CEBM024401

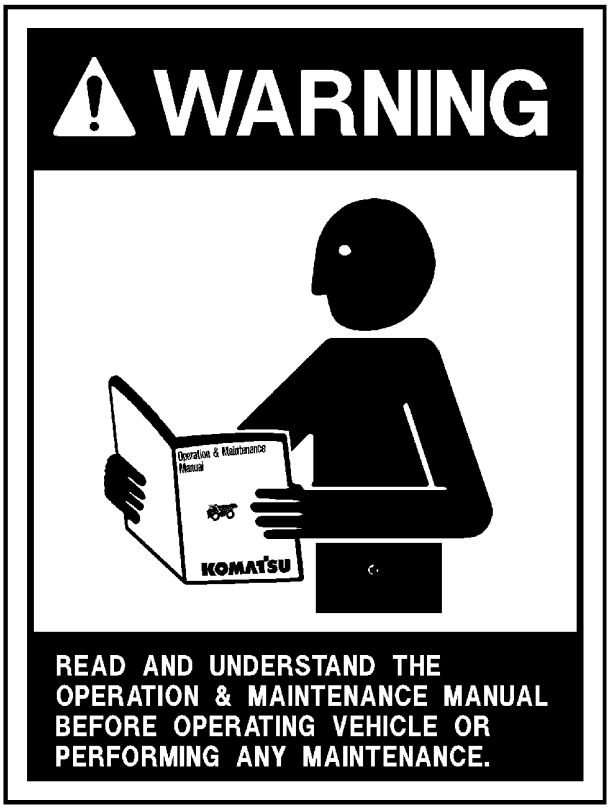
Shop Manual

730E

DUMP TRUCK

SERIAL NUMBERS A30603, A30610 - A30616, A30621, A30628, A30629, & A30632

KOMATSU®



Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read and understand this manual before operating or maintaining this machine.

This manual should be kept in or near the machine for reference, and periodically reviewed by all personnel who will come into contact with it.

It is the policy of the Company to improve products whenever it is possible and practical to do so. The Company reserves the right to make changes or add improvements at any time without incurring any obligation to install such changes on products sold previously.

Because of continuous research and development, periodic revisions may be made to this publication. Customers should contact their local Komatsu distributor for information on the latest revision.

CALIFORNIA
Proposition 65 Warning

Diesel engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

CALIFORNIA
Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

⚠WARNING

NON-OEM PARTS IN CRITICAL SYSTEMS

For safety reasons, Komatsu America Corp. strongly recommends against the use of non-OEM replacement parts in critical systems of all Komatsu equipment. Critical systems include but are not limited to steering, braking and operator safety systems.

Replacement parts manufactured and supplied by unauthorized sources may not be designed, manufactured or assembled to Komatsu's design specifications; accordingly, use of such parts may compromise the safe operation of Komatsu products and place the operator and others in danger should the part fail.

Komatsu is also aware of repair companies that will rework or modify an OEM part for reuse in critical systems. Komatsu does not generally authorize such repairs or modifications for the same reasons as noted above.

Use of non-OEM parts places full responsibility for the safe performance of the Komatsu product on the supplier and user. Komatsu will not in any case accept responsibility for the failure or performance of non-OEM parts in its products, including any damages or personal injury resulting from such use.

FOREWORD

This manual is written for use by the service technician. It is designed to help these persons to become fully knowledgeable of the truck and all its systems in order to keep it operating safely and efficiently. All operators and maintenance personnel must read and understand the materials in this manual before operating the truck or performing maintenance and/or operational checks on the truck. All safety notices, warnings, and cautions must be understood and followed when operating or repairing the truck.

The first section covers component descriptions, truck specifications and safe work practices, as well as other general information. The major portion of the manual pertains to disassembly, service, and reassembly. Each major serviceable component has a section in the shop manual. Disassembly of any component should only be done as far as necessary to accomplish needed repairs.

The illustrations used in this manual are, at times, typical of the component shown and may not necessarily depict a specific model.

This manual shows dimensioning in metric units and in U.S. English units. All references to Right, Left, Front, or Rear are made with respect to the operator's normal seated position, unless specifically stated otherwise.

Standard torque requirements for common fasteners are shown in torque charts in the general information section. Special torque requirtements are provided in the text in bold face type, such as **135 N·m (100 ft lb)**. All torque specifications have ±10% tolerance unless otherwise specified.

A product identification plate is located on the frame in front of the right side front wheel and designates the truck model number, product identification number (vehicle serial number), and maximum GVW (Gross Vehicle Weight) rating.

The Komatsu truck model designation consists of three numbers and one letter (i.e. 930E).

The three numbers represent the basic truck model.

The letter E, when present, designates an electrical wheel motor drive system.

The product identification number (vehicle serial number) contains information which will identify the original manufacturing bill of material for this unit. This complete number will be necessary for proper ordering of many service parts and/or warranty consideration.

The GVW is what determines the load on the drive train, frame, tires, and other components. The vehicle design and application guidelines are sensitive to the total maximum Gross Vehicle Weight (GVW). GVW is total weight: the empty vehicle weight + the fuel and lubricants + the payload.

To determine allowable payload, fill all lubricants and fuel tank to the proper level. Weigh the truck and record this value. Subtract it from the GVW to determine the allowable payload.

NOTE: Accumulations of mud, frozen material, etc., become part of the GVW and reduces allowable payload. To maximize payload and to keep from exceeding the GVW rating, these accumulations must be removed as often as practical.

Exceeding the allowable payload will reduce the expected life of truck components.

⚠WARNING

Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read this manual before operating or maintaining this machine. This manual should be kept in or near the machine for reference and periodically reviewed by all personnel who come in contact with it.

This ALERT symbol is used in this manual, along with the signal words CAUTION, DANGER, and WARNING, to alert the reader to hazards arising from improper operating and maintenance practices.

DANGER

DANGER identifies a specific potential hazard
WHICH WILL RESULT
in either INJURY OR DEATH
if proper precautions are not taken.

WARNING

WARNING identifies a specific potential hazard
WHICH WILL RESULT
in either INJURY OR DEATH
if proper precautions are not taken.

CAUTION

CAUTION is used for general reminders
of proper safety practices
OR
to direct the reader's attention to avoid unsafe
or improper practices which may result
in damage to the equipment.

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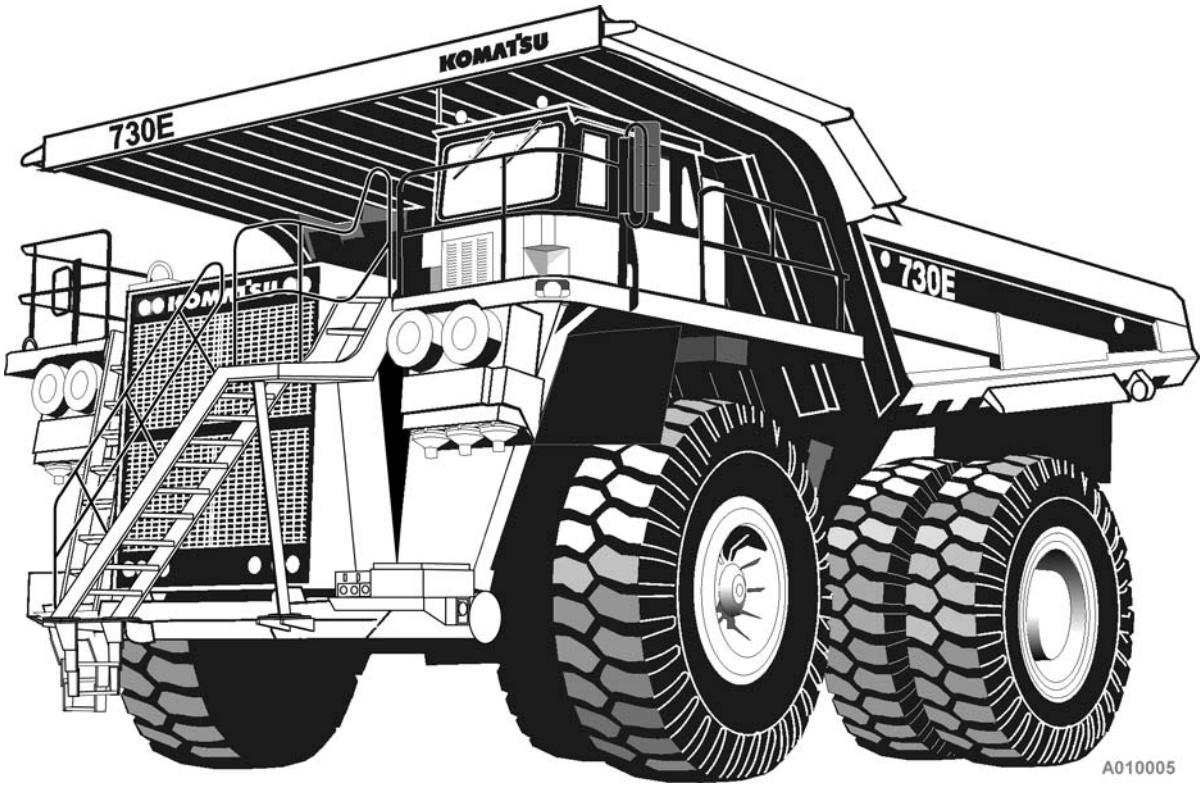


KOMATSU MODEL 730E DUMP TRUCK

SECTION A
GENERAL INFORMATION
INDEX

NOTES

MAJOR COMPONENT DESCRIPTION

The Komatsu model 730E standard dump truck is an electric drive, off-highway, rear dump truck with a gross vehicle weight of 324 319 kg (715,000 lbs) that is rated for a nominal payload of 185 t (203 tons). Some Trolley versions may have a higher GVW. Refer to the grade/speed chart in the operator's cab for the appropriate GVW.

ENGINE

The Komatsu 730E dump truck is powered by a Komatsu SSA16V159 engine rated at 1 492 kW (2,000 HP).

ALTERNATOR (GE GTA-22)

The diesel engine drives an alternator mounted in-line with the engine. The Alternating Current (AC) output of the alternator is rectified to Direct Current (DC) and sent to the DC drive wheel motors.

WHEEL MOTORS (GE 788)

The output of the alternator supplies electrical energy to the two wheel motors attached to the rear axle housing. The two wheel motors convert electrical energy back to mechanical energy through built-in gear trains within the wheel motor assembly. The direction of the wheel motors is controlled by a forward or reverse hand selector switch located on a console to the right side of the operator.

BLOWER

The blower supplies cooling air for the rectifiers, AC alternator, and to both wheel motors, where it is then exhausted to the atmosphere.

OPERATOR'S CAB

The operator's cab for the Komatsu 730E dump truck has been engineered for operator comfort and to allow for efficient and safe operation of the truck.

The cab provides for wide visibility, with an integral four-post Rollover Protective Structure/Falling Object Protective Structure (ROPS/FOPS), and an advanced analog operator environment. It includes a tinted safety-glass windshield and power-operated side windows, a deluxe interior with a fully adjustable seat with lumbar support, a fully adjustable/tilt steering wheel, controls mounted within easy reach of the operator, and an analog instrument panel which provides the operator with all instruments and gauges, which are necessary to control and/or monitor the truck's operating systems.

POWER STEERING

The Komatsu 730E dump truck is equipped with a full-time power steering system, which provides positive steering control with a minimum of effort by the operator. The system includes nitrogen-charged accumulators which automatically provide emergency power if the steering hydraulic pressure is reduced below an established minimum.

DYNAMIC RETARDING

Dynamic retarding is used to slow the truck during normal operation or control the speed coming down a grade. The dynamic retarding ability of the DC electric system is controlled by the operator through the activation of the retarder pedal in the operator's cab and by setting the RSC (Retarder Speed Control). Dynamic retarding is automatically activated if the truck goes to a preset overspeed setting.

BRAKE SYSTEM

The wheel service brakes are caliper/dry disc brakes applied by an all hydraulic actuation system. Depressing the brake pedal actuates wheel-speed single disc front brakes and armature-speed dual disc rear brakes. The rear brakes can also be activated by operating a switch on the instrument panel.

