



TO: Pierce Dealer Network

FROM: Pierce Customer Service

DATE: December 11, 2014

RE: Service Topic 354 – Saber FR and Enforcer Door Switch and DNMT Service Manual

ENGINEERING SERVICE TOPICS	Date Issued: 12/10/2014 Date Revised:	
Topic: Door Switch, Do Not Move Truck Light and Alarm Service Manual	Number:	
Symptom: Cab/Body Compartment Light not Activating and/or Do Not Move Truck Light (DNMT) and Alarm On.	Author: Joe Gregurich	Maintained By: Eng. Secretary
Units Affected: Saber FR and Enforcer Chassis	Engineering Approval:	

Door Switch and DNMT Service Manual

Read through this entire document first before starting. This will give you a full understanding of the work you will be performing.

Suggested tools:

- #1 Flat tip screwdriver or quarter.
- Multimeter.

Suggested actions for over-the-road drivers if DO NOT MOVE TRUCK (DNMT) light and alarm are activated with park brake OFF.

Step 1

- Check all truck cab and body compartment doors are closed. If any compartment or cab door is open, close it and verify DNMT light and alarm are OFF with park brake OFF. System is functioning properly.

Step 2

- If all truck cab and body compartment doors are closed and the DNMT light and alarm are ON with park brake OFF, A temporary method can be used to disable the DNMT light and alarm and be utilized for efficient troubleshooting methods.
- Use a standard flat tip screwdriver or quarter to open the two ¼ turn fasteners on the cab power distribution box at the officer side floor area and open door. See Figure #1.

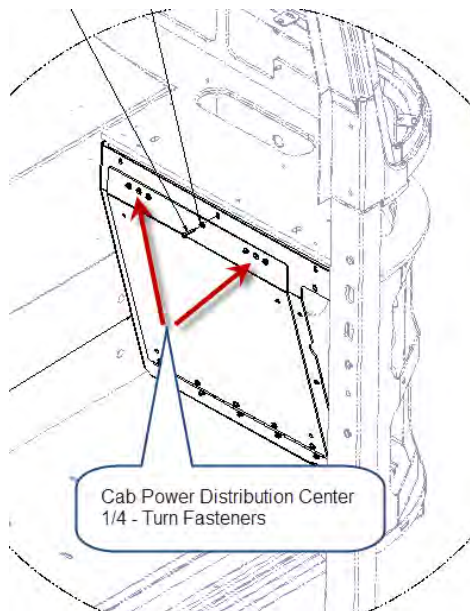


Figure #1

Step 3

- Locate diodes on left side of PCB main power distribution panel. **Diodes are keyed components. When diodes are removed and reinstalled, ensure diodes are installed in correct orientation. All diodes in the diode row face the same direction.**

