

KOMATSU®

HM400-2

NET HORSEPOWER
327 kW 438 HP @ 2.000 rpm

MAX. PAYLOAD
36,5 ton

BODY CAPACITY, HEAPED
22,3 m³

HM
400

ARTICULATED DUMP TRUCK



HM400-2

WALK-AROUND

The HM400-2 with new ECOT3 engine, meets the EU Stage IIIA and EPA Tier III emission regulations, offers all around maximum productivity with faster travel speed and features that enhance efficiency, while reducing maintenance costs. From rough terrain construction sites to landfills – the HM400-2 has the competitive edge.

Wide, spacious cab with excellent visibility

- The wide cab offers a comfortable operator and passenger environment
- Viscous mounts support the cab while absorbing vibration and noise
- Improved sealing and an integrated floor gives a low-noise cab. Interior noise level 76 dB(A)
- Additional front under view mirrors provide superior visibility

Tiltable cab

can be tilted rearward 36 degrees to provide easy service access to main components.



High performance and environment-friendly SAA6D140E-5 ECOT3 engine

- Net horsepower 327 kW 438 HP
- Meets EU Stage IIIA and EPA Tier III emission regulations
- Engine power mode selection system realizes both greater productivity and improved fuel economy
- Higher engine output and torque improve productivity in all applications

Fully hydraulic articulated steering

- Light and easy operation
- Minimum turning radius 8,7 m

NET HORSEPOWER
327 kW 438 HP

MAX. PAYLOAD
36,5 ton

BODY CAPACITY, HEAPED
22,3 m³

Komatsu designed, electronically controlled transmission for a comfortable ride

F6-R2 counter-shaft type transmission with K-ATOMiCS (Komatsu Advanced Transmission with Optimum Modulation Control System). Transmission shift hold button optimizes operator control.

Easy-to-load body

- Heaped capacity 22,3 m³
- Low loading height 2.970 mm
- High strength body constructed of thick wear-resistant steel with 400 Brinell hardness



All terrain hydro-pneumatic suspension

The hydro-pneumatic suspension in both front and rear assures a comfortable ride even over rough terrain.

Maintenance-free oscillating pivot

with tapered roller bearings means lower operating costs by eliminating the need to lubricate the hitch.

Differential locks provide excellent traction in rough terrain

The oil-cooled multiple-disc interaxle lock can be turned on and off during travel. In addition, the limited slip differentials prevent the tyres on either side from slipping on soft ground for maximum traction.

High capacity, reliable, continuously cooled, wet type multiple-disc brakes and retarder

- Fully hydraulic controlled wet multiple-disc brake
- Retarder absorbing capacity (continuous descent)
472 kW 633 HP

PRODUCTIVITY FEATURES



High performance SAA6D140E-5 engine

Electronic control system

Komatsu's electronic control system monitors the vehicle performance, optimizing emissions, fuel efficiency and noise levels, even under extreme conditions.

Heavy duty HPCR system

(High Pressure Common Rail fuel injection)

A high pressure pump pumps fuel into an accumulator chamber or 'Common Rail'. An ECU (electronic control unit) then optimizes fuel injection from the common rail into the engine cylinders. This improves engine power and fuel efficiency, reducing emission and noise levels.

Heavy-duty cooled EGR system

(Exhaust Gas Recirculation)

Cooled exhaust gas returned to the cylinders prevents nitrogen and oxygen bonding during combustion, reducing NOx emissions, lowering thermal stress and improving fuel efficiency.

Air-to-air charge air cooling system

By cooling the compressed air supplied by the turbo-charger to the cylinders, this system optimizes combustion efficiency, reduces emissions and improves engine performance.

New combustion system

Our new combustion system optimises combustion timing and ignition. Thanks to extensive computer simulations and analyses, its specially designed combustion chamber reduces NOx and particulates emissions, fuel consumption and noise levels.

