

# KOMATSU®

## HM400-3M0

**GROSS HORSEPOWER**  
338 kW 453 HP/2000min<sup>-1</sup>

**NET HORSEPOWER**  
334 kW 448 HP/2000min<sup>-1</sup>

**MAXIMUM GVW**  
HM400-3M0 : 74125 kg

**ecot3**

**HM  
400**



Photos may include optional equipment.

ARTICULATED DUMP TRUCK

# WALK-AROUND

## **PRODUCTIVITY & ECONOMY FEATURES**

- **Increased body capacity**  
Loading capacity : 40.0 metric ton  
Heaped capacity : 24.0 m<sup>3</sup>
- **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 3 and EU Stage 3A emissions certified
- **Engine power mode selection system**
- **Komatsu Advanced Transmission (K-ATOMiCS)**



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**MAXIMUM GVW**  
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**OPERATOR COMFORT**

- Ergonomic comfort
- Low noise  
Operator's ear noise (ISO6396) 72dB (A)
- Tilt-away steering column
- Center-located operator seat
- Hydro-pneumatic suspension
- Color rear view monitor (optional)

**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 HM400-3M0 has the 24.0 m<sup>3</sup> 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.

HM400-3M0'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 12.0% better fuel consumption in the field compared to the HM400-2.

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 12.0% better fuel consumption in the field compared to the HM400-2.

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Fuel consumption maximum **12.0%** reduction

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\* Compared with the HM400-2. 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.

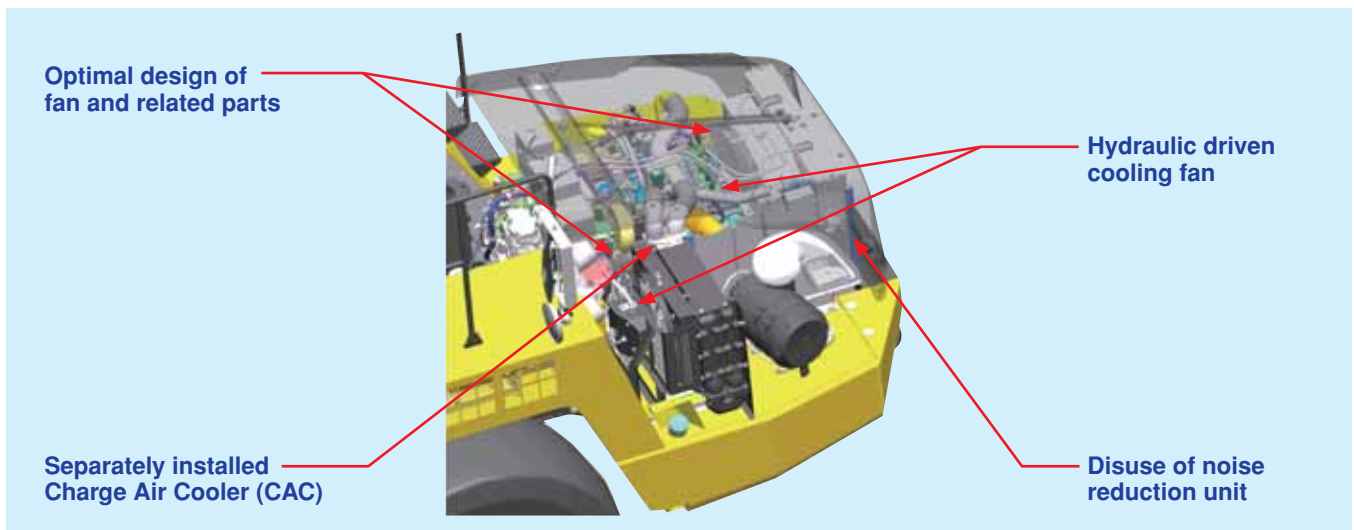
The fan speed is automatically set to its maximum when brake is applied, improving brake cooling capacity.

#### 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 HM400-2) as well.



## Komatsu technology



Komatsu develops and produces all major components, such as engines, electronics and hydraulic components, in house.

With this "Komatsu Technology," and adding customer feedback, Komatsu is achieving great advancement in technology.

To achieve both high levels of productivity and economical performance, Komatsu has developed the main components with a total control system.

The result is a new generation of high performance and environment friendly machines.

### 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

This engine delivers faster acceleration and higher travel speeds with high horsepower per ton in its class. Advanced technology, such as Common Rail Injection system (CRI), air to air aftercooler, and an efficient turbo-charger enables the engine is EPA Tier 3 and EU Stage 3A emissions certified. High torque at low speed, impressive acceleration, and low fuel consumption ensure maximum productivity.

