Operation & Maintenance Manual

Dump Truck

960E-2K

Serial Numbers A50011 — A50027

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 near the machine for reference and periodically reviewed by all personnel who will come into contact with it.

NOTICE

Komatsu has Operation & Maintenance Manuals written in some other languages. If a foreign language manual is necessary, contact your local distributor for availability.

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GENERAL INFORMATION E.2-0000051234

This manual provides dual dimensioning for many specifications. Metric units are specified first, with U.S. standard units in parentheses. When torque values are not specified in the assembly instructions contained in this manual, use the standard torque value for the hardware being used. Standard value torque tables are contained in this chapter for metric and SAE hardware.

This truck is assembled with both metric and SAE (U.S.) hardware. Reference the correct table when determining the proper torque value.

⚠ CAUTION

- **References throughout the manual to standard torques or other standard values will be to one of the following tables. Do not use standard values to replace specific torque values in assembly instructions.**

For values not shown in any of the charts or tables, standard conversion factors for most commonly used measurements are provided in the following tables.

Effect Of Special Lubricants

The Komatsu engineering department does not recommend the use of special friction-reducing lubricants, such as Copper Coat, Never-Seez®, and other similar products, on the threads of standard fasteners where standard torque values are applied. The use of special friction-reducing lubricants will significantly alter the clamping force being applied to fasteners during the tightening process.

If special friction-reducing lubricants are used with the standard torque values listed in this chapter, excessive stress and possible breakage of the fasteners may result.

Where the torque tables specify "Lubricated Threads" for the standard torque values listed, these standard torque values are to be used with simple lithium base chassis grease (multi-purpose EP NLGI) or a rust-preventive grease (see below) on the threads and seats unless specified otherwise.

NOTE: *Ensure the threads of fasteners and tapped holes are free of burrs and other imperfections before assembling.*

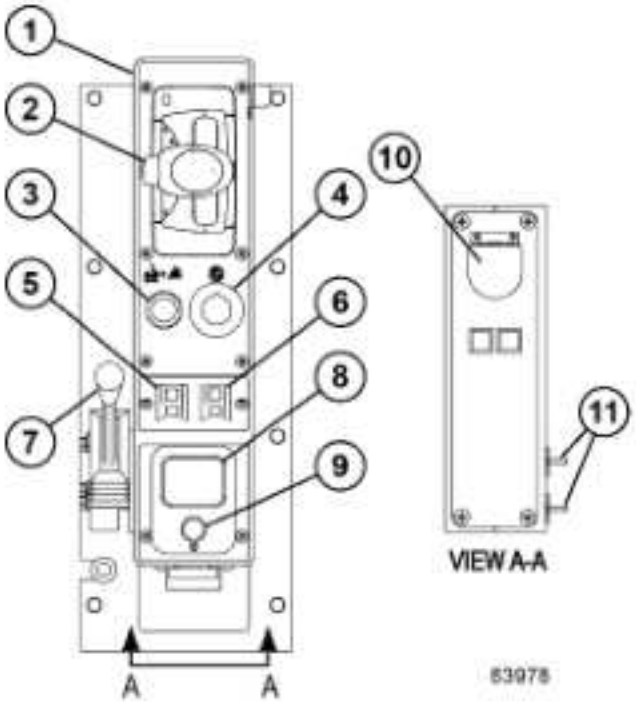
Suggested Sources For Rust Preventive Grease

NOTE: *This list represents the current engineering approved sources for use in Komatsu manufacture. It is not exclusive. Other products may meet the same specifications of this list.*

- American Anti-Rust Grease #3-X from Standard Oil Company (also American Oil Co.)
- Gulf NoRust #3 from Gulf Oil Company.
- Mobilarma 355, Product No. 66705 from Mobil Oil Corporation.
- Rust Ban 326 from Humble Oil Company.
- Rustolene B Grease from Sinclair Oil Co.
- Rust Preventive Grease - Code 312 from the Southwest Grease and Oil Company.