Engine power mode selection system

The system allows selection of the appropriate mode between two modes „High-power mode“ or „Economy mode“ according to each working condition. The mode is easily selected using a switch in the operator's cab.

High-power mode

Great productivity can be attained by taking full advantage of high output power. It is appropriate for job sites where large production on an uphill haul is required.

Economy mode

Engine speeds of the maximum output, downshift, and upshift are set to a lower level. It is suitable for light work on a flat haul.

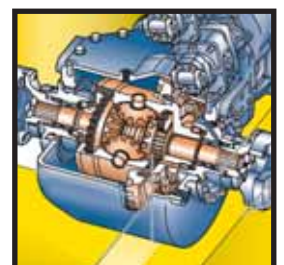
Komatsu designed electronically controlled countershaft transmission

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 transmission by monitoring the vehicle conditions. This Komatsu technology assures smooth shifting, maximising transmission life.



Komatsu designed differential locking systems

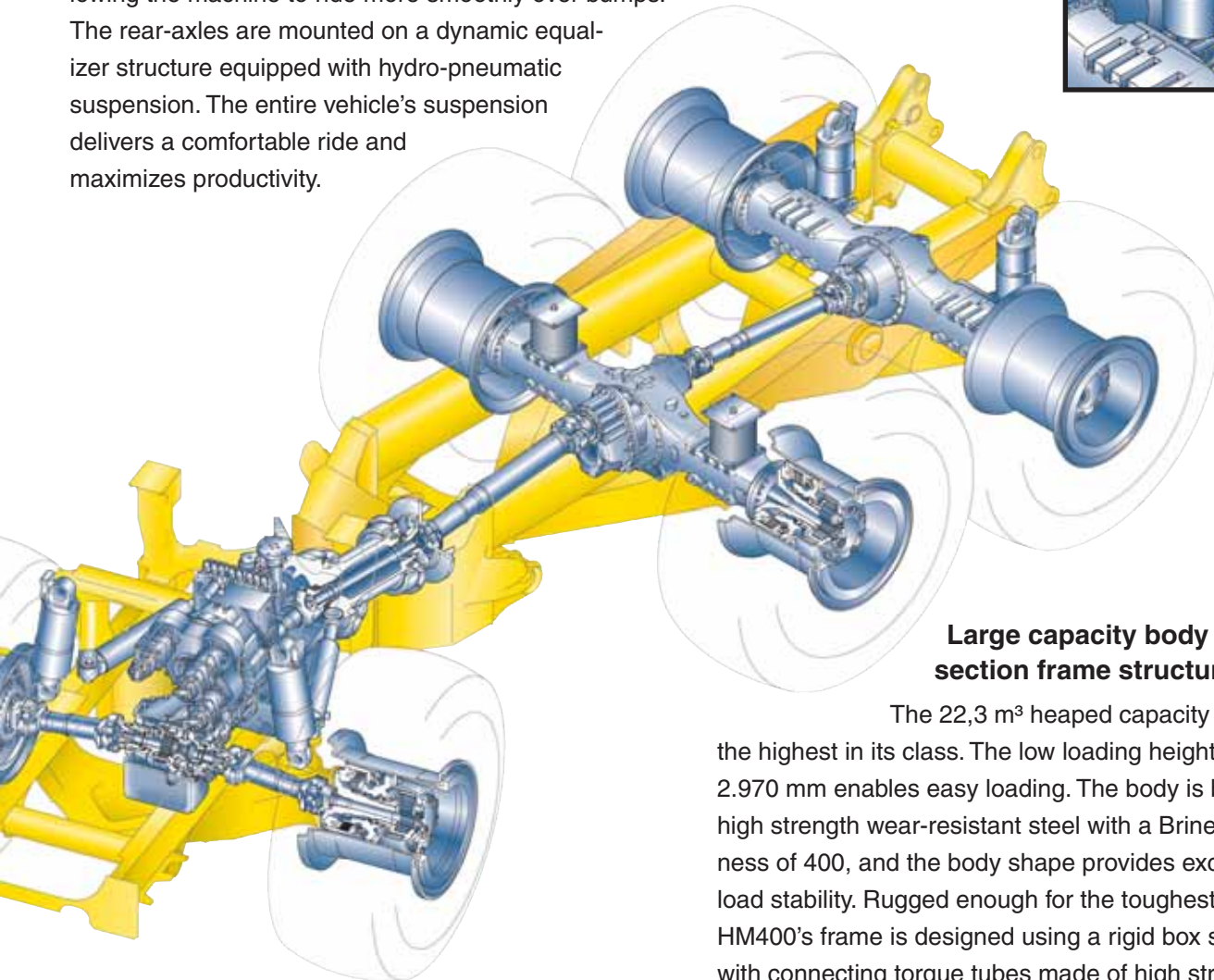
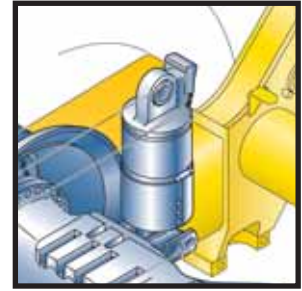
The full-time six-wheel drive system reduces slippage. A wet multiple-disc interaxle clutch also locks the three axles in unison for greater traction. The interaxle lock can be switched on and off while the truck is travelling, thereby boosting productivity. In addition, limited slip differentials prevent the tyres on either side from slipping on soft ground.