### 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.

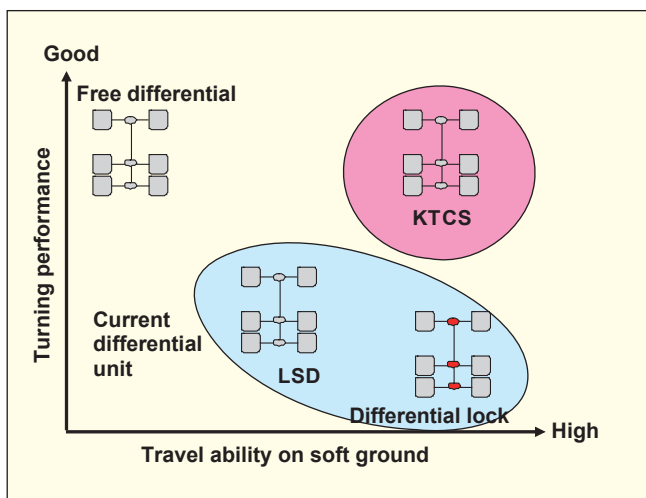


# SAFETY FEATURES

## 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.

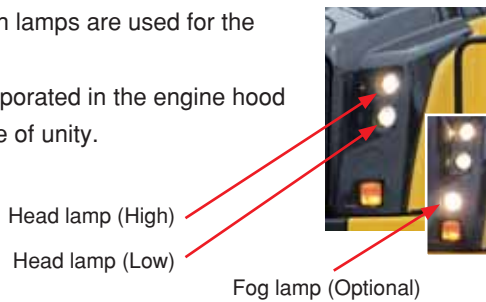
Komatsu Traction Control System (KTCS) allows easy traveling on soft ground and slippery road only by operating the accelerator. This also provides much better turning performance than the conventional differential lock-up or the Limited Slip Differential (LSD).



### 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.



Head lamp (High)

Head lamp (Low)

Fog lamp (Optional)

### Access safety

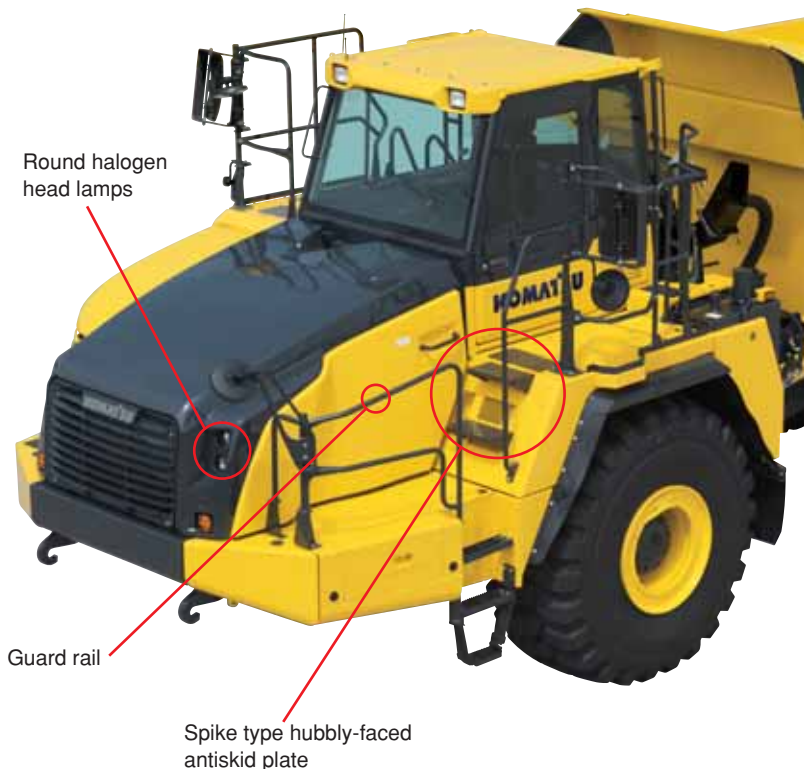
A spike type hubbly-faced antiskid plate is used for boarding the HM400-3M0.

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.



Round halogen head lamps

Guard rail

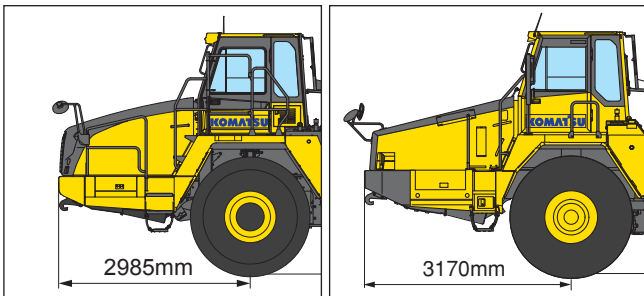
Spike type hubbly-faced antiskid plate



**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.



HM400-3M0

HM400-2

**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 HM400-3M0.



**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 HM400-3M0.

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.

