

KOMATSU®

HD405-7R

Quarry

GROSS HORSEPOWER

386 kW 518 HP

NET HORSEPOWER

371 kW 498 HP

MAXIMUM GVW

75080 kg 165,520 lb

**HD
405**

OFF-HIGHWAY TRUCK



Machine shown may include optional equipment.

WALK-AROUND

Productivity Features

- High performance Komatsu SAA6D140E-5 engine
Net horsepower **371kW** 498HP
- Mode selection system
(Variable horsepower control in Economy mode)
- Automatic Idling Setting System (AISS)
- 7-speed, fully automatic K-ATOMiCS transmission
- Fully hydraulic controlled wet multiple-disc brakes and retarder
Retarder absorbing capacity (Continuous descent)
662kW 887HP
- Long wheelbase and wide tread
- Large high strength body
Heaped capacity **27.3m³** 35.7yd³
- Small turning radius **7.2m** 23'7"
- Automatic Retard Speed Control (ARSC)(Option)
- Payload meter (PLM) (Option)

Harmony with Environment

- Komatsu SAA6D140E-5 engine is EPA Tier 2 and EU Stage 2 emissions equivalent
- Low operation noise
- Lead-free radiator
- Brake cooling oil recovery tank



GROSS HORSEPOWER
386 kW 518 HP @ 2000 rpm

NET HORSEPOWER
371 kW 498 HP @ 2000 rpm

MAXIMUM GVW
75080 kg 165,520 lb

Operator Environment

- Wide, spacious cab with excellent visibility
- Ergonomically designed cab
- Easy-to-see instrument panel
- Ideal driving position settings
- K-ATOMiCS with “Skip-shift” function
- Hydropneumatic suspension
- Built-in ROPS/FOPS cab
- Viscous cab mounts
- Electric body dump control
- Supplementary steering and secondary brake
- Three-mode hydropneumatic suspension (Automatic suspension) (Option)



Machine shown may include optional equipment.

Reliability Features

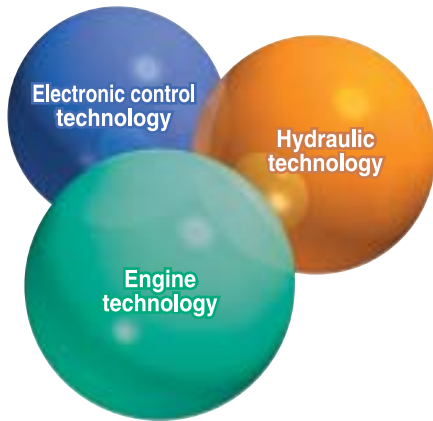
- Komatsu components
- High-rigidity frame
- Rigorous dump body design
- Reliable hydraulic system
- Sealed DT connectors
- Pedal-operated secondary brake
- Automatic Spin Regulator (ASR)(Option)

Easy Maintenance

- Advanced monitoring system
- Wet multiple-disc brakes and fully hydraulic controlled braking system
- Extended oil change interval
- Centralized arrangement of filters
- Disc wheels (Flange type rims)
- Electric circuit breaker
- Centralized greasing points (Option)

PRODUCTIVITY FEATURES

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 advancements 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.

High performance Komatsu SAA6D140E-5 engine

Powerful turbocharged and air-to-air aftercooled Komatsu SAA6D140E-5 engine provides **371 kW 498 HP (Net)**. This engine realizes high power in low fuel consumption with Common Rail Injection system (CRI), and thus it delivers higher travel speeds with high horsepower. This engine is EPA Tier 2 and EU Stage 2 emissions equivalent. Also high torque at low speed, impressive acceleration, and low fuel consumption ensure maximum productivity

Mode selection system

The system allows selection of the appropriate mode between two modes <Power mode > or <Economy mode> according to each working condition. The mode is easily selected with a switch in the operator's cab.

Power mode

Great productivity can be attained by taking full advantage of high output power. It is appropriate for job sites where larger production uphill-hauling is required.

Economy mode (Variable horsepower control)

The engine power automatically changes depending on loaded or unloaded conditions always to use an optimum speed gear. It is appropriate for light work on flat ground.