Hydro-pneumatic suspension

Hydro-pneumatic suspension with proven performance in larger articulated and rigid trucks is tailored for use in the HM400. The front axle hydro-pneumatic suspension employs „De Dion“ type design, allowing the machine to ride more smoothly over bumps.

The rear-axles are mounted on a dynamic equalizer structure equipped with hydro-pneumatic suspension. The entire vehicle's suspension delivers a comfortable ride and maximizes productivity.



Large capacity body and box section frame structure

The 22,3 m³ heaped capacity is among the highest in its class. The low loading height of 2.970 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. Rugged enough for the toughest jobs, the HM400's frame is designed using a rigid box structure with connecting torque tubes made of high strength low alloy steel.

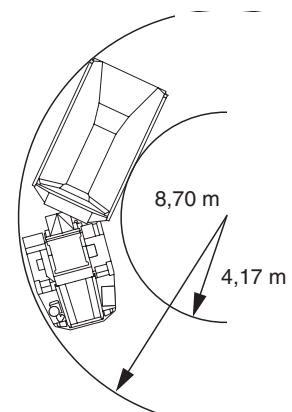
Hydraulically controlled wet multiple-disc brakes and retarder

Wet multiple-disc brakes with proven performance in larger articulated and rigid trucks are tailored for use in the HM400. 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):
472 kW 633 HP

Articulated steering

Fully hydraulic articulated steering offers low-effort operating performance and maneuverability. A minimum turning radius of only 8,7 m provides ability to work in tight areas.



OPERATOR ENVIRONMENT

Komatsu has developed a state-of-the-art, wide comfortable cab. The low level of vibration and noise ensure maximum productivity from the operator.

Low-noise designed cab

Integrated cab and floor provide an airtight cab. The engine compartment is also sealed. The low noise and sound insulated muffler / exhaust pipe contribute to reducing sound levels. Together they offer a quiet and comfortable operator environment.

Wide, spacious cab with excellent visibility

The wide cab provides a comfortable space for the operator and a full size trainer's seat. A large electrically operated window and the operator's seat positioned on the left hand side ensures superior visibility.

Ergonomically designed cab

The ergonomically designed operator's compartment makes it very easy and comfortable for the operator to use all the controls. The result is more confident operation by operators and greater productivity. A rear view camera and monitor system is supplied as standard. The number of under view mirrors has been increased from one to two. The rear view mirrors from two to four. Newly employed laminated glass in the windshield assures safe operation. In addition, electric heated rear window facilitates defrosting.