### Machine monitor



### Color rear view monitor (optional)



### Multi-switch panel



## 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 HM400-3M0. 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.



### Color rear view monitor (optional)

Operator can visually recognize the rear of the machine with the full color rear view monitor.

The reference lines on the monitor are used for identifying the sides and the rear of the machine.

# 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 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.



Operation records



ECO guidance records



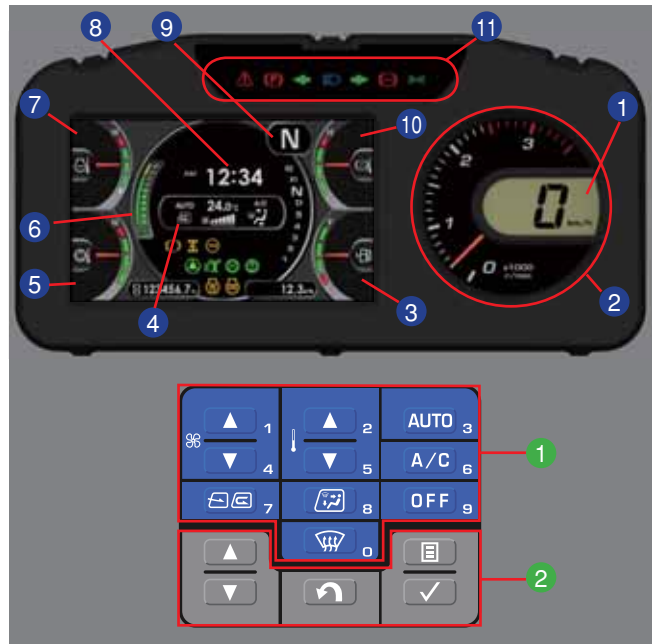
Average fuel consumption logs

# Machine Monitor

The machine monitor displays 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

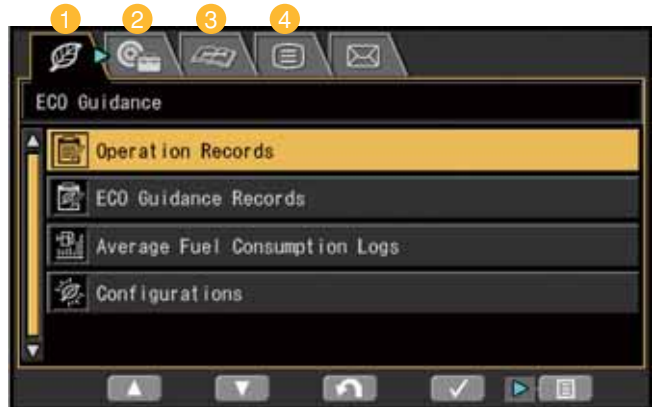
The LCD unit has wider display area than that of the previous model and uses color LCD, it displays more information and is easy to read.

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



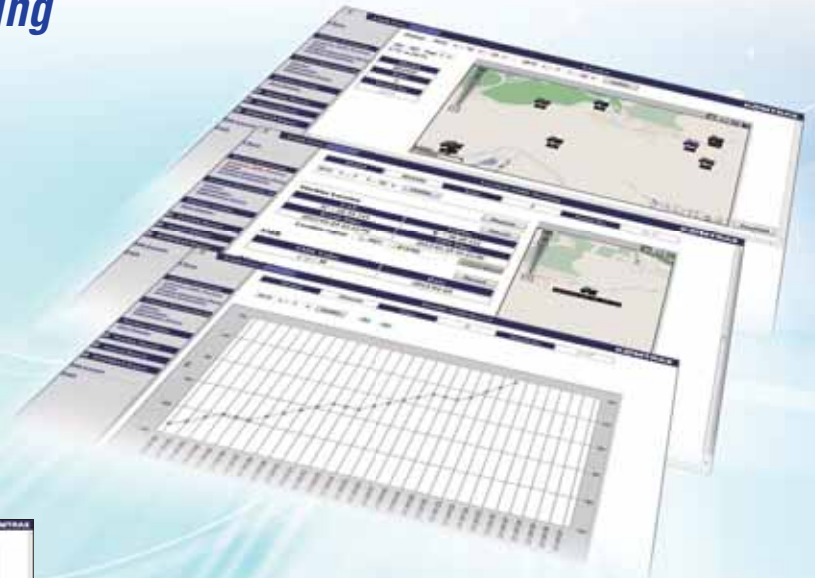
- Rear view monitor setting
- Measurement unit setting
- Screen brightness adjustment etc.



