



STANDARD EQUIPMENT

ENGINE:

- AISS (Automatic Idling Setting System)
- 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 hoist control system
- Electronic maintenance display/monitoring system
- Operator seat, reclining, suspension type with retractable 78 mm 3" width seat belt
- Passenger seat
- Power window (L.H.)
- ROPS cab with FOPS, sound suppression type

- 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
- Heater and defroster
- Power window (R.H.)
- Radio, AM/FM
- Radio, AM/FM with cassette
- Seat belt, 50 mm 2" width
- Seat belt, 78 mm 3" width for passenger seat
- Seat, fabric materials
- 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)
- Antilock brake system (ABS)
- 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
- Engine oil filter warning alarm and light
- Tachograph

OTHERS:

- 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 II, memory card type
- 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.

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KOMATSU®

HD405-7

Quarry

ecot3

HD  
405



Photo may include optional equipment.

OFF-HIGHWAY TRUCK



GROSS HORSEPOWER

386 kW 518 HP

NET HORSEPOWER

371 kW 498 HP

MAXIMUM GVW

75080 kg 165,520 lb



# WALK-AROUND

## Productivity Features

- High performance Komatsu SAA6D140E-5 engine  
Net horsepower **371kW** 498HP
- Mode selection system  
(Variable horsepower at 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 **27.3m<sup>3</sup>** 35.7yd<sup>3</sup>
- Small turning radius **7.2m** 23'7"
- Automatic retard speed control (ARSC)(Option)
- PLM II (Paylord meter II)(Option)

## Harmony with Environment

- Komatsu SAA6D140E-5 engine  
North American EPA Tier 3 and EU stage 3A emission certified for 2006
- Low operation noise
- Lead-free radiator
- Brake cooling oil recovery tank

## 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
- Viscous cab mounts
- Electric body dump control lever
- Supplementary steering and secondary brakes
- Three-mode hydropneumatic suspension  
(Automatic suspension) (Option)

## Reliability Features

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

## Easy Maintenance

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

Photo may include optional equipment.

**GALEO**  
Genuine Answers for Land & Environment  
Optimization





# 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 greater 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

This engine delivers faster acceleration and higher travel speeds with high horsepower per ton. Advanced technology, such as Common Rail Injection system (CRI), air to air aftercooler, efficient turbo-charger, and heavy duty cooled EGR enables the engine to be North American EPA Tier 3 and EU stage 3A emission certified. 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)

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 725 rpm when coolant temperature reaches **50°C 122°F**.



## 7-speed, fully automatic K-ATOMICs transmission

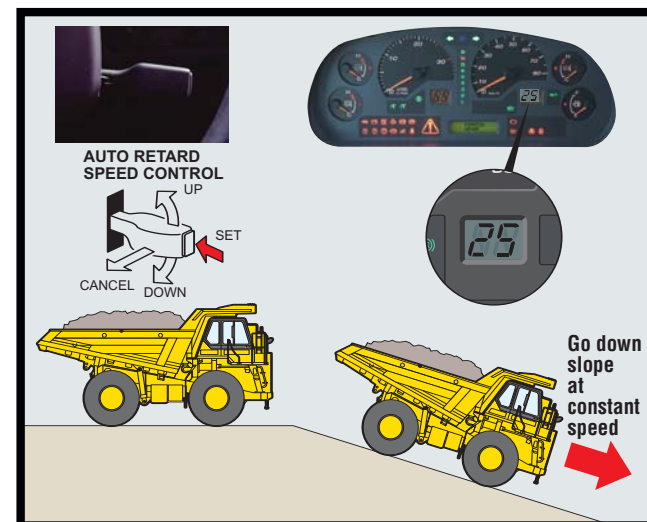
The K-ATOMICs (Komatsu Advanced Transmission with Optimum Modulation Control System) automatically selects the optimum gear according to vehicle speed, engine speed and the shift position you've chosen. The result: the best gear for any driving situation.



