DG734

Shop Manual

830E

DUMP TRUCK

SERIAL NUMBERS **A30544 - A30606**

KOMATSU®

FOREWORD

This Shop Manual is written for use by the service technician and is designed to help the technician become fully knowledgeable of the truck and all its systems in order to keep it running and in production. All maintenance personnel should read and understand the materials in this manual before performing maintenance and/or operational checks on the truck. All safety notices, warnings and cautions should be understood and followed when accomplishing repairs on 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 area is dealt with individually. For example: The disassembly, service and reassembly of the radiator group is discussed as a unit. The same is true of the engine and engine accessories, and so on through the entire mechanical detail of the truck. Disassembly should be carried only 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 of U.S. standard and metric (SI) units throughout and 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 are shown in torque charts in the general information section and individual torques are provided in the text in bold face type, such as **100 ft.lbs. (135 N.m)** torque. All torque specifications have ±10% tolerance unless otherwise specified.

A Product Identification plate is normally located on the truck frame in front of the right side front wheel and designates the Truck Model Number, Product Identification Number (vehicle serial number), and Maximum G.V.W. (Gross Vehicle Weight) rating.

The KOMATSU Haulpak Truck Model designation consists of three numbers and one letter (i.e. 830E). The three numbers represent the basic truck model. The letter “E” designates an Electrical propulsion 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 Gross Vehicle Weight (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)** and this means **the total weight:** the Empty Vehicle Weight + the fuel & lubricants + the payload.

To determine allowable payload: Service all lubricants for proper level and fill fuel tank of empty truck (which includes all accessories, body liners, tailgates, etc.) and then weigh truck. Record this value and subtract from the GVW rating. The result is the allowable payload.

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

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

This "ALERT" symbol is used with the signal words, "DANGER", "WARNING", and "CAUTION" in this manual 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 MAY 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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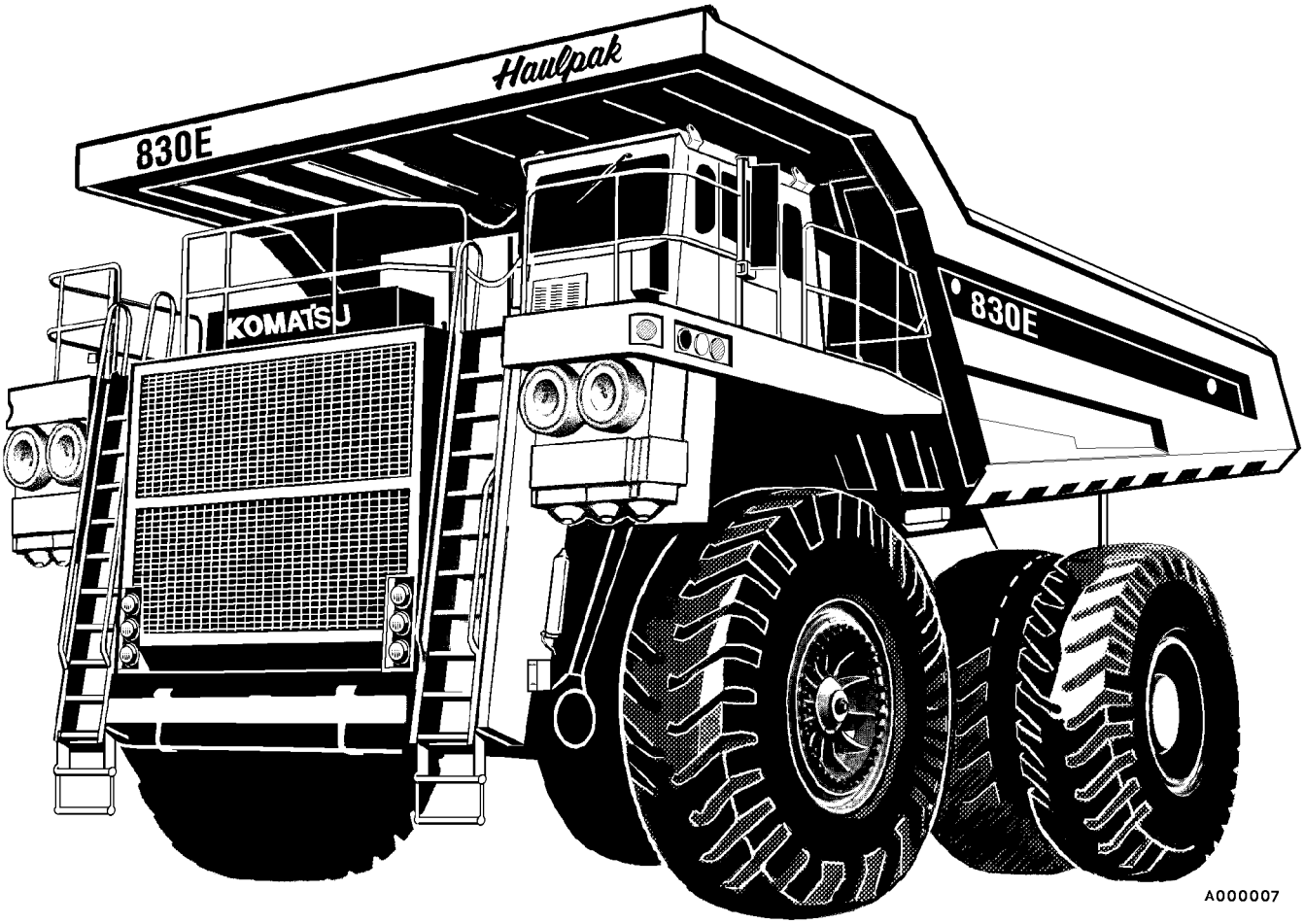

KOMATSU MODEL 830E HAULPAK TRUCK

SECTION A
GENERAL INFORMATION
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NOTES

TRUCK MAJOR COMPONENTS & SPECIFICATIONS

The KOMATSU Model 830E Haulpak Truck is an electric drive, off-highway, rear dump truck whose gross vehicle weight is 850,650 lbs. (385 848 kg) (240 - 255 ton nominal payload).

ENGINE

This Model 830E Haulpak Truck is powered by a MTU/DDC 16V4000 Series diesel engine with rated brake power @ 2500 hp (1887 kW). The radiator, engine, alternator, and blower are mounted on a separate subframe to provide fast, easy removal and installation of the power module.

ALTERNATOR (G.E. GTA-26)

The alternator is mounted in-line with the engine. The alternating current (AC) output of the alternator is rectified to direct current (DC) and sent to the wheel mounted DC drive traction motors.

BLOWER

The dual impeller, in-line blower supplies cooling air for the alternator, rectifiers, and both traction motors. The air is exhausted to atmosphere through the wheel motors.

WHEEL MOTORS

Traction motors located within each rear wheel structure receive electrical energy from the alternator. The two traction motors convert electrical energy back to mechanical energy through built-in gear trains within the wheel structure. The direction of the drive motors is controlled by a forward or reverse hand selector switch located on a console in the cab to the right side of the operator.

POWER STEERING

The Haulpak 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 a nitrogen-charged accumulator which automatically provides emergency power if the steering hydraulic pressure is reduced below an established minimum.

OPERATOR'S CAB

The Operator's Cab has been engineered for operator comfort and to allow for efficient and safe operation of the truck. The cab contains an integrated ROPS and is fully insulated to reduce noise and vibration. The tinted safety-glass windshield and side windows provide excellent visibility. The seat is a comfortable, adjustable suspension seat, the steering wheel provides tilt and telescoping adjustments and controls are mounted within easy reach of the operator. The instrument panel provides the operator with instruments and gauges that are necessary to control and monitor the truck's operating systems and is marked with international symbols for easy identification of functions.