## 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.



Machine monitoring



Location



Monthly SMR record

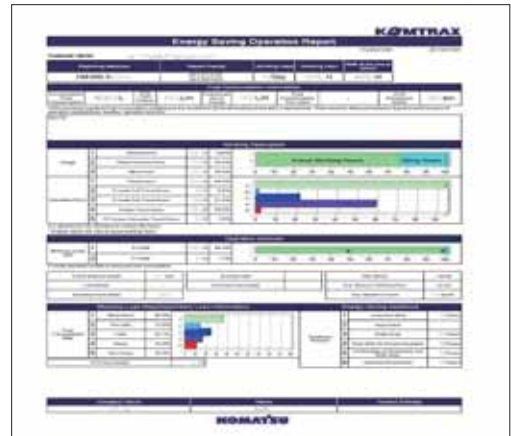


Monthly working record



### 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 HM400-3MO 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 HM400-3M0 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.

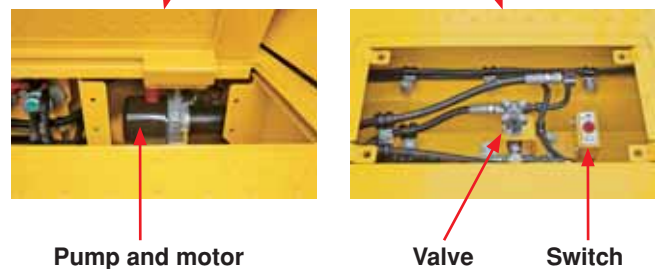
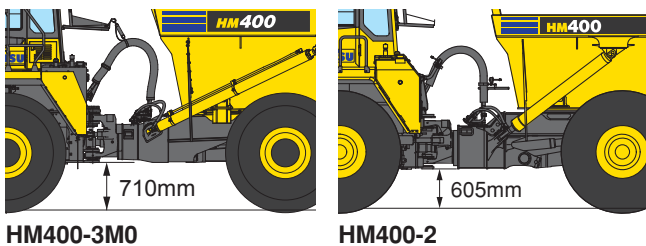
### Power cab tilt (optional)

Electrically-operate cab tilt is optionally available.



### 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 HM400-2.



Pump and motor

Valve

Switch

### 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, EGR
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 <sup>-1</sup>
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 3 and EU Stage 3A emissions certified.



### 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
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### BODY

Capacity:	
Struck	18.2 m <sup>3</sup>
Heaped (2:1, SAE)	24.0 m <sup>3</sup>
Payload	40.0 metric tons
Material	130 kg/mm <sup>2</sup> 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/cm <sup>2</sup>
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	34045 kg
Gross vehicle weight	74125 kg
Weight distribution:	
Empty: Front axle	56.9%
Center axle	23.1%
Rear axle	20.0%
Loaded: Front axle	29.4%
Center axle	35.4%
Rear axle	35.2%