Automatic Idling Setting System (AISS)

This system facilitates quick engine warm-up and cab cooling/warming. When setting the system ON, engine idle speed is kept at 945 rpm when coolant temperature is **50°C 122°F** or lower. Speed automatically returns to 750 rpm when coolant temperature reaches **50°C 122°F**.



7-speed, fully automatic K-ATOMiCS transmission

The K-ATOMiCS (Komatsu Advanced Transmission with Optimum Modulation Control System) automatically selects the optimum gear according to vehicle speed, engine speed and the shift position you've chosen. The result: the best gear for any driving situation.



K-ATOMiCS
(Komatsu Advanced Transmission with Optimum Modulation Control System)

Automatic Retard Speed Control (ARSC) (Option)

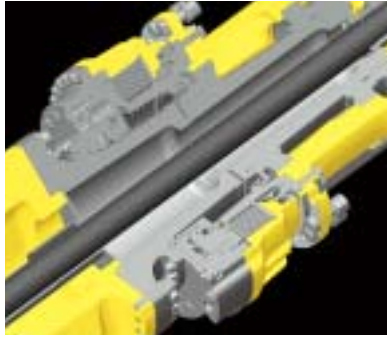
ARSC allows the operator to simply set the downhill travel speed and go down slopes at a constant speed. As a result, the operator can concentrate on steering. The speed can be set at increments of **1 km/h 0.6 MPH** per click (**±5 km/h 3.1 MPH** of setting speed adjustment) to match the optimum speed for the slope. Also, since the retarder cooling oil temperature is always monitored, the speed is automatically lowered.



Fully hydraulic controlled wet multiple-disc brakes and retarder

Wet multiple-disc brakes ensures highly reliable and stable brake performance. 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 traveling downhill.

- Retarder Absorbing Capacity (continuous descent): **662 kW**
887 HP
- Brake Surface Area (rear): **50,847 cm²**
7,881 in²



Long wheelbase and wide tread

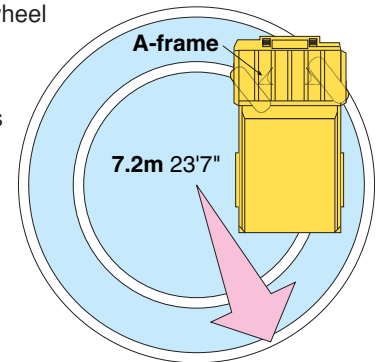
With an extra-long wheelbase, a wide tread and an exceptionally low center of gravity, the HD405-7R hauls the load at higher speed for greater productivity, and delivers superior driving comfort over rough terrain.

Large body

A wide target area makes for easy loading with minimal soil spillage and more efficient hauling. The V-shape design also increases structural strength, and provides excellent load stability.

Small turning radius

The MacPherson strut type front suspension has a special A-frame between each wheel and the main frame. The wider space created between the front wheels and the main frame increases the turning angle of the wheels. The larger this turning angle, the smaller the turning radius of the truck.



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 HD405-7R to your PC by connecting the cable. The loaded weight is indicated on the payload display (character display) and the external display lamp while loading.



OPERATOR ENVIRONMENT

Wide, spacious cab with excellent visibility

Wide windows in the front, side and back, plus plenty of space in the richly upholstered interior, provide quiet, comfortable environment from which to see and control every aspect of operation. Front under view mirrors and side under view mirrors have been added to improve safety.

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 and greater productivity.

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. Problems are recorded in the monitor and indicated as service codes. This makes the machine user friendly and easy to service.

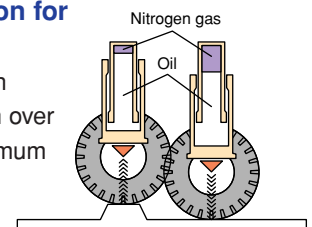
Ideal driving position settings

The 5-way adjustable operator seat and the tilt-telescopic steering column provide an optimum driving posture, for increased driving comfort and more control over machine operation. The suspension seat dampens vibrations transmitted from the machine and reduces operator fatigue as well as holding the operator securely to assure confident operation. **78mm** 3" width seat belt is provided as standard equipment.