DYNAMIC RETARDING

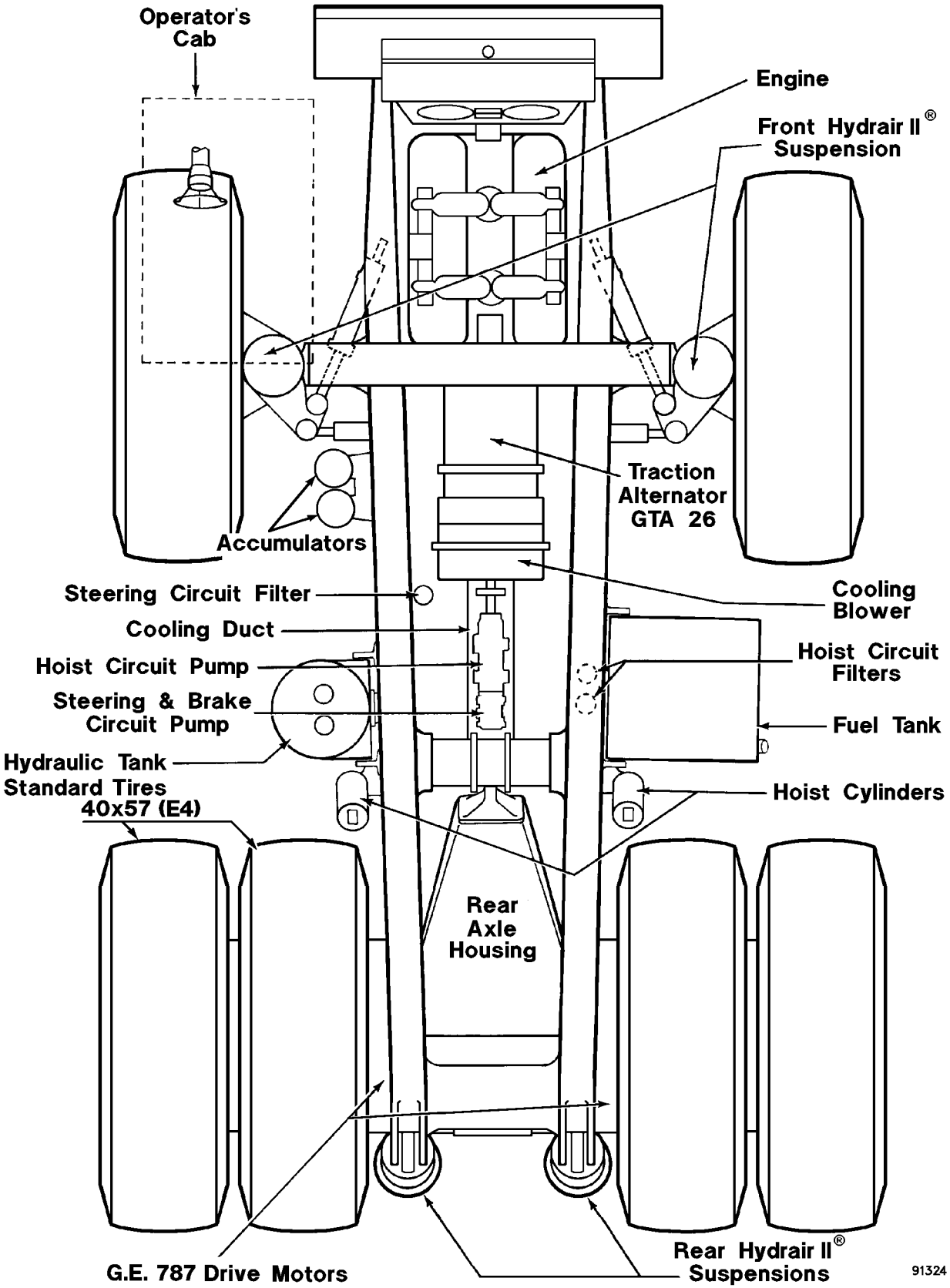
Dynamic retarding is used to slow the truck during normal operation or control speed coming down a grade. The dynamic retarding ability of the DC electric system is controlled by the operator by depressing the foot operated retarder pedal and/or setting the RSC (Retarder Speed Control) on the instrument panel. Dynamic Retarding is automatically activated if truck exceeds the overspeed setting.

BRAKE SYSTEM

The braking system consists of an all hydraulic actuation system. Depressing the brake pedal actuates wheel-speed single disc front brakes and armature-speed dual disc rear brakes. The brakes can also be activated by operating a switch on the instrument panel. The brakes will be applied automatically if system pressure decreases below a preset minimum.

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.



830E MAJOR COMPONENTS

SPECIFICATIONS

These specifications are for the standard 830E Haulpak Truck. Customer Options may change this listing.

ENGINES -

MTU/DDC 16V4000 Series

Number of Cylinders 16
Operating Cycle . . . . . 4- Stroke
Rated Brake HP . . 2500 HP (1887 kW) @ 1900 RPM
Flywheel HP . . . 2409 HP (1818 kW) @ 1900 RPM
Weight* (Dry) . . . . . 15,835 pounds (7183 kg)
* Weight does not include Radiator, Sub-frame, or Alternator

ELECTRIC DRIVE SYSTEM - STATEX III

(AC/DC Current)
Alternator . . . . . General Electric GTA - 26
Dual Impeller, In-Line Blower 9000 cfm (255 m^3/min)
Motorized Wheels . . . . . General Electric 787
Ratio 28.125:1
Maximum Speed* . . . . . 35.3 MPH (56.9 km/h)
(*w/40.00-57 Tires and 28.125:1 gear train)

DYNAMIC RETARDING

Extended Range Retarding With Fully Blown
18-Resistor Grids and Reverse Retarding Standard
Maximum Rating . . . . . 4000 HP (2983 kW)

TIRES

Rock Service, Deep Tread . . . . . (E-4) Tubeless
Standard Tire . . . . . 40.00 - 57, 68 Ply Rating
(w/787 Wheelmotor)
Separable Tire Rims *
5 Piece New Generation™ Rims *
Rims* are interchangeable with different positions on the truck, but due to improved design for greater load support, rims are not interchangeable with other manufacturer's rims.

Rim Size:
29 in. (737 mm) X 57 in. (1448 mm) X 6 in. (152 mm)

24 VDC ELECTRIC SYSTEM

Batteries . . . . . Two 12 Volt Batteries in Series
. 220 Ampere-Hour Capacity w/Disconnect Switch
Battery Charging Alternator . . . . . .
. . . . . 24 Volt, 240 Ampere Output
Lighting . . . . . 24 Volt
Starters . . . . . (2) Delco-Remy 24 Volt

SERVICE CAPACITIES

	U.S. Gallons	(Liters)
Crankcase *	66.0	250.0
* Includes Lube Oil Filters		
Cooling System	150	568
Fuel	1200	4543
Hydraulic System	250	947
Hydraulic Tank	238	901
Wheel Motor Gear Box (each)	10.5	39.7

AIR SYSTEM

Compressor . . . . . B-W TU-FLO 501
Capacity . . . . . 12 cfm (0.34 m^3/min.)
Starter with Interlock . Varies with Customer Option
Main Tank Capacity . . . . . 15 $ft.^3$ (425 liters)

HYDRAULIC SYSTEMS*

Pumps
Hoist . . . . . Tandem Gear Pumps
Rated @ . . . . 230 GPM (870 l/min.) @ 1900 RPM
Steering . . Radial Piston-Pressure Compensating
(also Brake) . . 65 GPM (246 l/min.) @ 1900 RPM
System Relief Pressures
Hoist/Steering . . . . . 2500 psi (17.2 MPa)
Brakes . . . . . 3500 psi (24.1 MPa)
Hoist Cylinders (2) 3-Stage
Tank (Vertical/Cylindrical) . . . . . Non-Pressurized
Filtration . Remote-mounted, Replaceable, Elements
Suction . . . . . Single, Full Flow, 100 Mesh
Hoist & Steering . . . . . .
. . . . . Full Flow, Dual In-Line, High Pressure
. . . . . Beta 12 Rating = 200
*With Quick Disconnects for powering disabled
. . . . . truck and system diagnostics.

