DG753

Shop Manual

830E

DUMP TRUCK

SERIAL NUMBERS **A30607 - A30624**

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DIODE BOARD 1

The truck is equipped with a diode board (1, Figure 3-7) containing replaceable diodes (4). Some of the diodes are used in the coil circuit of various relays to suppress the resultant coil voltage spike when power is removed from the circuit, preventing damage to other circuit components (lamp filaments etc.). Other diodes are used to control the flow of current in a circuit as required. Resistors may also be installed in sockets P7 through P12 (3).

Diode Testing

Refer to the electrical schematic in Section R of this manual for the specific circuit and diode to be tested.

If a diode failure is suspected, remove and check the diode as follows:

1. Grasp the diode connector, compressing the locking "ears" while pulling the connector off the board. Note the connector "key" used to ensure correct polarity.

NOTE: Some digital multimeters are designed to test diodes. If this type is used, follow the manufacturer's instructions for proper test.

2. An analog ohmeter can be used to test the diode as follows:
   a. Place the meter on the "X100" scale.
   b. With the red meter lead (+) on the banded end of the diode and the black lead (-) on the other diode lead, the meter should read between 1000 and 2000 ohms.
   c. Reverse the meter leads and read infinite resistance.
3. If no resistance is read on the meter, the diode is open and must be replaced.
4. If the meter reads zero ohms, the diode is shorted and must be replaced.
5. Orient the the diode assembly for proper polarity ("key" noted in step 1.) and insert connector until locked in position on mating receptacle.

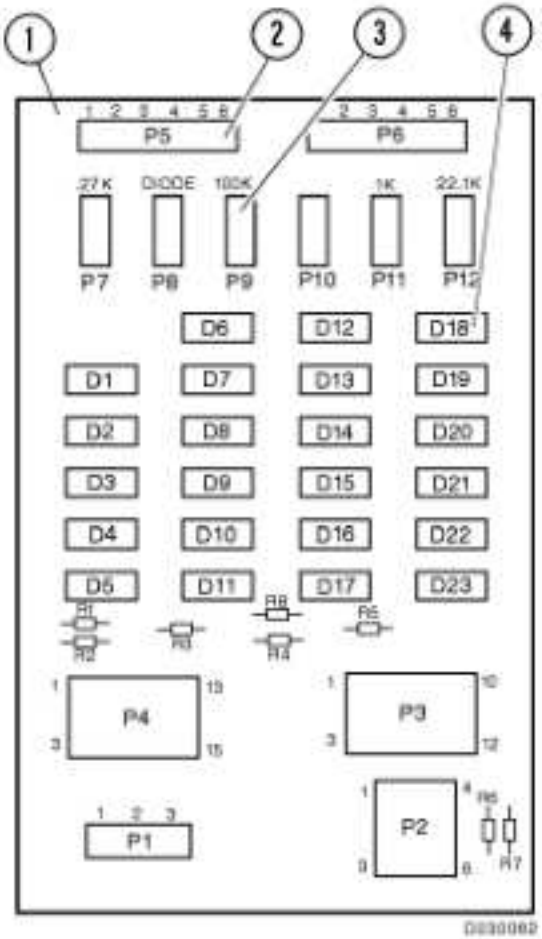


FIGURE 3-7. DIODE BOARD 1

1. Diode Board 1 (DB1)
2. Connectors (P1 - P6)
3. Sockets (P7 - P12)
4. Diodes (D1 - D23)

CIRCUIT BREAKERS

The chart on the following page lists the circuit breakers on the truck, their function and location.

Additional circuit information can be found in Section "R", Electrical Schematics.

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Symptom Table

PROBLEM	PROBABLE CAUSE
Payload meter is not recording haul cycles.	Broken or missing body-up signal. The body up signal triggers the PLM II™to start a new haul cycle. Check using the "Monitoring Input Signals" procedure.
Only one haul cycle in memory.	
Display shows payload all the time.	Broken or missing speed signal. Check using the "Monitoring Input Signals" procedure.
Display does not show time when the truck is traveling.	
No distance or speed information is recorded in the haul cycle data.	
Payload meter does not 'count up' while driving away from the shovel.	
Payload meter will not calibrate.	
F-18 fault	Missing alternator R-terminal signal. Troubleshoot signal or make modification to eliminate signal. Refer to the "F-18: R-Terminal, Oil Pressure Signals" on the following page.
F20 - F28 faults flashing	Shorted sensor power or ground. Troubleshoot wiring. Refer to the "Shorted 18v Sensor Power Supply" fault tree in this section.
Pressure sensor value drifts up or down erratically.	