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CENTER CONSOLE B.14-0000053862



1. Center Console
2. Directional Control Lever
3. Override/Fault Reset Switch
4. Engine Stop Switch
5. L.H. Window Control Switch
6. R.H. Window Control Switch
7. Hoist Control Lever
8. Ashtray
9. Lighter
10. Data Store Button
11. 12V Auxiliary Power Outlets

Figure 6-3 CENTER CONSOLE

DIRECTIONAL CONTROL LEVER

Directional control lever (2, Figure 6-3 CENTER CONSOLE, page 6-7) is mounted on the console to the right of the operator's seat. It is a four position lever that controls the park, reverse, neutral, and forward motion of the truck. Before moving the directional control lever, apply the service brakes to completely stop the truck. Depress the button on the side to release the detent lock, then move the control lever to the desired position. When the control lever is in the center N position, it is in NEUTRAL. When the control lever is in the P position, it is in PARK, and the parking brake will be applied. The parking brake is spring applied and hydraulically released. It is designed to hold the truck stationary when the engine is off and the key switch is turned OFF. The truck must be completely stopped before moving the control lever to PARK, or damage may occur to the park brake. When the key switch is ON, and the control lever is in PARK, the parking brake indicator light on the instrument panel will be illuminated.

NOTE: *The directional control lever must be in PARK to start the engine. DO NOT move the directional control lever to the PARK position at the shovel or dump.*

Select FORWARD drive by moving the control lever to the F position.

Select REVERSE drive by moving the control lever to the R position. DO NOT allow the control lever to travel too far and go into the PARK position when REVERSE is desired.

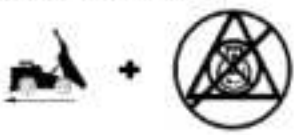
Any time the directional control lever is placed in the FORWARD or the REVERSE position, the engine speed will go to 1,600 rpm for 15 seconds in preparation for truck movement. If the throttle pedal is not touched within 15 seconds, engine speed will return to 750 rpm.

Any time the truck is moving and engine rpm is above 1,600 rpm and the throttle pedal is released, engine rpm will hold at 1,600 rpm. If the throttle pedal is not touched within 15 seconds, then engine rpm will return to 750 rpm.

NOTE: *The truck must be completely stopped before the control lever is moved to a drive position or into PARK. A drive system fault will be recorded if the control lever is placed into the PARK position while the truck is still moving.*

OVERRIDE/FAULT RESET SWITCH

Override/fault reset switch (3) is spring-loaded to the OFF position. When pushed in and held, this switch may be used for several functions.



1. This switch permits the operator to override the body-up limit switch and move the truck forward when the directional control lever is in FORWARD, the dump body is raised, and the brakes are released.

   Use of the override switch for this purpose is intended for emergency situations only!

2. The switch deactivates the retard pedal function when truck speed is below 5 kph (3 mph).

3. The override switch is also used to reset an electric system fault when indicated by a red warning light.

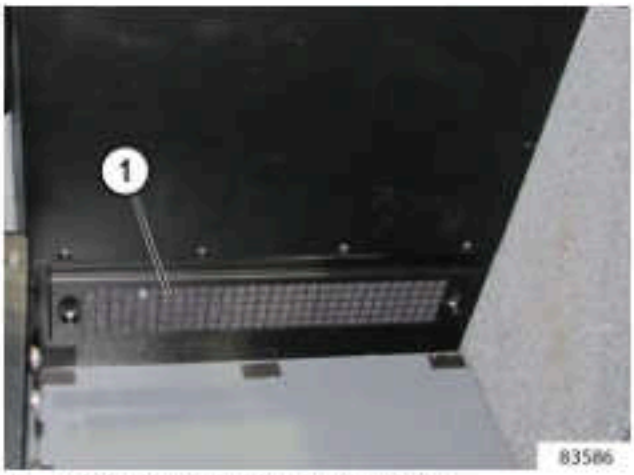
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EVERY 3000 HOUR LUBRICATION AND MAINTENANCE INSPECTION B.13-0000053905

NOTE: *Maintenance for every 10, 250, 500 & 1,000 hour Lubrication and Maintenance Checks must also be performed at this time. "Lube Key" references are to the lubrication chart.*

