CEAM020801

# Operation & Maintenance Manual

# 830E-1AC

## DUMP TRUCK

SERIAL NUMBERS **A30210 - A30239**

KOMATSU®

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## CENTER CONSOLE

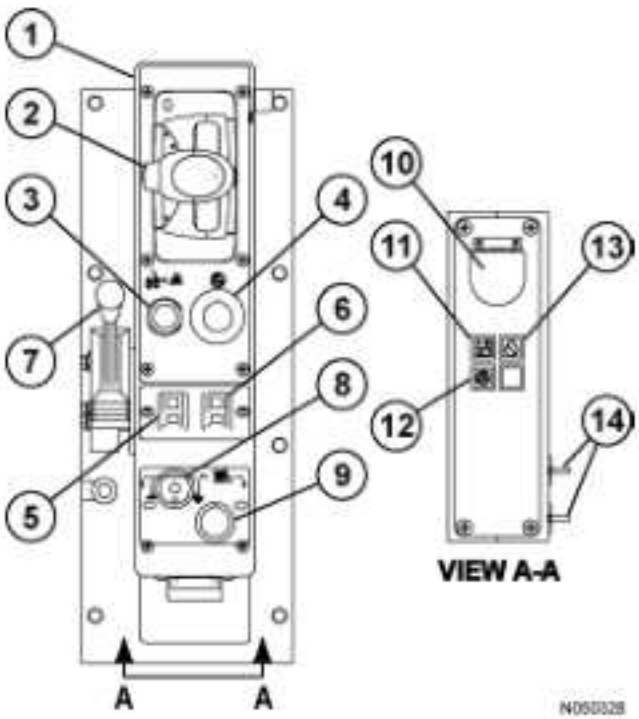



FIGURE 32-3. CENTER CONSOLE

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. Retarder Speed Control Dial
9. RSC Switch
10. Data Store Button
11. VHMS Snapshot In Progress Light
12. Link Energized Light (Red)
13. Service Engine Light (Blue)
14. 12V Auxiliary Power Outlets

### Directional Control Lever

Directional Control Lever (2, Figure 32-3) is mounted on a 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 (A3, overhead panel, Figure 32-8) will be illuminated.

**⚠ IMPORTANT ⚠**

***The directional control lever must be in PARK to start the engine.***

*NOTE: DO NOT move the directional control lever to the PARK position at the shovel or dump.*

The operator can select FORWARD drive by moving the control lever to the F position.

The operator can 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.

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

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# 250 HOUR LUBRICATION AND MAINTENANCE CHECKS

The 10 hour lubrication and maintenance checks should also be performed at this time.

*NOTE: "Lube Key" references are to the lubrication chart.*

**Truck Serial Number**_____ **Site Unit Number**_____ **Date**_____
**Hourmeter**_____ **Name of Service Technician**_____

| | TASK | COMMENTS | CHECKED | INITIALS |
|---|---|---|---|---|
| 1. | ENGINE - Refer to the engine manufacturer's Operation & Maintenance manual for complete specifications regarding engine lube oil specifications.<br><br>*NOTE: If the engine is equipped with the "Centinel™ oil system and/or the Eliminator™ filter system, engine oil and filter change intervals are extended beyond 250 hours. Refer to engine Operation & Maintenance manual for specific oil and filter change intervals.*<br><br>* The Centinel™ system is a duty-cycle-dependent lubrication management system whereby oil is blended with the fuel and burned and an extension of oil change intervals can occur.<br><br>a. Change engine oil. Lube Key "A".<br><br>b. Replace engine oil filters.<br><br>*NOTE: When installing spin-on filter elements, follow the instructions as specified by the filter manufacturer. The tightening instructions are normally printed on the outside of the filter.* ***Do not use a wrench or strap to tighten filter elements.***<br><br>c. If the truck is equipped with a reserve engine oil tank, change the reserve tank oil filter.<br><br>d. Check belt tension and condition of each accessory belt. Refer to engine Operation & Maintenance manual for specific adjustment instructions.<br><br>e. Check the torque on the cooling fan mounting cap screws (1, Figure 40-5). Tighten cap screws (2) to **237 N·m (175 ft lbs)**. | | | |

(CONTINUED NEXT PAGE)

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# MAJOR COMPONENT DESCRIPTION

## Truck And Engine

The 830E-AC Dump Truck is an off-highway, rear dump truck with AC Electric Drive. The gross vehicle weight is 385 852 kg (850,650 lbs.). The engine is a Komatsu SDA16V160 rated @ 1865 kW (2500 HP).