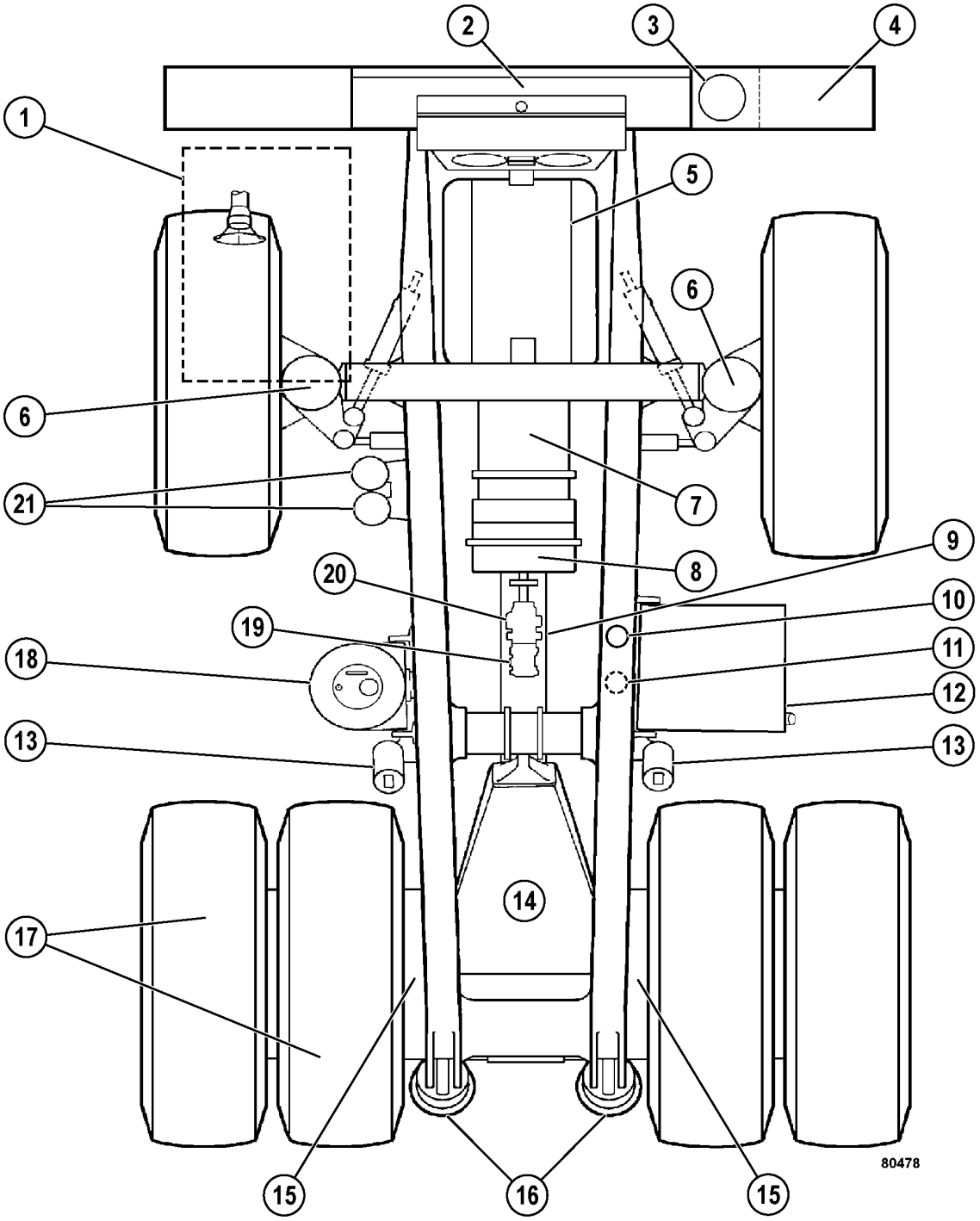
All wheel brakes will be applied automatically if the system pressure decreases below a preset minimum.

The parking brake is a caliper/disc type, mounted on each rear wheel motor, and is spring-applied and hydraulically-released with wheel speed application protection (will not apply with the truck moving.)

SUSPENSION

Hydrair®II suspension cylinders, located at each wheel, provide a smooth and comfortable ride for the operator and dampens shock loads to the chassis during loading and operation.

730E MAJOR COMPONENTS



1. Cab
2. Radiator
3. Reserve Oil
4. Auto Lube
5. Engine
6. Front Hydrair II® Suspension
7. Traction Alternator
8. Cooling Blower
9. Cooling Duct
10. Steering Circuit Filter
11. Hoist Circuit Filter
12. Fuel Tank
13. Hoist Cylinders
14. Rear Axle Housing
15. Drive Motors
16. Rear Hydrair II® Suspension
17. Tires
18. Hydraulic Tank
19. Steering and Brake Circuit Pump
20. Hoist Circuit Pump
21. Accumulators

SPECIFICATIONS

These specifications are for the standard 730E dump truck. Customer options may change this listing.

ENGINE

Komatsu SSA16V159

Number of Cylinders 16
Operating Cycle 4-Stroke
Rated Brake HP 1 491 kW (2,000 HP) @ 1,900 RPM
Flywheel HP . . 1 388 kW (1,860 HP) @ 1,900 RPM
Weight (Wet) . . . . . 5 294 kg (11,670 lbs)

ELECTRIC DRIVE SYSTEM

STATEX III w/Fuelsaver . . . . . AC/DC Current

Alternator . . . . . General Electric GTA - 22
Motorized Wheels . . . . . General Electric 788*
Standard Gear Ratio* 26.825:1
Maximum Speed . . . . . 34.6 mph (55.7 km/h)

*NOTE: Wheel motor application depends upon GVW, haul road grade, haul road length, rolling resistance, and other parameters. KOMATSU & G.E. must analyze each job condition to assure proper application.

DYNAMIC RETARDING

Electric Dynamic Retarding . . . . . Standard
Maximum Retarding . . . . . 2 759 kW (3,700 HP)
. . . . . With Continuous Rated Blown Grids
Two-Speed Overspeed & Extended Range Retarding
. . . . . Reverse Retarding

BATTERY ELECTRIC SYSTEM

Batteries . Bumper-Mounted in Polyethylene Boxes
. . . . . Four 12-Volt Batteries in Series/Parallel
. . . . . 220 Ampere-Hour Capacity
. . . . . With Disconnect Switch
Alternator . . . . . 24-Volt, 140 Ampere Output
Lighting 24-Volt
Starters (2) 24-Volt

SERVICE CAPACITIES

	Liters	**U.S. Gallons**
Crankcase (includes lube oil filters)		
Komatsu	223	59
Cooling System	409	108
Fuel	3217	850
Hydraulic System	731	193
Wheel Motor Gear Box	40/Wheel	10.5/Wheel

HYDRAULIC SYSTEM

Pumps:
Hoist (gear-type) . . . . . 513 l/min (135.6 GPM)
. . . . . at 17 240 kPa (2,500 psi) @ 1,900 rpm
Steering/Brake (vane-type) . . . . . 235 l/min (62 GPM)
. . . . . at 18 960 kPa (2,750 psi) @ 1,900 RPM
Relief Pressure-Hoist . . . . . 17 240 kPa (2,500 psi)
Relief Pressure-Steering . . . . 27 580 kPa (4,000 psi)
Hoist . . . . . Two Three-Stage Hydraulic Cylinders
Tank . . . . . Vertical - Cylindrical, Non-Pressurized
Service Capacity . . . . . 731 Liters (193 U.S. Gal)
Filtration . . . . . In-line Replaceable Elements
Suction . . . . . Single, Full Flow, 100 Mesh
Hoist and Steering High-Pressure Filters
. . . . . Dual, Full Flow, Seven Micron
. . . . . Beta 12 rating = 200

SERVICE BRAKES

Actuation . . . . . All Hydraulic - Caliper/Disc

	(Front)	(Rear)
Type	Single Disc	Dual Disc
	Wheel Speed	Armature Speed

STEERING

Turning Circle (SAE) . . . . . 28.0 m (92 ft)

Twin hydraulic cylinders with accumulator assist to provide constant rate steering.

Emergency power steering automatically provided by accumulators (meets SAE J1511).

These specifications are for the 730E dump truck without trolley assist. Specifications for trolley trucks will be different.

STANDARD DUMP BODY*

Capacity:

Struck . . . . . 77 m³ . . . . . 101 yds³

Heaped @ 2:1 (SAE) . . . . 111 m³ . . . . 145 yds³

Width (inside) . . . . . 6.86 m (22 ft 5 in.)

Depth . . . . . 2.26 m (7 ft 4 in.)

Loading Height . . . . . 5.61 m (18 ft 5 in.)

Dumping Angle . . . . . 45°

*Optional capacity dump bodies are available.

TIRES

Radial Tires (standard) 37.00 R57

Rock Service, Deep Tread . . . . . Tubeless

Rims . (Patented Phase II New Generation™ Rims)

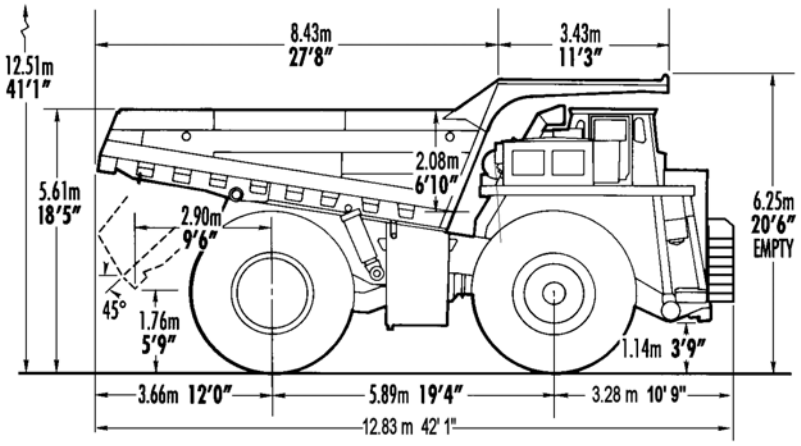
Tires and Rims . . . . . Interchangeable

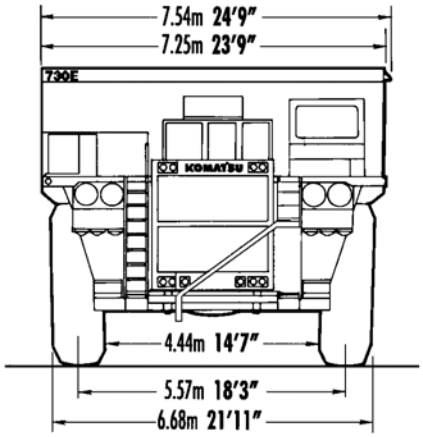
WEIGHT DISTRIBUTION

Empty Vehicle	Kilograms	(Pounds)
Front Axle	69 966	(154,249)
Rear Axle	73 670	(162,415)
Total (100% fuel)	143 636	(316,664)
Standard Komatsu Body	25 612	(56,464)
Standard Tire Weight	18 371	(40,500)

Loaded Vehicle	Kilograms	(Pounds)
Front Axle	115 655	(254,975)
Rear Axle	231 343	(510,025)
Total *	346 998	(765,000)
Nominal Payload	206 408	(455,050)

*Nominal payload is as defined within Komatsu America Corp. payload policy documentation. Nominal payload must be adjusted should the weight of any customized body or tires fitted vary from that of the standard Komatsu body and tires as shown above. Nominal payload must also be adjusted to take into account the additional weight of any customized/optional extras fitted to the truck which are not stated within the Standard Features list of this specification sheet.





All dimensions are with 77/111m³ **101/145 cu. yd.** body.
Vertical dimensions are for standard empty vehicle
– subtract 150mm/**5.9"** for vehicle loaded to max. GVW.
Minimum ground clearance (at max. GVW) . . . . . 0.72m **2'4"**

BODIES	Struck		2:1 Heap		Loading Height		Additional Weight	
	M³	Cu. Yds.	M³	Cu. Yds.	M	Feet	Kg	Lbs.
Standard	77	101	111	145	5.61	18'5"	–	–
Std/Optional	96	**125**	125	**163**	6.00	**19'8"**	+1112	**+2452**
Hi-density*	48	**63**	86	**113**	5.04	**16'6"**	+2400	**+5291**
H.D. Optional*	60	**78**	96	**126**	5.26	**17'3"**	+3030	**+6680**
Coal**	176	**230**	209	**273**	7.16	**23'6"**	+2540	**+5600**

* Floor – 1" (25mm); Front 0.625" (16mm); Sides 0.50" (12mm)
** Coal = 3:1 heap capacity - tailgate not included.

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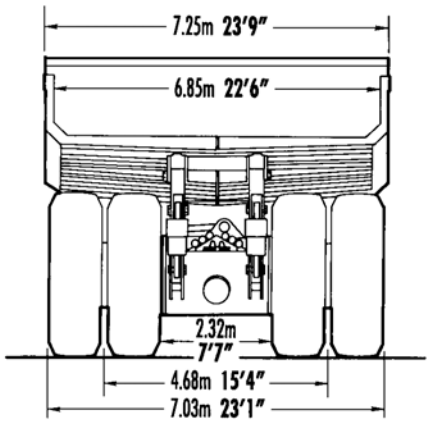


SECTION A3
GENERAL SAFETY AND OPERATION
INDEX

GENERAL SAFETY AND OPERATION

Safety records of most organizations will show that the greatest percentage of accidents are caused by unsafe behavior. The remainder are caused by unsafe mechanical or physical conditions. Report all unsafe conditions to the proper authority.

The following safety rules are provided as a guide for the operator. However, local conditions and regulations may add many more to this list.

⚠WARNING

Read and follow all safety precautions. Failure to do so may result in serious injury or death.

PERSONAL SAFETY

Safety Rules

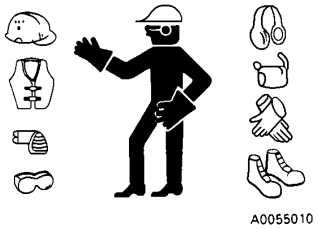
- Only trained and authorized personnel can operate and maintain the machine.
- Follow all safety rules, precautions, and instructions when operating or performing maintenance on the machine.
- When working with another operator, or a person on work site traffic duty, ensure all personnel understand all hand signals that are to be used.

Truck Safety Features

- Ensure all guards and covers are in their proper position. Repair any damaged guards and covers. (See Walk-Around Inspection, later in this section.)
- Learn the proper use of safety features, such as safety locks, safety pins, and seat belts. Use these safety features properly.
- DO NOT remove any safety features. Keep safety features in good operating condition.
- Improper use of safety features may result in serious bodily injury or death.

Clothing And Personal Items

- Avoid wearing loose clothing, jewelry, and loose long hair. They can catch on controls or in moving parts and cause serious injury or death. Additionally, DO NOT wear oily clothes as they are flammable.



- Wear a hard hat, safety glasses, safety shoes, mask, and gloves when operating or maintaining a machine. Wear safety goggles, a hard hat, and heavy gloves if your job involves scattering metal chips or very small materials--particularly when driving pins with a hammer, or when cleaning air cleaner elements with compressed air. Also, ensure that the work area is free of other personnel during such tasks.

Unauthorized Modification

- Any modification made to this vehicle, without authorization from Komatsu America Corp., can possibly create hazards.
- Before making any modification, consult your authorized regional Komatsu America Corp. distributor. Komatsu will not be responsible for any injury or damage caused by any unauthorized modification.

