CEBM032401

Shop Manual

KOMATSU®

730E-8

DUMP TRUCK

SERIAL NUMBERS **730E-8 A40015 – A40017**
A40035 and up

ENGINE **16V159**

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System performance test

This test is performed to establish the condition of all components in the system. Observe these conditions during testing:

1. Place a fan in front of the condenser to simulate normal ram air flow and allow the system to stabilize.
2. Install a thermometer into the air conditioning vent closest to the evaporator.
3. Start the engine and operate at 1000 rpm.
4. Evaluate the readings obtained from the gauges to see if they match the readings for the ambient temperature.
5. Set the air conditioning system at maximum cooling and maximum blower speed operation.
6. Close all windows and doors to the cab.
7. Carefully feel the hoses and components on the high side. All should be warm or hot to the touch. Check the inlet and outlet of receiver-drier for even temperatures. If outlet is cooler than inlet, a restriction is indicated.

⚠WARNING

Use extreme caution when placing hands on high side components and hoses. Under most normal conditions, these items can be extremely hot.

8. Feel the hoses and components on the low side. They should be cool to the touch. Check the connections near the expansion valve. The inlet side should be warm and the outlet side should be cold.
9. After a minimum of 10 minutes has elapsed and the system has stabilized, observe the gauge readings. Compare the readings to the specifications in Table 2.

NOTE: Pressures may be slightly higher in very humid conditions and lower in very dry conditions. Pressures listed in the table are during compressor clutch engagement.

10. Check the cab vents for cool air. Outlet air temperature should be approximately 16 - 22 °C (30 - 40 °F) below ambient air temperature.
11. If pressures and temperatures are not within the specified ranges, the system is not operating properly. Refer to Troubleshooting section **Cab air conditioning** for tips on diagnosing poor system performance.

Table 2: NOMINAL R-134a PRESSURE RANGES

Ambient Air Temperature	High Side Pressure	Low Side Pressure
21 °C (70 °F)	820 - 1 300 kPa (120 - 190 psi)	70 - 138 kPa (10 - 20 psi)
27 °C (80 °F)	950 - 1 450 kPa (140 - 210 psi)	70 - 173 kPa (10 - 25 psi)
32 °C (90 °F)	1 175 - 1 650 kPa (170 - 240 psi)	105 - 210 kPa (15 - 30 psi)
38 °C (100 °F)	1 300 - 1 850 kPa (190 - 270 psi)	105 - 210 kPa (15 - 30 psi)
43 °C (110 °F)	1 450 - 2 075 kPa (210 - 300 psi)	105 - 210 kPa (15 - 30 psi)

NOTE: All pressures in this chart are for reference only. Weight is the only absolute means of determining proper refrigerant charge.

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Fault Code A004: Right front suspension pressure sensor signal low

Operator Action	None
Fault Code	A004
Description	Right front suspension pressure sensor signal low.
Fault Conditions	Sets if pressure signal is out of range low (sensor current less than 2 ma). Resets if reading returns to normal.
Operator Alerting System Response	Repair Lamp Display Operator Action: None Display Fault Description: PLM RF PRESS SENS LO Display Fault Code: A004
Resulting Problem(s)	Bad payload computation.
Related Information	Bad payload computation.

Table

1. This fault is generated by PLM in response to a problem in the sensor circuit. This sensor circuit may have a related fault that can be used to resolve the problem. Refer to the Troubleshooting Instructions for the active parameter fault(s).
2. If there are no active parameter fault codes then based on the truck's setup while this fault is active, determine which of the parameters in the Table is not shown in its expected state on the IM Realtime Data Monitor program. Refer to the schematic to identify which item(s) may be causing the parameter(s) to be in the unexpected state. Troubleshoot these items.
3. If this fault is not currently active or if no parameters are currently in the unexpected state and the malfunction is still unresolved then check each of the parameters in the Table for proper functionality. Troubleshoot all item(s) related to the parameter(s) which are found to be malfunctioning.