STEERING (w / Accumulators)

Turning Circle - Front Wheel Track . 93 ft. (28.4 m)
Full Time Power Steering . . . . . Twin Cylinders
Automatic Emergency Steering . . . . . Standard

SERVICE BRAKES

Actuation . . . . . All Hydraulic
Front . . . . . Wheel Speed, Single Disc
Inboard Mounted . . . . . 3 Calipers
Disc Diameter, O.D. . . . . 47.75 in. (1213 mm)
Rear . . . . . Armature Speed, Dual Disc
Disc Diameter, O.D. . . . . 25.00 in. (63.5 cm)
Emergency Brake-Automatically Applied Standard
Wheel Brake Lock . . . . Manual Switch on Panel
(Loading and Dumping)

DISC PARKING BRAKE

Each Rear Wheel . . . . . Single Caliper
Spring Applied . . . . . Hydraulically Released

DUMP BODY CAPACITY & DIMENSIONS

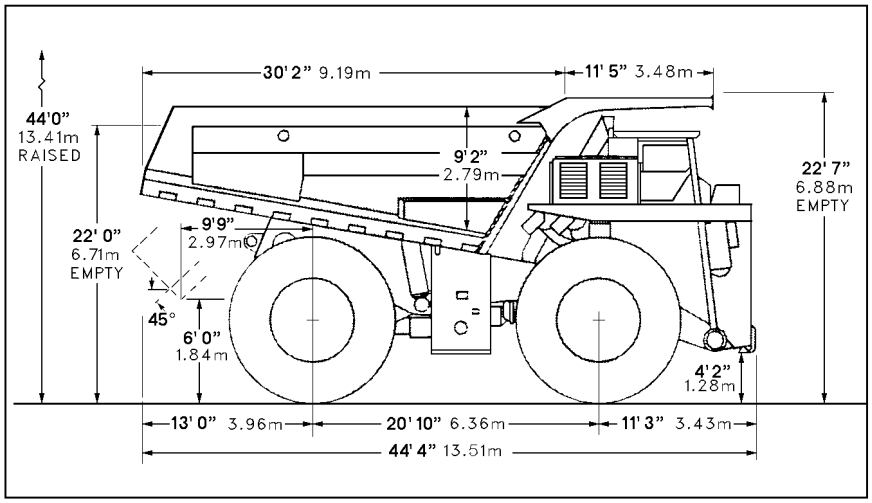
Standard, Heaped @ 2:1 (SAE) . 193 yd^3 (147 m^3)
Struck . . . . . 153 yd^3 (117 m^3)
Loading Height Empty . . . . . 22 ft. 1 in. (6.71 m)
Dumping Angle . . . . . 45°
Non-heated Body w/Exhaust Mufflers . . Standard

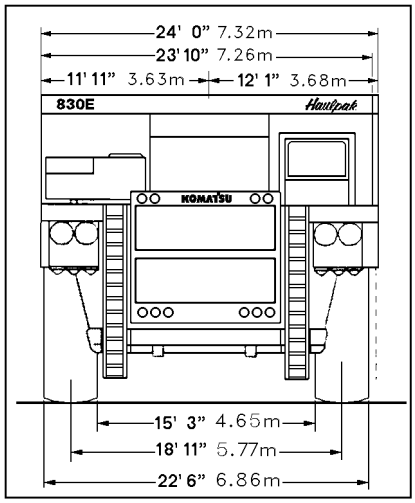
WEIGHT DISTRIBUTION

Empty Vehicle	**Pounds**	**(Kilograms)**
Front Axle	168,756	(76 546)
Rear Axle	171,642	(77 855)
Total	340,398	(154 401)

Loaded Vehicle	**Pounds**	**(Kilograms)**
Front Axle	282,241	(128 022)
Rear Axle	568,409	(257 826)
Total *	850,650	(385 848)

* Not To Exceed 850,650 lbs. (385 848 kg) including options, liners, fuel and payload, and subject to approval by Komatsu.

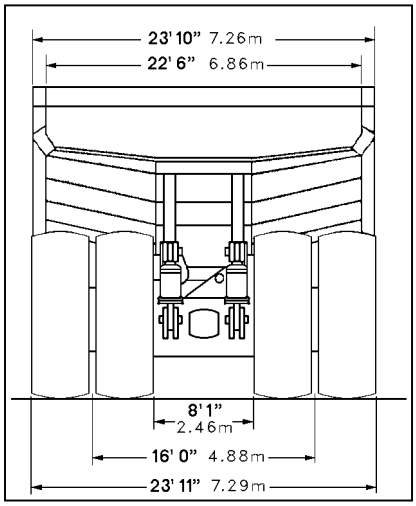




OVERALL TRUCK DIMENSIONS

(Empty with Standard Body)

Length	44 ft. 4 in. (13.51 m)
Width	24 ft. 0 in. (7.32 m)
Height With Canopy	22 ft. 7 in. (6.88 m)
Height With Dump Body Up . .	44 ft. 0 in. (13.41 m)
Turning Circle (On Front Track)	93 ft. 0 in. (28.35 m)



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GENERAL SAFETY

This safety section also contains precautions for optional equipment and attachments.

⚠WARNING

Read and follow all safety precautions. Serious injury or death may result, if all safety precautions are not followed.

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 worksite traffic duty, be sure all personnel understand all hand signals that are to be used.
-

SAFETY FEATURES

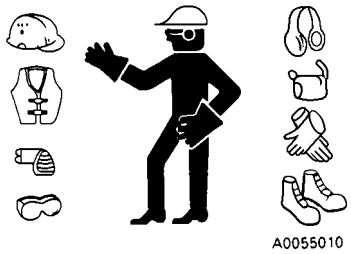
- Be sure all guards and covers are in their proper position. Have guards and covers repaired if damaged. (Refer to "Walk-Around Inspection, Operating Instructions", later in this section.)
- Learn the proper use of safety features such as safety locks, safety pins, and seat belts, and use these safety features properly.
- NEVER remove any safety features. ALWAYS keep them in good operating condition.
- Improper use of safety features could result in serious bodily injury or death.
-

UNAUTHORIZED MODIFICATION

- Any modification made without authorization from Komatsu can create hazards.
- Before making a modification, consult your Komatsu distributor. Komatsu will not be responsible for any injury or damage caused by any unauthorized modification.

CLOTHING AND PERSONAL PROTECTIVE ITEMS

- Avoid loose clothing, jewelry, and loose long hair. They can catch on controls or in moving parts and cause serious injury or death. Also, do not wear oily clothes because they are flammable.
- Wear a hard hat, safety glasses, safety shoes, mask or gloves when operating or maintaining the machine. Always wear safety goggles, hard hat and heavy gloves if your job involves scattering metal chips or minute materials—this is so particularly when driving pins with a hammer and when cleaning the air cleaner element with compressed air. Check also that there is no one near the machine.



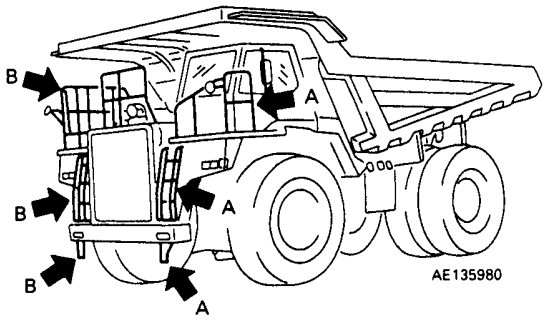
STANDING UP FROM THE SEAT

- To prevent any accident occurring if you should touch any control lever that is not locked, always carry out the following before standing up from the operator's seat.
- Place the shift control lever at neutral (N) and set the parking lever to the PARKING position.
- Lower the dump body, set the dump lever to the HOLD position, then apply the lock.
- Stop the engine. When leaving the machine, always lock everything. Always remember to take the key with you. If the machine should suddenly move or move in an unexpected way, this may result in serious bodily injury or death.

MOUNTING AND DISMOUNTING

- NEVER jump on or off the machine. NEVER get on or off a moving machine.
- When getting on or off the machine, face the machine and use the handhold and steps.
- Never hold any control levers when getting on or off the machine.

- Always maintain three-point contact with the handholds and steps to ensure that you support yourself.
- When bringing tools to the operator's compartment, always pass them by hand or pull them up by rope.
- If there is any oil, grease, or mud on the handholds or steps, wipe it off immediately. Always keep these parts clean. Repair any damage and tighten any loose bolts.
- Use the handrails and steps marked by arrows in the diagram below when getting on or off the machine.



A: For use when getting on or off the machine from the left door.