### TIRES

Standard tire	29.5 R25
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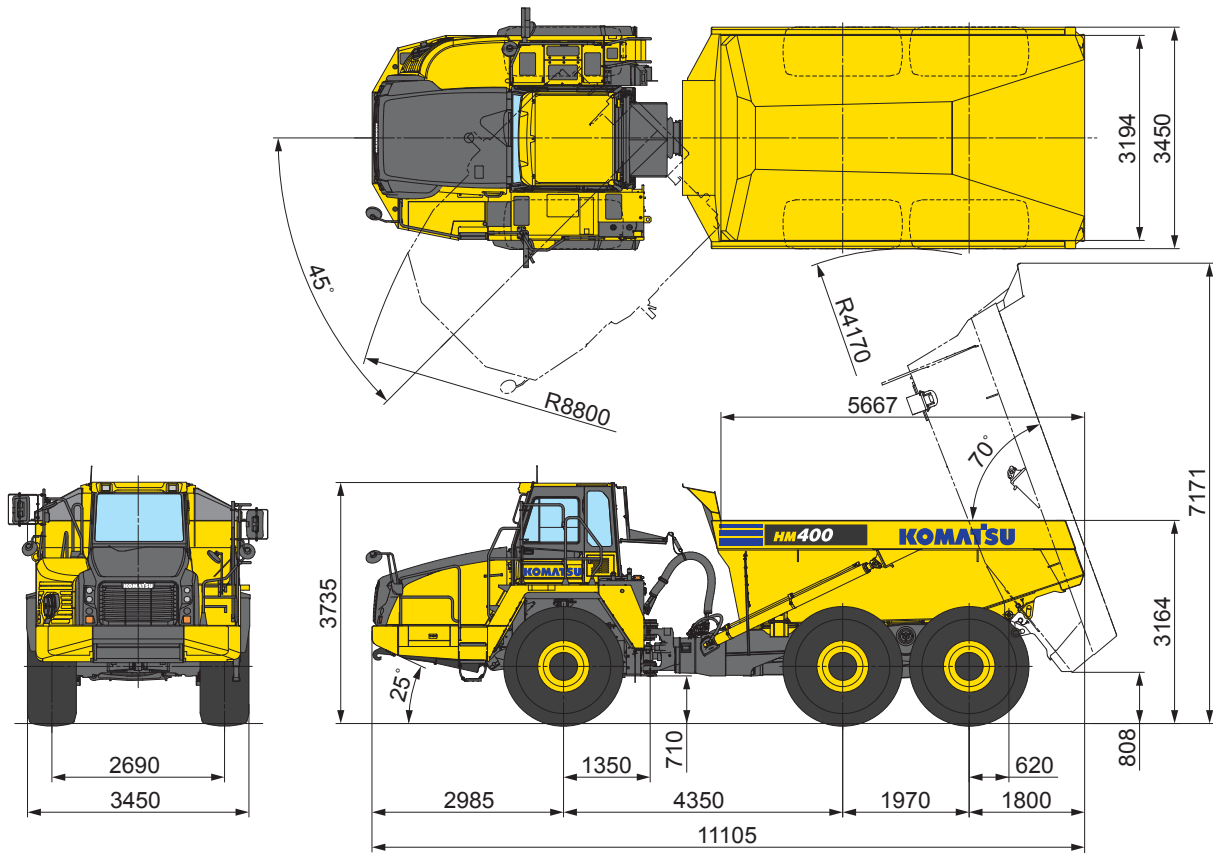
### SERVICE REFILL CAPACITIES

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

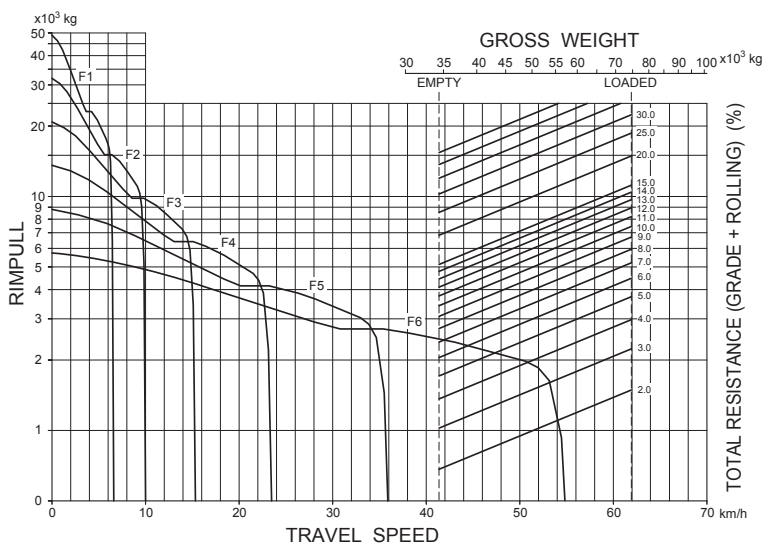


## DIMENSIONS

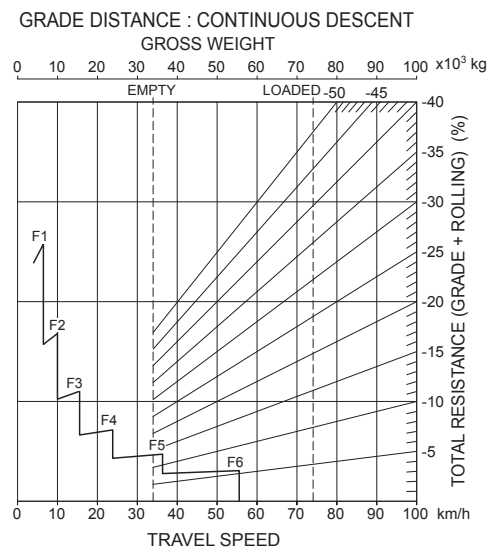
unit: mm



## 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 (with EGR)
- 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)
- Color rear view monitor
- 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

**KOMATSU**<sup>®</sup>