Parameter	Expected State and/or Related Fault(s)
Right Front Pressure Sensor (PLM III 36,20)	Sensor current >22 ma: Failed high Sensor current <2 ma: Failed low Sensor current >2 ma but less than 22 ma: Valid readings Fault(s): A003

Related circuit diagram
SAME SCHEMATIC AS A003.

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Fault Code A286: A fault was detected in the shutdown delay relay circuit

Operator Action	None
Fault Code	A286
Description	A fault was detected in the shutdown delay relay circuit.
Fault Conditions	Sets if an open circuit or short to ground is detected in the relay driver circuit. Resets only at power down.
Operator Alerting System Response	Repair Lamp Display Fault Description: SHT DWN DEL REL CKT Display Fault Code: A286
Resulting Problem(s)	A malfunctioning shutdown delay circuit could cause damage to the engine.
Related Information	A laptop running "IM Realtime Data Monitor" software may be required to resolve this fault.

Table

1. This fault's logic contains more than one parameter, each of which may have it's own related fault code(s). This fault may be resolved by resolving the parameter(s) active fault code(s). Refer to the Troubleshooting Instructions for the active parameter fault(s).
2. If there are no active parameter fault codes then based on the truck's setup while this fault is active, determine which of the parameters in the Table is not shown in its expected state on the IM Realtime Data Monitor program. Refer to the schematic to identify which item(s) may be causing the parameter(s) to be in the unexpected state. Troubleshoot these items.
3. If this fault is not currently active or if no parameters are currently in the unexpected state and the malfunction is still unresolved then check each of the parameters in the Table for proper functionality. Troubleshoot all item(s) related to the parameter(s) which are found to be malfunctioning.

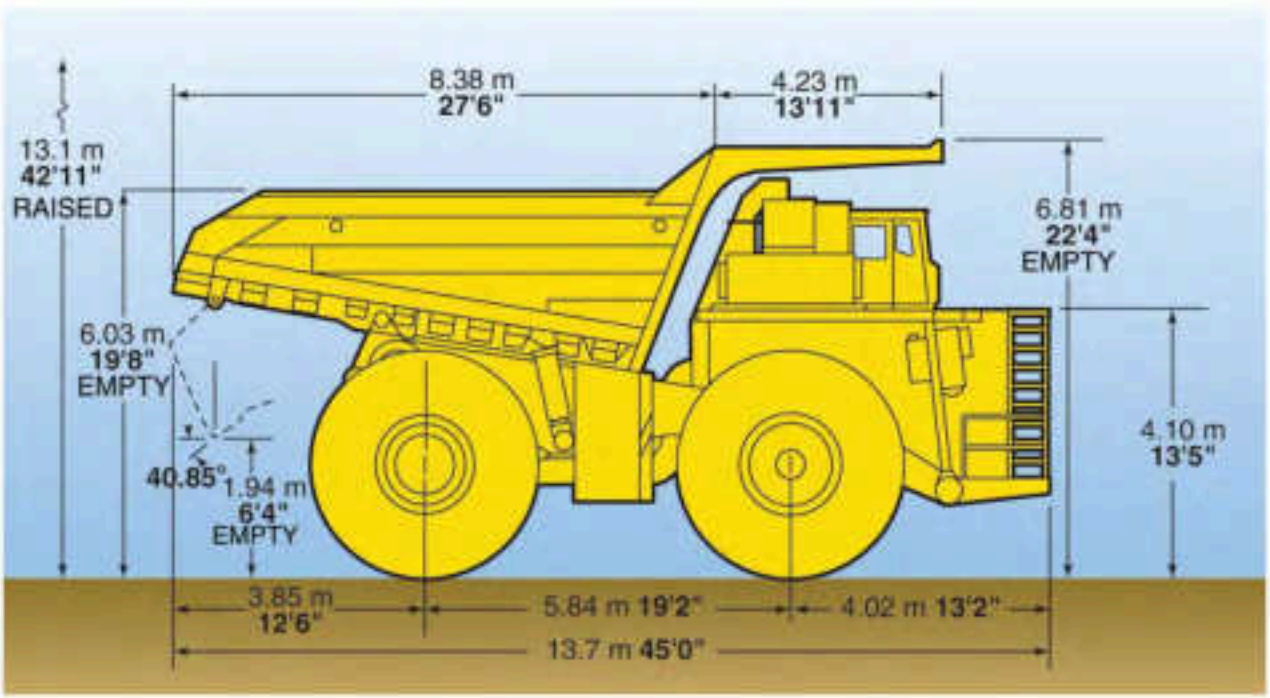
Parameter	Expected State and/or Related Fault(s)
Shutdown Delay Relay (IM1H)	Status - Open Load: Unexpected. Troubleshoot Status - Normal: Expected. No problem Status - Shorted to Ground: Unexpected. Troubleshoot Status - Overload: Unexpected. Troubleshoot 0: Turns off when conditions clear or engine speed drops to zero 1: Turns on when Keyswitch, Direct is off, Cummins Shutdown Delay is on, Park brake is set, Selector Switch is in park, but not J1939 Not Connected, not High Batt Charge Voltage, not Starter Stuck On, not Active Engine Red Light, and engine speed above 300 Fault(s): A292
Keyswitch, Direct (IM2P)	0: Keyswitch is off 1: Keyswitch is on Fault(s): A240