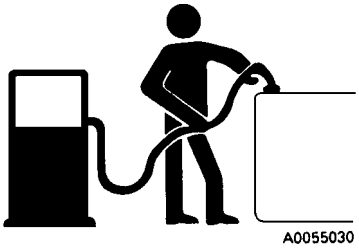
B: For use when getting on or off the machine from the engine hood or right door.

FIRE PREVENTION FOR FUEL AND OIL

- Fuel, oil, and antifreeze can be ignited by a flame.
  Fuel is extremely FLAMMABLE and can be HAZARDOUS.

- Keep flame away from flammable fluids.
- Stop the engine and do not smoke when refueling.

- Tighten all fuel and oil tank caps securely.
- Refueling and oiling should be made in well ventilated areas.
- Keep oil and fuel in its specified place and do not allow unauthorized persons to enter.



PRECAUTIONS WHEN HANDLING AT HIGH TEMPERATURES

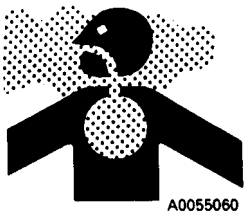
- Immediately after operations, the engine cooling water, engine oil, and hydraulic oil are at high temperature and are under pressure. If the cap is removed or the oil or water is drained or the filters are replaced, there is danger of serious burns. Always wait for the temperature to go down, and carry out the operation according to the specified procedure.

- To prevent hot water from spurting out:
  1) Stop the engine.
  2) Wait for the water temperature to go down.
  3) Turn the cap slowly to release the pressure before removing the cap.
- To prevent hot oil from spurting out:
  1) Stop the engine.
  2) Wait for the oil temperature to go down.
  3) Turn the cap slowly to release the pressure before removing the cap.

ASBESTOS DUST HAZARD PREVENTION

Asbestos dust can be HAZARDOUS to your health if it is inhaled.

If you handle materials containing asbestos fibers, follow these guidelines as given below:



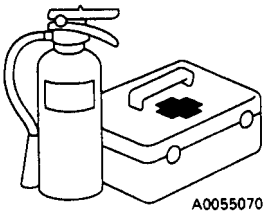
- NEVER use compressed air for cleaning.
- Use water for cleaning to keep down the dust.
- Operate the machine with the wind to your back, whenever possible.
- Use an approved respirator, if necessary.

PREVENTION OF INJURY BY WORK EQUIPMENT

- Never enter or put your hand or arm or any other part of your body between movable parts such as the dump body and chassis or cylinders. If the work equipment is operated, the clearance will change and this may lead to serious bodily injury or death.

FIRE EXTINGUISHER AND FIRST AID KIT

- Be sure fire extinguishers have been provided and know how to use them.
- Provide a first aid kit at the storage point.
- Know what to do in the event of a fire.



- Be sure you know the phone numbers of persons you should contact in case of an emergency.

PRECAUTIONS WHEN USING ROPS

- If ROPS is installed, the ROPS must never be removed when operating the machine.
- The ROPS is installed to protect the operator if the machine should roll over. If is designed not only to support the load if the machine should roll over, but also to absorb the impact energy.
- The Komatsu ROPS fulfills all of the regulations and standards for all countries, but if it is rebuilt without authorization or is damaged when the machine rolls over, the strength will drop and it will not be able to fulfill its function properly. It can only display its performance if it is repaired or modified in the specified way.
- When modifying or repairing the ROPS, always contact your Komatsu distributor.
- Even if the ROPS is installed, it cannot show its full effect if the operator does not fasten the seat belt properly. Always fasten the seat belt when operating.

PRECAUTIONS FOR ATTACHMENTS

- When installing and using an optional attachment, 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 or your 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.

PRECAUTIONS DURING OPERATION

BEFORE STARTING ENGINE

SAFETY AT WORKSITE

- Before starting the engine, thoroughly check the area for any unusual conditions that could be dangerous.
- Examine the road surface in the jobsite and determine the best and safest method of operation.
- Choose an area where the ground is as horizontal and firm as possible before carrying out the operation.
- If you need to operate on a road, protect pedestrians and cars by designating a person for worksite traffic duty or by installing fences around the worksite.
- Check the river bed condition, and depth and flow of water before crossing shallow parts of river. NEVER be in water which is in excess of the permissible water depth.
- The operator must check personally the work position, roads to be used, and existence of obstacles before starting operations.
- Always determine the travel roads in the worksite and maintain them so that it is always safe for the machines to travel.

FIRE PREVENTION

- Thoroughly remove wood chips, leaves, paper and other flammable things accumulated in the engine compartment. They could cause a fire.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- Check fuel, lubrication, and hydraulic systems for leaks. Have any leaks repaired. Wipe up any excess oil, fuel or other flammable fluids.
- Be sure a fire extinguisher is present and working.
- Do not operate the machine near any flame.

IN OPERATOR'S CAB

- Do not leave tools or spare parts lying around in the operator's compartment. They may damage or break the control levers or switches. Always put them in the tool box on the right side of the machine.
- Keep the cab floor, controls, steps and handrails free of oil, grease, snow, and excess dirt.
- Check the seat belt, buckle and hardware for damage or wear. Replace any worn or damaged parts. Always use seat belts when operating your machine.

VENTILATION FOR ENCLOSED AREAS

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


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KEEP MIRRORS, WINDOWS, AND LIGHTS CLEAN

- Remove any dirt from the surface of the windows or lights to ensure good visibility.
- Adjust the rear view mirror to a position where the operator can see best from the operator's seat, and keep the surface of the mirror clean. If any glass should break, replace it with a new part.
- Check that the machine is equipped with the head lamps and working lamps needed for the operating conditions. Check that all the lamps light up properly.

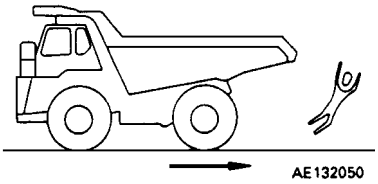
OPERATING MACHINE

WHEN STARTING ENGINE

- Walk around your machine again just before mounting it, checking for people and objects that might be in the way.
- NEVER start the engine if a warning tag has been attached to the control.
- When starting the engine, sound the horn as an alert.
- Start and operate the machine only while seated.
- Do not allow any person other than the operator in the operator's compartment or any other place on the machine.
- For machines equipped with a back-up alarm buzzer, check that the alarm buzzer works properly.

CHECK WHEN TRAVELING IN REVERSE

- Before operating the machine or work equipment, do as follows:
- Sound the horn to warn people in the area.



- Check that there is no one near the machine. Be particularly careful to check behind the machine.
- If necessary, designate a person to check the safety. This is particularly necessary when traveling in reverse.
- When operating in areas that may be hazardous or have poor visibility, designate a person to direct worksite traffic.
- Do not allow any one to enter the line of travel of the machine. This rule must be strictly observed even on machines equipped with a back-up alarm or rear view mirror.

TRAVELING

- When traveling on rough ground, travel at low speed. When changing direction, avoid turning suddenly.
- Lower the dump body and set the dump lever to the FLOAT position when traveling.
- If the engine should stop when the machine is traveling, the steering wheel will not work, and it will be dangerous to drive the machine. Apply the brakes immediately and stop the machine.

TRAVELING ON SLOPES

- Traveling on slopes could result in the machine tipping over or slipping.
- Do not change direction on slopes. To ensure safety, go down to level ground before turning.
- Do not travel up and down on grass, fallen leaves, or wet steel plates. These materials may make the machine slip on even the slightest slope. Take all possible steps to avoid traveling sideways, and always keep the travel speed low.
- When traveling downhill, use the retarder brake to reduce speed. Do not turn the steering wheel suddenly. Do not use the foot brake except in an emergency.
- If the engine should stop on a slope, apply the brakes fully and apply the parking brake, also, to stop the machine.

ENSURE GOOD VISIBILITY

- When working in dark places, install working lamps and head lamps, and set up lighting in the work area if necessary.
- Stop operations if the visibility is poor, such as in mist, snow, or rain, and wait for the weather to improve to a condition that allows the operation to be carried out safely.

OPERATE CAREFULLY ON SNOW

- When working on snowy or icy roads, there is danger that the machine may slip to the side on even the slightest slope, so always travel slowly and avoid sudden starting, turning, or stopping.
- Be extremely careful when carrying out snow-clearing operations. The road shoulder and other objects are buried in the snow and cannot be seen.
- When traveling on snow-covered roads, always install tire chains.