## Alternator (GTA-41)

The diesel engine drives an in-line alternator at engine speed. The alternator produces AC current which is rectified to DC within the main control cabinet. The rectified DC power is converted back to AC by groups of devices called "inverters", also within the main control cabinet. Each inverter consists of six "phase modules" under the control of a "gate drive unit" (GDU). The GDU controls the operation of each phase module.

Cooling air for the control / power group and wheel motors, as well as the alternator itself, is provided by dual fans mounted on the alternator shaft.

## AC Induction Traction Motorized Wheels

The alternator output supplies electrical energy to the two wheel motors attached to the rear axle housing. The motorized wheels use three-phase AC induction motors with full-wave AC power.

The two wheel motors convert electrical energy back to mechanical energy through built-in gear trains within the wheel motor assembly. The direction of the wheel motors is controlled by a forward or reverse hand selector switch located on the center console.

## Suspension

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

## Operator's Cab

The operator cab has been engineered for operator comfort and to allow for efficient and safe operation of the truck. The cab provides wide visibility, with an integral 4-post ROPS/FOPS structure, and an advanced analog operator environment. It includes a tinted safety-glass windshield and power-operated side windows, a deluxe interior with a fully adjustable seat with lumbar support, a fully adjustable tilt/telescope steering wheel, controls mounted within easy reach of the operator, and an analog instrument panel which provides the operator with all instruments and gauges which are necessary to control and/or monitor the truck's operating systems.

## Power Steering

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

## Dynamic Retarding

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

The parking brake is intregal with the service brake caliper, and is spring-applied and hydraulically-released. The park brake is applied by moving the directional control lever to the PARK position.

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## PLM III SYSTEM CONFIGURATION

### Starting Communications

The PDM software allows users to download and configure the system.



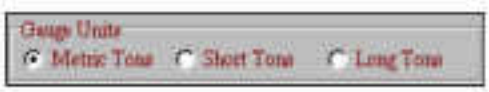

Before connecting to the payload meter, select "Change Program Options" and confirm that the program has selected the correct laptop serial port. Most laptops use Comm 1 for serial communications. The units displayed for reports and graphs by the PC software can be set on this form. Click "Done" to return to the main menu.




From the main menu, click the "Connect to Payload Meter" button. The PC will try to connect to the payload meter and request basic information from the system. In the event of communications trouble, the PC will try 3 times to connect before "timing-out". This may take several seconds.

### Displayed Payload Units

Three options are available for the display of units in the PC software, reports, and graphs:




*Short Tons:* Payload is displayed in short tons, distances and speeds will be displayed in Miles

*Metric Tons:* Payload is displayed in metric tons, distances and speeds are displayed in Kilometers

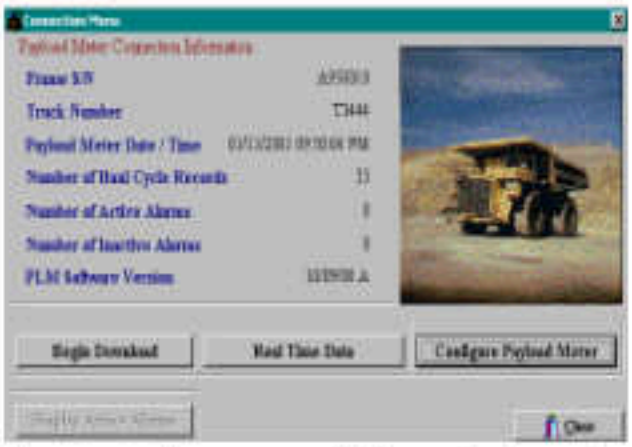
*Long Tons:* Payload is displayed in long tons, distances and speeds are displayed in Miles

### Time Units

Minutes and Seconds Example:
Five minutes and thirty-two seconds = 5:32

Decimal Minutes Example:
Five minutes and thirty-two seconds = 5.53

### Connection Menu




The connection screen displays basic system information to the user.

