CEAM032600

Operation & Maintenance Manual

730E

DUMP TRUCK

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ENGINE 16V159

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KOMATSU®

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Grease Pressure Failure Switch

Pressure switch (10, Figure 5-10 PUMP & RESERVOIR COMPONENTS (FRONT VIEW), page 5-37) is a normally open switch set at 13 789 kPa (2,000 psi). If the appropriate grease pressure is not achieved during the normal pump cycle, the warning system will be activated, illuminating the warning lamp in the overhead display to notify the operator a problem exists in the lube system.

Relief Valve (unloader valve)

There is a relief valve that protects the pump from high pressures. The relief valve is set at 27 580 kPa (4,000 psi).

Lubrication Cycle Timer

The solid state lubrication cycle timer provides a 24 VDC timed-interval signal to energize solenoid valve providing oil flow to operate the grease pump motor. The timer is in the lube controller box that is located in the electrical interface cabinet (aux. box).

SYSTEM OPERATION B.2-0000053153

During truck operation, the lubrication cycle timer will energize the system at a preset time interval. Hydraulic oil provided by the truck steering pump circuit flows to the pump motor and initiates a pumping cycle.

The hydraulic oil from the steering circuit is directed through the pressure reducing valve and flow control valve before entering the motor. Pump pressure can be read on an optional pressure gauge that can be mounted on the manifold. With oil flowing into the hydraulic motor, the grease pump will operate. Grease is pumped from the reservoir to the injectors through a check valve and to the vent valve. During this period, the injectors will meter the appropriate amount of grease to each lubrication point.

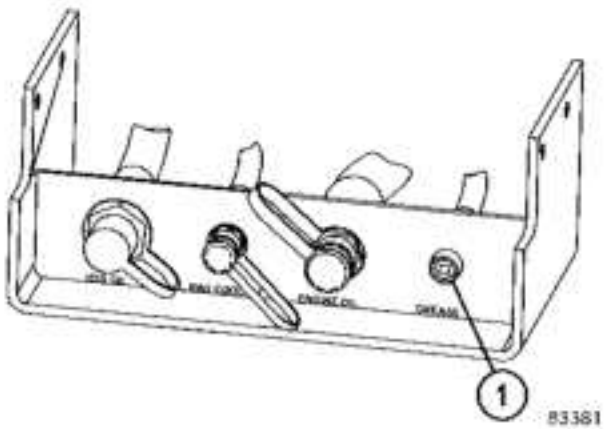
NOTE: *Each lube injector services only one grease point. In case of pump malfunction, each injector is equipped with a covered grease fitting to allow the use of external lubricating equipment.*

When grease pressure reaches the pressure switch setting, power from the hydraulic motor/pump solenoid and the pump will stop.

After the pump solenoid valve is de-energized, hydraulic pressure in the manifold drops and the vent valve opens. Grease pressure is then released to the injector banks. When this occurs, the injectors are then able to recharge for the next lubrication cycle.

NOTE: *The system will remain at rest until the lubrication cycle timer turns on and initiates a new grease cycle.During the normal lubrication cycle, if grease pressure fails to reach 13 790 kPa (2,000 psi) within 120 seconds at the pressure switch located on the rear axle housing, an amber indicator light will illuminate on the overhead panel.*

Filling The Reservoir



1. Automatic Lubrication Fill Connector

Figure 5-13 SERVICE CENTER

The grease reservoir has an approximate capacity of 41 kg (90 lbs.) of grease. When the grease supply is replenished by filling the system at the service center, the grease is passes through the filter to remove contaminants before it flows into the reservoir.

To fill the automatic lubrication system reservoir, perform the following:

1. Connect an external grease supply to grease connector (1) of the service center.
2. Remove the vent hose from the reservoir.
3. Pump grease into the reservoir, from the service center, until grease is seen through the vent hose port. Once grease is present, stop filling.
4. Disconnect external grease supply from the service center and reconnect the vent hose to the reservoir.