Hydropneumatic suspension for all terrains

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

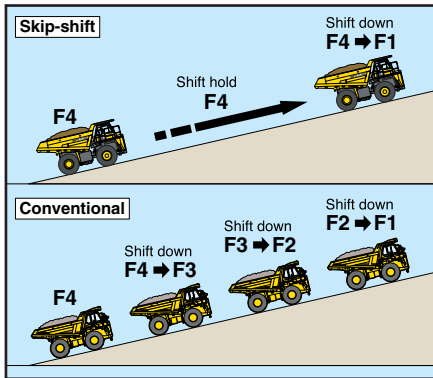


K-ATOMiCS with "Skip-shift" function

An electronically controlled valve is provided for each clutch pack in the transmission for independent clutch engagement/disengagement. It enables an ideal change in clutch modulation pressure and torque cut-off timing in response to travel conditions. This system and newly added "skip-shift" function ensure smooth shifting and responsive acceleration.

"Skip-shift" function

Optimum travel speed automatically selected in response to angle of ascent. Reduced frequency of downshift and smoother operation are provided.



Three-mode hydropneumatic suspension (Automatic suspension) (Option)

Suspension mode is automatically switched to one of three stages (soft, medium and hard) according to load and operating conditions, for a more comfortable and stable ride.

Built-in ROPS/FOPS cab

These structures conform to ISO3471 ROPS standard, and ISO 3449 FOPS standard.



Viscous cab mounts

Viscous mounts reduce the noise transmitted to the cab and achieve a quiet 77 dB(A) noise level.



Electric body dump control

The low effort lever makes dumping easy. A positioning sensor is installed for dump body control which significantly reduces the shock made by the lowering of the dump body.



Supplementary steering and secondary brake

Supplementary steering and secondary brake are standard features.

Steering: ISO 5010, SAE J1511

Brakes: ISO 3450



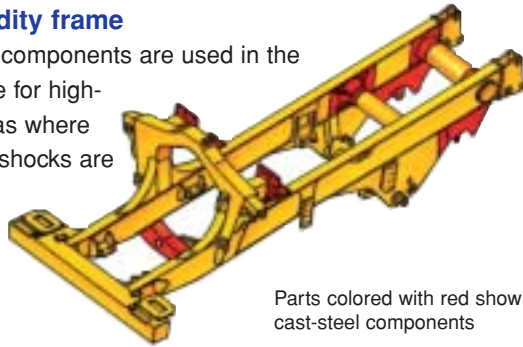
RELIABILITY FEATURES

Komatsu components

Komatsu manufactures the engine, torque converter, transmission, hydraulic units, and electrical parts on this dump truck. Komatsu dump trucks are manufactured with an integrated production system under strict quality control system guidelines.

High-rigidity frame

Cast-steel components are used in the main frame for high-stress areas where loads and shocks are most concentrated.

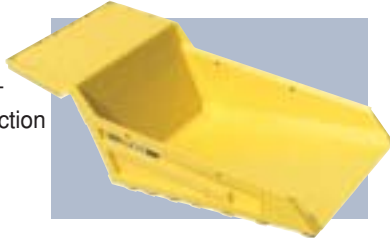


Parts colored with red show cast-steel components

Rigorous dump body design

The body is built of **160 kg/mm² 227,520 PSI** wear-resistant high-tensile steel with a Brinell hardness of 500.

The V-shape design also increases structural strength. The side and bottom plates of the dump section are reinforced with ribs for added strength.

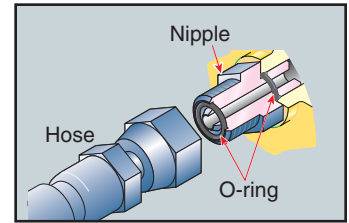


Reliable hydraulic system

The oil cooler is installed in the radiator lower tank, improving the reliability of the hydraulic system during sudden temperature rises. Further, in addition to the main filter, a 25-micron line filter is at the entrance to the transmission control valve. This system helps to prevent secondary faults.

Flat face-to-face O-ring seals

Flat face-to-face O-ring seals are used to securely seal all hydraulic hose connections and to prevent oil leakage.



Sealed DT connectors

Main harnesses and controller connectors are equipped with sealed DT connectors providing high reliability, water resistance and dust resistance.



