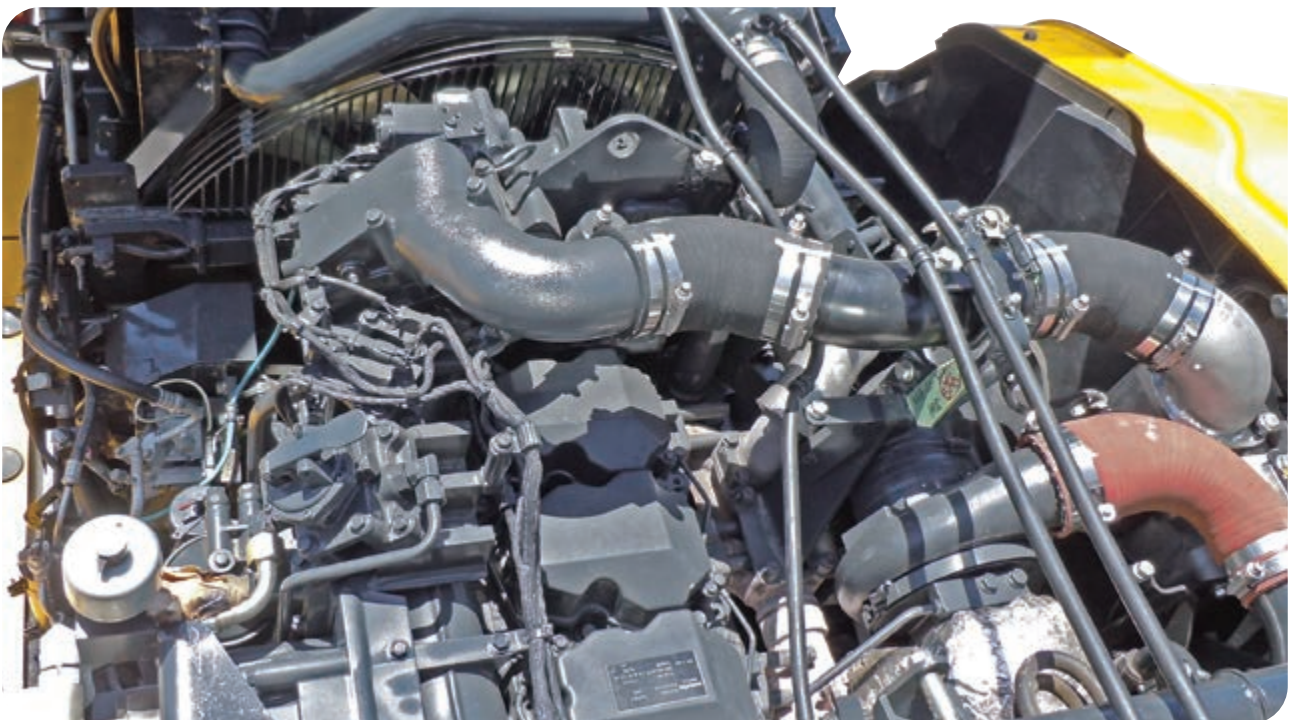
Komatsu develops and produces all major components such as engines, electronic and hydraulic components, in house. With this “Komatsu technology,” and by adding customer’s feedback, Komatsu is achieving great advancement in technology. To achieve both high productivity and economical performance, Komatsu has developed the main components with a total control system, resulting in a new generation machines with high performance and environmental friendliness.

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, 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 Komatsu Advance Transmission with Optimum Modulation Control System (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.



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

Charge air cooler (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.

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.

Optimal design of fan and related parts

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



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.

Safety



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.

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

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

Secondary engine shutdown switch

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



Built-in ROPS/FOPS cab

These structures conform to ROPS (ISO 3471) standard, and FOPS (ISO 3449) standard.



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



Battery disconnect switch

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



Operator environment



Ergonomic comfort

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

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.