Leaving The Operator’s Seat

- When leaving the operator's seat, DO NOT touch any controls. To prevent accidents from occurring, perform the following:

  Move the selector switch to NEUTRAL, and apply the parking brake.

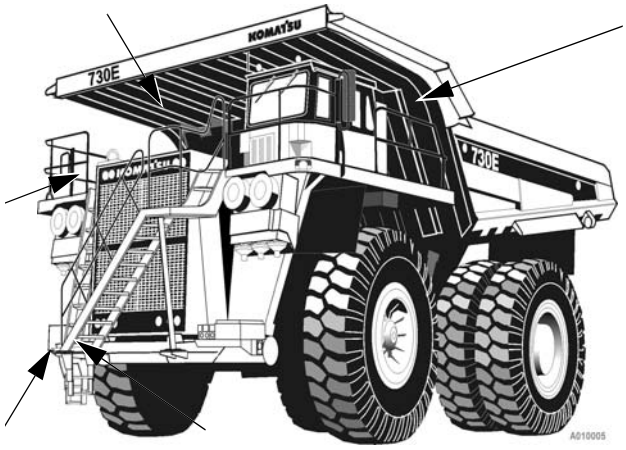
  Lower the dump body, and move the hoist control lever to the FLOAT position.

  Stop the engine. When exiting the machine, lock compartments, and take the keys with you to prevent entry from unauthorized persons.

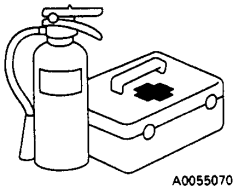
Mounting And Dismounting

- DO NOT jump on or off the machine. DO NOT climb on or off a machine while it is moving.
- When climbing on or off a machine, face the machine and use the handhold and steps.
- DO NOT hold any control levers when getting on or off a machine.
- Maintain three-point contact with the handholds and steps to ensure that you support yourself.
- When bringing tools up to the operating deck, pass them by hand or pull them up by rope.
- If there is any oil, grease, or mud on the handholds or steps, wipe them clean immediately. Keep these components clean. Repair any damage, and tighten any loose bolts.

Use the handrails and steps marked by arrows in the diagram below when climbing on or off the machine.



Fire Extinguishers And First Aid Kits



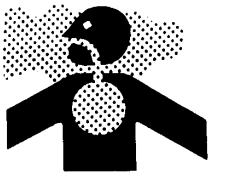
- Ensure fire extinguishers are accessible and proper usage techniques are known.
- Provide a first aid kit at the storage point.
- Know what to do in the event of a fire.
- Keep the phone numbers of persons you must contact in case of an emergency.

Precautions For High Temperature Fluids

- Immediately after operating the truck, engine coolant, engine oil, and hydraulic oil are at high temperatures and are pressurized. If the cap is removed, the fluids drained, the filters are replaced, etc., there is danger of serious burns. Allow heat and pressure to dissipate before performing such tasks, and follow proper procedures, as outlined in the service manual.
- To prevent hot coolant from spraying:
  1. Stop the engine, and wait for the coolant temperature to decrease.
  2. Depress the pressure relief button on the radiator cap.
  3. Turn the radiator cap slowly to allow pressure to dissipate.
- To prevent hot engine oil spray:
  1. Stop the engine.
  2. Wait for the oil temperature to cool.
  3. Turn the cap slowly to allow pressure to dissipate.

Asbestos Dust Hazard Prevention

Asbestos dust is hazardous to your health when inhaled. If you handle materials containing asbestos fibers, follow the guidelines below: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- DO NOT use compressed air for cleaning.
- Use water for cleaning and to control dust.
- Operate the machine or perform tasks with the wind to your back, whenever possible.
- Use an approved respirator, when necessary.

Fire Prevention For Fuel And Oil

- Fuel, oil, and antifreeze can be ignited by a flame. These fluids are extremely flammable and hazardous.
- Keep flames away from flammable fluids.
- Stop the engine while refueling.
- DO NOT smoke while refueling.
- Tighten all fuel and oil tank caps securely.
- Refuel and maintain oil in well-ventilated areas.
- Keep oil and fuel in a designated location. DO NOT allow unauthorized persons to enter.


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ROPS Precautions

- The Rollover Protection Structure (ROPS) must be properly installed before using the truck.
- The ROPS is intended to protect the operator if the machine rolls over. It is designed not only to support the load of the machine, but also to absorb the energy of the impact.
- ROPS structures, installed on equipment manufactured and designed by Komatsu America Corp., fulfills all of the regulations and standards for all countries. If it is modified or repaired without authorization from Komatsu, or is damaged when the machine rolls over, the strength of the structure will be compromised and will not be able to fulfill its intended purpose. Optimum strength of the structure can only be achieved if it is repaired or modified, as specified by Komatsu.
- When modifying or repairing the ROPS, consult your nearest Komatsu distributor.
- Even with the ROPS installed, the operator must use the seat belt when operating the machine.

Preventing Injury From Work Equipment

- DO NOT position any part of your body between movable parts, such as the dump body, chassis, or cylinders. If the work equipment is operated, clearances will change and may cause serious bodily injury or death.

Precautions For Optional Attachments

- When installing and using optional equipment, read the instruction manual for the attachment and the information related to attachments in this manual.
- DO NOT use attachments that are not authorized by Komatsu America Corp., or the authorized regional Komatsu distributor. Use of unauthorized attachments could create a safety problem and adversely affect the proper operation and useful life of the machine.
- Any injuries, accidents, and product failures resulting from the use of unauthorized attachments, will not be the responsibility of Komatsu America Corp., or the authorized regional Komatsu distributor.

Precautions When Starting The Machine

- Start the engine from the operator's seat only.
- DO NOT attempt to start the engine by shorting across the starter terminals. This may cause fire or serious injury or death to anyone in the machine's path.

PRECAUTIONS FOR TRUCK OPERATION

Safety Is Thinking Ahead

Prevention is the best safety program. Prevent a potential accident by knowing the employer's safety requirements and all necessary job site regulations. In addition, know the proper use and care of all the safety equipment on the truck. Only qualified operators or technicians may attempt to operate or maintain a Komatsu truck.

Safe practices start before the operator gets to the equipment!

Safety At The Work Site

- When walking to and from a truck, maintain a safe distance from all machines, even when the operator is visible.
- Before starting the engine, thoroughly check the area for any unusual conditions that could be dangerous.
- Examine the road surface at the job site, and determine the best and safest route.
- Choose an area where the ground is as horizontal and firm as possible before performing the inspection.
- If you need to operate on or near a public road, protect pedestrians and cars by designating a person for work site traffic duty, or by installing fences around the work site.
- The operator must personally check the work position, the roads to be used, and the existence of obstacles before starting the truck.
- Determine the travel roads to be used at the work site. Travel roads must be maintained in order to ensure safe machine travel.
- If travel through wet areas is necessary, check the depth and flow of water before crossing the shallow parts. DO NOT drive through water which exceeds the permissible water depth.

Fire Prevention

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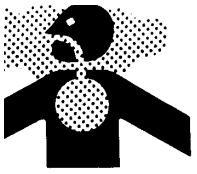
- Thoroughly remove wood chips, leaves, paper, and other flammable items accumulated in the engine compartment, as they could cause a fire.
- Check fuel, lubrication, and hydraulic systems for leaks. Repair any leaks. Clean any excess oil, fuel, or other flammable fluids, and dispose of properly.
- Ensure a fire extinguisher is present and in proper working condition.
- DO NOT operate the machine near open flames.

Preparing For Operation

- Mount and dismount while facing the truck. DO NOT attempt to mount or dismount the truck while it is in motion. Use handrails and ladders when mounting or dismounting the truck.
- Check the deck areas for debris, loose hardware, and tools. Check for people and objects that remain on or around the truck.
- Become familiar with and use all protective equipment devices on the truck. Ensure that these items (anti-skid material, grab bars, seat belts, etc.) are securely in place.

Ventilation For Enclosed Areas



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- If it is necessary to start the engine in an enclosed area, provide adequate ventilation. Exhaust fumes from the engine can kill.

Mirrors, Windows, And Lights

- Remove any dirt from the surface of the windshield, cab windows, mirrors, and lights. Good visibility may prevent an accident.
- Adjust the mirrors to a position where the operator can see best from the operator's seat.
- Ensure the headlights, work lights, tail and stop lights (1, Figure 3-1), turn signal and clearance lights (2), and backup lights (3) are in proper working order. Ensure that the machine is equipped with the proper work lamps needed for the operating conditions. Verify backup alarms (4) are in proper working order.
- Replace any broken mirrors, windows, or lights.

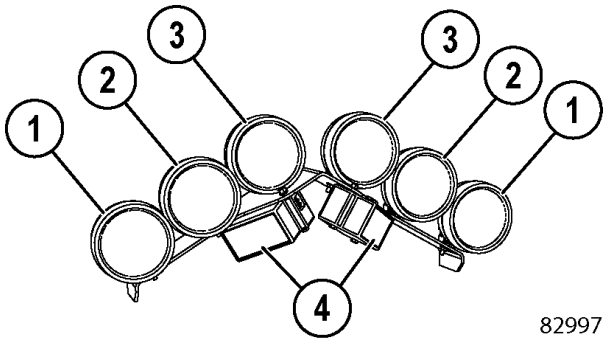


FIGURE 3-1. REAR LIGHTS

1. Brake Lights
2. Retard Lights
3. Backup Light
4. Backup Alarm

In The Operator's Cab - Before Starting The Engine

- DO NOT leave tools or spare parts lying around or allow trash to accumulate in the cab of the truck. Keep all unauthorized reading material out of the truck cab.
- Keep the cab floor, controls, steps, and handrails free of oil, grease, snow, and excess dirt.
- Read and understand the contents of the Operation and Maintenance manual. Read the safety and operating instructions with special attention. Become thoroughly acquainted with all the gauges, instruments, and controls before operating the truck.
- Read and understand the warning and caution decals in the operator's cab.
- Ensure the steering wheel, horn, controls, and pedals are free of any oil, grease, or mud.
- Check the windshield wiper, the condition of the wiper blades, and the washer fluid reservoir level.
- Be familiar with all steering and brake system controls, warning devices, road speeds, and loading capabilities before operating the truck.

Seat Belts

- On both driver and passenger seats, check the seat belt fabric, buckle, all belt retractors and hardware for damage or wear. Replace any worn or damaged parts immediately.
- Even if there are no signs of damage, replace both driver and passenger seat belts 5 years after seat belt manufacture, or every 3 years after start of use, whichever comes first. The passenger seat belt date of manufacture label is sewn into the seat belt near the buckle. The driver seat belt date of manufacture label is sewn into the back of the seat belt.

OPERATING THE MACHINE

Starting The Engine

- DO NOT attempt to start the machine by shorting across the starter terminals. This may cause a fire, or serious injury or death, to anyone in the machine's path.
- Check for people and objects that remain on or around the truck.
- DO NOT start the engine if a warning tag has been attached to the controls.
- When starting the engine, sound the horn as an alert.
- Start and operate the machine only while seated in the operator's seat.
- DO NOT allow any unauthorized persons in the operator's compartment or any other place on the machine.
- For machines equipped with a back-up alarm, check that the alarm works properly.

Truck Operation - General

- Wear seat belts at all times.
- Only authorized persons are allowed to ride in the truck. Passengers must be in the cab and belted in the passenger seat.
- DO NOT allow anyone to ride on the decks or on the steps of the truck.
- DO NOT allow anyone to get on or off the truck while it is in motion.
- DO NOT move the truck in or out of a building without a signal person present.
- Know and obey hand signal communications between the operator and spotter. When other machines and personnel are present, the operator must move in and out of buildings, loading areas, and through traffic, under the direction of a signal person. Courtesy at all times is a safety precaution!
- Immediately report any adverse conditions on the haul road, pit, or dump area that may cause an operating hazard.
- Check for flat tires periodically during a shift. If the truck has been operating on a flat, DO NOT park indoors until the tire cools. If the tire must be changed, DO NOT stand in front of the rim and locking ring when inflating a tire mounted on the machine. Observers must not be permitted in the area and must be kept away from the side of such tires.

⚠DANGER

The tire and rim assembly may explode if subjected to excessive heat. Personnel must move to a remote or protected location if there is a fire near the tire and wheel area, or if the smell of burning rubber or excessively hot brakes is evident.

If the truck must be approached, such as to fight a fire, those personnel must do so only while facing the tread area of the tire (front or back), unless protected by the use of large heavy equipment as a shield. Stay at least 15 m (50 ft) from the tread of the tire.

In the event of fire in the tire and wheel area (including brake fires), stay away from the truck for at least eight hours, or until the tire and wheel are cool.

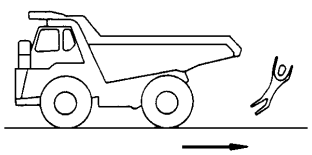
- Keep serviceable, fire fighting equipment nearby. Report used extinguishers for replacement or refilling.
- Apply the parking brake when the truck is parked and unattended. DO NOT leave the truck unattended while the engine is on.
- Park the truck a safe distance away from other vehicles, as determined by the supervisor.
- Stay alert at all times! In the event of an emergency, be prepared to react quickly and avoid accidents. If an emergency arises, know where to get prompt assistance.

Traveling In The Truck

- When traveling on rough ground, travel at low speeds. When changing direction, avoid turning suddenly.
- Lower the dump body, and set the dump lever to the FLOAT position before traveling.
- If the engine stops while the truck is in motion, the steering and brakes will continue to operate, but only for a fixed amount of oil consumption. Steer immediately to a safe spot, and stop the truck. When the truck is completely stopped, apply the parking brake.