AVOID DAMAGE TO DUMP BODY

- When working in tunnels, on bridges, under electric cables, or when entering a parking place or any other place where there are height limits, always drive extremely carefully and lower the dump body completely before driving the machine.

WHEN DUMPING

- Before starting the dumping operation, check that there is no person or object behind the machine.
- Stop the machine in the correct position, and check again that there is no person or object 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 carrying out dumping operations on slopes, the machine stability will become poor and there is danger that it may tip over. Always carry out such operations extremely carefully.
- Do not travel with the dump body raised.

WORKING ON LOOSE GROUND

- Avoid operating your machine too close to the edge of cliffs, overhangs, and deep ditches. If these areas collapse, your machine could fall or tip over and result in serious injury or death. Remember that the soil after heavy rain or blasting is weakened in these areas.
- Earth laid on the ground and the soil near ditches are loose. They can collapse under the weight or vibration of your machine.
- When operating in places where there is danger of falling rocks or danger of the machine turning over, always install ROPS and a seat belt.

WHEN LOADING

- Check that the surrounding area is safe, stop the machine in the correct loading position, then load the body uniformly.
- Do not leave the operator's seat during the loading operation.

DO NOT GO CLOSE TO HIGH-VOLTAGE CABLES

- Going close to high-voltage cables can cause electric shock. Always maintain the safe distance given below between the machine and the electric cable.

Voltage	Minimum Safety 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:
  1) Wear shoes with rubber or leather soles.
  2) Use a signal person to give warning if the machine approaches too close to the electric cable.
- If the work equipment should touch the electric cable, the operator should not leave the operator's compartment.
- When carrying out operations near high voltage cables, do not let anyone come close to the machine.
- Check with the electricity company about the voltage of the cables before starting operations.

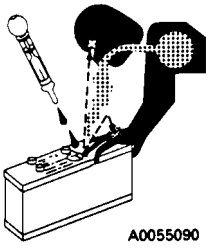
PARKING THE MACHINE

- Choose a horizontal road surface to park the machine. If the machine has to be parked on a slope, always put blocks under all the wheels 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. Be sure that the machine, flags, or lights do not obstruct the traffic.
- Before leaving the machine, lower the dump body fully, set the parking lever to the PARKING position, stop the engine, then lock everything. Always take the key with you.

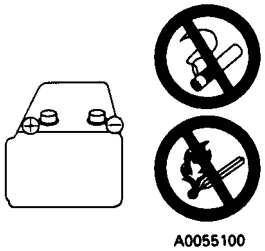
BATTERY

BATTERY HAZARD PREVENTION

- Battery electrolyte contains sulfuric acid and can quickly burn the skin and eat holes in clothing. If you spill acid on yourself, immediately flush the area with water.
- Battery acid could cause blindness if splashed into the eyes. If acid gets into the eyes, flush them immediately with large quantities of water and see a doctor at once.



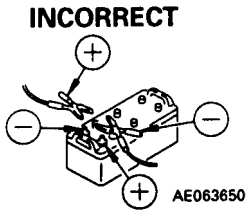
- If you accidentally drink acid, drink a large quantity of water or milk, beaten egg or vegetable oil. Call a doctor or poison prevention center immediately.
- When working with batteries ALWAYS wear safety glasses or goggles.
- Batteries generate hydrogen gas. Hydrogen gas is very EXPLOSIVE, and is easily ignited with a small spark of flame.



- Before working with batteries, stop the engine and turn the starting 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, check which is the positive (+) terminal and negative (-) terminal.
- Tighten the battery cap securely.
- Tighten the battery terminals securely. Loosened terminals can generate sparks and lead to an explosion.

STARTING WITH BOOSTER CABLES

- ALWAYS wear safety glasses or goggles when starting the machine with booster cables.
- When starting from another machine, do not allow the two machines to touch.
- Be sure to connect the positive (+) cable first when installing the booster cables.
  Disconnect the ground or negative (-) cable first when removing them.



- If any tool touches between the positive (+) terminal and the chassis, it will cause sparks. This is dangerous, so be sure to work carefully.
- Connect the batteries in parallel: positive to positive and negative to negative.
- When connecting the ground cable to the frame of the machine to be started, be sure to connect it as far as possible from the battery.

TOWING

WHEN TOWING, FIX WIRE TO HOOK

- Towing in the wrong way may lead to serious personal injury or damage.
- When using another machine to tow this machine, use a wire rope with ample strength for the weight of this machine.
- Never tow a machine on a slope.
- Do not use any towing rope that has kinks or is twisted.
- Do not stand astride the towing cable or wire rope.
- When connecting a machine that is to be towed, do not let any one come between the towing machine and the machine that is being towed.
- Set the coupling of the machine being towed in a straight line with the towing portion of the machine, and secure it in position. (For towing method, see "Operating Instructions" later in this section.)

PRECAUTIONS FOR MAINTENANCE

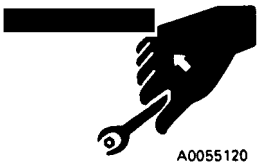
BEFORE PERFORMING MAINTENANCE

WARNING TAG

- If others start the engine or operate the controls while you are performing service or lubrication, you could suffer serious injury or death.
- ALWAYS attach the 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. 09963-03000)

PROPER TOOLS

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



PERIODIC REPLACEMENT OF CRITICAL PARTS

- Periodically replace parts used to insure safety or prevent accident. (See "Periodic Replacement Of Component Parts For Safety Devices", Section 4, of the "Operation & Maintenance Manual".)
- Replace these components periodically with new ones, regardless of whether or not they appear to be defective. These components deteriorate over time.
- Replace or repair any such components if any defect is found, even though they have not reached the time specified.

STOPPING THE ENGINE BEFORE SERVICE

- When carrying out inspection or maintenance, always stop the machine on firm flat ground, lower the dump body, then stop the engine.
- If the engine must be run during service, such as when cleaning the radiator, always set the shift control lever to the neutral position (N) and the parking brake lever to the PARKING position. Always carry out the work with two people. One person should sit on the operator's seat so that he can stop the engine if necessary. NEVER move any controls you do not need to operate.
- When servicing the machine, be careful not to touch any moving part or get your clothes caught.
- Put blocks under the wheels.
- When carrying out service with the dump body raised, always place the dump lever at the HOLD position, apply the lock, and insert the safety pins securely.

DURING MAINTENANCE

PERSONNEL

- Only authorized personnel can service and repair the machine. Extra precaution should be used when grinding, welding, and using a sledge-hammer.

ATTACHMENTS

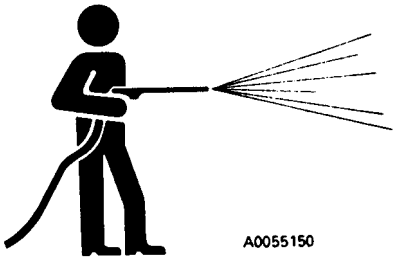
- Place attachments that have been removed from the machine in a safe place so that they do not fall. If they fall on you or others, serious injury could result.

WORK UNDER THE MACHINE

- Always lower all movable work equipment to the ground or to their lowest position before performing service or repairs under the machine.
- Always block the tires of the machine securely.

- Never work under the machine if the machine is poorly supported.

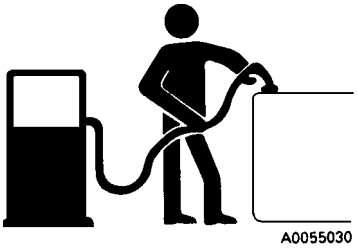
KEEP THE MACHINE CLEAN

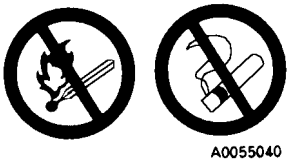


- Spilled oil or grease, or scattered tools or broken pieces are dangerous because they may cause you to slip or trip.
  Always keep your machine clean and tidy.
- If water gets into the electrical system, there is danger that the machine may not move or may move unexpectedly.
  Do not use water or steam to clean the sensors, connectors, or the inside of the operator's compartment.