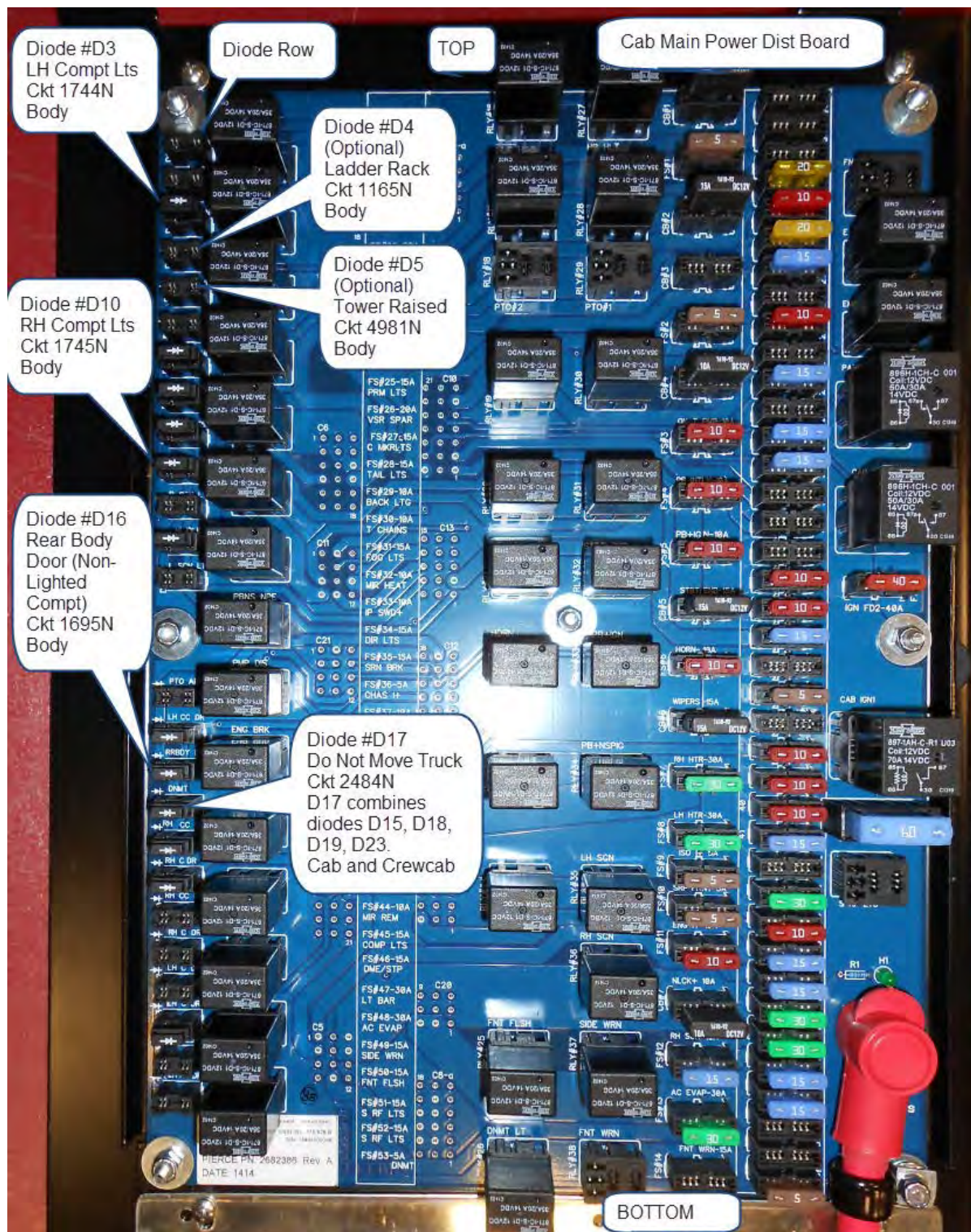


Figure #2

Step 4

Drivers Only:

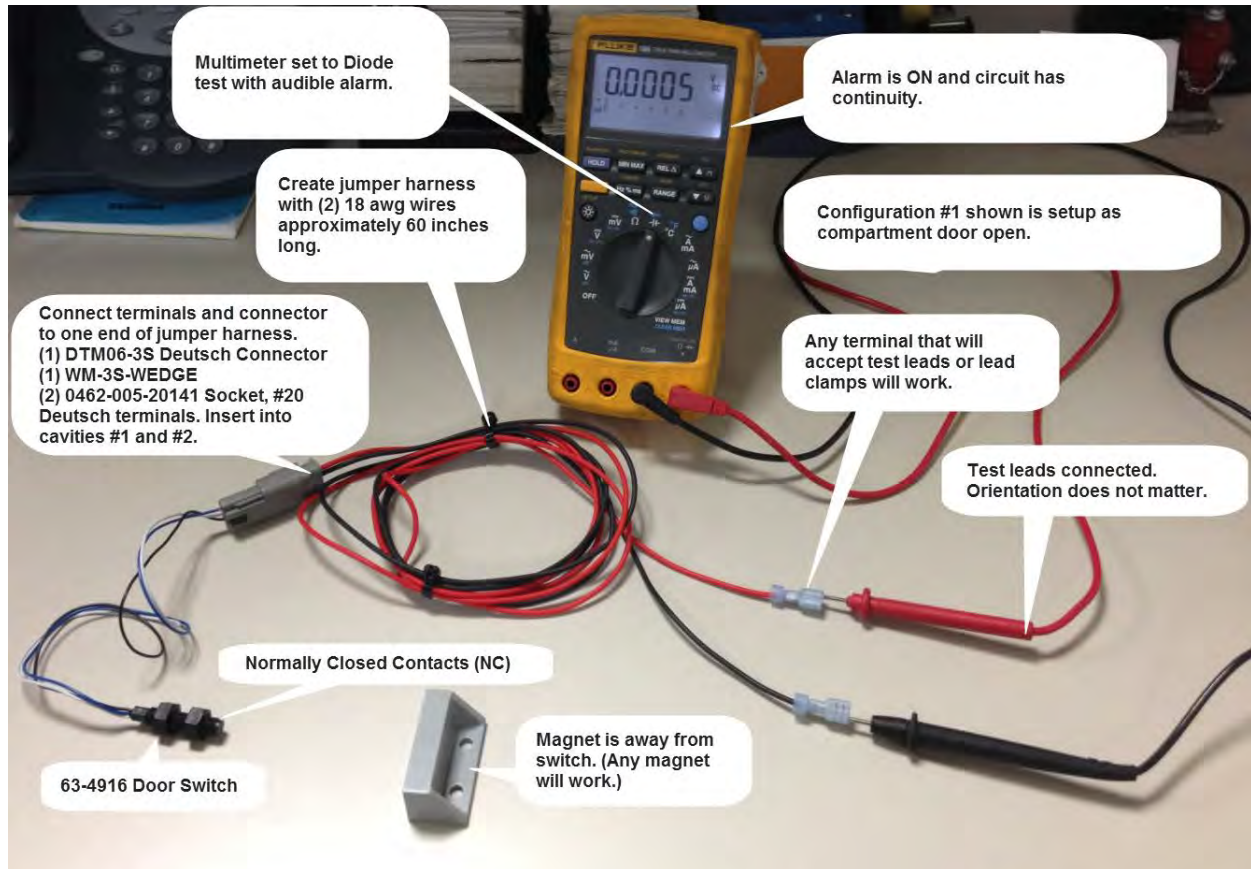
See figure #2. Remove chassis and body diodes #D3, #D10, #D16 and optional diodes #D4 and #D5 if installed. Check to see if DNMT light and alarm are off. If OFF, save diodes and reinstall at destination. (Result is there is an active fault in the chassis or body.)