EVERY 3000 HOUR MAINTENANCE	
Item	**Task**
TRACTION ALTERNATOR	• Regrease bearing. Add 80 g (2.8 oz) of Mobilith SHC 100. DO NOT over grease. (Lube Key E) • Clean condensation water drain holes at the underside of the alternator. • Check the inlet air duct connection to the N end shield and retorque, if necessary. • Check the end shield and intermediate housing bolt connections. Retorque if necessary. • Check the cable connection to terminal boxes and retorque, if necessary. • Check the pulse generator and speed sensor. • Check air outlet covering for foreign bodies and damage.
IGBT CONTROL BOX	• Overhaul/replace inner liquid to air heat exchanger motor. • Drain the coolant from the system. • Replace coolant pump. • Overhaul/Replace coolant pump motor. • Replace coolant with fresh water/Antifrogen® mixture.
GRID BOX	• Regrease DE and NDE grid blower shaft bearings (add 22g). ***NOTE:*** *Grid blower shaft bearings and coupling are lubricated from the vendor with Mobolith AW2 and should be relubricated with the same or some equivalent.* • Visually inspect grid resistors for damage by looking in the grid box outlet, replace resistors if necessary. • Regrease coupling between motor and blower shaft (add 10g).
MAIN BLOWER	Megger the motor windings and record for future reference. The value must be > 1.4 M ohms @ 500V.

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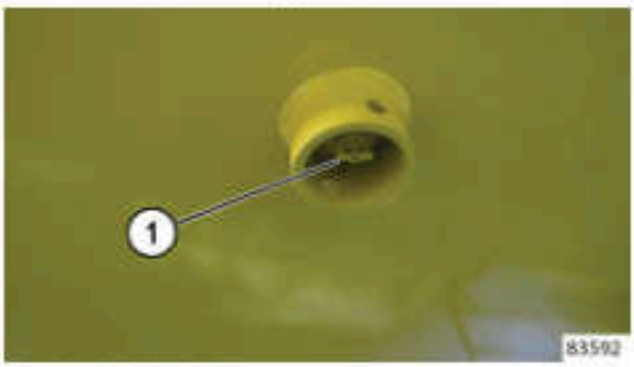
1. HVAC Recirculation Filter Element

Figure 7-7 HVAC RECIRCULATION FILTER LOCATION

1. Clean both filter elements (1, Figure 7-6 CAB AIR FILTER LOCATION, page 7-5 and Figure 7-7 HVAC RECIRCULATION FILTER LOCATION, page 7-6) with mild soap and water.
2. Rinse completely clean and air dry with a maximum of 275 kPa (40 psi).
3. Reinstall the filters.

FUEL SYSTEM SERVICE G.33-0000051601

Fuel Tank Cleaning

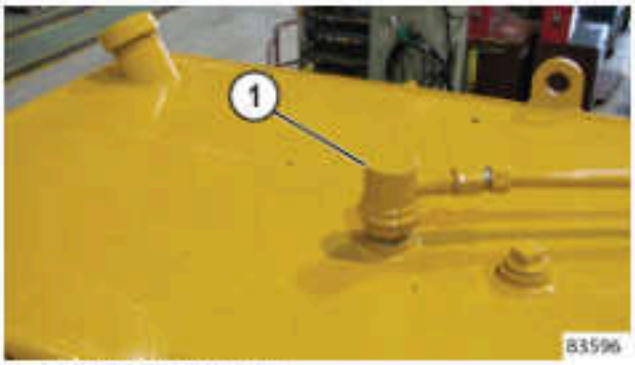


1. Fuel Tank Drain

Figure 7-8 FUEL TANK

Open fuel tank drain (1, Figure 7-8 FUEL TANK, page 7-6) to drain water and sediment from the fuel tank. The fuel tank is provided with a drain and a cleaning port in the side that allows steam or solvent to be utilized in cleaning tanks that have accumulated foreign material.

It is not necessary to remove the tank from the truck for cleaning of sediment, however rust and scale on the walls and baffles may require complete tank removal. Prior to a cleaning procedure of this type, all vents, fuel gauge, and hose connections should be removed and temporarily sealed. After all scale, rust, and foreign material has been removed, the temporary plugs can be removed. A small amount of light oil must be sprayed into the tank to prevent rust if the tank is to remain out of service. All openings should be sealed for rust prevention.

