CEBM028700

Shop Manual

960E-2

DUMP TRUCK

SERIAL NUMBERS **A30074 & UP**

KOMATSU®

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Failure of the discharge system

If the capacitor charge lights remain illuminated, a failure of the normal (fast) capacitor discharge system (RP discharge path) has likely occurred. The slow discharge resistors that are hard wired across the DC link should then discharge the capacitors. The slow discharge resistors will discharge the DC link to less than 1 VDC in under 7.5 minutes. If after 7.5 minutes, the capacitor charge lights are still illuminated, it must be assumed that the automatic discharge system is not working and that high voltage is present in the high voltage area.

1. Open the high voltage area doors.
2. Use a suitable high voltage meter (rated for at least 2000 VDC) and suitable protective equipment that are included in 2000VDC meter kit (58B-06-00800) to measure the voltage across each of the DC link capacitors. Place one meter lead on the positive (+) capacitor terminal, and the other meter lead on the negative (-) capacitor terminal, and observe the voltage. See Figure 00-7 and Figure 00-8. If the voltage is less than 1.0 V the capacitor is sufficiently discharged. Repeat on all DC Link capacitors. If the voltage of any capacitor is above 1.0 V, manually discharge the capacitor as described in "Manual discharge of capacitors".

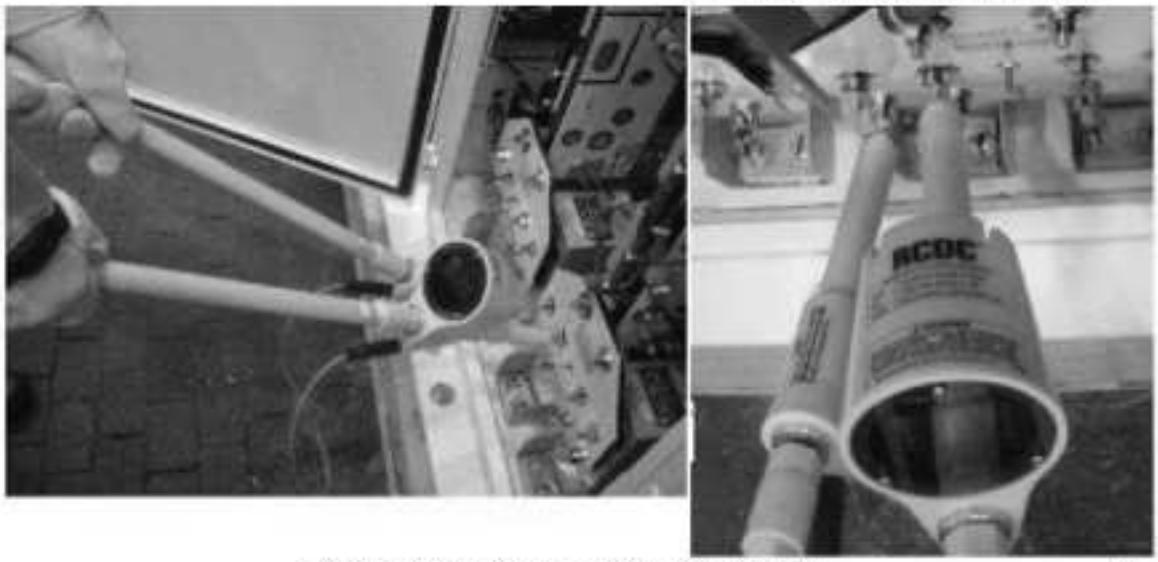


FIGURE 00-7. DC METER ON CAPACITOR

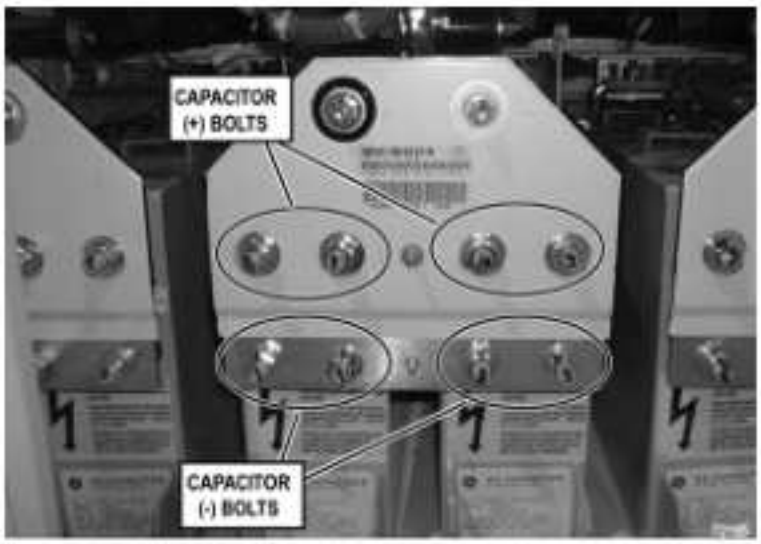


FIGURE 00-8. CAPACITOR TERMINAL POLARITY

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Fault Code A010: Incline sensor signal low

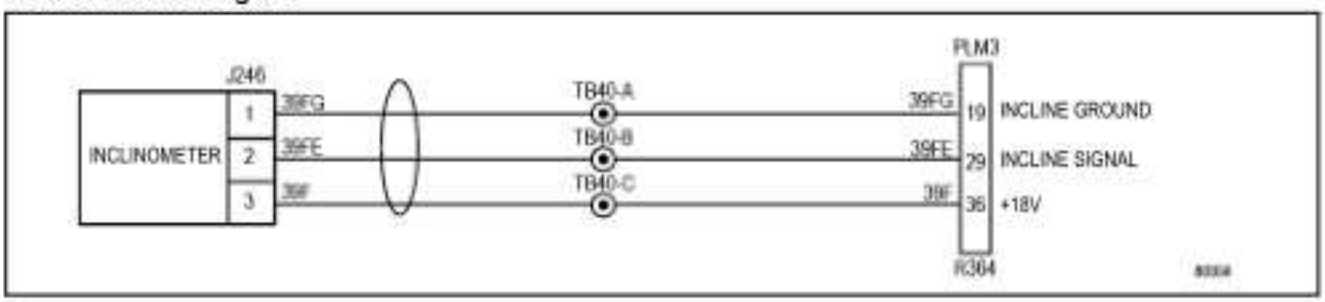
Operator Action	None
Fault Code	A010
Description	Incline sensor signal low.
Fault Conditions	Sets if incline signal is out of range low (sensor voltage greater than 5.08 volts). Resets if reading returns to normal.
Operator Alerting System Response	Repair Lamp Display Operator Action: None Display Fault Description: INCLINE SENSOR LOW Display Fault Code: A010
Resulting Problem(s)	Bad payload computation.
Related Information	A laptop running "IM Realtime Data Monitor" software may be required to resolve this fault.

Table

1. This fault is generated by PLM3 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)
Incline Sensor (PLM3 36, 29, 19)	Sensor voltage <0.565: failed high Sensor voltage >5.08: failed low Sensor voltage >0.565 but < 5.08: valid readings Fault(s): A009

Related circuit diagram



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Fault Code A355: Overload on output 1L