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

## Automatic Retard Speed Control (ARSC)(Option)

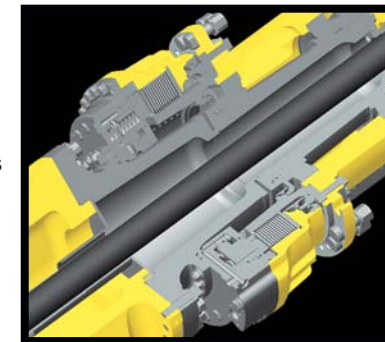
ARSC allows the operator to simply set the downhill travel speed and go down slopes at a constant speed. As a result, the operator can concentrate on steering. The speed can be set at increments of **1 km/h 0.6 MPH** per click ( $\pm 5$  **km/h 3.1 MPH** of maximum speed adjustment) to match the optimum 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 ensure 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 cm<sup>2</sup> 7,881 in<sup>2</sup>**



## Long wheelbase and wide tread

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

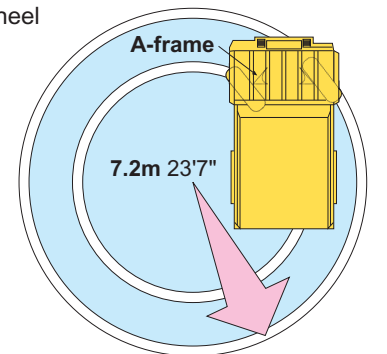
## Large high strength body

A wide target area makes for easy loading with minimal soil spillage and more efficient hauling. The body is built of **160 kg/mm<sup>2</sup> 227,520 PSI** wear-resistant high-tensile steel with a Brinell hardness of 500. The V-shape design also increases structural strength, and provides excellent load stability.



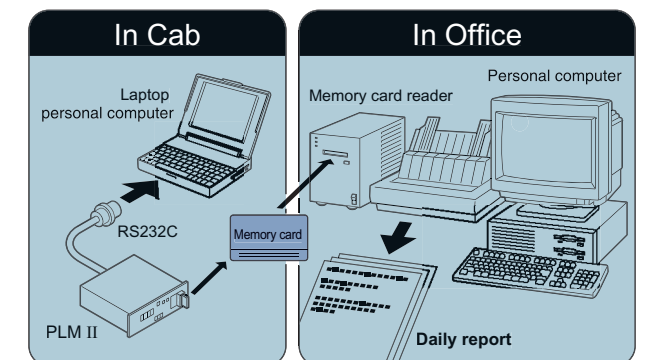
## Small turning radius

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.



## PLM II (Payload Meter II) (Option)

PLM II allows the production volume and the working conditions on the dump truck to be analyzed and controlled directly via a personal computer. The system can store up to 2900 working cycles.



(Note) The memory card, card reader and software for data processing are available as options.



## 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 very friendly and easy to service.

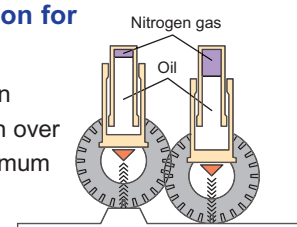
### Ideal driving position settings

The 5-way adjustable operator seat and the tilt-telescopic steering column create an optimum driving posture, for increased driving comfort and more control over the machine's operations. 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.

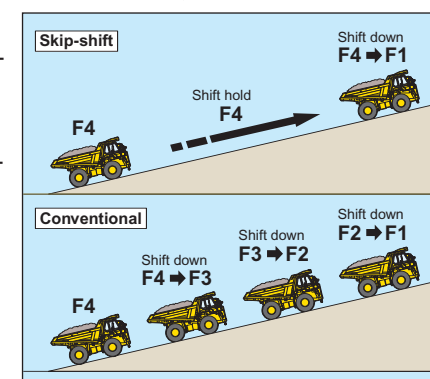


### K-ATOMiCS with "Skip-shift" function

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.

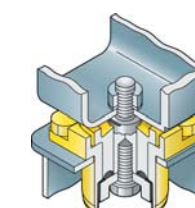
### Built-in ROPS/FOPS

These structures conform to ISO3471 and SAE J1040 ROPS standards, and ISO 3449 and SAE J231 FOPS standards.



### 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 lever

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 brakes

Supplementary steering and secondary brakes are standard features.

Steering: ISO 5010, SAE J1511, SAE J53

Brakes: ISO 3450, SAE J1473





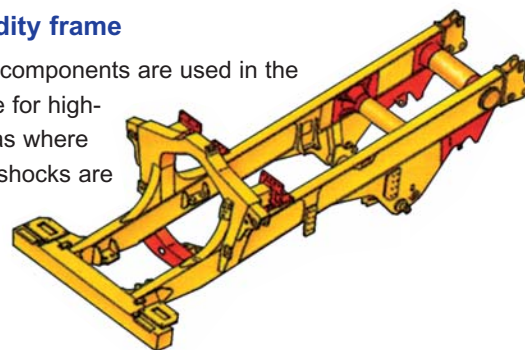
# RELIABILITY FEATURES

## 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 a strict quality control system.

## High-rigidity frame

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



## Rigorous dump body design

The standard dump body is made of 160 kg/mm<sup>2</sup> 227,520 PSI high-tensile-strength steel for excellent rigidity and reduced maintenance cost. The V-shape design also increases structural strength. The side and bottom plates of the dump section are reinforced with ribs for added strength.