Precautions When Traveling In Reverse

Before operating the machine or work equipment, do as follows:



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- Ensure the back-up alarm works properly.
- Sound the horn to warn people in the area.
- Check for personnel near the machine. Do a thorough check behind the machine.
- When necessary, designate a person to watch the area for the truck operator. This is particularly necessary when traveling in reverse.
- When operating in hazardous areas and areas with poor visibility, designate a person to direct work site traffic.
- DO NOT allow anyone to enter the line of travel of the machine. This rule must be strictly obeyed, even with machines equipped with a back-up alarm or rearview mirror.

Traveling On Slopes

- Traveling on slopes could result in the machine tipping over or slipping.
- DO NOT change direction on the slopes. To ensure safety, drive to level ground before turning.
- DO NOT travel up and down on grass, fallen leaves, or wet steel plates. These materials may cause the machine to slip on even the slightest slope. Avoid traveling sideways, and keep travel speed low.
- When traveling downhill, use the retarder to reduce speed. DO NOT turn the steering wheel suddenly. DO NOT use the foot brake, except in an emergency.
- If the engine stops on a slope, apply the service brakes fully and stop the machine. Apply the parking brake after the machine has stopped.

Ensuring Good Visibility

- When working in dark places, install work lamps and headlamps.
- Safely stop the truck if visibility is poor, such as in mist, snow, or rain. Wait for the weather to improve to allow safe travel.

Operating On Snow

- When working on snowy or icy roads, there is danger that the machine may slip on even the slightest slope. Travel slowly and avoid sudden starting, turning, or stopping in these conditions.
- Use caution when clearing snow. The road shoulder and other objects may be buried in the snow and cannot be seen.

Avoid Damage To The Dump Body

- When working in tunnels, on bridges, under electric cables, or when entering an enclosed area where there are height limits, use extreme caution. The dump body must be completely lowered before driving.

⚠WARNING

Driving with a raised dump body, or raising the dump body in an enclosed area, may result in serious damage and bodily injury or death. Drive with the dump body resting on the frame.

Driving Near High-Voltage Cables

- Driving near high-voltage cables can cause electric shock. Maintain the safe distances between the machine and the electric cable, as listed below.

Voltage	Minimum Safe Distance	
6.6 kV	3 m	10 ft
33.0 kV	4 m	14 ft
66.0 kV	5 m	17 ft
154.0 kV	8 m	27 ft
275.0 kV	10 m	33 ft

The following actions are effective in preventing accidents while working near high voltages:

- Wear shoes with rubber or leather soles.
- Use a signalman to give warning if the machine approaches an electric cable.
- If the work equipment must touch an electric cable, the operator must remain in the cab.
- When working near high-voltage cables, DO NOT allow anyone to approach the machine.
- Check with the electrical maintenance department about the voltage of the cables before operating the truck.

When Loading The Truck

- Ensure the surrounding area is safe. If so, stop the machine in the correct loading position and evenly load the body.
- DO NOT leave the operator's seat during loading.

When Dumping

- Before starting, check that there is no person or objects behind the machine.
- Stop the machine in the desired location. Check again for persons or objects behind the machine. Give the determined signal, then slowly operate the dump body. If necessary, use blocks for the wheels or position a flagman.
- When dumping on slopes, machine stability is poor and there is danger of tip over. Avoid dumping on slopes whenever possible.
- DO NOT travel with the dump body raised.

Working On Loose Ground

- Avoid operating the machine near cliffs, overhangs, and deep ditches. If these areas collapse, the machine could fall or tip over and result in serious injury or death. Remember that ground surfaces in these areas may be weakened after heavy rain or blasting.
- Freshly laid soil and the soil near ditches is loose. It can collapse under the weight or vibration of the machine. Avoid these areas whenever possible.

Parking The Machine

- Choose a horizontal road surface to park the machine. If the machine has to be parked on a slope, install wheel chocks to prevent the machine from moving.
- When parking on public roads, provide fences and signs, such as flags or lights, on the machine to warn pedestrians and other vehicles. Ensure that the machine, flags, or lights DO NOT obstruct the traffic.
- Before leaving the machine, lower the dump body fully, activate the parking brake, stop the engine, and lock everything. Take the key with you.

TOWING

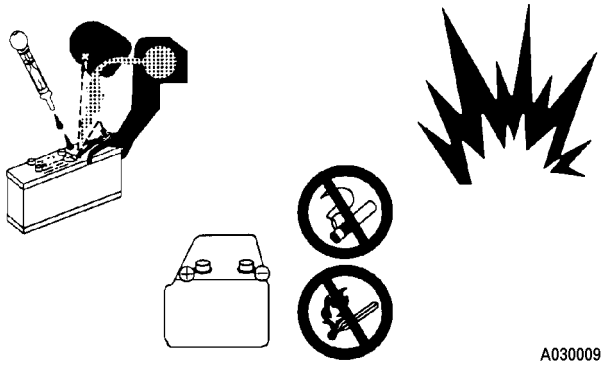
- Improper towing methods may lead to serious personal injury and/or damage.
- Use a towing device with ample strength for the weight of this machine.
- DO NOT tow a machine on a slope.
- AFTER connecting a machine to be towed, DO NOT allow anyone to go between the tow machine and the disabled machine.
- Set the coupling of the machine being towed in a straight line with the towing portion of the tow machine. Secure it in position.
- DO NOT stand next to the towing device while the truck is moving.

For more towing information, refer to Section 30, Operating Instructions - Towing.

WORKING NEAR BATTERIES

Battery Hazard Prevention

- Battery electrolyte contains sulfuric acid and can quickly burn the skin and eat holes in clothing. If the electrolyte comes in contact with the skin, immediately flush the area with water.
- Battery acid can cause blindness if splashed into the eyes. If acid gets into the eyes, flush them immediately with large quantities of water. See a doctor immediately.
- If acid is accidentally ingested, drink a large quantity of water, milk, beaten eggs, or vegetable oil. Call a doctor or poison prevention center immediately.
- Wear safety glasses or goggles when working with batteries.
- Batteries generate hydrogen gas. Hydrogen gas is very explosive and is easily ignited with a small spark or flame.



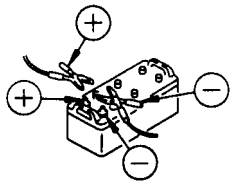
- Before working with the batteries, shut the engine off and turn the key switch to the OFF position.
- Avoid short-circuiting the battery terminals through accidental contact with metallic objects, such as tools, across the terminals.
- When removing or installing a battery, identify the positive (+) terminal and negative (-) terminals. DO NOT short-circuit the terminals by touching positive to negative.
- Tighten the battery caps securely.
- Tighten the battery terminals securely. Loose terminals can generate sparks and lead to an explosion.

Jump-Starting With Booster Cables

- Always wear safety glasses or goggles when starting the machine with booster cables.
- While jump starting with another machine, DO NOT allow the two machines to touch.
- Ensure the parking brake is applied on both machines.
- Ensure the size of the booster cables and clips are suitable for the battery size. Inspect the cables and clips for any damage or corrosion.
- Ensure the key switch and both battery disconnect switches on the disabled machine are in the OFF position.
- Connect the batteries in parallel: positive to positive and negative to negative.
- Connect the positive (24VDC +) cable from the good machine to the (24VDC +) on the disabled machine first.
- Then connect the ground cable on the good machine to the frame of the disabled machine, as far away as possible from the batteries. This will prevent a spark from possibly starting a battery fire.
- Allow time for the batteries to charge.

NOTE: The batteries will charge even with the battery disconnect switches are in the OFF position.

- If starting with a booster cable, perform the operation with two people. One person in the cab of the disabled machine, the other person working with the jumper cables.
- If the batteries are low, DO NOT attempt starting the machine with only one set of jumper cables installed. Install the second set of jumper cables in the same way as already described.
- Turn the battery disconnect switches to the ON position and attempt starting.
- For booster cable removal, disconnect the ground or negative (-) cable first, then the (24VDC +) cable last.



- If any tool touches between the positive (+) terminal and the chassis, it will cause sparks. Always use caution when using tools near the battery.

Jump Starting With Receptacles

- Always wear safety glasses or goggles when starting the machine with booster cables.
- While jump starting with another machine, DO NOT allow the two machines to touch.
- Ensure the parking brake is applied on both machines.
- Inspect the cables and connectors for any damage or corrosion.
- Ensure the key switch and both battery disconnect switches on the disabled machine are in the OFF position.
- Connect the jumper cable to the receptacle on the good machine to the receptacle on the disabled machine.
- Allow time for the batteries to charge.

NOTE: The batteries will charge even with the battery disconnect switches are in the OFF position.

- If starting with a booster cable, perform the operation with two people. One person in the cab of the disabled machine, the other person working with the jumper cables.
- If the batteries are low, DO NOT attempt starting the machine with only one set of jumper cables installed. Install the second set of jumper cables in the same way as already described.
- Turn the battery disconnect switches to the ON position and attempt starting.
- For booster cable removal, disconnect the cables from each machine.

If any tool touches between the positive (+) terminal and the chassis, it will cause sparks. Always use caution when using tools near the battery.

PRECAUTIONS FOR MAINTENANCE

BEFORE PERFORMING MAINTENANCE

Stopping The Engine Before Service

- Before performing inspections or maintenance, stop the machine on firm, flat ground. Lower the dump body, shut the engine off, and apply the parking brake. Install wheel chocks.
- If the engine must be operated during service, move the selector switch to the NEUTRAL position, and apply the parking brake. Perform this work with two people. One person must sit in the operator's seat to stop the engine, if necessary. DO NOT move any controls during these situations unless necessary for service.
- When servicing the machine, DO NOT touch any moving parts. DO NOT wear loose clothing.
- When servicing the truck with the dump body raised, place the dump lever in the HOLD position. Install the body-up retention cable securely.

Warning Tag

- DO NOT start the engine or operate the controls while a person is performing maintenance on the truck. Serious injury or death may result.

- Attach a warning tag to the control lever in the operator's cab to alert others that you are working on the machine. Attach additional warning tags around the machine, if necessary.
- These tags are available from your Komatsu distributor. Part No. 09963-03001.

Proper Tools

- Use only tools suited to the task. Using damaged, low quality, faulty, or makeshift tools can cause personal injury.

- Extra precaution must be used when grinding, welding, and using a sledgehammer.

Securing The Dump Body

⚠WARNING

To avoid serious personal injury or death, the body retention cable must be installed whenever personnel are required to perform maintenance on the truck while the dump body is in the raised position.

The Komatsu body-up safety cable can only be used with a Komatsu body. Non-OEM body may not accommodate the Komatsu body-up safety cable. The end user must ensure that a proper cable is used.

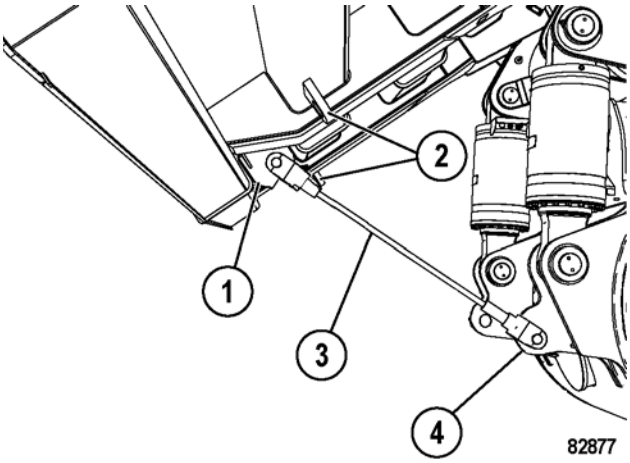


FIGURE 3-2. BODY UP CABLE

1. Rear Body Ear
2. Cable Stored Position
3. Cable
4. Axle Housing Ear

1. To hold the dump body in the up position, raise the body to its maximum height.
2. Remove cable (3) from its stored position on the body, and install between rear body ear (1) and axle housing ear (4).
3. Secure the cable clevis pins with cotter pins.
4. Move the hoist lever to the FLOAT position to slowly lower the body until the cable is supporting the full weight of the body. Then move the hoist lever to the HOLD position.
5. Return the cable to stored position (2) after maintenance is complete.

DURING MAINTENANCE

Personnel

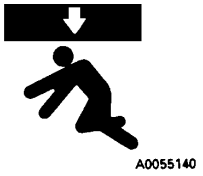
- Only authorized personnel may service and repair the machine.

Attachments

- Place attachments that have been removed from the machine in a safe place. Secure the attachments to prevent them from falling.

Working Under The Machine

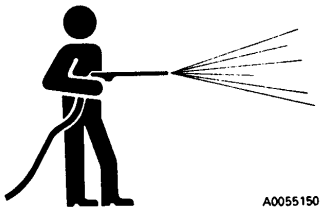
- Lower all movable work equipment to the ground, or to their lowest position, before performing service under the machine.



- Chock the tires of the machine securely.
- DO NOT work under the machine if the machine is poorly supported.

Keeping The Machine Clean

- Spilled oil or grease, scattered tools, etc. can cause you to slip or trip. Keep your machine clean and tidy.



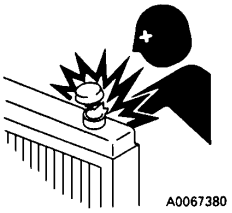
- If water gets into the electrical system, the machine may move unexpectedly and/or damage to components may occur. DO NOT use water or steam to clean any sensors, connectors, or the inside of the operator's compartment.
- Use extreme care when washing the electrical control cabinet. DO NOT allow water to enter the control cabinet around the doors or vents. DO NOT allow any water to enter the cooling air inlet duct above the electrical control cabinet. If water enters the control cabinet through any opening or crevice, major damage to the electrical components may occur.
- DO NOT spray water into the rear wheel electric motor covers. Damage to the wheel motor armatures may occur.
- DO NOT spray water into the retarding grids. Excess water in the retarding grids can cause a ground fault, which will prevent propulsion.