Easy-to-see instrument panel

The instrument panel makes it easy to monitor critical machine functions. In addition, a caution light warns the operator of any problems that may occur. This Komatsu on-board monitoring system makes the machine very friendly and easy to service.

Steering wheel and pedals

Low effort pedals reduce operator fatigue when working continuously for long periods. The tiltable, telescoping steering column enables operators to maintain an optimum driving position at all times.



Built-in ROPS/FOPS

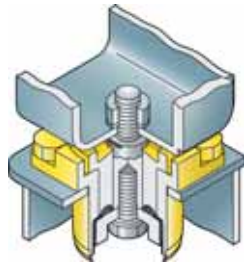
These structures conform to ISO 3471 and SAE J1040-1988c standards.

Hydro-pneumatic suspension for all terrains

The hydro-pneumatic suspension assures a comfortable ride even over rough terrain and ensures maximum productivity and operator confidence.

Viscous cab mounts

Viscous mounts reduce the noise transmitted to the cab and achieve a quiet 76 dB(A) noise level

**Air suspension seat is standard**

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 as well as holding the operator securely to assure confident operation.

Electric body dump control lever

The low effort lever makes dumping easier than ever.

Supplementary steering and secondary brakes

Supplementary steering and secondary brakes are standard features.

Steering: ISO 5010-1992, SAE J1511

Brakes: ISO 3450-1996, SAE J1473



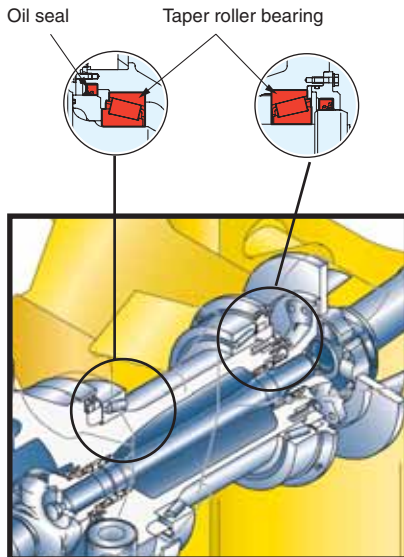
EASY MAINTENANCE

The HM400-2 has been designed to keep service time down and productivity up by having a maintenance-free oscillating pivot, a reduced number of grease points, easy access to filters, and longer intervals between oil changes.

Tiltable cab

The cab can be tilted rearward 36 degrees to provide easy maintenance/service for the engine and transmission.

Note: An external hydraulic pump is required to tilt the cab or a service crane can be used after easily removing only eight bolts.



Extended service intervals

In order to minimize operating costs, service intervals have been extended:

- Engine oil 500 hours
- Transmission oil 1.000 hours
- Engine oil filter 500 hours
- Transmission oil filters 1.000 hours

Guards

The following guards are provided as standard:

- Protective grille for rear window
- Engine underguard
- Heavy duty transmission underguard
- Propeller shaft guards
- Exhaust thermal guard
- Fire prevention covers

Fewer grease points

The number of grease points are minimized by using maintenance-free rubber bushings and a maintenance-free oscillating pivot.



SPECIFICATIONS



ENGINE

Model.....Komatsu SAA6D140E-5
 Type..... Common rail direct injection, water-cooled, emissionised, turbocharged, after-cooled diesel
 Rated capacity.....327 kW/438 HP (ISO 9249 Net) at engine speed2.000 rpm
 No. of cylinders 6
 Bore x stroke 140 x 165 mm
 Displacement..... 15,24 ltr
 Max. torque..... 213 kgf-m
 Governor..... Electronically controlled
 Lubricating systemGear pump, force-lubrication
 Filter..... Full-flow type
 Air filter Dry type with double elements and precleaner (cyclonpack type), plus dust indicator