RULES TO FOLLOW WHEN ADDING FUEL OR OIL

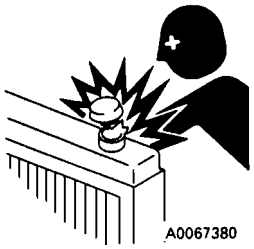
- Spilled fuel and oil may cause you to slip, so always wipe it up immediately.
- Always tighten the cap of the fuel and oil fillers securely.
- Never use fuel for washing any parts.
- Always add fuel and oil in a well-ventilated place.





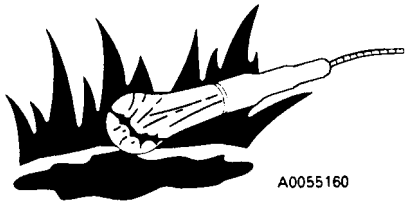
RADIATOR WATER LEVEL

- If it is necessary to add water to the radiator, stop the engine and allow the engine and radiator to cool down before adding the water.
- Slowly loosen the cap to relieve pressure before removing the cap.



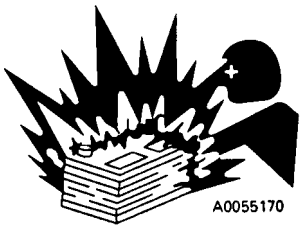
USE OF LIGHTING

- When checking fuel, oil, coolant, or battery electrolyte, always use lighting with anti-explosion specifications. If such lighting equipment is not used, there is danger or explosion.



PRECAUTIONS WITH BATTERY

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



HANDLING HIGH-PRESSURE HOSES

- Do not bend high-pressure hoses or hit them with hard objects. Do not use any bent or cracked piping, tubes or hoses. They may burst during use.
- Always repair any loose or broken fuel hoses or oil hoses. If fuel or oil leaks, it may cause a fire.

PRECAUTIONS WITH HIGH PRESSURE OIL

- Do not forget that the work equipment circuits are always under pressure.
- Do not add oil, drain oil, or carry out maintenance or inspection before completely releasing the internal pressure.
- If oil is leaking under high pressure from small holes, it is dangerous if the jet of high-pressure oil hits your skin or enters your eyes.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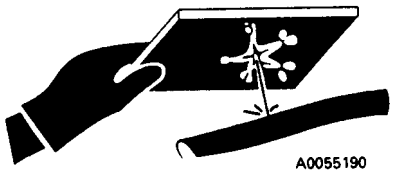
- If you are hit by a jet of high-pressure oil, consult a doctor immediately for medical attention.
- Always wear safety glasses and thick gloves, and use a piece of cardboard or a sheet of wood to check for oil leakage.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PRECAUTIONS WHEN PERFORMING MAINTENANCE AT HIGH TEMPERATURE OR HIGH PRESSURE

- Immediately after stopping operations, the engine cooling water and oil at all parts are at high temperature and under high pressure.


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- In this condition, if the cap is removed, or the oil or water are drained, or the filters are replaced, it may result in burns or other injury. Wait for the temperature to go down, then carry out the inspection and maintenance in accordance with the procedures given in this manual.

ROTATING FAN AND BELT

- Keep away from rotating parts and be careful not to let anything get caught in them.
- If your body or tools touch the fan blades or fan belt, they may be cut off or sent flying, so never touch any rotating parts.


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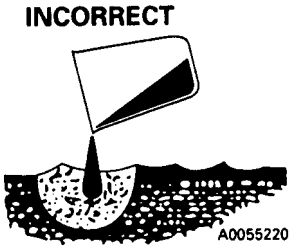
WASTE MATERIALS

- Never dump waste oil in a sewer system, rivers, etc.
- Always put oil drained from your machine in containers. Never drain oil directly on the ground.



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- Obey appropriate laws and regulations when disposing of harmful objects such as oil, fuel, coolant, solvent, filters, batteries, and others.

TIRES

HANDLING TIRES

- If tires are not used under the specified conditions, they may overheat and burst or be cut and burst by sharp stones on rough road surfaces. This may lead to serious injury or damage.
- To maintain safety, always keep to the following conditions:
- Inflate the tires to the specified pressure. Abnormal heat is generated particularly when the inflation pressure is too low.
- Use the specified tires.

The values given in this manual for the tire inflation pressure and permissible speed are general values. The actual values may differ depending on the type of tire and the condition under which they are used. For details, please contact your Komatsu distributor or tire maker.

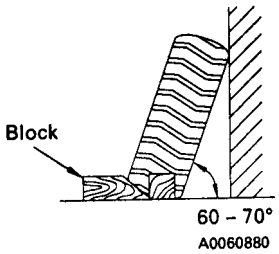
If the tires become hot, a flammable gas is produced, and this may ignite. It is particularly dangerous if the tires become overheated when the tires are under pressure. If the gas generated inside the tire ignites, the internal pressure will suddenly rise, and the tire will explode, and this may lead to serious personal injury. Explosions differ from punctures or tire bursts, because the destructive force is extremely large. Therefore, the following operations are strictly prohibited when the tire is under high internal pressure:

- Welding the rim
- Building fires or carrying out welding near the wheel or tire.

If you do not understand the proper procedure for carrying out maintenance or replacement of the wheel or tire, and you use the wrong method, the wheel or tire may burst and cause serious injury or damage. When carrying out such maintenance, please consult your Komatsu distributor or tire maker.

STORING TIRES AFTER REMOVAL

- As a basic rule, store the tires in a warehouse which unauthorized persons cannot enter. If the tires are stored outside, always erect a fence around the tires and put up “No Entry” and other warning signs that even young children can understand.
- Stand the tire on level ground, and block it securely so that it cannot roll or fall over.



- If the tire should fall over, get out of the way quickly. The tires for construction equipment are extremely heavy, so trying to hold the tire may lead to serious injury.

ADDITIONAL JOB SITE RULES

Use this space to add any ADDITIONAL Job Site Rules not covered in any of the previous discussions.

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 check of the truck should be made by the operator before attempting to start the engine.

SAFETY IS THINKING AHEAD

Prevention is the best safety program. Prevent potential accidents by knowing all of the employer's safety requirements, all necessary job site regulations, as well as the use and care of the safety equipment on the Haulpak Truck.
Only qualified operators or technicians should attempt to operate or maintain the Haulpak Truck.

Safe practices start before the operator gets to the equipment!

- Wear the proper clothing. Loose fitting clothing, unbuttoned sleeves and jackets, jewelry, etc., can catch on a protrusion and cause a potential hazard.
- Always use the personal safety equipment provided for the operator such as hard hat, safety shoes, safety glasses or goggles. There are some conditions when protective hearing devices should also be worn for operator safety.
- When walking to and from the truck, maintain a safe distance from all machines even if the operator is visible.

At The Truck - Ground Level Walk Around Inspection

At the beginning of each shift, a careful walk around inspection of the truck should be made before the operator attempts engine start-up. A walk around inspection is a systematic ground level inspection of the truck and its components to insure that the truck is safe to operate before entering the operator's cab.

Start at the left front corner of the truck (see illustration, next page), and move in a counter-clockwise direction, front-to-rear, across the rear, and continuing forward up the opposite side of the truck to the original starting point.

If these steps are taken in sequence, and are repeated from the same point and in the same direction before every shift, many potential problems may be avoided, or scheduled for maintenance. UNSCHEDULED downtime and loss of production can be reduced.

Local work practices may prevent an operator from performing all tasks suggested here, but to the extent permitted, the operator should follow this or similar routine.

1. Start at left front of truck (see illustration, next page). While performing the walk around inspection, visually inspect all lights and safety equipment for external damage from rocks or misuse. Make sure lenses are clean and unbroken.

   Empty the dust pans on the left side air cleaner assemblies.

2. Move behind the front of the left front tire, inspect the hub and brake assemblies for leaks and any abnormal conditions.

   Check that all suspension attaching hardware is secure, the suspension extension is correct, and that there are no leaks.

3. With engine stopped, swing access ladder down. If dark, turn on service light located to the right, just above ladder by hand rail. Check engine oil level.

4. Inspect fan and air conditioner belts for correct tension, obvious wear, and tracking. Inspect fan guard for security and condition. When leaving this point, be sure ladder is up and secure, and turn off service light(s), if used.