Rules To Follow When Adding Fuel Or Oil

- Spilled fuel and oil may cause slipping. Clean up spills immediately.
- Tighten the fuel cap and the oil cap securely.
- DO NOT use fuel to wash parts.
- Add fuel and oil in a well-ventilated area.

Radiator Coolant Level

- If it is necessary to add coolant to the radiator, shut the engine off, and allow the engine and radiator to cool before adding the coolant.



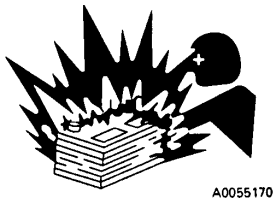
- Depress the pressure relief button on the radiator cap.
- Slowly loosen the cap to relieve the pressure during removal.

Use Of Lighting

- When checking fuel, oil, coolant, or battery electrolyte, use lighting with anti-explosion specifications. If lighting without this protection is used, there is a danger of explosion.

Precautions With The Battery

- When repairing the electrical system, or when arc welding, remove the negative (-) terminal of the battery to stop the flow of current.



Handling High-Pressure Hoses

- DO NOT bend or hit high-pressure hoses. DO NOT use bent or cracked piping, tubes, or hoses. They may burst during use.
- Repair any loose or broken hoses. Fuel and/or oil leaks may result in a fire.

Precautions With High-Pressure Oil

- Hydraulic circuits may be pressurized. Ensure that all pressure is released before loosening hydraulic fittings or hoses.
- DO NOT service a system before completely releasing the internal pressure.

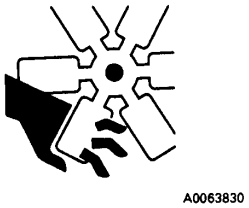
- Small, high-pressure pinhole leaks are extremely dangerous. The jet of high-pressure oil can pierce the skin and eyes. Wear safety glasses and thick gloves. Use a piece of cardboard or a sheet of wood to check for oil leakage.

Maintenance Near High Temperatures And High Pressures

- Immediately after stopping, the engine coolant and operating oils are at high temperature and may be pressurized. In these conditions, opening the system or replacing the filters, may result in burns or other injury. Wait for the temperature to cool and the pressure to subside before servicing.

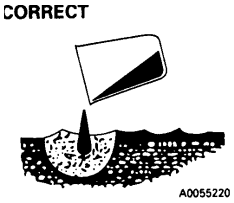
Rotating Fan And Belts

- Keep a safe distance from rotating parts, such as the radiator fan and fan belts.
- Serious bodily injury may result from direct or indirect contact with rotating parts and flying objects.



Waste Materials

- DO NOT dump oil or other harmful fluids into a sewer system, rivers, etc.
- Obey appropriate laws and regulations when disposing of harmful objects, such as oil, fuel, coolant, solvent, filters, batteries, and others.



- Drain fluids from your machine into the appropriate containers. DO NOT drain fluids directly onto the ground.

TIRES

Handling Tires

Rim and tire maintenance can be hazardous unless the correct procedures are followed by trained personnel.

Improperly maintained or inflated tires can overheat and burst due to excessive pressure. Improper inflation can also result in cuts in the tire caused by sharp stones. Both of these conditions can lead to tire damage, serious personal injury, or even death.

To safely maintain a tire, adhere to the following conditions:

- Before a tire is removed from a vehicle for tire repair, the valve core must be partially removed to allow deflation, and then the tire/rim assembly can be removed. During deflation, persons must stand outside of the potential trajectory of the locking ring of a multi-piece wheel rim.
- After the tire/rim assembly is installed on the vehicle, inflate the tires to their specified pressure. Abnormal heat is generated, particularly when the inflation pressure is too low.

NOTE: To prevent injury from the wheel rims during tire inflation, use one of the following:

1. A wheel cage or other restraining device that will constrain all wheel rim components during an explosive separation of a multi-piece wheel rim, or during the sudden release of air.
2. A stand-off inflation device which permits a person to stand outside of the potential trajectory of the wheel components.

- Use the specified tires.

The tire inflation pressure and permissible speeds, given in this manual, are general values. The actual values may differ, depending on the type of tire and the specific operating conditions. For details, please consult the tire manufacturer.

When the tires become overheated, a flammable gas is produced inside the tire which can ignite. It is particularly dangerous if the tires become overheated while the tires are pressurized. If the gas generated inside the tire ignites, the internal pressure will suddenly rise, and the tire will explode, resulting in danger and/or death to personnel in the area. Explosions differ from punctures or tire bursts because the destructive force of the explosion is extremely large.

Therefore, the following operations are strictly prohibited when the tire is pressurized:

- Welding the rim.
- Welding near the wheel or tire.
- Smoking or creating open flames.

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Tire Maintenance

If the proper procedure for performing maintenance or replacement of the wheel or tire is not used, the wheel or tire may burst, causing damage, serious injury, or even death. When performing such maintenance, consult your authorized regional Komatsu distributor, or the tire manufacturer.

Refer to the Society of Automotive Engineers (SAE), SAE J1337, Off-Road Rim Maintenance Procedures and Service Precautions, Section 4.2 for additional information on demounting the tires and rim assemblies. Also, refer to Section 4.4 of SAE J1337 for assembly and inflation recommendations.

The U.S. Department of Labor Mine Safety and Health Administration (MSHA) addresses tire repairs in its Title 30 Code of Federal Regulations, 30 CFR 57.14104.

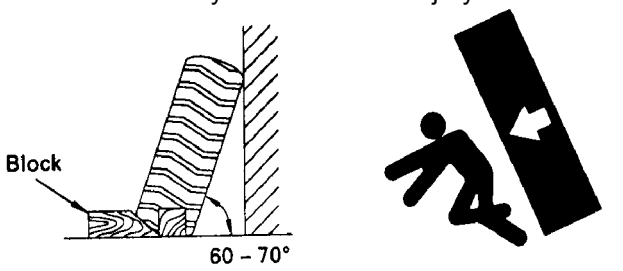
⚠WARNING

DO NOT stand in front of a rim and locking ring when inflating a tire mounted on the machine. Observers must not be permitted in the area.

DO NOT weld or heat the rim assembly with the tire mounted on the rim. Resulting gases inside the tire may ignite, causing explosion of the tire and rim.

Storing Tires After Removal

- As a basic rule, store the tires in a warehouse in which unauthorized persons cannot enter. If the tires are stored outside, erect a fence around the tires with No Entry and other warning signs.
- Stand the tire on level ground, and block it securely so that it cannot roll or fall over.
- If the tire falls, flee the area as quickly as possible. The tires for mining equipment are extremely heavy. DO NOT attempt to hold a tire upright when the tire is falling. The weight of these tires may lead to serious injury or death.



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Mounted tires stored as spares must be inflated to the minimum inflation pressure necessary to keep the tire beads properly seated. Maximum inflation pressure of the stored tire must, in no instance, exceed 15% of the tire's cold inflation pressure.

ADDITIONAL JOB SITE RULES

Use this space to add any additional job site rules not covered in any of the previous discussions.

WHEN REPAIRS ARE NECESSARY

1. Only qualified maintenance personnel, who understand the systems being repaired, must attempt repairs.
2. Many components on the Komatsu truck are large and heavy. Ensure that the lifting equipment - hoists, slings, chains, lifting eyes - are of adequate capacity.
3. DO NOT stand under a suspended load. DO NOT work under the raised body unless the body safety cable is in place to hold the body in the up position.
4. DO NOT service the truck while the engine is on, except when absolutely necessary. Keep a safe distance from moving parts.
5. When servicing the air conditioning system, wear a face shield and cold-resistant gloves for protection against frostbite. Follow all current regulations for handling and recycling refrigerants.
6. Follow the package directions carefully when using cleaning solvents.
7. If an auxiliary battery assist is needed, first use one cable to connect the 24V positive (+) post of the disabled truck batteries to the 24V positive (+) post of the auxiliary assist. Use the second cable to connect the 24V negative (-) post of the auxiliary assist battery to a frame ground (-) on the disabled truck away from the battery.
8. Disconnect the positive and negative battery cables before arc welding on the truck. Failure to do so may seriously damage the battery and the electrical equipment. Disconnect the battery charging alternator lead wire and isolate the electronic control components before making the welding repairs. It is not necessary to disconnect or remove any control circuit cards or any of the Alarm Indicating Device (AID) circuit control cards.

   Fasten the welding machine ground (-) lead to the piece being welded; the grounding clamp must be attached as near as possible to the weld area. DO NOT allow welding current to pass through the ball bearings, roller bearings, suspensions, or hydraulic cylinders. Avoid laying the welding cables over or near the vehicle electrical harnesses. The welding voltage could be induced into the electrical harness and cause damage to the components.
9. If the truck is to be towed for any reason, use a rigid tow bar. Check the truck cab for decals for special towing precautions. Refer to Section 30, Operating Instructions - Towing.
10. Drain, clean, and ventilate the fuel tanks and/or hydraulic tanks before welding.

NOTE: If it is necessary to weld the hydraulic tank or fuel tank, drain, clean, and ventilate the tank(s) before welding.

⚠WARNING

Pressurized hydraulic fluid may penetrate the skin. Serious injury and possibly death may result if the proper medical treatment by a physician familiar with this injury is not received immediately.

11. Relieve system pressure before disconnecting hoses or components.
12. After adjustments or repairs, replace all shields, screens, and clamps.
13. Working near tires can be dangerous. Use extreme caution when working around tires. Refer to Tires earlier in this chapter.
14. Only a qualified operator may operate the truck in the repair facility or during road testing.

OPERATING INSTRUCTIONS

PREPARING FOR OPERATION

The safest trucks are those which have been properly prepared for operation. At the beginning of each shift, a careful inspection of the truck must be completed by the operator before starting the engine.

SAFETY IS THINKING AHEAD

Prevention is the best way to avoid an accident. Prevent potential accidents by knowing the employer's safety requirements and all necessary job site regulations. In addition, know the proper use and care of all the safety equipment on the truck. Operators or technicians must be qualified to operate or maintain a Komatsu truck.

Safe practices start before the operator gets to the truck! Refer to Section 20, General Safety, for safety guidelines.

WALK AROUND INSPECTION

At the beginning of each shift, perform a careful walk around inspection of the truck before engine start-up. A walk-around inspection is a ground level check of the truck and its components to ensure the truck is safe to operate.

Start at the left front corner of the truck (see illustration, next page.) Move in a counterclockwise direction, around the truck, and back to the starting point.

Inspection of the truck before every shift can help avoid many potential problems. Downtime and loss of production can be reduced by scheduled maintenance.

Local work practices may prevent an operator from performing all tasks suggested here. To the extent permitted, the operator must follow this or a similar routine.

1. Start at the left front of the truck. During the walk-around inspection, visually inspect all lights and safety equipment for external damage. Ensure all light housing lenses are clean and unbroken.
2. Empty the dust pans on the left side air cleaners. Ensure the battery box covers are in place and securely fastened.

   Inspect the battery box cover for damage. Verify it is securely attached.

⚠DANGER

High voltage may be present on this truck! DO NOT open any electrical cabinet doors on this truck while the engine is running. Never climb on any power cables or use power cables for handholds or footholds unless the engine has been shut down and the system has been verified to be de-energized by a qualified electrician.

3. Move behind the front left tire. Check the hub and brake assemblies for leaks, and any abnormal wear or signs of damage.
   Check the oil level in the front wheel hub sight gauge. Refill, if necessary.
4. With the engine (5, Figure 3-1) stopped, check the engine oil level. If necessary, use the service light to illuminate the area. Ensure the light is turned off when the inspection of this area is complete.
5. Inspect the fan and air conditioner belts for correct tension and tracking. Also, check for belt wear or damage.

   Verify the fan guard bolts are installed and properly tightened.
6. Ensure the anchor end of the steering cylinder pin is properly greased and tightened.
7. Move outboard of the front wheel and inspect the attaching lugs/wedges to ensure they are properly tightened. Replace any parts that are missing.

   Inspect the tires for damage. Check for proper inflation.