Automatic Spin Regulator (ASR) (Option)

ASR automatically prevents the rear tires on either side from slipping on soft ground for optimal traction.

Pedal-operated secondary brake

If there should be a failure in the foot brake, the parking brake and front disc brakes are activated as a pedal operated secondary brake. In addition, when hydraulic pressure drops below the rated level, the parking brake is automatically actuated.



Lead-free radiator

In addition to compliance with emission regulations, a lead-free aluminum core is used for the radiator to meet with global environmental requirements.

Brake cooling oil recovery tank

To protect the environment, a tank is installed to recover brake cooling oil in the event of brake floating seal leakage.

Protection functions supported by electronic control

Item	Function
Downshift inhibitor	Even if the driver downshifts accidentally, a speed appropriate to the current gear is automatically set, preventing over-runs.
Over-run inhibitor	When descending grades, if the vehicle's speed surpasses the maximum for the current gear, the rear brakes automatically operate, preventing over-runs.
Reverse inhibitor	The vehicle is prevented from moving backward when operating the body.
Forward/Reverse shift inhibitor	This device makes it impossible to shift from forward to reverse when the vehicle's speed surpasses 4 km/hour.
Anti-hunting system	When running near a shift point, smooth automatic shifting takes place.
Neutral safety	The engine is prevented from starting when the shift lever is not in neutral.

EASY MAINTENANCE

Advanced monitoring system

The Komatsu advanced monitoring system identifies maintenance items, reduces diagnostic times, indicates oil and filter replacement hours and displays abnormality codes. This monitor system helps to maximize machine production time.



Wet multiple-disc brakes and fully hydraulic controlled braking systems

realize lower maintenance costs and higher reliability. Wet disc brakes are fully sealed to keep contaminants out, reducing wear and maintenance. Brakes require no adjustments for wear, meaning even lower maintenance. Added reliability is designed into the braking system by the use of three independent hydraulic circuits providing hydraulic backup should one of the circuits fail. Fully hydraulic braking systems eliminate the air system so air bleeding is not required, and water condensation that can lead to contamination, corrosion and freezing is eliminated.

Extended oil change intervals

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

- Engine oil 500 hours
- Hydraulic oil 4000 hours

Centralized arrangement of filters

The filters are centralized so that they can be serviced easily.



Disc wheels (Flange type rims)

Disc wheels (Flange type rims) provide easy removal/installation for the tires.



Electric circuit breaker

A circuit breaker is adopted in important electric circuits that should be restored in a short time when a problem occurs in the electrical system.



Centralized greasing points (Option)

Greasing points are centralized at three locations, it enables to approach from ground level.



SPECIFICATIONS



ENGINE

Model	Komatsu SAA6D140E-5	
Type	Water-cooled, 4-cycle	
Aspiration	Turbo-charged, air-to-air after-cooled	
Number of cylinders	6	
Bore x stroke	140 mm x 165 mm 5.5" x 6.5"	
Piston displacement	15.24 ltr 930 in ³	
Horsepower		
SAE J1995	Gross	386 kW 518 HP
ISO 9249 / SAE J1349	Net	371 kW 498 HP
Rated rpm	2,000 rpm	
Fan drive type	Mechanical	
Maximum torque	2167 N-m 221 kg-m 1,600 lb. ft	
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	
EPA Tier 2 and EU Stage 2 emissions equivalent		



TRANSMISSION

Torque converter	3-elements, 1-stage, 2-phase	
Transmission	Full-automatic, planetary type	
Speed range	7 speeds forward and 1 reverse	
Lockup 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	
Shift control	Electronic shift control with automatic clutch modulation in all gear	
Maximum travel speed	70 km/h 43.5 mph	



AXLES

Rear Axle	Full-floating	
Final drive type	Planetary gear	
Ratios:		
Differential	3.125	
Planetary	4.737	



SUSPENSION SYSTEM

Independent, hydropneumatic suspension cylinder with fixed throttle to dampen vibration.		
Effective cylinder stroke (front suspension)	250 mm 9.8"	
Rear axle oscillation:		
Oil stopper	6.8°	
Mechanical stopper	8.1°	



STEERING SYSTEM

Type	Fully hydraulic power steering with two double-acting cylinders	
Supplementary steering	Manual control (meets ISO 5010 and SAE J1511)	
Minimum turning radius	7.2 m 23'7"	
Maximum steering angle	43°	



CAB

Dimensions comply with ISO 3471 ROPS (Roll-Over Protective Structure) standard and ISO 3449 FOPS standard.