Missing Body-Up Signal

The payload meter starts a new haul cycle after the body comes down from dumping the last haul cycle. Each new haul cycle starts at the dump. Without a body-up signal, the payload meter does not know that a new haul cycle has started. The payload meter will not record new haul cycles without the body-up signal. This is the most common sign that the signal is missing.

The body-up input signal is received from a magnetic switch located on the inside of the truck frame forward the pivot pin of the truck body. This is the same switch typically used for input to the drive system. When the body is down, the switch closes and completes the circuit to 71-Control Power. 24vdc indicates the body is down. Open circuit indicates that the body is up. This input can be checked using the "Monitoring Input Signals" procedure.

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LUBRICATION AND SERVICE

Recommended Preventive Maintenance will contribute to the long life and dependability of the Haulpak truck and its components. The use of proper lubricants and the performance of checks and adjustments at the recommended intervals is most important.

Lubrication requirements are referenced to the lube key found in the Truck Lubrication Specifications Chart (page P2-2).

For detailed service requirements for specific components, refer to the shop manual section for that component (i.e. Section "H" for Suspensions, Section "L" for Hydraulic System, etc.).

Refer to manufacturer's service manual when servicing any components of the General Electric System.

830E SERVICE CAPACITIES		
Crankcase: (including lube oil filters).	**Liters**	**U.S. Gallons**
DDC/MTU 4000 Series Engine	250.0	66.0
Cooling System:	568	150
Hydraulic System: Hydraulic Tank Refer to "Hydraulic Tank Service"	947 901	250 238
Fuel Tank	4543	1200
Wheel Motor Gear Box (each side)	39.7	10.5

COOLING SYSTEM ANTI - FREEZE RECOMMENDATIONS (Ethlyene Glycol Permanent Type Anti-Freeze)		
Percentage of Anti-Freeze	**Protection To**	
10	+ 23°F	- 5°C
20	+ 16°F	- 9°C
25	+ 11°F	- 11°C
30	+ 4°F	- 16°C
35	- 3°F	- 19°C
40	- 12°F	- 24°C
45	- 23°F	- 30°C
50	- 34°F	- 36°C
55	- 48°F	- 44°C
60	- 62°F	- 52°C
Use only anti-freeze that is compatible with engine as specified by engine manufacturer.		

Refer to engine manufacturer's service manual when servicing the engine or any of its components.

The service intervals presented here are in hours of operation. **These intervals are recommended in lieu of an oil analysis program which may determine different intervals**. However, if the truck is being operated under extreme conditions, some or all, of the intervals may need to be shortened and the service performed more frequently.

Many Haulpak Trucks are equipped with an Automatic Lubrication System. The initial setup for this system provides for nominal amounts of lubricant to be delivered to each serviced point. The lubrication injectors can be adjusted to vary the amount of lubricant delivered. In addition, the timer for lubrication intervals is normally adjustable. For adjustments to these devices, consult the "Automatic Lubrication System" in this section of the manual.

HYDRAULIC TANK SERVICE

There are two sight gauges on the side of the hydraulic tank. With engine stopped, keyswitch "off", hydraulic system bled down and body down, oil should be visible in either top or lower sight gauge. If hydraulic oil is not visible in the lower sight gauge, follow "Adding Oil" instructions below.