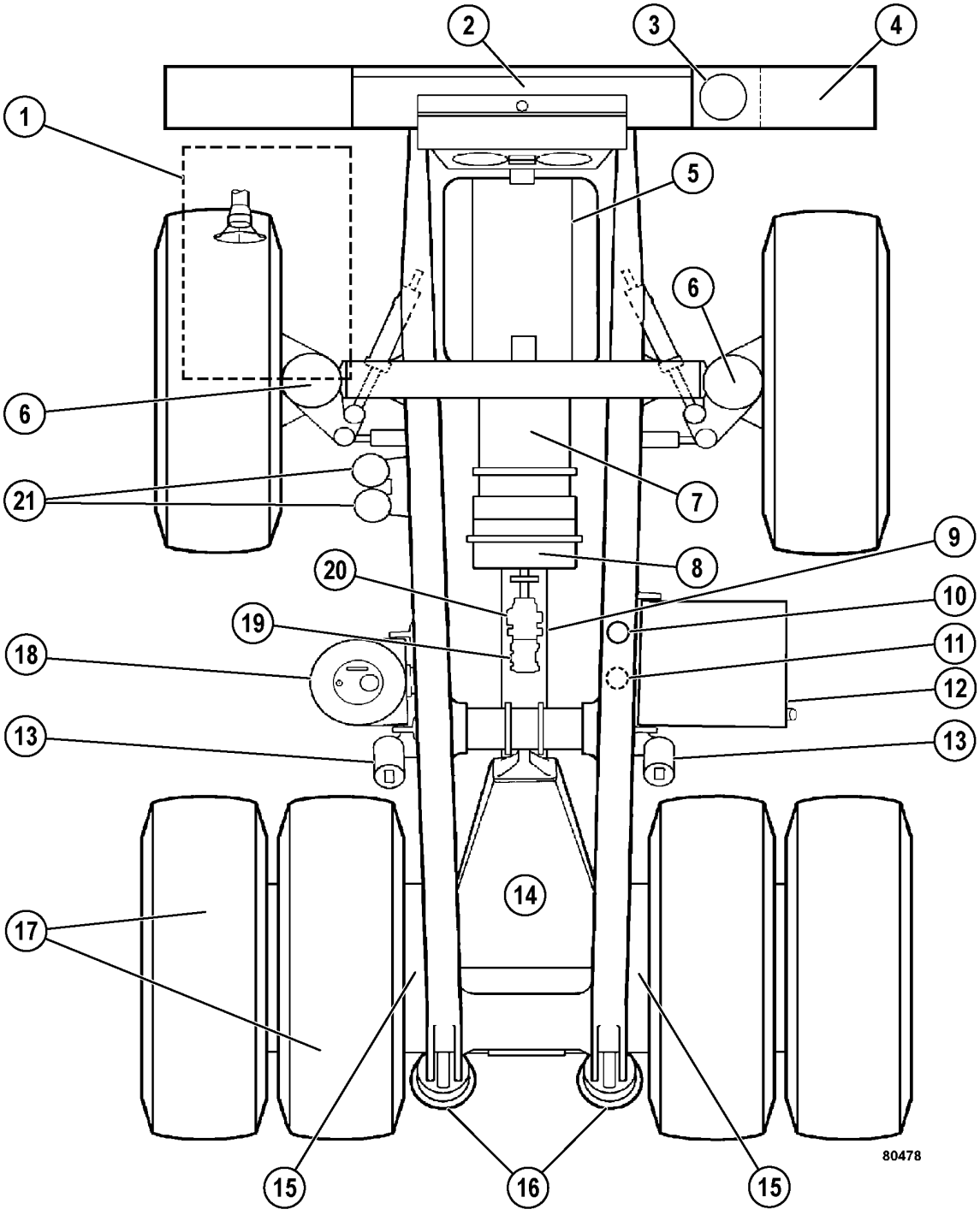


FIGURE 3-3. COMPONENT LOCATION

1. Cab
2. Radiator
3. Reserve Oil
4. Auto Lube
5. Engine
6. Front Hydrair II® Suspension
7. Traction Alternator
8. Cooling Blower
9. Cooling Duct
10. Steering Circuit Filter
11. Hoist Circuit Filter
12. Fuel Tank
13. Hoist Cylinders
14. Rear Axle Housing
15. Drive Motors
16. Rear Hydrair II® Suspension
17. Tires
18. Hydraulic Tank
19. Steering and Brake Circuit Pump
20. Hoist Circuit Pump
21. Accumulators

8. Move behind the rear of the front wheel. Ensure the suspension protective boot is in good condition. Verify all suspension (6, Figure 3-3) attaching hardware bolts are completely tightened. Inspect the mounting key area for evidence of wear. Verify the suspension extension (exposed piston rod) is correct. Check for leaks.

   Check for leaks around the hub and brakes. Also, check for any unusual wear conditions or damage.

   Ensure the rod end of the steering cylinder is properly greased. Verify all mounting hardware is properly tightened. Check for any hydraulic leaks.

9. Check the oil level in the hydraulic tank (18). With the engine stopped and the body down, hydraulic fluid must be visible in the upper sight glass.

10. Verify all hydraulic tank shut off valves are locked in the fully open position.

11. Move around the hydraulic tank in front of the rear dual tires.

    Inspect the hoist cylinder (13) for any damage or hydraulic oil leaks.

    Ensure both the upper and lower hoist cylinder pins are properly tightened and greased.

12. Inspect the lower edge of the chassis.

    Ensure the blower hose (9) is in good condition with no holes or breakage.

    Check the main hydraulic pumps (19 and 20) for leakage.

    Check for other unusual conditions with the pumps or the pump drive shaft.

13. Move around the left side dual tires (17). Inspect the attaching lugs/wedges to ensure they are properly tightened. Replace any parts that are missing.

    Inspect the wheel cover for cracks or damage. Verify the latches are properly fastened. Inspect the area for any oil leakage from inside the wheel cover (could indicate brake or wheel motor leakage.

    Inspect the dual tires for damage. Verify proper inflation pressure. If the truck has been operating with low tire pressure, the tire must be cooled before parking the truck inside.

14. Move to the rear of the dual tires. Check for and remove any rocks lodged between the dual tires. To prevent tire damage, verify the rock ejector is in good condition and straight.

15. Inspect the left rear suspension (16) for damage. Verify all suspension attaching hardware is completely tightened.

    Verify the suspension is properly charged. Ensure there are no leaks. Verify the suspensions are properly greased. Verify the cover over the chromed piston rod is in good condition.

16. Move to the rear center of the truck. Open the rear hatch cover, and turn on the work light, if necessary. Inspect the condition of the hatch cover gasket. Inspect the housing (14) for any foreign objects or misplaced tools.

    Check for leaks around the mounting surface of the rear housing wheel motor (15) and any brake hose fittings.

    Verify the covers on the wheel motor sump are firmly attached. Turn off the work light, if used, and close and latch the rear hatch cover.

17. While standing in front of the rear hatch, verify the rear lights and back-up horns are working. Inspect the panhard rod for proper lubrication. Also, inspect both body hinge pins for damage and proper lubrication.

18. Inspect the right rear suspension (16) for damage. Verify all suspension attaching hardware is completely tightened.

    Verify the suspension is properly charged.

19. Ensure there are no leaks. Verify the suspensions are properly greased. Verify the cover over the chromed piston rod is in good condition.

20. Move behind the rear right side dual tires. Check for and remove any rocks lodged between the dual tires. To prevent tire damage, verify the rock ejector is in good condition and straight.

21. Move around the right side dual tires. Inspect the attaching lugs/wedges to ensure they are properly tightened. Replace any parts that are missing.

    Inspect the wheel cover for cracks or damage. Verify the latches are properly fastened. Inspect the area for any oil leakage from inside the wheel cover (could indicate brake or wheel motor leakage.

    Inspect the dual tires for damage. Verify proper inflation pressure. If the truck has been operating with low tire pressure, the tire must be cooled before parking the truck inside.

22. Move in front of the right side dual tires.

    Inspect the hoist cylinder (13, Figure 3-3) for any damage or hydraulic oil leaks. Verify the lower guard is in place. Ensure both the upper and lower hoist cylinder pins are properly tightened and greased.

    Check the secureness and condition of the body-up limit switch. Remove any mud/dirt accumulation from the switch.

23. Move to the fuel tank (12).

    Verify the fuel gauge on the tank agrees with the gauge in the cab.

    Inspect the tank mounting connections to the frame. Ensure they are tight and not damaged.

24. Move behind the right side front wheel.

    Ensure the suspension protective boot is in good condition. Verify all suspension attaching hardware bolts are completely tightened. Inspect the mounting key area for evidence of wear. Verify the suspension extension (exposed piston rod) is correct. Check for leaks.

    Check for leaks around the hub and brakes. Also, check for any unusual wear conditions or damage.

    Ensure the rod end of the steering cylinder is properly greased. Verify all mounting hardware is properly tightened. Check for any hydraulic leaks.

25. Move outboard of the front wheel, and inspect the attaching lugs/wedges to ensure they are properly tightened. Replace any parts that are missing.

    Inspect the tires for damage. Check for proper inflation.

26. Inspect the engine (5) compartment for any leaks or unusual conditions.

    Remove any foreign objects or debris from behind the radiator (2).

    Inspect the auto lube system (4). See Lubrication and Maintenance, Section 40, for specific details concerning the auto lube system.

    If used, turn the work light off and secure the ladder in a stored position.

27. Move around to the right front of the truck.

    Remove the air cleaner pans and remove any dirt buildup. Reinstall and securely attach the pans.

    Inspect the battery box cover for damage. Verify it is securely attached.

28. Move to the front of the radiator (2).

    Remove any debris or foreign objects.

    Check for coolant leaks.

    Inspect all headlights and fog lights for damage. Verify all lights are working.

29. Verify the ground level engine shutdown switch and battery disconnect switches are in the ON position.

30. Clean the stairs, ladder, and/or handrails of any foreign material, such as ice, snow, oil, or mud.

⚠CAUTION

Use the handrails when mounting or dismounting the truck. Always face the truck when using the ladders. DO NOT mount or dismount the truck while it is in motion.

31. Check the coolant in the radiator using the coolant level sight gauge, or observe the coolant level through the opening in the end of the hood.

    If it is necessary to remove the radiator cap, shut the engine off, allow the engine to cool, and slowly remove the radiator cap. DO NOT remove the radiator cap when the cooling system is pressurized.

⚠CAUTION

If the engine is hot, allow the coolant to cool before removing the fill cap or draining the radiator. Serious burns may result if the coolant is not allowed to cool.

32. Inspect the covers over the braking grids to ensure the latches are securely fastened.

    Inspect the main air inlet to ensure it is clear of all foreign objects and debris that would prevent complete air flow into the inlet.

    Verify all the cabinet door latches are securely fastened.

Move around the cab (1, Figure 3-3) to the back.

    Open the doors to the brake cabinet and check for any hydraulic oil leaks

    If used, turn the work light off.

    Close the door and verify the latches are securely fastened.

33. Clean the cab windows and mirrors.

    Remove dirt or debris from the cab floor. Ensure the steering wheel, controls, and pedals are free of any oil, grease, or mud.

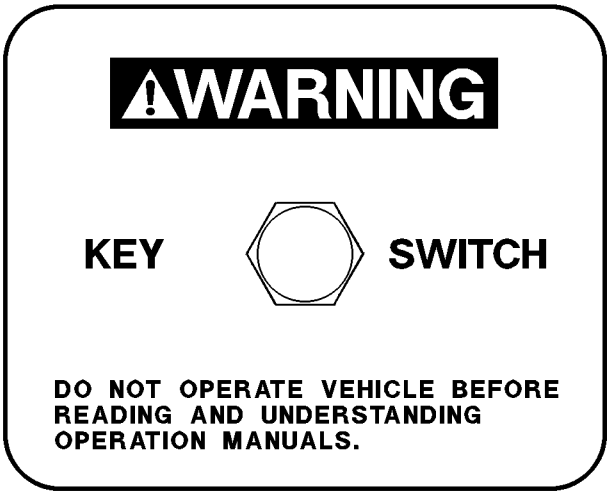
34. Store any personal gear in the cab so it does not interfere with the operation of the truck. DO NOT carry tools or supplies in the cab of the truck or on the deck.

35. Adjust the seat and steering wheel so that it is comfortable for use.

36. Read and understand the Operator Controls and Instrument Panel discussion in this section. Be familiar with all the control locations and functions before operating the truck.

ENGINE START-UP

1. Ensure all personnel are clear of the truck before starting the engine. Sound the horn as a warning before actuating any operational controls. If the truck is in an enclosure, ensure adequate ventilation before start-up. Exhaust fumes are dangerous!
2. Ensure the parking brake switch is in the ON position. The selector switch must be in NEUTRAL before starting the truck.
3. If the truck is equipped with auxiliary cold weather heaters, DO NOT start the engine while the heaters are on. Damage to the coolant heaters will result.
4. The key switch is a four-position switch (ACC, OFF, RUN, START). The ACC position is not currently used. When the switch is rotated one position clockwise, it is in the RUN position and all electrical circuits (except START) are activated. With the selector switch in NEUTRAL, rotate the key switch fully clockwise to the START position and hold this position until the engine starts. The START position is spring loaded to return to RUN when the key is released.



NOTE: If the truck is equipped with an engine prelube system, a noticeable time delay will occur (while the engine lube oil passages are being filled) before the starter engages. The colder the engine oil temperature, the longer the time delay. In addition, if the truck is equipped with an engine starting aid for cold weather starting, the engine prelube system must be engaged for 5-10 seconds, or until the starter is engaged, before activating the engine starting aid.

⚠WARNING

Starting fluid is extremely volatile and flammable! Use with extreme care.

If the truck is equipped with the optional engine starting aid and the ambient temperature is below 10°C (50°F), turn the key switch to the START position. While cranking the engine, move the engine starting aid switch to the ON position for three seconds maximum, then release the engine starting aid. If the engine does not start, wait at least fifteen seconds before repeating the procedure.

DO NOT crank an electric starter for more than thirty seconds at one time. Allow two minutes for cooling before attempting to start the engine again. Severe damage to the starter motor can result from overheating.

AFTER ENGINE HAS STARTED

1. Become thoroughly familiar with the steering and emergency controls. After the engine has started and the low pressure and warning systems are normal, test the truck steering in extreme right and left directions. If the steering system is not operating properly, shut the engine off immediately. Determine the steering system problem and repair before resuming operation.
2. Check the brakes before moving the truck. Start the engine and allow the hydraulic system to fully pressurize. Activate the service brake, parking brake, and brake lock at least twice. If a warning alarm is activated when a brake is applied or released, DO NOT operate the truck. If the application and release of any brake appears slow or improper, DO NOT operate the truck. If a brake problem is suspected, shut the engine off and notify maintenance personnel.
3. Check the gauges, warning lights, and instruments before moving the truck to ensure proper system operation and proper instrument functioning. Observe the braking and steering circuit hydraulic warning lights. If the warning lights come on, shut the engine off immediately and determine the cause.
4. Ensure the headlights, work lights, and taillights are in proper working order. Good visibility may prevent an accident. Check the operation of the windshield wipers.
5. When the truck body is in the dump position, DO NOT allow anyone beneath it unless the body-up retaining cable is in place.
6. DO NOT allow unauthorized personnel to ride in the truck. DO NOT allow anyone to ride on the stairs or ladder of the truck.
7. DO NOT leave the truck unattended while the engine is on. Shut the engine off, and apply the parking brake before getting out of the cab.