5. Inspect anchor end of steering cylinder for proper greasing and for security.

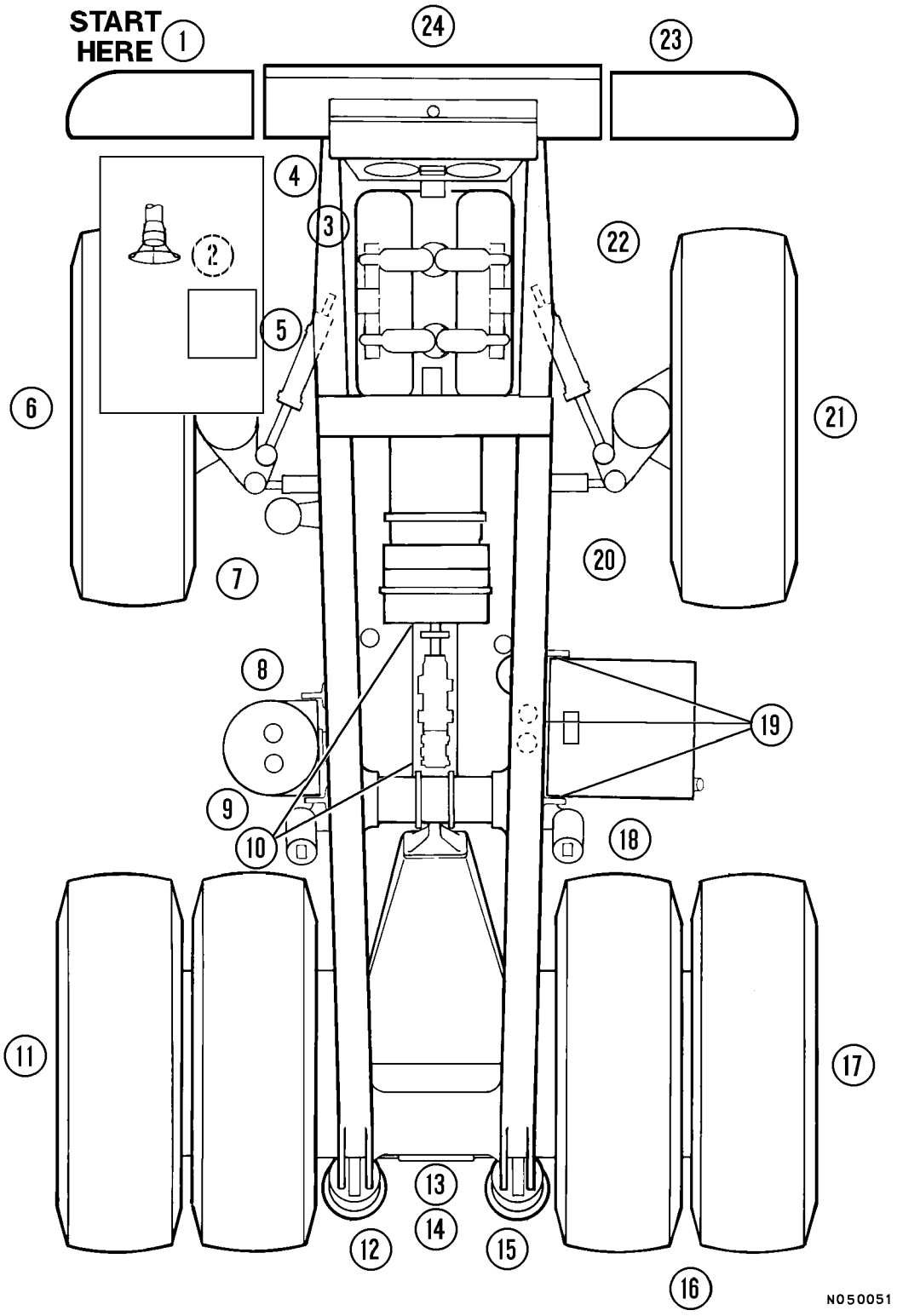
6. Move outboard of the front wheel, and inspect attaching lugs/wedges to be sure all are tight and complete. Check tires for cuts, damage or "bubbles" and that inflation appears to be correct.

7. Move behind the rear of the front wheel, inspect for leaks at hub or brakes or any unusual conditions. Inspect suspension hardware to be sure it is all in place. Inspect live end of steering cylinder for proper greasing, and for security of all parts. Inspect for any hydraulic leaks.

   Swing hydraulic tank inspection ladder down. Inspect sight glass on hydraulic reservoir, engine should be stopped and body down, and fluid should appear in lower sight glass.

8. Before leaving hydraulic tank be sure that ladder is up and secure.

PREPARING FOR OPERATION
GROUND LEVEL CHECKS



830E "WALK-AROUND"

9. Move on around the hydraulic tank and in front of the rear dual tires, inspect the hoist cylinder for any damage and leaks, also that lower guard is in place. Inspect both upper and lower hoist cylinder pins for security, and for proper greasing.

10. Before leaving this position, look under the lower edge of the chassis to be sure the flexible duct that carries the air from the main blower to the final drive housing is in good condition with no holes or breakage. Also look up at the main hydraulic pumps to see that there is no leakage or any other unusual condition with pumps or pump drive shafts.

11. Move on around the dual tires, check to see that all lugs/wedges are in place and tight. Inspect latches on wheel cover to be sure they are properly latched. Inspect wheel for any leakage that may be coming from inside the wheel cover that would indicate brake leakage, or wheel motor leakage.

    Check dual tires for cuts, damage or "bubbles" and that inflation appears to be correct. If truck has been run on a "flat", **the tire must be cooled before parking truck inside**. Inspect for any rocks that might be lodged between dual tires, and that rock ejector is in good condition and straight so that it can not damage a tire.

12. Inspect left rear suspension for damage and for proper inflation, and that there are no leaks. Inspect also for proper greasing, and that covers over the chrome piston are in good condition.

13. Open rear hatch cover, turn on work light, if necessary. Inspect for leaks around wheelmotor mounting to rear housing, and also brake hoses and fittings. Be sure that covers on wheel motor sump are in place, and that there are no rags or tools left behind. Inspect condition of hatch cover gasket, report any bad gasket to maintenance. Turn off work light if used, close and latch hatch.

14. While standing in front of rear hatch, look up to see that rear lights are in good condition, along with dual back up horns. Look up at panhard rod to see that it is getting proper greasing. Also look at both body hinge pins for greasing and any abnormal condition.

15. Perform the same inspection on the right rear suspension as done on the left.

16. Move on around the right dual tires, inspect between the tires for rocks, and for condition of the rock ejector, inspect the tires for cuts or damage, and for correct inflation.

17. Perform the same inspection for wheel lugs/wedges, wheel cover latches, and for leaks that was done on the left hand dual wheels.

18. Move in front of right dual tires, and inspect the hoist cylinder the same as was done on the left side.

19. Move on around the fuel tank, inspect the fuel quantity gauge (if equipped - this should agree with the fuel gauge in the cab). Inspect the attaching hardware for the fuel tank at the upper saddles, and then at the lower back of the tank for the security and condition of the resilient mounts.

20. Move in behind the right front wheel, and inspect the steering cylinder, suspension attaching hardware and suspension extension, as well as greasing and attaching hardware for the steering cylinder. Inspect the hub and brakes for leaks and any unusual condition. Be sure the suspension protective boot is in good condition.

21. Move out and around the right front wheel, inspect that all lugs/wedges are in place and tight.

22. Move in behind the front of the right front wheel, check hub and brakes for leaks and any unusual condition. Inspect steering cylinder for security and for proper greasing. Inspect the engine compartment for any leaks and unusual condition. Inspect the fan guard, and belts also for any rags or debris behind radiator. Turn work light off, if used, and secure the ladder up and latched.

23. Move on around the front of the truck, drop the air cleaner pans to remove dirt, latch up and secure.

24. As you move in front of the radiator, inspect for any debris that might be stuck in front of the radiator and remove it. Check for any coolant leaks. Inspect all head and fog lights.

25. Before climbing ladder to first level, be sure ground level engine shutdown switch is "ON". Inspect fire control actuator to be sure safety pin is in place and plastic tie that prevents accidental actuation is in place and in good condition.