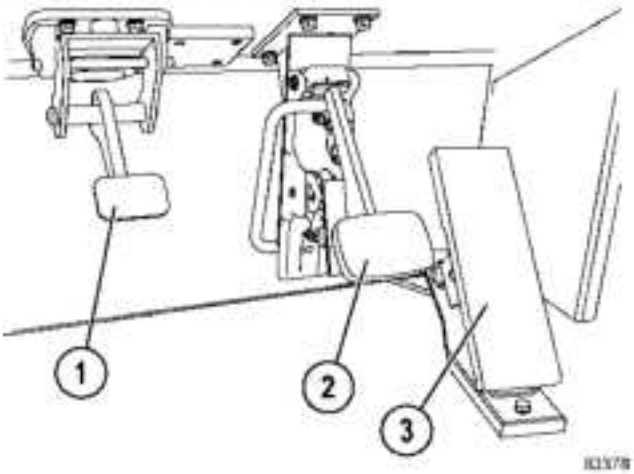
Lubricant Required For Automatic Lubrication System

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).

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PEDALS C.7-0000051459



1. Service Brake Pedal
2. Dynamic Retard Pedal
3. Accelerator Pedal

Figure 6-3 PEDALS

Service Brake Pedal

Service brake pedal (1, Figure 6-3 PEDALS, page 6-5) is a foot operated pedal which applies the service brakes. Only apply the service brakes when dynamic retarding requires additional braking force to slow the truck speed quickly, or to bring the truck to a complete stop once truck speed is less than 5 kph (3 mph).

Dynamic Retard Pedal

Dynamic retard pedal (2) is a foot operated pedal which allows the operator to slow the truck and maintain a safe productive speed without the use of the service brakes. For normal truck operation, only dynamic retarding must be used to slow and control the speed of the truck. Use the grade/speed chart, located on the left post next to the windshield, to determine maximum safe truck speeds for descending a grade with a loaded truck. Only apply the service brakes when dynamic retarding requires additional braking force to slow the truck speed quickly or to bring the truck to a complete stop.

When dynamic retarding is in use, the engine rpm will automatically go to an advance rpm retard speed setting (usually 1250 rpm). Dynamic retarding will be applied automatically, if the speed of the truck reaches the predetermined overspeed retard setting. Dynamic retarding is available in FORWARD/REVERSE at all truck speeds above 0 kph/mph, but is available in NEUTRAL only when truck speed is above 5 kph (3 mph).

Dynamic Retarding

Dynamic retarding is a braking torque (not a brake) produced through electrical generation by the wheelmotors when the truck motion (momentum) is the propelling force.

For normal truck operation, dynamic retarding must be used to slow and control truck speed.

Dynamic retarding is available in FORWARD/REVERSE at all truck speeds above 0 kph/mph; however, as the truck speed slows below 5 kph (3 mph), the available retarding force may not be effective. Use the service brakes to bring the truck to a complete stop.

Dynamic retarding will not hold a stationary truck on an incline. Use the parking brake or wheel brake lock for this purpose.

Dynamic retarding is available in NEUTRAL only when truck speed is above 5 kph (3 mph).

When dynamic retarding is in operation, engine rpm will automatically go to an advance retard speed setting. This rpm will vary depending on temperature of several electrical system components.

Dynamic retarding will be applied automatically if the speed of the truck obtains the maximum speed setting programmed in the control system software.

When dynamic retarding is activated, an indicator light in the overhead display will illuminate. The grade/speed retard chart must always be used to determine safe downhill speeds. Refer to the grade speed chart in the cab.

Accelerator Pedal

Accelerator pedal (3) is a foot-operated pedal which allows the operator to control engine rpm depending on pedal depression.

It is used by the operator to request torque from the motors when in forward or reverse. In this mode, the propulsion system controller commands the correct engine speed for the power required. In NEUTRAL, this pedal controls engine speed directly.