EMERGENCY STEERING SYSTEM

Operation

This truck is equipped with an emergency steering system. This system is a backup in the event of loss of oil supply to the main steering system. The emergency steering system was designed to meet or exceed SAE J1511 and ISO 5010 standards.

If the low steering system pressure indicator light and alarm are activated, a failure in the hydraulic oil supply to the steering and brake system exists. When the alarm is activated, typically there is enough hydraulic pressure stored in the brake and steering accumulators to allow brief operation of the steering and brake functions. However, this oil supply is limited. Therefore, it is important to stop the truck as quickly and safely as possible after the alarm is first activated.

If the oil supply pressure drops to a predetermined level, the low brake pressure warning light will also illuminate. If the oil pressure continues to decrease, the brake auto-apply feature will activate the service brakes to stop the truck.

Pre-Operation Testing

NOTE: Komatsu recommends that operators perform this test to verify that the steering accumulator precharge pressure is adequate at the beginning of each shift before operating the truck.

⚠WARNING

Ensure no one is near the front tires during this test. All personnel are warned that the clearances change when the truck is steered and this could cause serious injury.

This test can only be performed with an empty truck.

1. Park the empty truck on flat, level ground. Lower the dump body onto the frame and stop the engine. Ensure the key switch is in the OFF position.
2. Wait at least 90 seconds to verify that all hydraulic pressure has been relieved from the steering accumulators. Turn the steering wheel from stop to stop. If the front wheels do not move, there is no hydraulic pressure.
3. Check the hydraulic tank oil level. The oil level must be visible in the center of the upper sight glass and must not cover the entire upper sight glass. Add oil if necessary. **DO NOT overfill.**
4. Turn the key switch to the ON position, but DO NOT start the engine.
   a. *Steering system pressure:* Verify that the low steering pressure warning light is illuminated. If it is not illuminated, immediately notify maintenance personnel. DO NOT operate the truck until the problem is corrected.
   b. *Steering accumulator precharge:* Verify that the low accumulator precharge warning light is not illuminated and the warning buzzer is not sounding. If the warning light is illuminated and the buzzer is sounding, immediately notify maintenance personnel. DO NOT operate the truck until the problem is corrected.
5. Start the engine and allow the steering accumulators to fully charge. Turn the steering wheel so that the front wheels are straight.
6. Check the hydraulic tank oil level while the engine is on.
   a. If the oil level is visible in center of the lower sight glass and does not cover the entire lower sight glass, the steering accumulators are adequately charged. Proceed to Step 7.
   b. If the oil level is below the lower sight glass, the steering accumulators are not adequately charged. Stop the engine and turn the key switch to the OFF position. Immediately notify maintenance personnel. DO NOT operate the truck until the problem is corrected.
7. Shut the engine off by using the engine stop button located on the center console. Leave the key switch in the ON position. This allows the steering accumulators to retain their hydraulic charge.
   - ❑ If the warning light and buzzer do activate, turn the key switch OFF and notify maintenance personnel. DO NOT operate the truck until the problem is corrected.
   - ❑ If the steering accumulators are adequately charged, the low steering pressure warning light and the low accumulator precharge warning light will not illuminate. Continue to the next step.

8. Turn the steering wheel from stop to stop. The front wheels must turn fully to the left and to the right. Eventually, the low steering pressure warning light will illuminate and the warning buzzer will sound. This is normal.

   If the front wheels cannot be turned fully to the left and right, or if the warning light and buzzer do not activate, immediately notify maintenance personnel. DO NOT operate the truck until the problem is corrected.

If the truck passes this test, the emergency steering system is functioning properly.

Additional Guidelines

1. When the truck body is raised, DO NOT allow anyone below it unless the body-up retaining cable is in place.
2. DO NOT use the fire extinguisher for any purpose other than putting out a fire! If an extinguisher is discharged, report the occurrence so the used unit can be refilled or replaced.
3. DO NOT allow unauthorized personnel to ride in the truck. DO NOT allow anyone to ride on the ladder or outside of the truck cab. Passengers must be belted into the passenger seat during travel.

DO NOT leave the truck unattended while the engine is running. Move the directional control lever to PARK, then shut the engine off before getting out of the cab.

MACHINE OPERATION SAFETY PRECAUTIONS

After the truck engine is started and all the systems are functioning properly, the operator must follow all the local safety rules to ensure safe machine operation.

⚠WARNING

If any of the red warning lights come on, or if any gauge reads in the red area during truck operation, a malfunction is indicated. Stop the truck as soon as safety permits, shut the engine off, and have the problem corrected before resuming truck operation.

⚠CAUTION

Operating the truck with stalled or free spinning wheel motors may cause serious damage to the wheel motors! If the truck does not begin to move within 10 seconds after depressing the throttle pedal (selector switch in a drive position), release the throttle pedal. Allow the wheels to regain traction before accelerating the engine again.

1. Look to the rear before backing the truck. Watch for and obey the ground spotter's hand signals before reversing. Sound the warning horn three times. The spotter must have a clear view of the total area at the rear of the truck.
2. Operate the truck only while properly seated with the seat belt fastened. Keep hands and feet inside the cab compartment while the truck is in operation.
3. Check the gauges and instruments frequently during operation for proper readings.
4. Observe all regulations pertaining to the job site's traffic pattern. Be alert to any unusual traffic pattern. Obey the spotter's signals.
5. Match the truck speed to the haul road conditions. Slow the truck in congested areas. Keep a firm grip on the steering wheel at all times.
6. DO NOT allow the engine to idle for extended periods of time.

7. Check the parking brake periodically during the shift while the truck is stopped. Use the parking brake only for parking. DO NOT use the parking brake for loading/dumping.

⚠WARNING

DO NOT use the brake lock for parking. With the engine stopped, hydraulic pressure will bleed-down, allowing the brakes to release!

8. Check the brake lock performance periodically for safe loading and dumping.
9. Proceed slowly on rough terrain to avoid deep ruts or large obstacles. Avoid traveling close to the soft edges and the edge of the fill area.
10. Truck operation requires concentrated effort by the driver. Avoid distractions of any kind while operating the truck.
11. Before driving the truck, ensure the tires are properly inflated. If the truck has been driven with an under-inflated tire, do not park the truck inside a building until the tire has cooled to ambient temperature.

LOADING

1. Pull into the loading area with caution. Remain at a safe distance while the truck ahead is being loaded.
2. DO NOT drive over unprotected power cables.
3. When approaching or leaving a loading area, watch for other vehicles and for personnel working in the area.
4. When pulling in under a loader or shovel, follow the spotter or shovel operator signals. The truck operator may speed up loading by observing the location and loading cycle of the truck being loaded ahead. Then follow a similar pattern.
5. When the truck is being loaded, the operator must stay in the truck cab with the engine on. Place the selector switch in NEUTRAL, and apply the brake lock.
6. When loaded, drive away from the shovel quickly, but with extreme caution.

HAULING

1. Stay alert! Drive with extreme caution. Cab doors must remain closed at all times if the truck is in motion or unattended.
2. Obey all road signs. Operate the truck in a controlled manner. Govern the truck speed by the road conditions, weather, and visibility. Report haul road conditions immediately. Muddy or icy roads, pot holes, or other obstructions can present hazards.
3. When backing the truck, give the back-up signal three sounds of the horn. When starting forward, two sounds of the horn. These signals must be given each time the truck is moved forward or backward.
4. Use extreme caution when approaching a haul road intersection. Maintain a safe distance from oncoming vehicles.
5. Maintain a safe distance of 15 m (50 ft) when following another vehicle. When driving downhill, maintain a distance of 30 m (100 ft).
6. DO NOT stop or park on a haul road unless unavoidable. If you must stop, move the truck to a safe place, apply the parking brake, and shut the engine off before leaving the cab. Chock the wheels securely, and notify maintenance personnel for assistance.
7. Before starting up or down a grade, maintain a speed that will ensure safe driving and provide effective retarding. Refer to the grade/speed decal in the operator's cab.
8. When operating the truck in darkness, or when visibility is poor, DO NOT move the truck unless all the headlights, clearance lights, and tail lights are on. DO NOT back the truck if the back-up horn or lights are inoperative. Dim the headlights when meeting oncoming vehicles.
9. If the emergency steering light and/or low brake pressure warning light illuminate during operation, immediately steer the truck to a safe stopping area, away from other traffic.
10. The Statex III w/fuel enhancement system monitors wheel motor, ambient, and static exciter temperatures. If any one of these values is outside the limits established, the Statex III controls will cause the engine to increase to 1,650 rpm. Normal engine rpm for haul road/retarding operation is 1,250 rpm.

11. When the maximum truck speed is reached, haul trucks equipped with Statex III w/fuel enhancement (fuel saver) system will experience a decrease in engine rpm.

NOTE: This is different from trucks equipped with Statex II or Statex III without fuel enhancement, which increase rpm upon reaching the speed limit.

PASSING

1. DO NOT pass another truck on a hill or blind curve!
2. Before passing, ensure the road ahead is clear. If a disabled truck is blocking your lane, slow down and pass with extreme caution.
3. Use only the areas designated for passing.

DUMPING

1. Approach the dump area with extreme caution. Ensure the area is clear of persons and obstructions, including overhead utility lines. Obey signals directed by the spotter, if present.

   Avoid unstable areas. Stay a safe distance from the edge of the dump area. Position the truck on a solid, level surface before dumping.

⚠DANGER

As the body raises, the truck center of gravity will move. The truck must be on a level surface to prevent tipping/rolling!

2. Carefully maneuver the truck into the dump position. When backing the truck into the dump position, use only the brake pedal to stop and hold the truck. DO NOT rely on the wheel brake lock to stop the truck. This control is unmodulated and applies the rear service brakes only.
3. When the truck is stopped and in the dump position, apply the wheel brake lock. Move the selector switch to the NEUTRAL position.

To Raise The Dump Body:

⚠WARNING

Dumping certain types of material can result in sudden and violent movement of the truck. This truck movement may cause injury to the operator. It may also cause damage to the hoist cylinders, frame, and/or body hinge pins. Use caution when dumping large rocks (10% of payload, or greater) to prevent the load from shifting too quickly. Sticky material (loads that do not flow freely from the body) may also cause sudden truck movement if the load releases quickly.

4. Move the lever to the HOIST position. Refer to Figure 3-4. Releasing the lever while in the HOIST position will cause the lever to move to the HOLD position.
5. Raise the engine rpm to accelerate the hoist speed.

⚠CAUTION

If dumping very large rocks or sticky material, as described in the warning, slowly accelerate the engine rpm to raise the body. When the material starts to move, release the hoist lever to the HOLD position. If the material does not continue to exit the body, repeat this procedure as necessary.

6. Reduce the engine rpm as the last stage of the hoist cylinder begins to extend. Let the engine go to low idle as the last stage reaches half-extension.

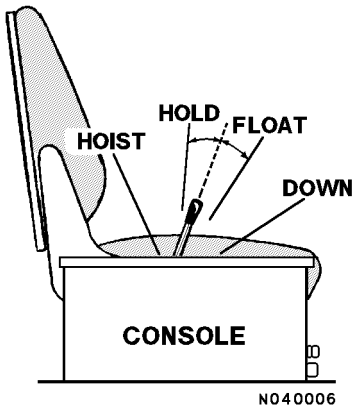


FIGURE 3-4. HOIST LEVER POSITIONS

7. Release the hoist lever as the last stage of the hoist cylinder reaches full extension.

To Lower The Dump Body:
(When dumping over a berm or into a crusher):

8. Move the hoist lever forward to the DOWN position and release. Releasing the lever places the hoist control valve in the FLOAT position, allowing the body to return to the frame.

⚠CAUTION

DO NOT drive forward in the fully raised position if the dump body will not clear an obstacle, such as a crusher wall. DO NOT move the truck with a raised dump body raised except in an emergency. Failure to lower the body before moving the truck may cause damage to the hoist cylinders, frame, and/or body hinge pins.

NOTE: If the dumped material builds up at the rear of the truck and the body cannot be lowered, perform the following steps:

a. Move the hoist lever back to the HOIST position and fully raise the dump body. Continue to hold the hoist lever until the body is completely raised.

NOTE: If the body is not completely raised, it may lower very rapidly when the truck is moved forward and the material is cleared from the rear of the truck.

b. Once the body is fully raised, release the hoist lever (it will return to the HOLD position).

c. Shift the selector switch to FORWARD, release the brake lock, and press the override button.

d. Slowly drive forward to clear the material.

e. Once the material is cleared, stop the truck, place the selector switch in NEUTRAL, and apply the brake lock.

f. Completely lower the body.

NOTE: Failure to hoist the body, after making an unsuccessful attempt at lowering the body, may result in the dump body suddenly lowering after the truck has pulled ahead of the material that was previously preventing the body from lowering.

To Lower The Dump Body
(When dumping on flat ground):

9. It is very likely when dumping on flat ground that the dumped material will prevent the body from lowering. In this instance, the truck will have to be driven forward a short distance (just enough to clear the material) before the body can be lowered.

   a. Shift the selector switch to FORWARD, release the brake lock, and depress the override button. Drive forward enough for the body to clear the material. Stop, shift the selector switch to NEUTRAL, and apply the brake lock.

   b. Move the hoist lever forward to the DOWN position and release. Releasing the lever places the hoist control valve in the FLOAT position, allowing the body to return to the frame.

NOTE: If the dumped material builds up at the rear of the body and the body cannot be lowered, then perform steps c and d below:

   c. Move the hoist lever back to the HOIST position to fully raise the dump body. Then release the hoist lever so it returns to the HOLD position.

   d. Shift the selector switch to forward, release the brake lock, and depress the override button. Drive forward to clear the material. Stop, shift the selector switch to NEUTRAL, and apply the brake lock. Lower the body again.

NOTE: Failure to hoist the body, after making an unsuccessful attempt at lowering the body, may result in the dump body suddenly lowering after the truck has pulled ahead of the material that was previously preventing the body from lowering.