MAIN FRAME

Type	Box-sectioned structure
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BRAKES

Brakes meet ISO 3450 standard.	
Service brakes:	
Front	Fully hydraulic control, caliper disc type
Rear	Fully hydraulic, oil-cooled, multiple-disc type
Parking brake	Spring applied, caliper disc type
Retarder	Oil-cooled, multiple-disc rear brakes act as retarder.
Secondary brake	Manual pedal operation.
When hydraulic pressure drops below the rated level, parking brake is automatically actuated.	
Brake surface	
Front	968 cm ² 150 in ²
Rear	50847 cm ² 7,881 in ²



BODY

Capacity:	
Struck	20 m ³ 26.2 yd ³
Heaped (2:1, SAE)	27.3 m ³ 35.7 yd ³
Payload, maximum	40.0 metric tons 44.1 U.S. tons
Material	160 kg/mm ² 227,520 psi high-tensile-strength steel
Structure	V-shape body
Material thickness:	
Bottom	25 mm 0.98"
Front	16 mm 0.63"
Sides	14 mm 0.55"
Target area (inside length x width)	
5590 mm x 3380 mm 18'4" x 11'1"	
Dumping angle	48°
Height at full dump	7925 mm 26'0"
Heating	Exhaust heating



HYDRAULIC SYSTEM

Hoist cylinder	Twin, 2-stage telescopic type
Relief pressure	20.6 MPa 210 kg/cm ² 2,990 psi
Hoist time	10 sec



WEIGHT (APPROXIMATE)

Empty weight	34400 kg 75,840 lb
Gross vehicle weight with 40 metric ton (44.1 U.S. ton) payload	74480 kg 164,200 lb
Max. gross vehicle weight	75080 kg 165,520 lb
Not to exceed max. gross vehicle weight, including options, fuel and payload.	
Weight distribution:	
Empty: Front axle	50.7%
Rear axle	49.3%
Loaded: Front axle	32.8%
Rear axle	67.2%



TIRES

Standard tire	18.00-R33
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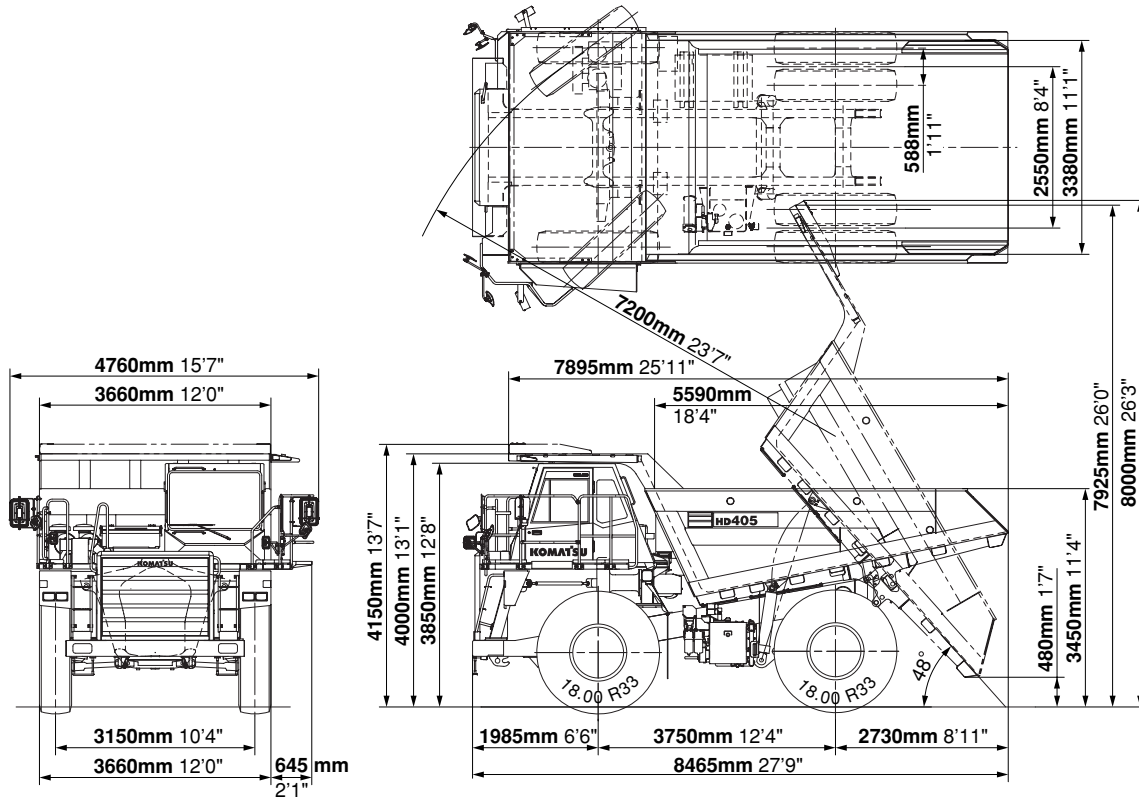