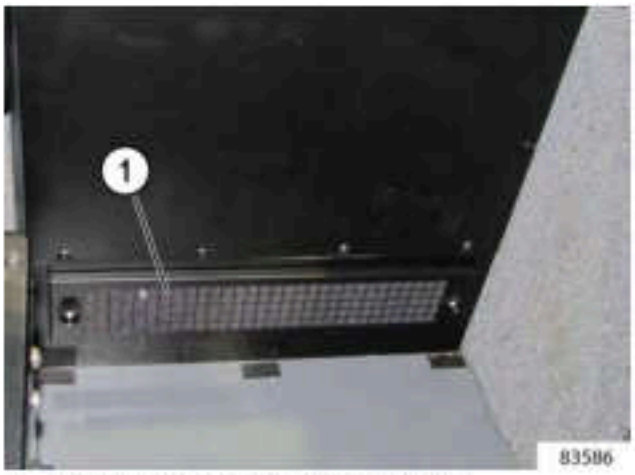
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EVERY 500 HOUR LUBRICATION AND MAINTENANCE B.7-0000053301

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

EVERY 500 HOUR LUBRICATION AND MAINTENANCE	
Item	**Task**
WHEEL MOTORS	• Remove the breather elements for the motorized wheels. Clean or replace the elements. • (Initial 500 hours only) change or filter wheel motor gear oil only after initial 500 hours or operation. Wheel motor gear oil must be filtered or changed every 2500 hours of operation thereafter. Refer to the Shop Manual, Section G for oil sampling information.
HYDRAULIC SYSTEM	• Replace the filter elements. Check the oil level. Add oil as necessary. (Lube Key "B"). • Replace the breather elements. Refer to HYDRAULIC SYSTEM SERVICE, page 7-2 for detailed instructions.
HYDRAIR® SUSPENSION	Check for proper piston extension (front and rear). Refer to Section H4 in the service manual for more information on proper suspension extension and maintenance procedures.
THROTTLE AND BRAKE PEDAL	Lubricate the treadle roller and hinge pins with lubricating oil. Lift the boot from the mounting plate and apply a few drops of lubricating oil between the mounting plate and the plunger.
HOIST ACTUATOR LINKAGE	Check operation. Clean, lubricate, and adjust as necessary.
ACCUMULATOR PRECHARGE	Check all steering, brake and auxiliary hydraulic system accumulator pre-charge pressures. Refer to the Shop Manual, Section J and Section L for details.
HVAC	• Clean the air conditioner recirculation filter. • Ensure the air conditioner cab drains are clear of any obstructions. • Wash the air conditioner condensor with a low pressure hose. Check for any obstructions to airflow, clean as required.
COOLING SYSTEM	Wash the radiator fins with a low pressure hose. Check for any obstructions to airflow, clean as required.
FUEL SYSTEM	Wash the fuel cooler (if equipped), located on the front RH side of the radiator, with a low pressure hose. Check for any obstructions to airflow, clean as required.
FRONT WHEELS	Take an oil sample of the front wheel bearing oil. Refer to FRONT WHEEL SERVICE, page 7-7 for detailed instructions.
FRONT BRAKE DISC	Measure the thickness of the disc. If 20 to 25% of the disc wear surface is worn below **28.7 mm (1.13 in.)**, the disc must be replaced. Refer to the shop manual, Section J, for additional information.
REAR BRAKE DISC	Measure the thickness of the disc. If 20 to 25% of the disc wear surface is worn below **22.3 mm (0.88 in.)**, the disc must be replaced. Refer to the shop manual, Section J, for additional information.

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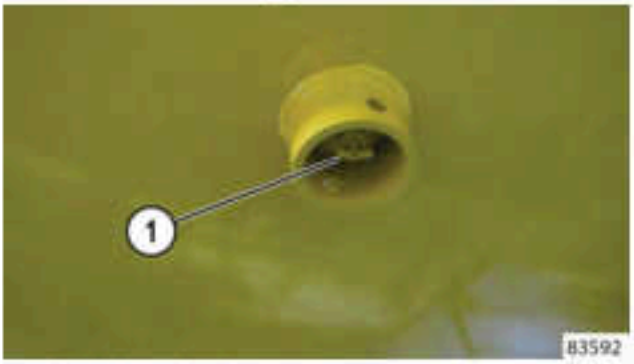
1. HVAC Recirculation Filter Element