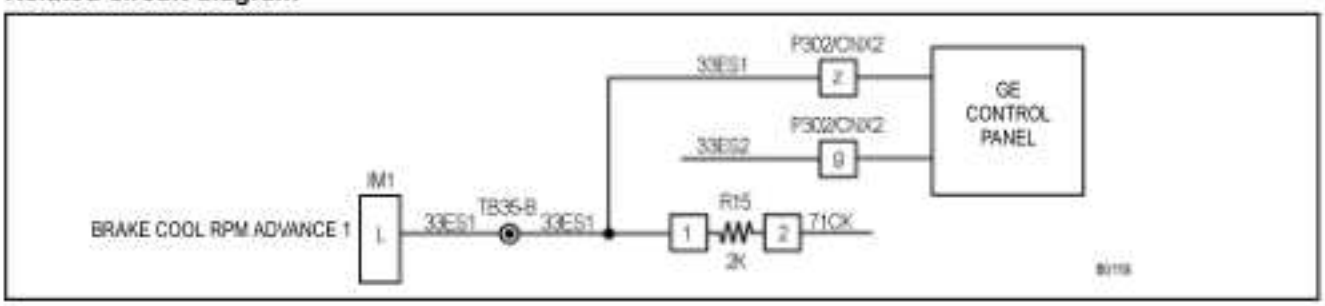
Operator Action	None
Fault Code	A355
Description	Overload on output 1L.
Fault Conditions	Sets if driver chip detects overcurrent or over temp on output 1L. Output is turned off when overload is detected. Resets at power down.
Operator Alerting System Response	Repair Lamp Display Fault Description: IM OUTPUT 1L FAULT Display Fault Code: A355
Resulting Problem(s)	Unused outputs with short circuits on them might damage the driver chip if not corrected.
Related Information	A laptop running "IM Realtime Data Monitor" software may be required to resolve this fault.

Table

1. This fault's logic contains just one parameter, which may have additional 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)
Brake Cooling RPM Advance 1: (IM 1L)	Status - Open Load: Unexpected. Troubleshoot Status - Normal: Expected. No problem. Status - Shorted to Ground: Unexpected. Troubleshoot. Status - Overload: Unexpected. Troubleshoot. 0: Off. 1: On. Fault(s): A145

Related circuit diagram



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4. Observe both capacitor charge lights (CCL1, CCL2). CCL1 is on the outside of the contactor box. CCL2 is on the switch panel inside the low voltage area. The lights will stay illuminated as long as the voltage on the DC link is greater than 50 VDC. Refer to Figure 00-6.

⚠WARNING

Hazardous voltages may be present in this equipment even if the engine and capacitor charge lights are off.

Use measurement and protective equipment rated for 2000 VDC minimum to verify that no voltage is present before touching any terminal.

⚠WARNING

Verify functionality of the measurement equipment using site-approved procedures both before and after performing control group measurements.

Failure to observe these precautions may result in death or serious personal injury.

5. Use volt meter tester (58B-06-00770) to test the volt meter for proper operation. Voltage should read 100 VDC. If the voltmeter fails the test, repair or replace the volt meter. Do not proceed unless the volt meter is functioning properly.