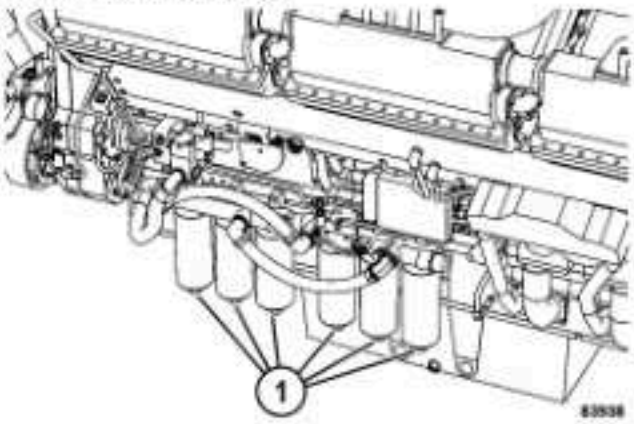


1. Fuel Tank Breather

Figure 7-9 FUEL TANK BREATHER

Remove breather (1, Figure 7-9 FUEL TANK BREATHER, page 7-6) and clean in solvent. Dry with pressurized air and reinstall.

Fuel Filter Service



1. Water Drain Valves

Figure 7-10 WATER SEPARATOR DRAIN

Open water drain valves (1, Figure 7-10 WATER SEPARATOR DRAIN, page 7-6) to remove water from the fuel/water separators daily.

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Lubricant Required For Automatic Lubrication System

Grease requirements will depend on ambient temperatures encountered during truck operation:

- Above 32°C (90°F) - Use NLGI No. 2 multipurpose grease (MPG).
- -32° to 32°C (-25° to 90°F) - Use NLGI No. 1 multipurpose grease (MPG).
- Below -32°C (-25°F) - Refer to local supplier for extreme cold weather lubricant requirements.

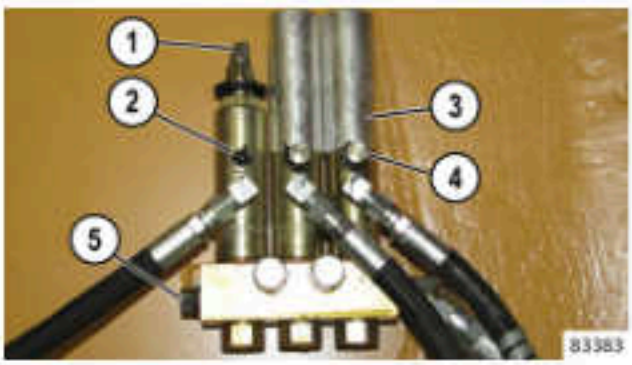
Priming The Automatic Lubrication System

The system must be full of grease and free of air pockets to function properly. After maintenance, if primary or secondary lubrication lines were replaced, it will be necessary to prime the system to eject all entrapped air.



1. Vent Valve
2. Main Supply Line

Figure 5-14 AUTO LUBE MAIN SUPPLY LINE



1. Injector Indicator
2. Injector Grease Zerk
3. Injector Cover
4. Injector Grease Zerk Cap
5. Injector Manifold Plug

Figure 5-15 INJECTOR MANIFOLD

To prime the main supply lines, perform the following:

1. Fill lube reservoir with lubricant, if necessary.
2. Remove injector manifold plug (5, Figure 5-15 INJECTOR MANIFOLD, page 5-42) from injector manifold. Always start with the injector manifold closest to the pump. The last grease line to be purged should be the main grease line to the rear axle (longest grease line).
3. Disconnect main supply line (2, Figure 5-14 AUTO LUBE MAIN SUPPLY LINE, page 5-42) from vent valve (1). Connect an external grease supply to main supply line (2).
4. Pump grease in main supply line (2) until grease appears at the injector manifold plug.
5. Re-install the injector manifold plug. Repeat for remaining injector groups.

After all main supply lines are purged of air, the injector circuits must now be primed.

To prime the secondary supply lines, perform the following:

1. If necessary, disconnect an injector grease line from the component that particular injector supplies grease to.
2. Remove injector grease zerk cap (4) from each injector and connect an external grease supply to injector grease zerk (2) on the injector.
3. Pump grease into the injector until grease appears at the far end of the individual grease line or the joint being greased.
4. Reconnect injector grease line to the component, remove the external grease supply, and reinstall injector grease zerk cap.
5. Repeat steps 1 through 4 until all secondary supply lines have been primed.
6. After all grease lines are primed, use the override switch to cycle the automatic lubrication pump a few times to lube the components.

PREVENTIVE MAINTENANCE PROCEDURES E.6-0000051465

Use the following maintenance procedures to ensure proper system operation.

Daily Lubrication System Inspection

1. Check the grease reservoir level after each shift of operation. Grease usage should be consistent from day-to-day operations. Lack of lubricant usage would indicate an inoperative system. Excessive usage would indicate a broken supply line.

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