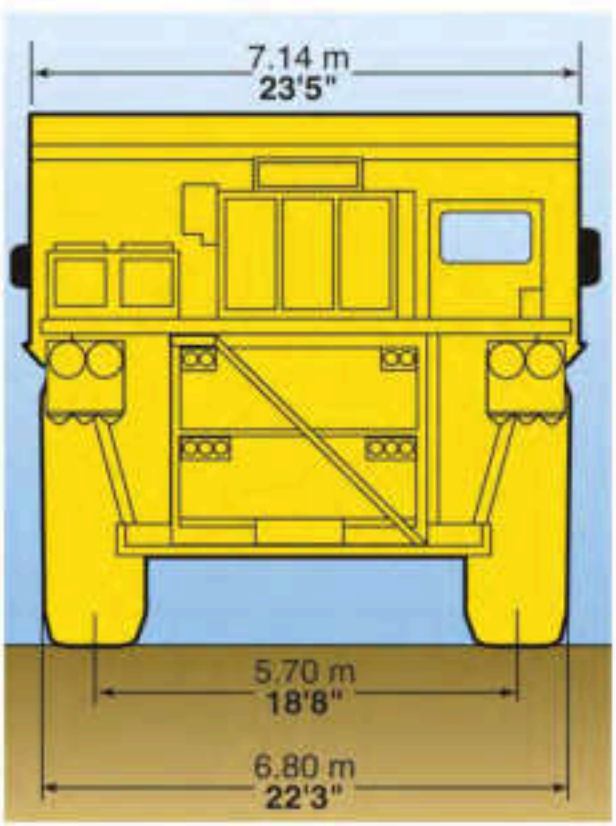
Related circuit diagram

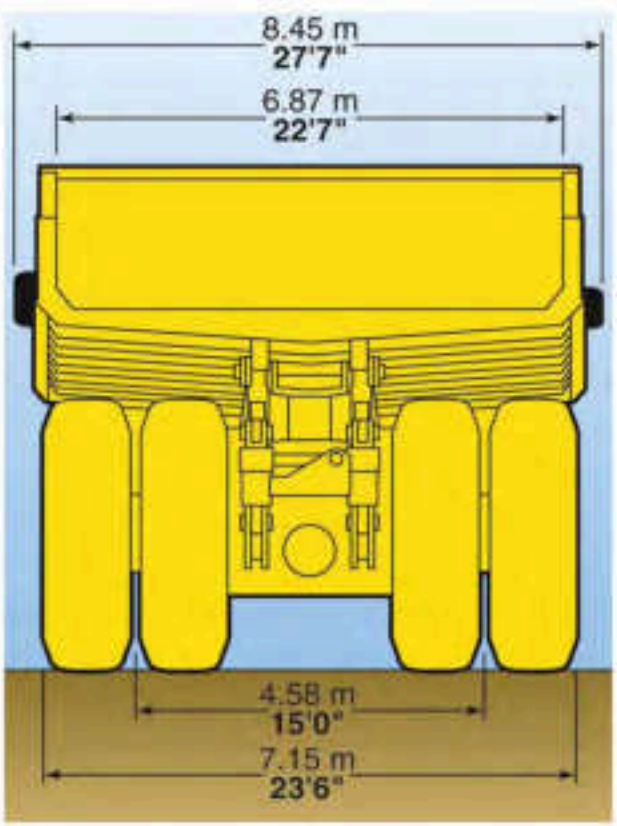
58D-06-00440 SH4 (E-10) KEYSWITCH, DIRECT & SHUTDOWN DELAY RELAY CIRCUITS.