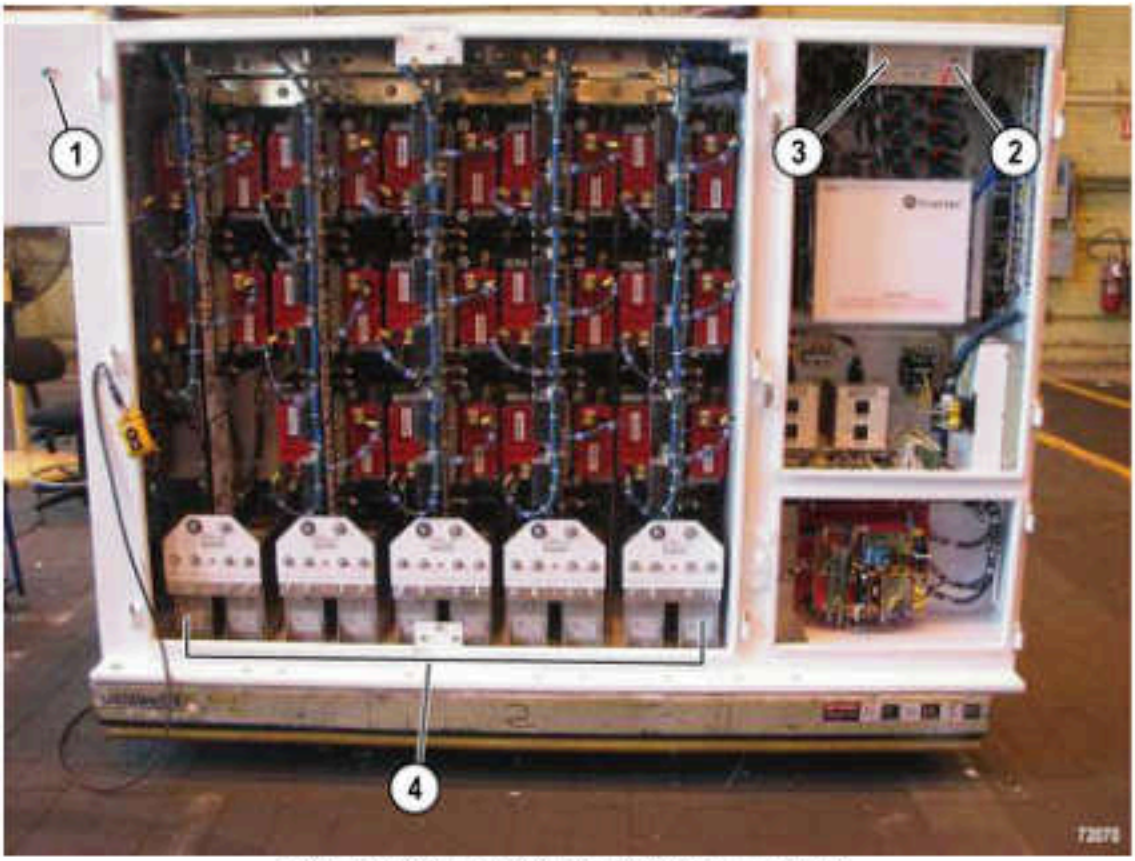


FIGURE 00-6. CAPACITOR CHARGE LIGHTS

1. Exterior Capacitor Charge Light (CCL2)
2. Interior Capacitor Charge Light (CCL1)
3. Information Display Panel
4. DC Link Capacitors

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7. Disconnect the round connector from the top of the gate driver power converters (GDPC1 and GDPC2).
10. Disconnect the CCLR1 and CCLR2 connectors.
11. Disconnect the round output connectors from all VAMs (VAM1, VAM2, VAM3, and VAM4).
12. Remove the wires from ground block located near the DSC panel. Ensure that all removed ground wires are insulated from ground and from other wires. A wire that makes contact with ground or any other wire may affect the megger test results.
13. Remove the arc chute from GF contactor (1, Figure 1) and install a jumper between main contactor tips (2).



FIGURE 30-1. JUMPERING GF CONTACTOR TIPS

1. GF Contactor 2. Contactor Tips

14. Install a jumper wire between the DC+ link and DC- link power. The jumper wire maybe installed inside the left control cabinet door at the top on cables DCP08 and DCN08. See Figure 2.