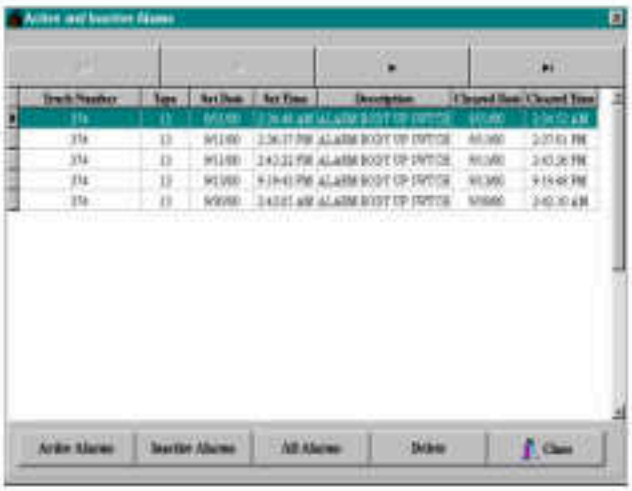
- Frame S/N should agree with the truck serial number from the serial plate located on the truck frame.
- Truck Number is an ID number assigned to the truck by the mine.
- The Payload Meter Date / Time values come from the payload meter at the moment of connection.
- Number of Haul Cycle Records is the number of haul cycles records stored in memory and available for download.
- Number of Active Alarms shows how many alarms are currently active in the system at the time of connection. If there are active alarms, the "Display Active Alarms" button is available.
- Number of Inactive Alarms shows how many alarms have been recorded in memory and are available for download.
- PLM Software Version displays the current version of software in the payload meter.

The information on the connection menu comes from the configuration of the payload system on the truck.

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### Viewing Alarms

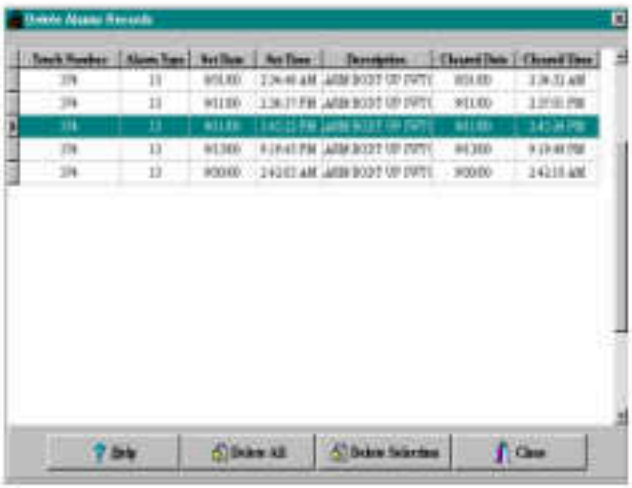
From the Payload Summary screen, click the "Alarms" button to display the alarm screen. The alarms are sorted by the query settings from the Payload Summary screen. Alarms can be displayed as Active or Inactive.



### Deleting Alarm Records

To delete alarm records from the main database, press the "Delete" button at the bottom of the "Alarm Display" screen. The program will display a summary of the alarms from the query. To delete an alarm, select one at a time and press the "Delete" button. It is recommended that the query data be exported to a ".zip" file for archival purposes before deletion. Multiple records may be selected by holding down the Shift key. Pressing the "Delete All" button will select all the alarms from the current query and delete them.

*NOTE: There is no recovery for alarms that have been deleted from the main database. It is highly recommended that all records be exported and archived in a compressed file format for future reference before being deleted.*




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