Low noise

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

Operator's ear noise (ISO 6396) 72 dB(A)

Two 12 V DC electrical outlets

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

Viscous mounts reduce

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

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.



Information & Communication Technology (ICT)

Machine monitor

The machine monitor displays various machine information and allows for various settings of the machine. A 7-inch color 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.



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.

- 1 **ECO guidance**
 - Operation records
 - ECO guidance records
 - Average fuel consumption logs
 - Configurations
- 2 **Machine setting / information**
 - Radiator fan reverse mode
 - Change air cooler fan reverse mode
 - TCS setting etc.
- 3 **Maintenance**
 - Check and reset of various maintenance times
- 4 **Monitor setting**
 - 14 languages
 - Rear view monitor setting
 - Measurement unit setting
 - Screen brightness adjustment etc.

Energy saving operation

Energy saving operation is supported by “ECO guidance” in real time

This new model is equipped with advanced Information and 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

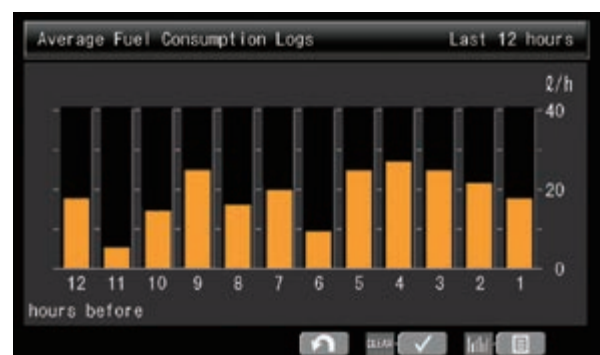
The ECO gauge indicates a momentary fuel consumption rate during operation. Operating the machine by keeping the gauge within the green zone leads to an energy-saving operation.
* Fuel consumption rate depends on the work load and accelerator pedal operation.

Energy saving operation guide & report

The operator can check the operation records, ECO guidance records, and fuel consumption logs. 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



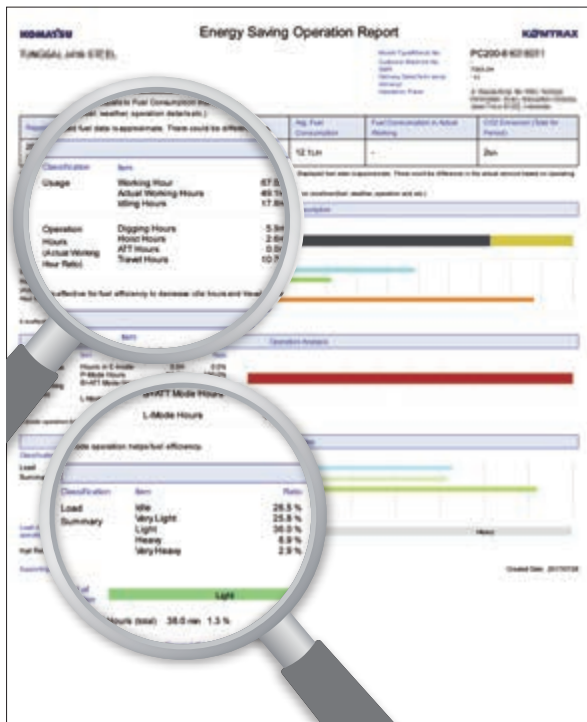
Average fuel consumption logs

Komtrax

The Komatsu remote monitoring and management technology provides insightful data about your equipment and fleet in user-friendly format.