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Specification drawing







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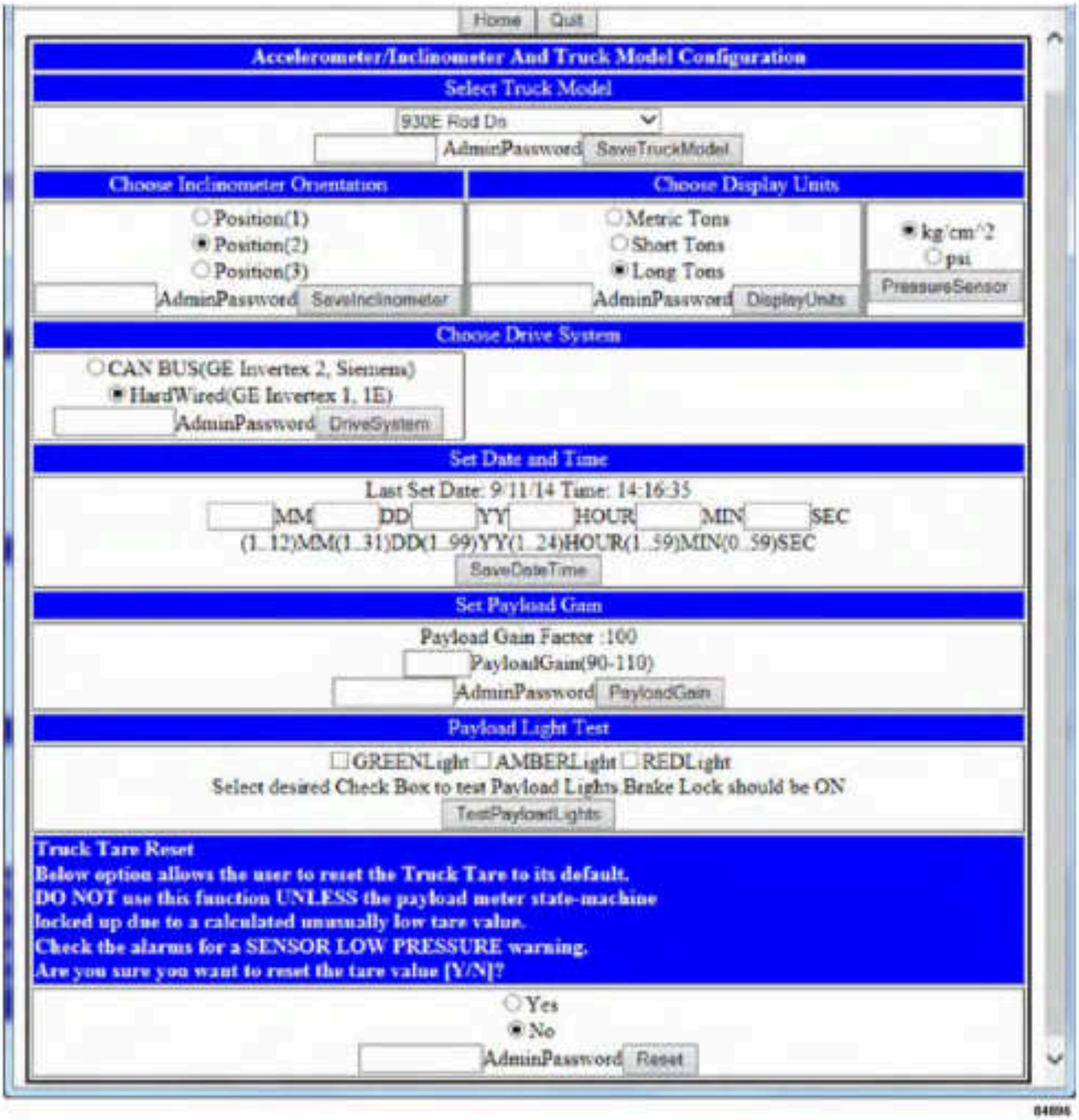