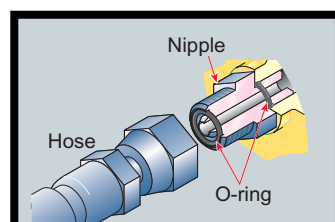


## Reliable hydraulic system

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.



## 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.

## Sealed DT connectors

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



## ABS (Antilock braking system) (Option)

Using its outstanding electronics technology, Komatsu is the first in the industry to introduce ABS on construction machinery. This system prevents the tires from locking, thus minimizes skidding under slippery conditions while applying the service brake.

## ASR (Automatic spin regulator) (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 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 adopted for the radiator to comply with global environmental requirements.

## Brake cooling oil recovery tank

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

# 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 multi-disc brakes and fully hydraulic braking systems

mean 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.



## Flange type rim

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.





## SPECIFICATIONS



### ENGINE

Model.....	KOMATSU SAA6D140E-5
Type.....	Water-cooled, 4-cycle
Aspiration.....	Turbo-charged,air-to-air after-cooled,cooled EGR
Number of cylinders.....	6
Bore x stroke.....	<b>140 mm x 165 mm</b> 5.5" x 6.5"
Piston displacement.....	<b>15.24 ltr.</b> 930 in <sup>3</sup>
Horsepower	
SAE J1995.....	Gross <b>386 kW</b> 518 HP
ISO 9249 /SAE J1349.....	Net <b>371 kW</b> 498 HP
Rated rpm.....	2,000 rpm
Fan drive type.....	Mechanical
Maximum torque.....	<b>2167 N·m 221 kg·m</b> 1600 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



### 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-disk 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 gears
Maximum travel speed.....	<b>70 km/h</b> 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).....	<b>250 mm</b> 9.8"
Rear axle oscillation:	
Oil stopper.....	6.8°
Mechanical stopper.....	8.1°



### STEERING SYSTEM

Type.....	Fully hydraulic power steering with two double-acting cylinder
Supplementary steering.....	Manual control (meets ISO 5010,SAE J1511 and SAE J53)
Minimum turning radius.....	<b>7.2 m</b> 23'7"
Maximum steering angle.....	43°



### CAB

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



### MAIN FRAME

Type.....	Box-sectioned structure
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### BRAKES

Brakes meet ISO 3450 and SAE 1473 standards.	
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.....	<b>968 cm<sup>2</sup></b> 150 in <sup>2</sup>
Rear.....	<b>50847 cm<sup>2</sup></b> 7,881 in <sup>2</sup>



### BODY

Capacity:	
Struck.....	<b>20 m<sup>3</sup></b> 26.2 yd <sup>3</sup>
Heaped (2:1 ,SAE).....	<b>27.3 m<sup>3</sup></b> 35.7 yd <sup>3</sup>
Payload, maximum.....	<b>41.0 metric tons</b> 45.2 U.S. tons
Material.....	<b>160 kg/mm<sup>2</sup></b> 227,520 psi high-tensile-strength steel
Structure.....	V-shape body
Material thickness:	
Bottom.....	<b>25 mm</b> 0.98"
Front.....	<b>16 mm</b> 0.63"
Sides.....	<b>14 mm</b> 0.55"
Target area (inside length x width).....	<b>5590 mm x 3380 mm</b> 18'4" x 11'1"
Dumping angle.....	48°
Height at full dump.....	<b>7925 mm</b> 26'0"
Heating.....	Exhaust heating



### HYDRAULIC SYSTEM

Hoist cylinder.....	Twin, 2-stage telescopic type
Relief pressure.....	<b>20.6 MPa 210 kg/cm<sup>2</sup></b> 2,990 PSI
Hoist time.....	10 sec