Energy saving operation report

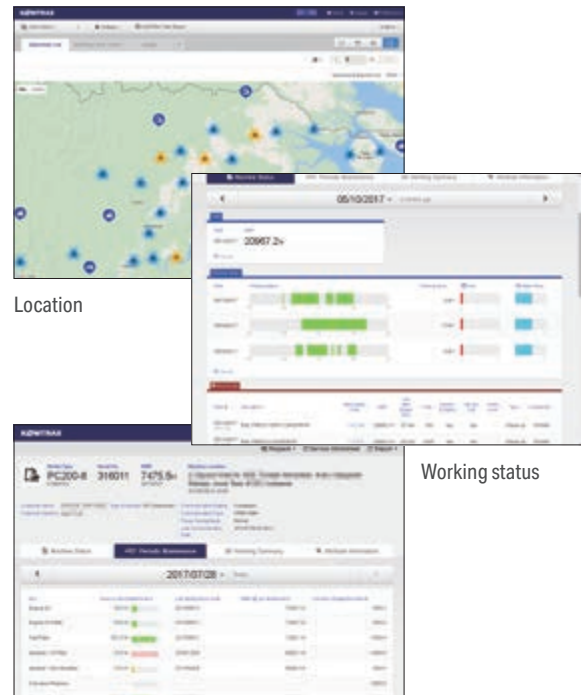
Komtrax delivers the energy-saving operation report based on the operating information such as fuel consumption, load summary and idling time, which helps you efficiently run a business.



This report image is an example of hydraulic excavator

Equipment management support

Through the web application, a variety of search parameters are available to quickly find information about specific machines based on key factors. Moreover, Komtrax finds out machines with problems from your fleet and shows you through an optimal interface.



Location

Working status

Periodic maintenance

The report contents and data depend on the machine model.

Optimal strategy for efficient work

The detailed information that Komtrax puts at your fingertips helps you manage your fleet conveniently on the web anytime, anywhere. It gives you the power to make better daily and long-term strategic decisions.



Easy maintenance

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.



Easy draining of transmission oil

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

Fan reverse mode

The radiator fan or charge air cooler fan is driven hydraulically. You can reverse the rotation of the radiator fan or charge air cooler fan to blow off dirt and dust accumulated on respective cores. Fan reverse mode can be controlled through the monitor.

Round design engine hood and grille

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

Tiltable cab

The cab be tilted rearward by 32° to provide easy maintenance/service of the engine and the transmission. Electrically operate cab tilt is available (optional).

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 distance between the bottom face of the hitch and ground is 710 mm.

Disc wheels (flange type rims)

Disc wheels (flange type rims) provide easy removal/installation of the tires.



Komatsu total support



Komatsu total support

To keep your machine available and minimize operation cost when you need it, the Komatsu distributor is ready to provide a variety of supports before and after procuring the machine.

Fleet recommendation

The Komatsu distributor can study the customer's job site and provide the most optimum fleet recommendation with detailed information to meet all of your application needs when you are considering to buy new machines or replace the existing ones from Komatsu.



Technical support

Komatsu product support service (technical support) is designed to help customer. The Komatsu distributor offers a variety of effective services to show how much Komatsu is dedicated to the maintenance and support of Komatsu machine.

- Preventive Maintenance (PM) clinic
- Oil & wear analysis program



Product support

The Komatsu distributor gives the proactive support and secures the quality of the machinery that will be delivered.

Parts availability

The Komatsu distributor is available for emergency inquiry by the customers for genuine, quality guaranteed Komatsu parts.

Repair & maintenance service

The Komatsu distributor offers quality repair and maintenance service to the customer, utilizing and promoting Komatsu developed programs.

Komatsu Reman (remanufactured) components

Komatsu Reman products are the result of the implementation of the Komatsu global policy which establishes and agrees to reduce the owning, operating and total Life Cycle Costs (LCC) to Komatsu's customer through high quality, prompt delivery and competitively priced in own remanufactured products (QDC).