TRANSMISSION

Torque converter..... 3-elements, 1-stage, 2-phase
 Transmission..... Full-automatic, counter-shaft type
 Speed range 6 speeds forward and 2 reverse
 Lock-up clutch Wet, single-disc 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 gears
 Shift control..... Electronic shift control with automatic clutch modulation in all gears

Max. travel speeds:

Gear	Forward						Reverse	
	1.	2.	3.	4.	5.	6.	1.	2.
km/h	7,3	11,1	17,1	26,1	39,6	58,5	7,4	17,5



STEERING SYSTEM

Type..... Articulated type, fully hydraulic power steering with two double-acting cylinders
 Supplementary steering . Automatically actuated, electrically powered
 Minimum turning radius, wall to wall 8,7 m
 Articulation angle 45° each direction



SUSPENSION

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



AXLES

Full time all wheel drive with limited slip differential in all axles.
 Final drive type Planetary gear
 Ratios:
 Differential 3,417
 Planetary 4,941



BRAKES

Service brakes..... Full-hydraulic control, oil-cooled multiple-disc type on all wheels
 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..... 16,5 m³
 Heaped (2:1, SAE)..... 22,3 m³
 Payload 36,5 tons
 Material..... 130 kg/mm²
 400 Brinell high tensile strength steel
 Material thickness:
 Bottom..... 16 mm
 Front..... 8 mm
 Sides 12 mm
 Target area (inside length x width) 5.629 mm x 3.194 mm
 Heating Exhaust heating (option)



HYDRAULIC SYSTEM

Hoist cylinder..... Twin, 2-stage telescopic type
 Relief pressure 20,6 MPa 210 kg/cm²
 Hoist time..... 12 sec



CAB

Dimensions comply with ISO 3471 and SAE J1040-1988c ROPS (Roll-Over Protective Structure) standards.

SPECIFICATIONS



WEIGHT (APPROX.)

Empty weight 32.460 kg
 Gross vehicle weight 69.040 kg

Weight distribution

Empty:
 Front axle 55,0%
 Center axle..... 22,9%
 Rear axle..... 22,1%

Loaded:
 Front axle 28,8%
 Center axle..... 35,8%
 Rear axle..... 35,4%



GROUND PRESSURE

At 75 mm ground penetration and with specified weights and tyre pressures:

Tyre size	29.5 R25	875/65 R29
Unloaded		
Front	135 kpa	113 kpa
Center	67 kpa	55 kpa
Rear	65 kpa	54 kpa
Loaded		
Front	146 kpa	119 kpa
Center	170 kpa	143 kpa
Rear	168 kpa	142 kpa



TYRES

Standard tyres29.5 R25



SERVICE REFILL CAPACITIES

Fuel tank..... 493 ltr
 Engine oil..... 50 ltr
 Torque converter, transmission and retarder cooling..... 115 ltr
 Differentials (total) 97 ltr
 Final drives (total)..... 32 ltr
 Hydraulic system 180 ltr
 Suspension (total)..... 20,4 ltr