26. Climb ladder to main deck. Always use grab rails and ladder when mounting or dismounting from the truck. Clean ladder and hand rails of any foreign material, such as ice, snow, oil or mud.

⚠WARNING

Always mount and dismount ladders facing the truck. Never attempt to mount or dismount while the truck is in motion.

27. Observe coolant level through opening in end of hood. When checking coolant in radiator, relieve pressure slowly before removing radiator cap.

⚠WARNING

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

28. Be sure battery disconnect switches are on. Inspect covers over braking grids to be sure latches are in place and secure. Be sure battery box hold down wing nuts are in place and secure. Inspect main air inlet to be sure it is clear. Be sure all cabinet door latches are secure.

29. Move on around the cab to the back, open the doors to the brake cabinet, inspect for leaks. Before latching doors, turn work lights off, if used.

30. Clean cab windows and mirrors; clean out cab floor as necessary. Insure steering wheel, controls and pedals are free of any oil, grease or mud.

31. Stow personal gear in cab so that it does not interfere with any operation of the truck. Dirt or trash buildup, specifically in the operator's cab, should be cleared. Do not carry tools or supplies in cab of truck or on the deck.

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

33. If the truck is in an enclosure, insure adequate ventilation before start-up. Exhaust fumes are dangerous!

ENGINE START-UP SAFETY PRACTICES

1. Insure all personnel are clear of truck before starting engine. Always sound the horn as a warning before actuating any operational controls.

2. Check and insure Selector Switch is in "**N**eutral" before starting.

3. If truck is equipped with auxiliary cold weather heater system(s),
   DO NOT attempt to start engine while heaters are in operation.
   DAMAGE TO COOLANT HEATERS WILL RESULT!

   Also refer to: PREPARING FOR OPERATION, item 27. *"NOTE"*.

4. The keyswitch is a three position (Off, Run, Start) switch. When switch is rotated one position clockwise, it is in the "Run" position and all electrical circuits (except "Start") are activated. With Selector Switch in "**N**eutral", rotate keyswitch fully clockwise to "Start" position and hold this position until engine starts. "Start" position is spring loaded to return to "Run" when key is released.

⚠WARNING

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

If truck is equipped with optional Engine Starting Aid and ambient temperature is below 50^{o}F (10^{o}C), turn the keyswitch to the "Start" position, and while cranking engine, move the Engine Starting Aid switch to the "On" position for three (3) seconds **MAXIMUM**; then release Engine Starting Aid. If engine does not start, wait at least fifteen (15) seconds before repeating the procedure.

Do not crank an electric starter for more than 30 seconds.
Allow two minutes for cooling before attempting to start engine again.

NOTE: Severe damage to starter motor can result from overheating.

AFTER ENGINE HAS STARTED

1. After engine has started, do not accelerate engine speed or drive truck until low pressure and warning systems are normal, and the coolant temperature is at least 160°F (71°C).
2. Become thoroughly familiar with steering and emergency controls. Test the truck steering in extreme right and left directions. If the steering system is not operating properly, shut engine down immediately. Determine the steering system problem and have repairs made before resuming operation.
3. Operate each of the truck's brake circuits at least twice prior to operating and moving the truck. These circuits include individual activation from the operator's cab of the service brake, parking brake, and brake lock (also emergency brake, if equipped). With the engine running and with the hydraulic circuit fully charged, activate each circuit individually. If any application or release of any brake circuit appears sluggish or improper, or if warning alarms are activated on application or release, shut the engine down and notify maintenance personnel. Do not operate truck until brake circuit in question is fully operational.
4. Check gauges, warning lights and instruments before moving the truck to insure proper system operation and proper instrument functioning. Give special attention to braking and steering circuit hydraulic warning lights. If warning lights come on, shut down the engine immediately and determine the cause.
5. Insure headlights, worklights and taillights are in proper working order. Good visibility may prevent an accident. Check operation of windshield wiper.
6. When truck body is in dump position, do not allow anyone beneath it unless body-up retaining pin or cable is in place.
7. Do not use the fire extinguisher for any purpose other than putting out a fire! If extinguisher is discharged, report the occurrence so the used unit can be refilled or replaced.
8. Do not allow unauthorized personnel to ride in the truck. Do not allow anyone to ride on the ladder of the truck.
9. Do not leave truck unattended while engine is running. Shut down engine before getting out of cab.

MACHINE OPERATION SAFETY PRECAUTIONS

After the truck engine is started and all systems are functioning properly, the operator must follow all local safety rules to insure 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 truck as soon as safety permits, shut down engine if problem indicates and have problem corrected before resuming truck operation.

⚠CAUTION

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

1. Always look to the rear before backing the truck. Watch for and obey ground spotter's hand sign before making any reverse movements. Sound the warning horn (3 blasts). Spotter should have a clear view of the total area at the rear of the truck.
2. Operate the truck only while properly seated with seat belt fastened. Keep hands and feet inside the cab compartment while truck is in operation.
3. Check 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 haul road conditions and slow the truck in any congested area. Keep a firm grip on steering wheel at all times.
6. Do not allow engine to run at "Idle" for extended periods of time.
7. Check parking brake periodically during shift. Use parking brake **ONLY** for parking. Do not use park brake for loading / dumping. *Do not attempt to apply parking brake while truck is moving!*

⚠WARNING

Do not use "Brake Lock" or "Emergency Brake" (if equipped) for parking.

8. Check brake lock performance periodically for safe loading and dump operation.
9. Proceed slowly on rough terrain to avoid deep ruts or large obstacles. Avoid traveling close to soft edges and the edge of fill area.
10. Truck operation requires concentrated effort by the driver. Avoid distractions of any kind while operating the truck.

LOADING

1. Pull into the loading area with caution. Remain at a safe distance while truck ahead is being loaded.
2. Do not drive over unprotected power cables.
3. When approaching or leaving a loading area, watch out for other vehicles and for personnel working in the area.
4. When pulling in under a loader or shovel, follow "Spotter" or "Shovel Operator" signals. The truck operator may speed up loading operations by observing the location and loading cycle of the truck being loaded ahead, then follow a similiar pattern.
5. When being loaded, operator should stay in truck cab. Place Selector Switch in "**N**eutral" and apply brake lock with engine running.
6. When loaded, pull away from shovel as quickly as possible but with extreme caution.

HAULING

1. Always stay alert! If unfamiliar with the road, drive with extreme caution.
   Cab doors should remain closed at all times if truck is in motion or unattended.
2. Obey all road signs. Operate truck so it is under control at all times. Govern 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 back-up signal (three blasts on the horn); when starting forward, two blasts on 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 when following another vehicle. Never approach another vehicle from the rear, in the same lane, closer than 50 ft. (15 m). When driving on a down grade, this distance should not be less than 100 ft. (30 m).
6. Do not stop or park on a haul road unless unavoidable. If you must stop, move truck to a safe place, apply parking brake, block wheels securely, shut down engine and notify maintenance personnel for assistance.
7. Before starting up or down a grade, maintain a speed that will insure safe driving and provide effective retarding under all conditions. Refer to Grade/Speed decal in operator's cab.
8. When operating truck in darkness, or when visibility is poor, do not move truck unless headlights are on. Do not back truck if back-up horn or lights are inoperative. Always dim headlights when meeting oncoming vehicles.
9. If the "Emergency Steering" light and/or "Low Brake Pressure Warning" light (*if equipped*) illuminate during operation, steer the truck **immediately** to a safe stopping area, away from other traffic, if possible. Refer to item 6 above.
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 1650 RPM.
    (Normal engine RPM for haul road/retarding operation is 1250 RPM.)
11. When maximum truck speed is reached, trucks equipped <u>with</u> Fuel Enhancement will experience a DECREASE in engine RPM.
    NOTE: This is different from trucks <u>NOT</u> equipped with Fuel Enhancement, which will increase RPM upon reaching speed limit.
12. Check tires for proper inflation periodically during shift. If truck has been run on a "flat", or under-inflated tire, it must not b**e parked in a building until the tire cools**.

PASSING

1. Do not pass another truck on a hill or blind curve!
2. Before passing, make sure 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.