SERVICE REFILL CAPACITIES

Fuel tank	484 ltr. 127.9 U.S. Gal
Engine oil	50 ltr. 13.2 U.S. Gal
Torque converter, transmission and retarder cooling	90 ltr. 23.8 U.S. Gal
Differential	45 ltr. 11.9 U.S. Gal
Final drives (total)	30 ltr. 7.9 U.S. Gal
Hydraulic system	129 ltr. 34.1 U.S. Gal
Suspension (total)	44.2 ltr. 11.7 U.S. Gal

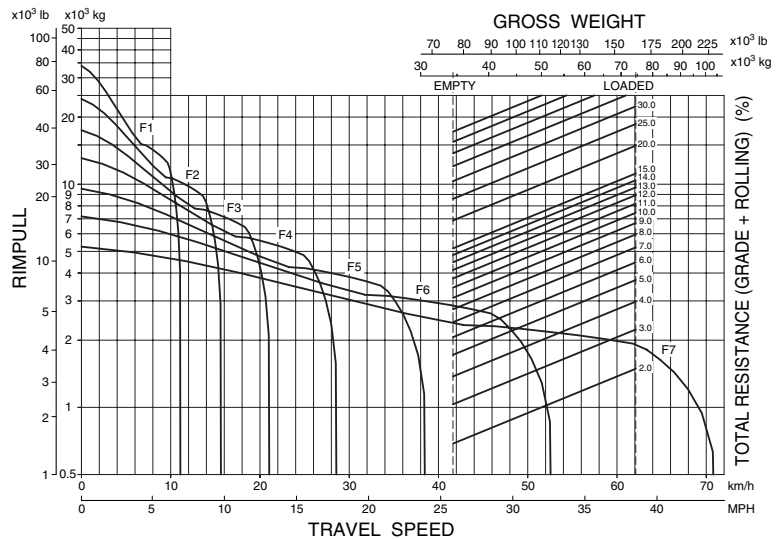


DIMENSIONS



TRAVEL PERFORMANCE

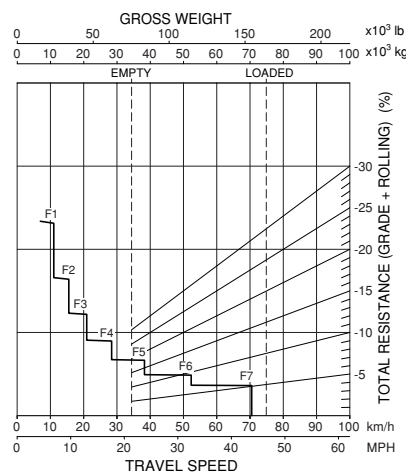
To determine travel performance: Read from gross weight down to the percent of total resistance. From this weight-resistance point, read horizontally to the curve with the highest obtainable speed range, then down to maximum speed. Usable rimpull depends upon traction available and weight on drive wheels.