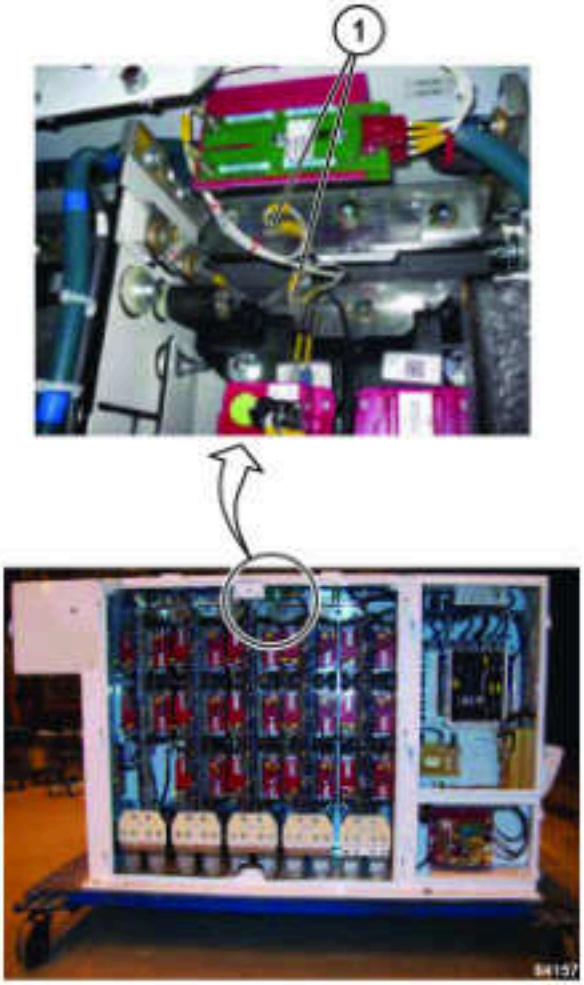
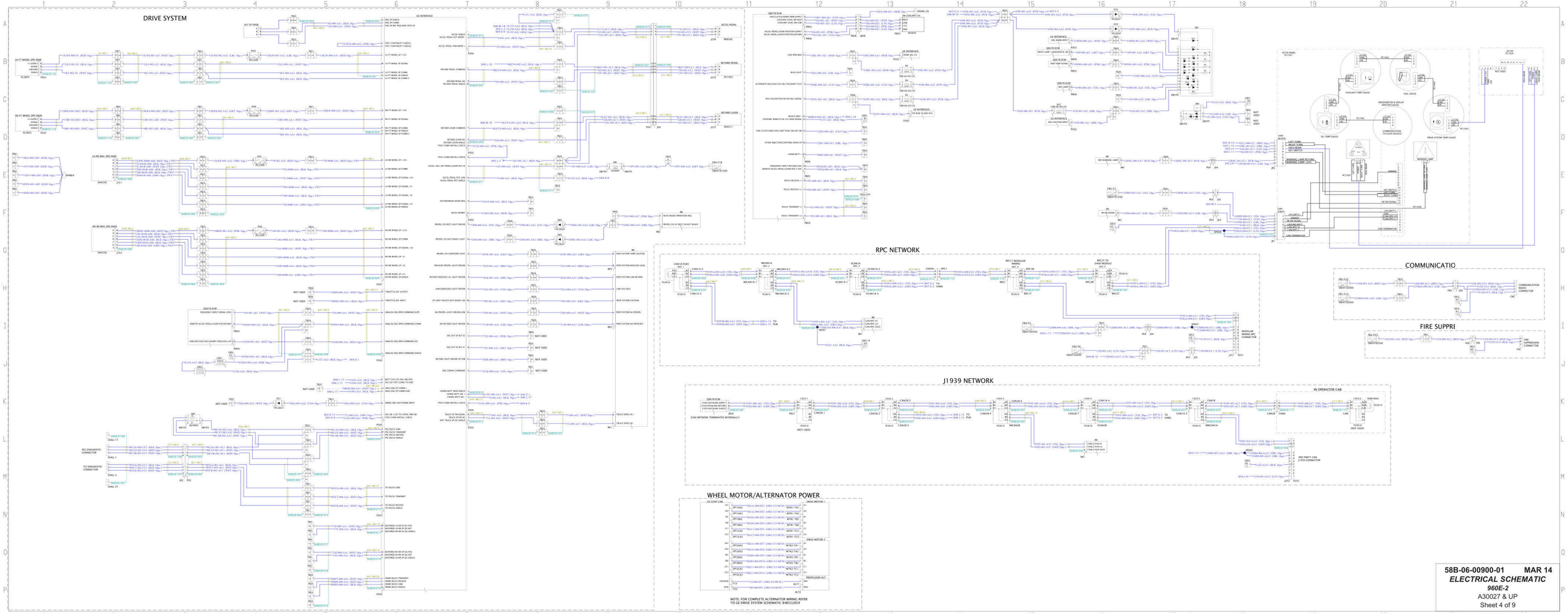


FIGURE 30-2. JUMPERING THE DC BUS

1. Jumper Wire (DCP08 to DCN08)

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