FIGURE 30-5. PLM IV SYSTEM CONFIGURATIONS PAGE

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WIRE TABLE

(CONTINUED ON DIAGRAM 18 AND 19)

WIRE NAME	SHT-ZONE	CONN FROM	CONN TO
-15VDI-001	12-G10	J07-2	DID-9
-15VDI-002	12-G8	TB42-B2	P07-2
-15VDI-003	12-G6	DCDCPS-11	TB42-B1
0-000	3-D2	BATT1(+)-1	BATT2(-)-1
0-001	3-E2	BATT3(+)-1	BATT4(-)-1
0-002	6-C3	GB51A-A1	P804-J
0-003	6-C3	GB51A-A2	P804-K
0-004	6-C3	GB51A-A3	P804-L
0-005	3-N12	REP-65	GB80-A1
0-006	6-L3	ERPSW-1	GB80-A2
0-007	6-L1	GB80-A1	P803-1
0-008	6-L3	GB80-A2	P816-4
0-009	3-G13	PLMSW(-)	GB80-A3
0-010	3-J14	STRT2-2C	PLPM(-)
0-011	3-J12	STRT1-2B	STRT2-2A
0-012	3-J7	ALT(-)	GB70-A1
0-013	3-J14	DISC(-)-4	STRT2-2B
0-014	3-J12	STRT1-2A	DISC(-)-3
0-015	6-E6	TB33-W1	R1-1
0-016	11-O14	GB8-3	HDL2-B
0-017	11-O14	GB8-3	HDL1-B

WIRE NAME	SHT-ZONE	CONN FROM	CONN TO
0-146	11-C10	P23-D	P25-B
0-147	9-F5	P24-B	P24-D
0-148	11-O5	P08-85	GB10-A3
0-150	12-K7	GB10-A3	P35-B
0-151	11-N5	P25-D	GB10-A3
0-152	8-J11	P25-D	P25-B
0-153	12-N7	P33-D	P33-B
0-154	12-M5	GB10-A4	P34-D
0-155	12-M5	P34-6	GB10-A4
0-156	12-M7	P34-B	P34-D
0-157	12-M5	P33-D	GB10-A4
0-158	12-P5	GB10-B2	P37-D
0-160	11-O5	GB10-B1	P08-85
0-162	11-O5	P36-B	GB10-B1
0-163	7-L15	P39-B	P39-5
0-164	7-L15	P39-5	P39-D
0-165	9-M8	P38-B	P38-D
0-166	11-O5	P39-B	GB10-B1
0-167	12-P4	GB10-B2	J03-31
0-168	11-O8	P808-1	GB10-B3
0-169	11-M7	GB10-B3	WADT-3

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ELECTRICAL SCHEMATIC

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