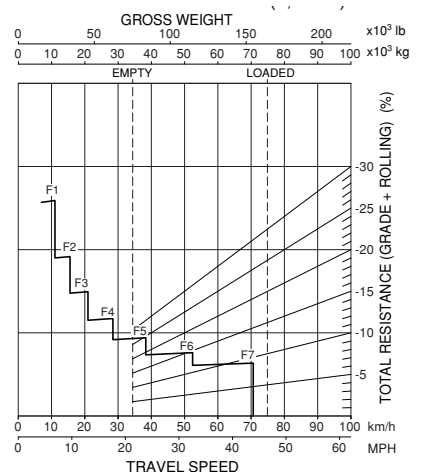
BRAKE PERFORMANCE

To determine brake performance: These curves are provided to establish the maximum speed and gearshift position for safer descents on roads with a given distance. Read from gross weight down to the percent of total resistance. From this weight resistance point, read horizontally to the curve with the highest obtainable speed range, then down to maximum descent speed the brakes can safely handle without exceeding cooling capacity.

Grade distance: Continuous Descent



Grade distance: 450 m (1,480 ft)





STANDARD EQUIPMENT FOR BASE MACHINE

ENGINE:

- Automatic Idling Setting System (AISS)
- Alternator, 50A/24V
- Batteries, 2 x 12V/170Ah
- Engine, Komatsu SAA6D140E-5
- Mode selection system
- Starting motor, 1 x 11.0 kW

CAB:

- Ashtray
- Cigarette lighter
- Cup holder
- Electronic dump control system
- Electronic maintenance display/monitoring system
- Operator seat, reclining, suspension type
- Passenger seat with retractable seat belt
- Power window (LH)
- ROPS cab with FOPS, sound suppression type

- Seat belt, 78 mm 3" width, retractable, 2-point
- Seat, fabric materials
- Space for lunch box
- Steering wheel, tilt and telescopic
- Sunvisor
- Laminated glass, front
- Two doors, left and right
- Windshield washer and wiper (with intermittent feature)

LIGHTING SYSTEM:

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

GUARD AND COVERS:

- Exhaust thermal guard
- Fire protective covers

- Drive shaft guard (front and rear)

SAFETY EQUIPMENT:

- Alarm, backup
- Catwalk with hand rails
- Coolant temperature alarm and light
- Front brake cut-off system
- Hand rails for platform
- Horn, electric
- Ladders, left and right hand sides
- Overrun warning system
- Rearview mirrors and underview mirrors
- Supplementary steering

OTHER:

- Electric circuit breaker, 24V
- Side markers

TIRES:

- 18.00 R33



OPTIONAL EQUIPMENT

CAB:

- Air conditioner
- Power window (RH)
- Radio, AM/FM
- Radio, AM/FM with cassette
- Seat, airsuspension type
- Seat belt, 50 mm 2" width, retractable, 3-point
- Sun visor, additional

BODY:

- Spill guard, 150 mm 6" [90 kg 200 lb]
- Spill guard, 250 mm 10" [145 kg 320 lb]

GUARD:

- Engine under guard [25 kg 60 lb]
- Platform guard, Right hand side [35 kg 80 lb]
- Transmission under guard [95 kg 210 lb]

LIGHTING SYSTEM:

- Back-up lights, additional
- Fog lights
- Work light, RH and LH sides

TIRES:

- 18.00 R33 tires

SAFETY:

- Automatic spin regulator (ASR)
- Automatic retard speed control (ARSC)
- Supplementary steering, automatic
- Rear view camera and monitor

ARRANGEMENT:

- Batteries for cold area arrangement
- Cold area arrangement
- Sandy and dusty area arrangement

GAUGE:

- Dump position alarm & warning light
- Tachograph

OTHER:

- Alternator, 75 A
- Centralized greasing
- Engine side covers
- Fast fill coupler for fuel tank
- Fire extinguisher
- Gas charge tool
- Gas spring for engine hood
- Muffler (no body heating type)
- Payload meter
- PM service connectors
- Pull hook, rear
- Radiator shutter, canvas type
- Spare parts for first service
- Tool kit
- Vandalism protection

[] shows the amount of increased weight

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.