Figure 7-6 HVAC RECIRCULATION FILTER LOCATION

1. Clean both filter elements (1, Figure 7-5 CAB AIR FILTER LOCATION, page 7-4 and Figure 7-6 HVAC RECIRCULATION FILTER LOCATION, page 7-5) 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 B.2-0000053613

Fuel Tank Cleaning



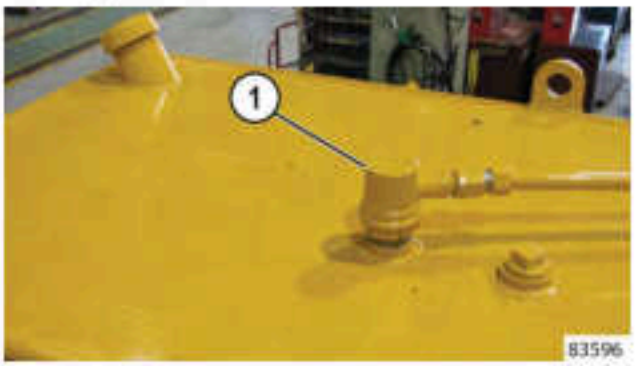
1. Fuel Tank Drain

Figure 7-7 FUEL TANK

Open fuel tank drain (1, Figure 7-7 FUEL TANK, page 7-5) 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.

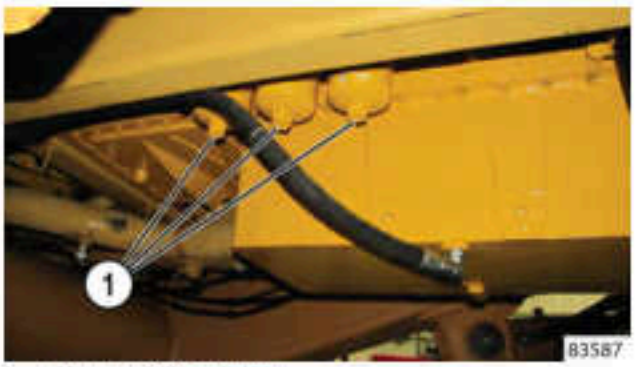


1. Fuel Tank Breather

Figure 7-8 FUEL TANK BREATHER

Remove breather (1, Figure 7-8 FUEL TANK BREATHER, page 7-5) and clean in solvent. Dry with pressurized air and reinstall.

Fuel Filter Service



1. Water Drain Valves

Figure 7-9 WATER SEPARATOR DRAIN

Open water drain valves (1, Figure 7-9 WATER SEPARATOR DRAIN, page 7-5) to remove water from the fuel/water separators daily.

INTAKE AIR CLEANER SERVICE B.4-0000053612

⚠ CAUTION

- **The engine must be turned off before servicing the air cleaner assemblies or opening the engine air intake system. Never start the engine with the filter elements removed. Serious engine damage can result.**

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UPLOADING DATA E.8-0000051431