### WEIGHT (APPROXIMATE)

Empty weight.....	<b>34400 kg</b> 75,840 lb
Gross vehicle weight with 40 metric ton (44.1 U.S.ton) payload.....	<b>74480 kg</b> 164,200 lb
Max. gross vehicle weight.....	<b>75080 kg</b> 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 tires.....	18.00 R33
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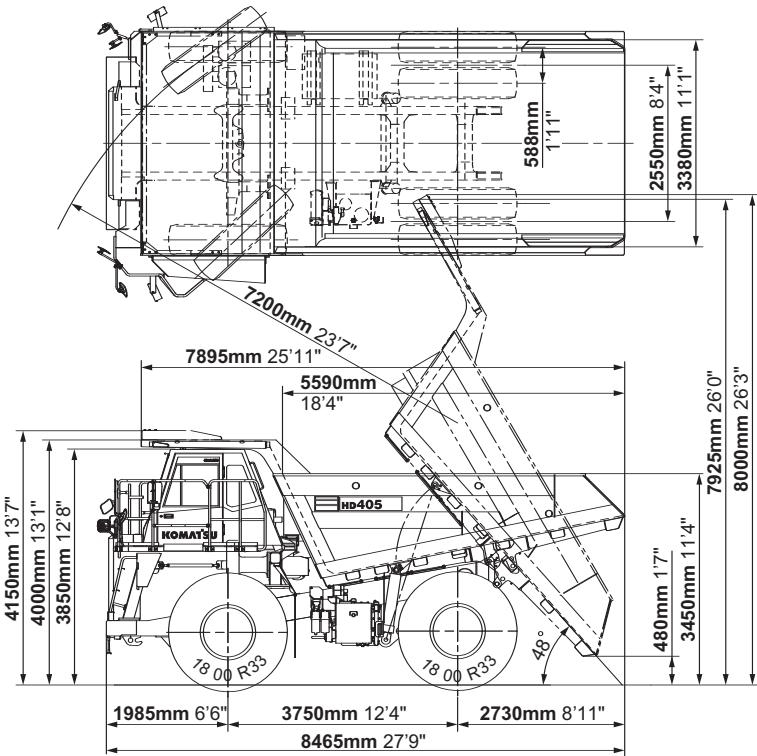
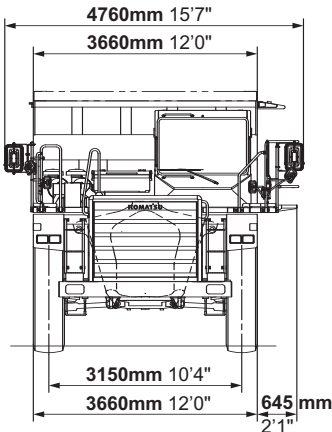


### SERVICE REFILL CAPACITIES

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



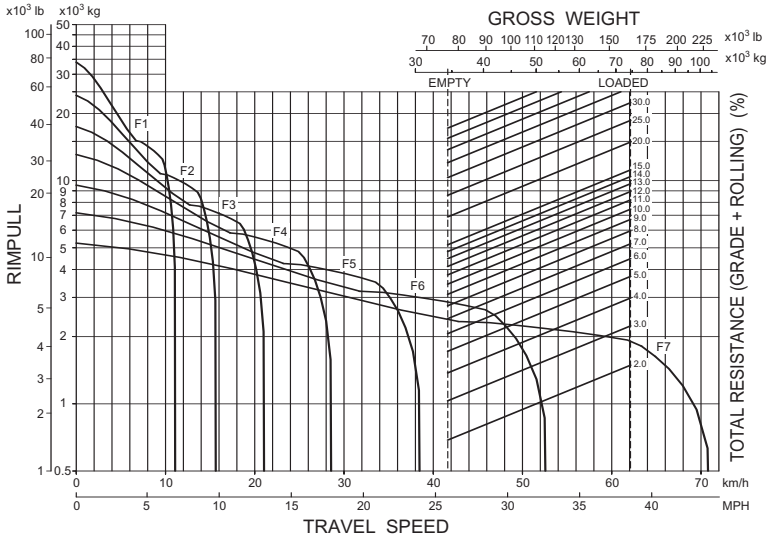
### DIMENSIONS



## 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.

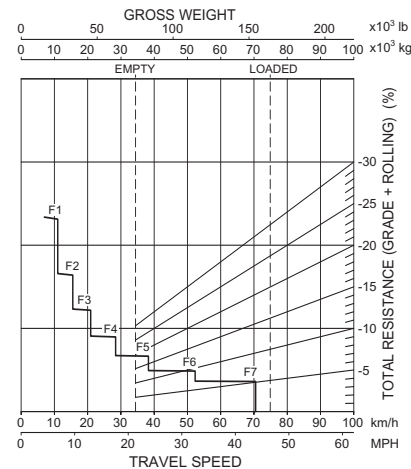
## OFF-HIGHWAY TRUCK



## 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 (1480 ft)