⚠CAUTION

DO NOT move the truck with a raised dump body raised except in an emergency. Failure to lower the body before moving the truck may cause damage to the hoist cylinders, frame, and/or body hinge pins.

10. With the body returned to the frame, move the selector switch to FORWARD, release the brake lock, and exit the dump area carefully.

TOWING

⚠WARNING

Before towing a truck, many factors must be carefully considered. Serious personal injury and/or significant property damage may result if important safety practices, procedures and preparation for moving heavy equipment are not observed.

A disabled machine may be towed after the following precautions have been taken.

- Do not tow the truck any faster than 8 kph (5 mph).
- Tow with a solid tow bar. DO NOT tow with a cable. Use a towing device with ample strength for the weight of this truck.
- Never tow a truck on a slope.
- Inspect towing components, such as tow bars and couplings, for any signs of damage. Never use damaged or worn components to tow a disabled vehicle.
- Keep a safe distance from the trucks and towing apparatus while towing a vehicle.
- AFTER connecting a truck that is to be towed, DO NOT allow anyone to go between the tow vehicle and the disabled vehicle.
- Set the coupling of the truck being towed in a straight line with the towing portion of the tow truck, and secure it in position.
- An operator is to remain in the cab of the towed vehicle at all times during the towing procedure.

Towing Procedure

1. Shut the engine off.
2. Block the wheels on the disabled truck to prevent movement while preparing the truck for towing and while attaching the tow bar.
3. Ensure the towing vehicle has adequate capacity to both move and stop the towed truck under all conditions.
4. Ensure that the tow bar has adequate strength (approximately 1.5 times the empty vehicle weight of truck being towed). Install tow bar between the two vehicles.
5. Block the wheels on the tow vehicle to prevent movement while preparing the disabled truck for towing.
6. If necessary, install quick disconnect fittings to the bleeddown manifold to allow the hydraulic system to be operational. Install hydraulic connections for steering/braking between the tow vehicle the and disabled vehicle. An auxiliary power unit can also be used.
7. After the hydraulic connections are made, check the disabled vehicle braking and steering systems for normal operation. Install 24 100 kPa (3,500 psi) pressure gauges on both the BF test port and the BR test port on the brake manifold in the brake cabinet. Ensure proper pressure is displayed on the gauge when depressing the brake pedal.
8. If the truck is loaded, dump the entire load. Never pull or tow a loaded truck. Refer to “Disabled Truck Dumping Procedure”.
9. Ensure the operator in the towing vehicle has 2-way radio communications with the driver in the disabled truck.
10. When ready to tow the disabled truck, remove blocking from the wheels.
11. Tow the disabled truck. Sudden movement may cause tow bar failure. Smooth, gradual truck movement is preferred. Do not tow the truck any faster than 8 kph (5 mph).
12. Minimize the tow angle at all times. **Never exceed 30 degrees.** The towed truck must be steered in the direction of the tow bar.
13. When the desired location has been reached, the operator in the towed vehicle is to apply the service brakes, then apply the parking brakes.
14. Block the wheels on the towing vehicle and the disabled truck to prevent roll-away.
15. Shut down the engine in the towing vehicle. Disconnect the hydraulic hoses.
16. Disconnect the tow bar.

SAFE PARKING PROCEDURES

The operator must continue the use of safety precautions when preparing for parking and engine shutdown.

In the event that the equipment is being worked in consecutive shifts, any questionable truck performance the operator may have noticed must be checked by maintenance personnel before the truck is released to another operator.

1. Park the truck on level ground, if possible. If parking on a grade, position the truck perpendicular to the grade.
2. Apply the parking brake and install wheel chocks so that the truck cannot roll. Park each truck a safe distance from one another.
3. Haul roads are not safe parking areas. In an emergency, pick the safest spot most visible to other machines in the area. If the truck becomes disabled, mark the truck with warning flags in daylight, or flares at night.

ENGINE SHUTDOWN PROCEDURE

The following procedure must be followed at each engine shutdown.

1. Stop the truck. Reduce the engine rpm to low idle. Place the selector switch in NEUTRAL and apply the parking brake switch. If the engine shutdown with timer delay is preferred, refer to the Delayed Engine Shutdown procedure.
2. Allow the engine to cool gradually at low idle for three to five minutes.
3. With the truck stopped and the engine cool, turn the key switch counterclockwise to OFF for normal shutdown of the engine. If the engine does not shutdown with the key switch, use the engine shutdown switch on the center console (see Operator Controls section).
4. With the key switch OFF and the engine stopped, wait at least 90 seconds. Ensure the pressure is relieved in the steering circuit by turning the steering wheel back and forth several times. No front wheel movement will occur when hydraulic pressure is relieved.
5. Close and lock all windows, remove the key from the key switch, and lock the cab to prevent possible unauthorized truck operation. Dismount the truck properly.

DELAYED ENGINE SHUTDOWN PROCEDURE

Refer to Section N, Operator Cab and Controls, for identification of the various switches and indicator lights.

1. Stop the truck. The truck must be away from other traffic, on a level surface, and away from overhead power lines or other obstructions.
2. Reduce the engine speed to low idle.
3. Place the selector switch in NEUTRAL.
4. Apply the parking brake switch. Ensure the parking brake applied indicator light in the overhead display panel is illuminated.
5. Move the top of the engine shutdown switch to the ON (center) position. Then, firmly press the switch to the MOMENTARY (upper) position. Hold this position briefly to activate the idle timer. The switch is spring-loaded and will return to the ON position when released.
6. When the engine shutdown timer has been activated, the timer delay indicator light in the overhead display panel will illuminate to indicate that the shutdown timing sequence has been started. The engine will continue to idle for approximately three minutes to allow the engine to properly cool before turning off.

NOTE: The engine shutdown timer switch does not turn off the 24VDC electric power.

7. Turn the key switch to the OFF position to allow the engine to turn off when the timing sequence is complete. When the engine stops after the idle period, the hydraulic bleed-down timer will be activated and the 24VDC electric circuits will turn off.

⚠ IMPORTANT ⚠

The engine will only shut off if the key switch is in the OFF position.

NOTE: To cancel the idle timer sequence, move the timer delay shutdown switch to the OFF (lower) position. If the key switch is in the OFF position, the engine will stop. If the key switch is in the ON position, the engine will continue to run.

8. With the key switch OFF and the engine stopped, wait at least 90 seconds. Relieve the steering circuit pressure by turning the steering wheel back and forth several times. No front wheel movement will occur when hydraulic pressure is relieved.
9. Close and lock all windows, remove the key from the key switch, and lock the cab to prevent possible unauthorized truck operation. Dismount the truck properly.

SUDDEN LOSS OF POWER

If the engine suddenly stops, there is enough hydraulic pressure stored in the brake and steering accumulators to allow the operation of the steering and brake functions. However, this oil supply is limited so it is important to stop the truck as quickly and safely as possible after the loss of engine power.

If the brake supply pressure drops to a pre-determined level, the low brake pressure warning light will illuminate and a buzzer will sound. If the brake pressure continues to decrease, the auto-apply feature will activate and the service brakes will apply automatically to stop the truck.

1. Bring the truck to a safe stop as quickly as possible by using the foot pedal to apply the service brakes. If possible, safely steer the truck to the side of the road while braking.

⚠ WARNING

Dynamic retarding will not be available!
DO NOT use the service brakes for continuous retarding purposes.

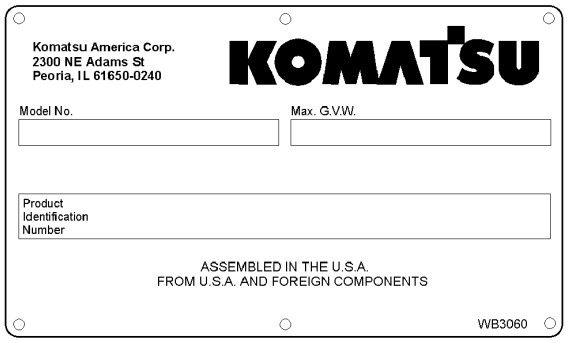
2. As soon as the truck has stopped moving, shift to NEUTRAL and apply the parking brake.
3. Slowly release the service brakes to check the capacity of the parking brake. If the parking brake can not hold the truck stationary, apply the service brakes and hold them ON. DO NOT turn the key switch OFF, and DO NOT release the service brakes.
4. Notify maintenance personnel immediately.
5. If the truck is on level ground, or if the parking brake can hold the truck stationary and the truck is in a stable condition, it is then OK to turn the key switch OFF.
6. If safe to do so, have maintenance personnel place wheel chocks or other mechanisms in front or behind the wheels to reduce the risk of the truck rolling.
7. If traffic is heavy near the disabled machine, mark the truck with warning flags during daylight hours or use flares at night. Adhere to local regulations.

NOTES

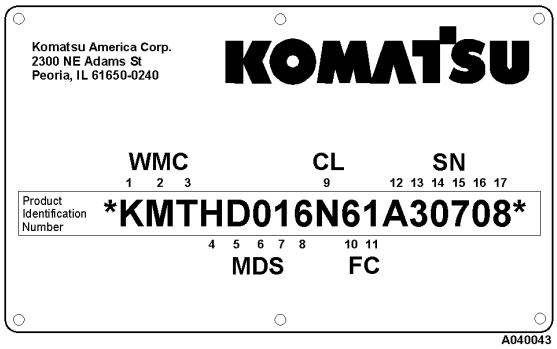
WARNINGS AND CAUTIONS

The following pages provide a brief explanation of the warning, caution, and service instruction plates and decals attached to the truck. The plates and decals listed here are typical of this model. Because of customer options, individual trucks may have plates and decals that are different from those shown here.

The plates and decals must be kept clean and legible. If any decal or plate is illegible or damaged, it must be replaced with a new one.



A product identification plate is located on the frame in front of the right side front wheel. It shows the truck model number, maximum Gross Vehicle Weight (GVW), and Product Identification Number (PIN).



The PIN consists of 19 total characters. The first and last characters are tamper preventative symbols (*). The remaining 17 alpha/numeric characters are used to identify five characteristics of the machine. The five characteristics are detailed below.

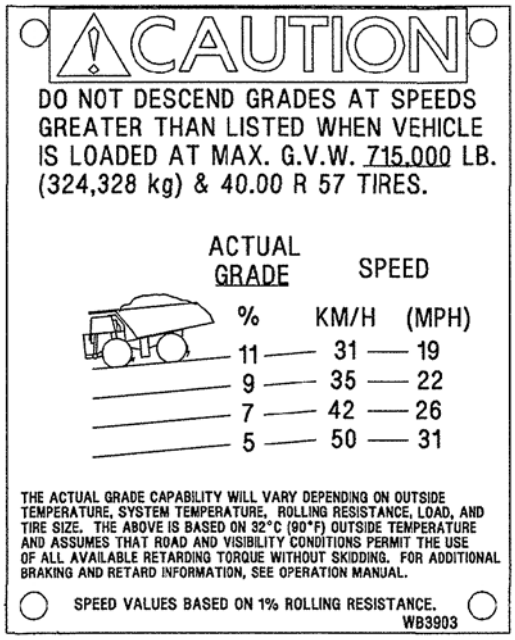
WMC - Character positions 1, 2, and 3 identify the Worldwide Manufacturer Code (WMC). The WMC designates the manufacturer of the product. Komatsu brand products are identified with the letters KMT.

MDS - Character positions 4, 5, 6, 7, and 8 identify the Machine Descriptor Section (MDS). The MDS code identifies general information regarding machine specifications. The MDS is a code for the machine type and model.

CL - Character position 9 identifies the Check Letter (CL). The CL is used to verify the accuracy of the individual PIN.

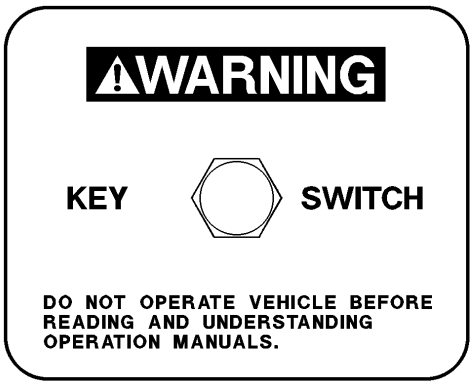
FC - Character positions 10 and 11 identify the Factory Code (FC). The FC identifies the Komatsu factory in charge of claims for the product. The FC for electric drive trucks is 61.

SN - Character positions 12, 13, 14, 15, 16, and 17 identify the Serial Number (SN). The SN is a unique sequential number.



A grade/speed plate is located on the left front post of the operator's cab. The decal provides the recommended maximum speeds to be used when descending various grades with a loaded truck.

This decal may change with the optional truck equipment. Refer to the decal in the operator's cab for the proper speeds specifications.



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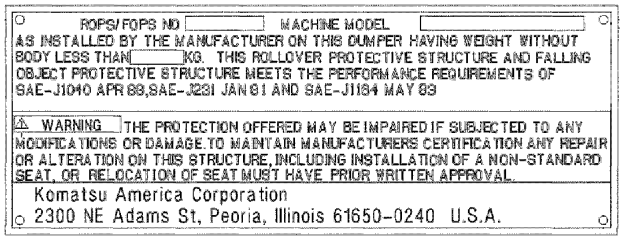
A warning decal surrounds the key switch. The warning stresses the importance of reading the operator's manual before operation.



A plate attached to the right rear corner of the cab states the Rollover Protective Structure (ROPS) and Falling Object Protective Structure (FOPS) meet various SAE performance requirements.

DO NOT make modifications to the ROPS components. DO NOT attempt to repair damage without written approval from the manufacturer. Unauthorized repairs will void certification.

Warning plates are attached to the hydraulic tank and the fuel tank. The decals alert technicians not to work on the truck with the body raised unless the body-up retention cable is in position.