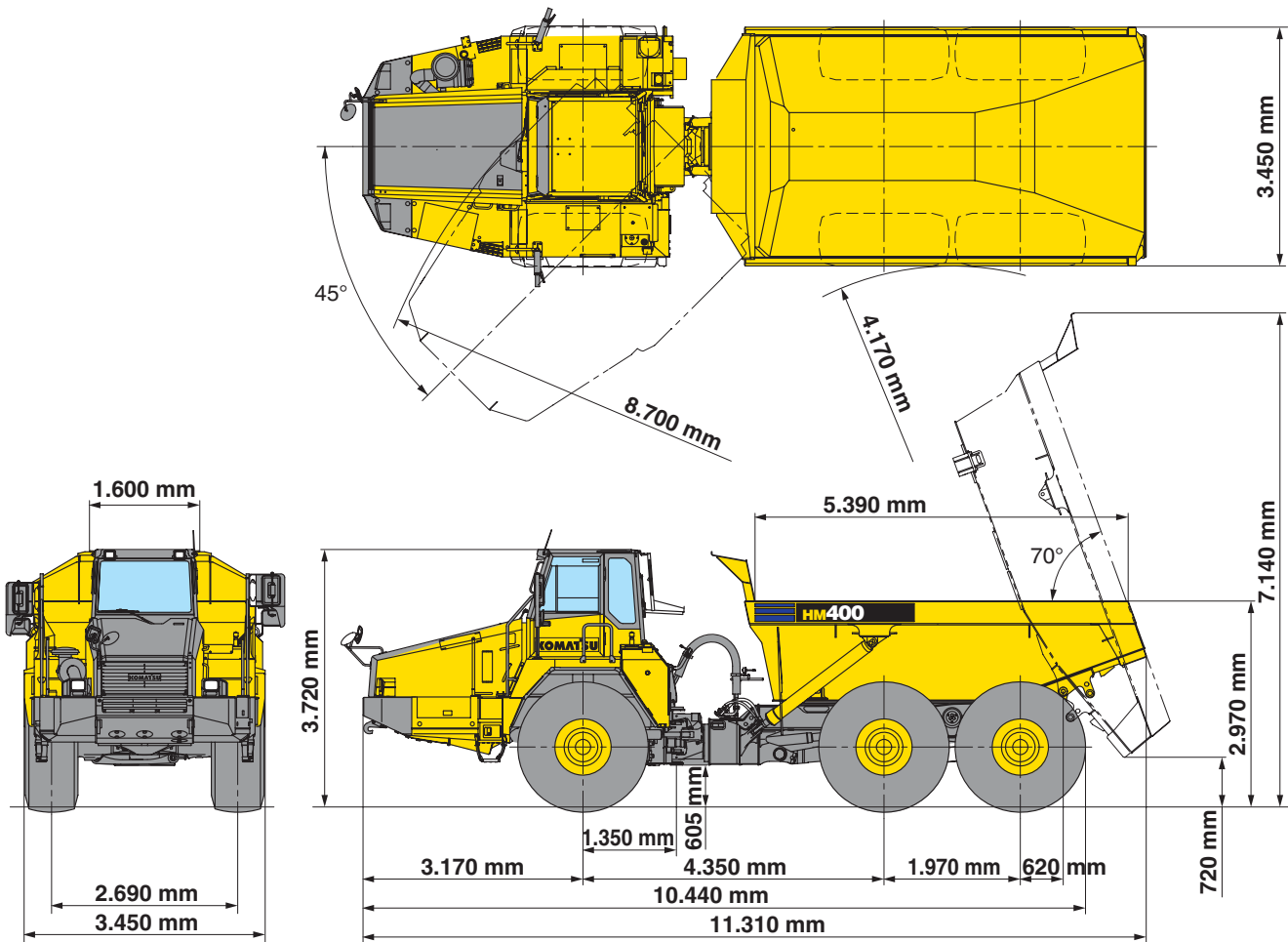


ENVIRONMENT

Engine emissions Fully complies with EU Stage IIIA and EPA Tier III exhaust emission regulations