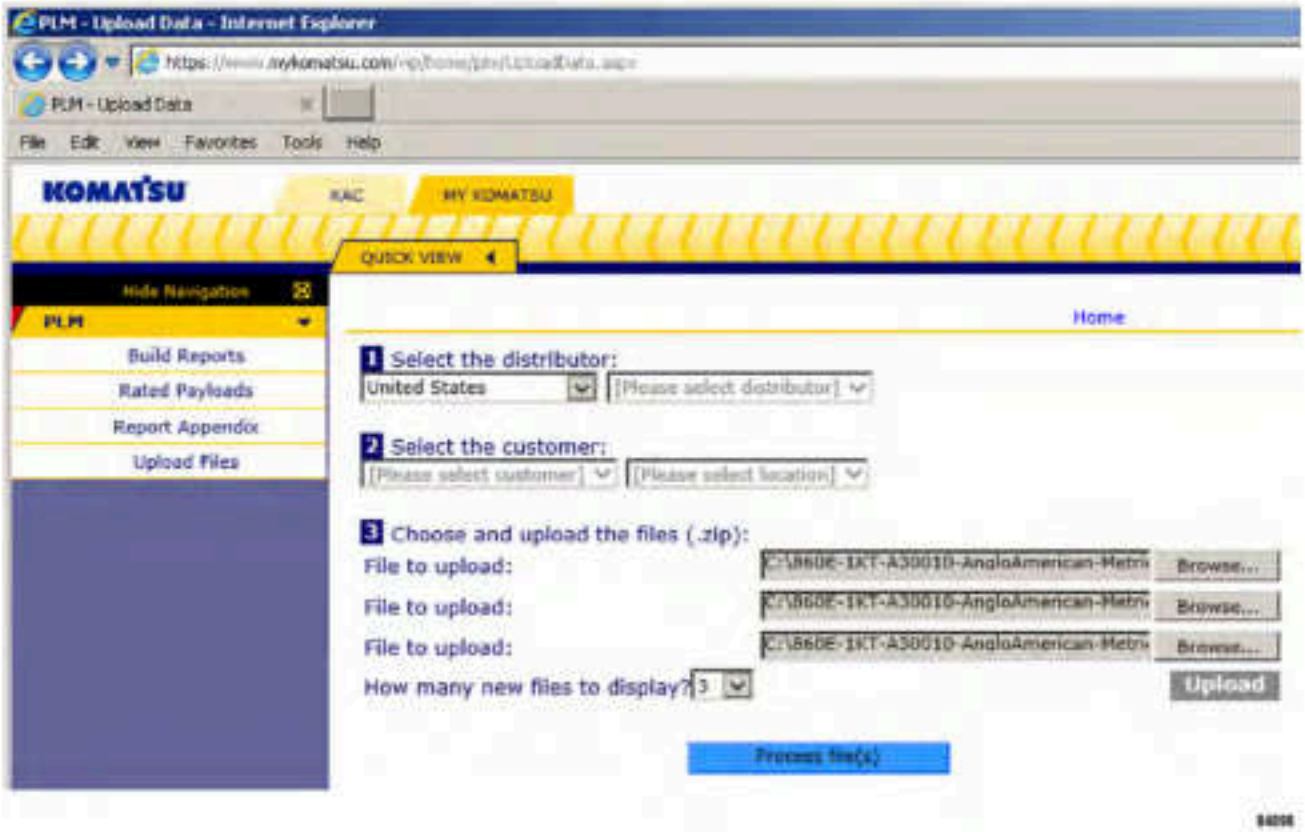


Figure 5-8 UPLOADING HAUL CYCLE AND ALARM DATA

The Payload Meter (PLM) application uses data that has been uploaded and stored on the server. The reports generated by the application are in PDF (Adobe) format. CSV files are also available for special analysis. The upload feature allows you to send the PLM data stored on your computer to the server.

To access the PLM application, perform the following:

1. Open the internet browser and go to https://www.mykomatsu.com. User id and password is required. If you need access, either contact your administrator or click "Register Now".
2. Once logged in, there will be "Go To" links for the applications that you have access to. Click "Go to PLM" to access the PLM application.

NOTE: *If no link exists, send an email to: servicesystems@komatsuna.com. Include your company and contact information.*

To upload PLM information to the server, perform the following:

1. Once logged in and at the "Payload Management" screen, click "Data Upload", on the left side of the screen, and enter the specific information about the location, distributor, and customer.
2. Click the "Browse" button to locate the file desired for uploading. Multiple files can be submitted at once by clicking a new "Browse" button for each file.

NOTE: *An uploaded file can either contain data for a group of trucks or an individual truck. The uploaded file can also contain previously uploaded data with recent data. The application will automatically sort the machines.*

3. When all the files have been selected, click the "Upload" button. The time it takes to complete the upload will depend on the number and size of the file(s) submitted.
4. Once the uploading is finished, click "Process the file(s)".
5. When the files are finished processing, a report will be generated that will display graphs corresponding to what months were included within the PLM data for each truck.

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