Specifications



Engine

Model	Komatsu SAA6D140E-5
Type	Water-cooled, 4-cycle
Aspiration	Turbo-charged, after-cooled
Number of cylinders	6
Bore × dstroke	140 × 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 rpm
Fan drive type	Hydraulic
Maximum torque	Gross 2089 Nm / 213 kgfm
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

Front	Hydro-pneumatic suspension
Rear	Combined hydro-pneumatic and rubber suspension system



Steering

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	ISO 3450
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
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Body

Capacity:	
Struck	18.2 m ³
Heaped (2:1, SAE)	24.0 m ³
Payload	40.0 metric tons
Material	130 kg/mm ² high tensile strength steel
Material thickness:	
Bottom	16 mm
Front	8 mm
Sides	12 mm
Target area (inside length × width)	5667 mm × 3194 mm
Heating	Exhaust heating (optional)



Hydraulic system

Hoist cylinder	Twin, telescopic type
Relief pressure	28.4 MPa / 290 kgf/cm ²
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 (approx.)

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
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Service refill capacities

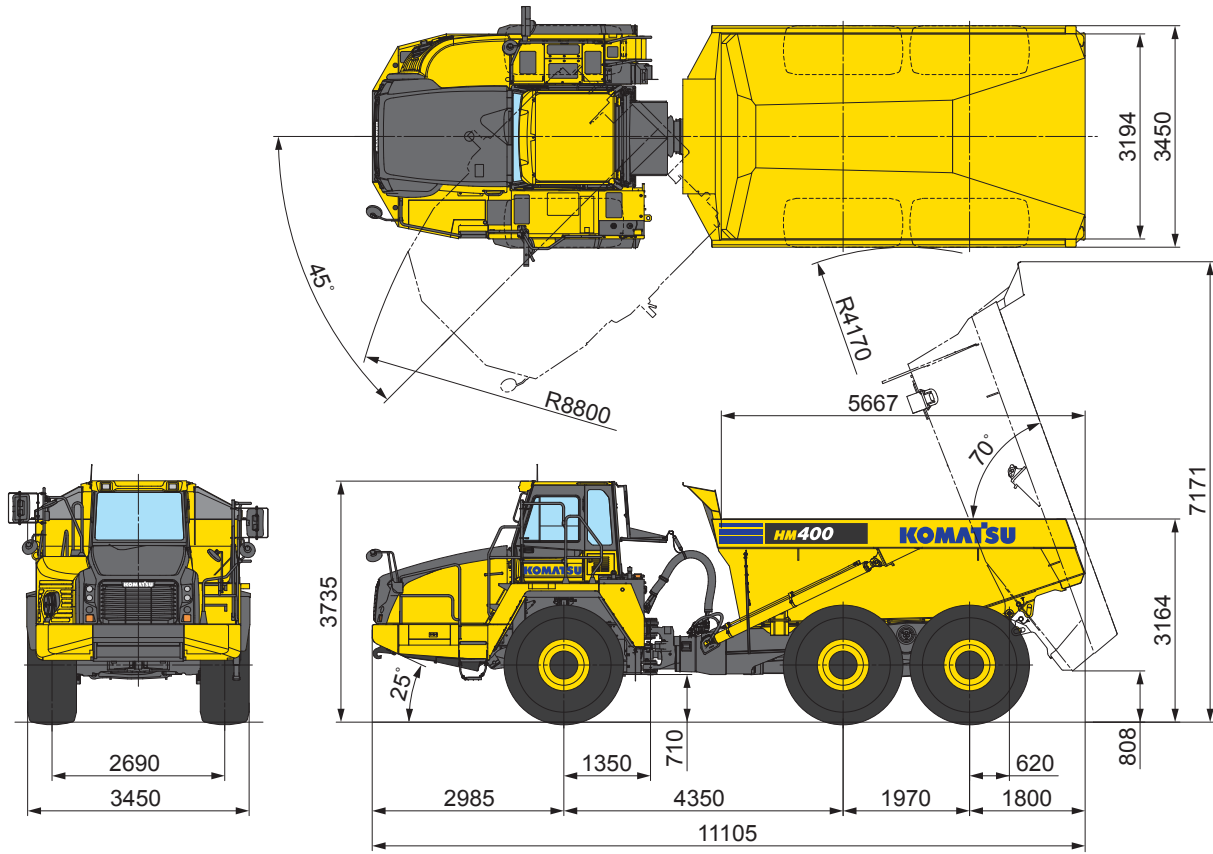
Fuel tank	518 l
Engine oil	50 l
Torque converter, transmission and retarder cooling	125 l
Differentials (total)	108 l
Final drives (total)	32 l
Hydraulic system	167 l
Suspension (total)	20.4 l