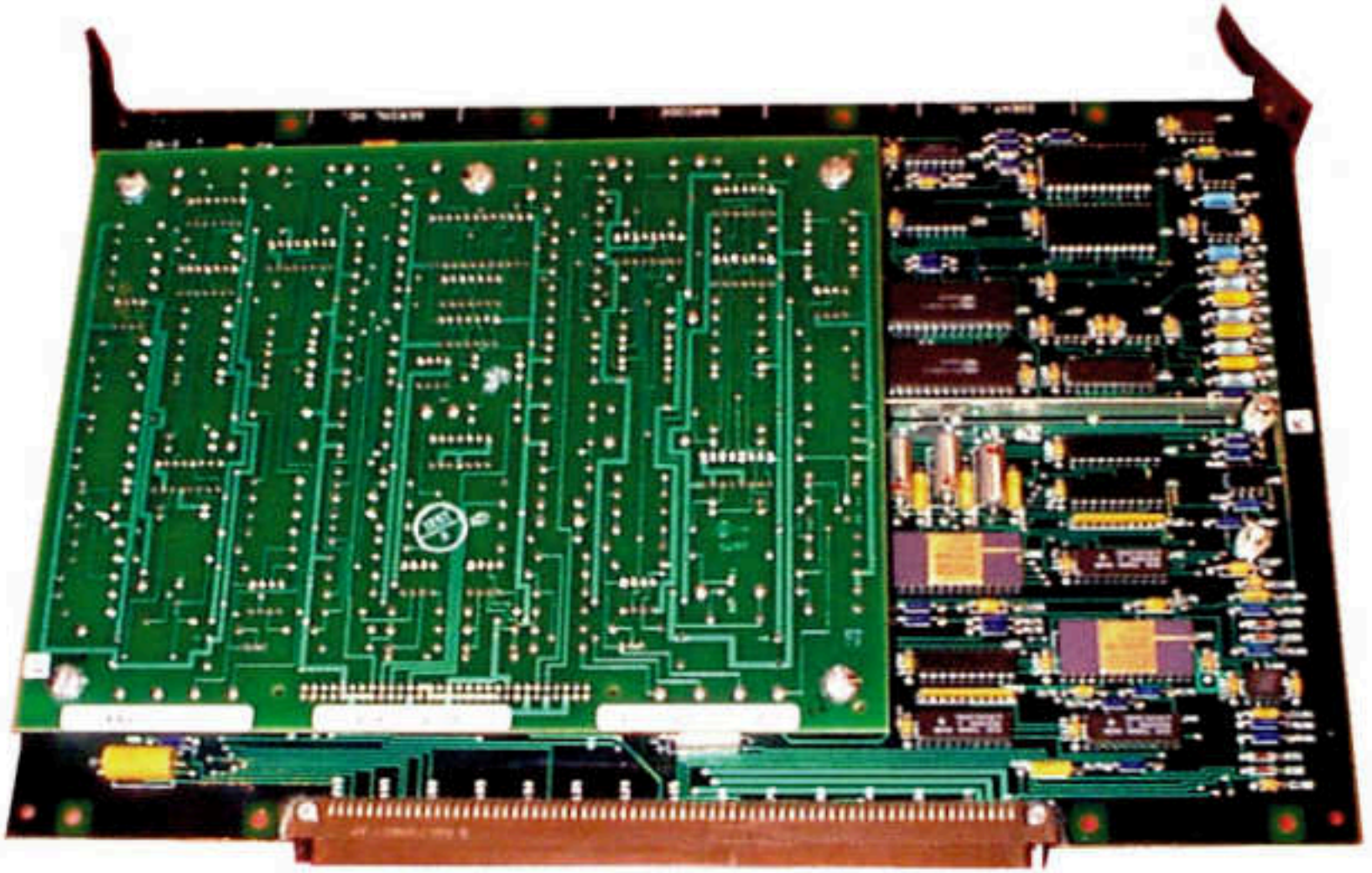
Adding Oil

Keep the system open to the atmosphere only as long as absolutely necessary to lessen chances of system contamination.

Service the tank with clean Type C-4 hydraulic oil only. All oil being put into the hydraulic tank should be filtered through 3 micron filters.

1. With engine stopped, keyswitch "off", hydraulic system bled down and body down, check to see that hydraulic oil is visible in the top or lower sight gauge.
2. If hydraulic oil is not visible in the lower sight gauge, remove the tank fill cap and add clean, filtered C-4 hydraulic oil (Lubrication Chart, Lube Key "D") until oil is visible in the top sight gauge.
3. Replace fill cap.
4. Start engine. Raise and lower the dump body three times.
5. Repeat steps 1 through 4 until oil is maintained in the top sight gauge.

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DEVICE NAMES AND SHEET NUMBER LOCATIONS

A/C & HEATER

A/C COMPRESSOR	22,28
A/C CONDENSER	22,28
A/C RECEIVER DRYER	22,28
BLOWER MOTOR	22

ALARMS

AID HORN	21
BACK-UP HORN	24
LOW BRAKE PRESSURE BUZZER	21
LOW STEERING PRESS BUZZER	21

ALTERNATOR

ALTERNATOR, 24VDC	26,28
ALTERNATOR, 3-PHASE AC	8A,8B,9

BATTERIES

BATTERIES, 12VDC LEAD ACID	7,27,28
VANNER BATT EQUALIZER BOX	7,27,28

BATTERY DISCONNECT

24VDC, SPST, MASTER SW	7,27,28

CAPACITORS

CAP1, 21000uF	8A,8B,9
CAP2, 21000uF	8A,8B,9
C1, 100uF	25

CIGAR LIGHTER

CIGAR LIGHTER 12VDC	18

CIRCUIT BREAKERS

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		± .05-2 PLACES	4	SEE SHT 1 FOR DESCRIPTIONS OF ALL CHANGES		SEE SHT 1	---	---	---
		± 1°-ANGULAR	3	GROUP USED ON 8W007Z			07SEP05		
PROCEDURE	ISSUANCE	DASH		DESCRIPTION OF CHANGE		DATE	ECO	BY	CHD
DRAWN BY S.R.HANAUER	DATE 9-15-99	2	MORPLUS						
CHECKED K. CALDWELL	DATE 1-4-00	USED ON 830E							
APPROVED BA HARDISON	DATE 1-4-00	SCALE NONE							
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