Noise levels

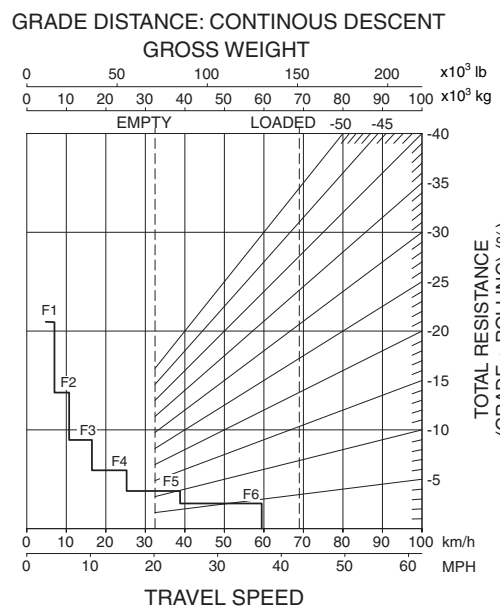
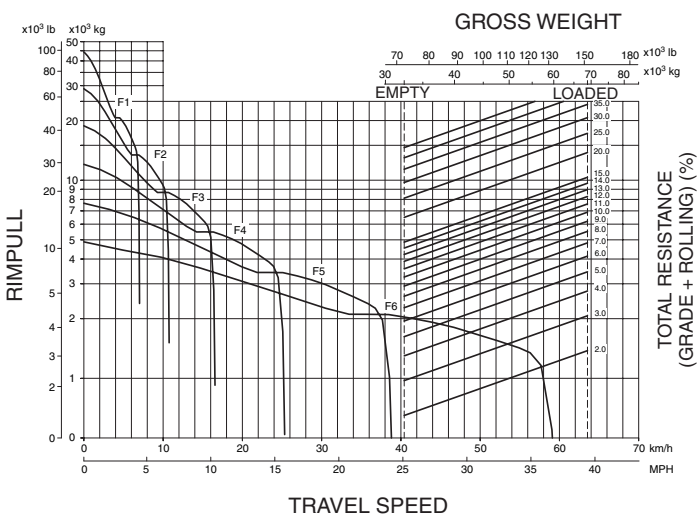
LwA external 110 dB(A) (2000/14/EC Stage II)
 LpA operator ear 76 dB(A) (ISO 6369 dynamic test)



All measurements with tyres 29.5 R25; if equipped with tyres 875/65 R29:
 Overall height 3.740 mm, overall width 3.665 mm, tread 2.805 mm

TRAVEL PERFORMANCE

BRAKE PERFORMANCE



ARTICULATED DUMP TRUCK

STANDARD EQUIPMENT

ENGINE

- Komatsu SAA6D140E-5 engine, EU Stage IIIA/EPA Tier III compliant
- Exhaust muffler with stack
- Alternator 50 A/24 V
- Batteries 2x12 V/136 Ah
- Starting motor 11 kW

LIGHTING SYSTEM

- Back-up light
- Hazard lights
- Headlights with dimmer switch
- Indicator, stop and tail lights

GUARD AND COVERS

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

CAB

- Tilttable ROPS/FOPS cab
- Air conditioner
- EMMS (Equipment Management Monitoring System) with self-diagnostic function and maintenance display
- Heated rear window
- Operator seat, reclining, air suspension type with retractable 78 mm width seat belt
- Trainer seat
- Power window (l.h.)
- Steering wheel, tilt and telescopic
- Sun visor, driver's side front window
- Body dump counter
- Cigarette lighter, ashtray, cup holder, space for lunch box

SAFETY EQUIPMENT

- Back-up alarm
- Anti-slip material on fenders
- Automatic supplementary steering
- Coolant temperature alarm and light
- Hand rails for platform
- Horn, electric
- Ladders, left and right hand side
- Protective grille for rear window
- Rearview mirrors
- Steering joint locking assembly
- Under view mirrors
- Rear view camera and monitor

BODY

- Electronic hoist control system

TYRES

- 29.5 R25

OTHER

- Centralized greasing
- Electric circuit breaker, 24 V
- Limited slip differentials in all axles

OPTIONAL EQUIPMENT

CAB

- Power window (r.h.)
- Radio
- Cassette-radio

BODY

- Body exhaust heating kit
- Body liner
- Tail gate, wire type
- Upper side extension, 200 mm

LIGHTING SYSTEM

- Fog lights

SAFETY EQUIPMENT

- Wheel blocks

TYRES

- 875/65 R29
- 25.00 R25 rim for 29.5 R25 tyre
- 27.00 R29 rim for 875/65 R29 tyre

OTHER

- 100% differential lock
- KOMTRAX™ Komatsu Tracking System (Step 2)
- Fire extinguisher
- Gas charge tool for suspension cylinders
- Jack, 30 ton capacity

Call the experts



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