HM400-3R



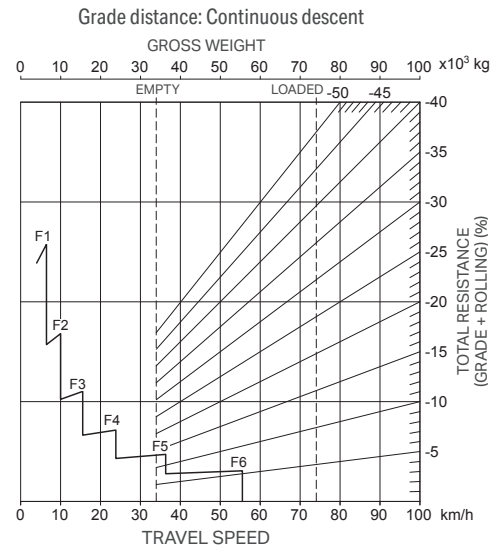
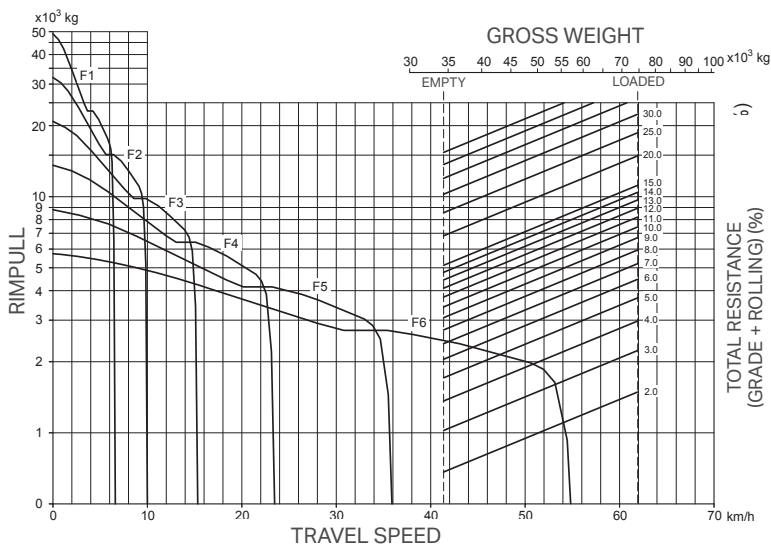
Dimensions

unit: mm



Travel performance (Power mode)

Brake performance





Standard equipment

Engine

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

Cab

- 2 × 12 V DC 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 (LH)
- 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
- Body liner
- 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
- Color rear view monitor and camera
- Fast fill coupler for fuel tank
- Filler cap lock and cover lock

- Fire extinguisher
- Gas charge tool
- Payload meter and lamp
- Power cab tilt
- Precleaner turbo II
- Sandy and dusty area arrangement
- Spare parts for first service
- Tool kit



Precleaner turbo II



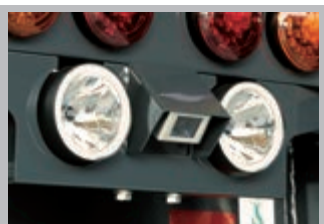
Stop, tail and turn signal lamps (LED)



Overhung tail gate, wire type



Color rear view monitor and camera



Payload meter and lamp



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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