If alarm and light are still ON, reinstall chassis and body diodes #D3, #D10, #D16 and optional diodes #D4 and #D5.

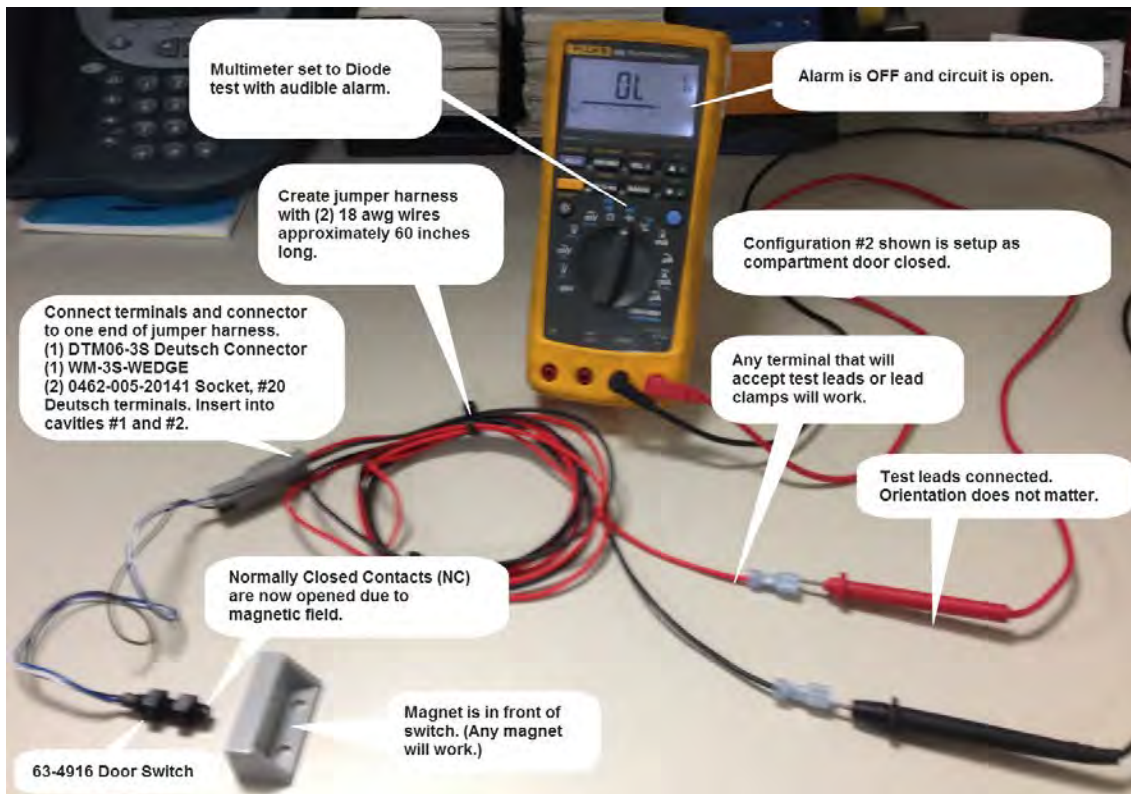
Remove cab and crewcab diode #D17. Check to see if DNMT alarm and light are OFF. If OFF, save diode and reinstall at destination. (Result is there is an active fault in the cab or crewcab doors.)

Qualified Service Technicians Only:

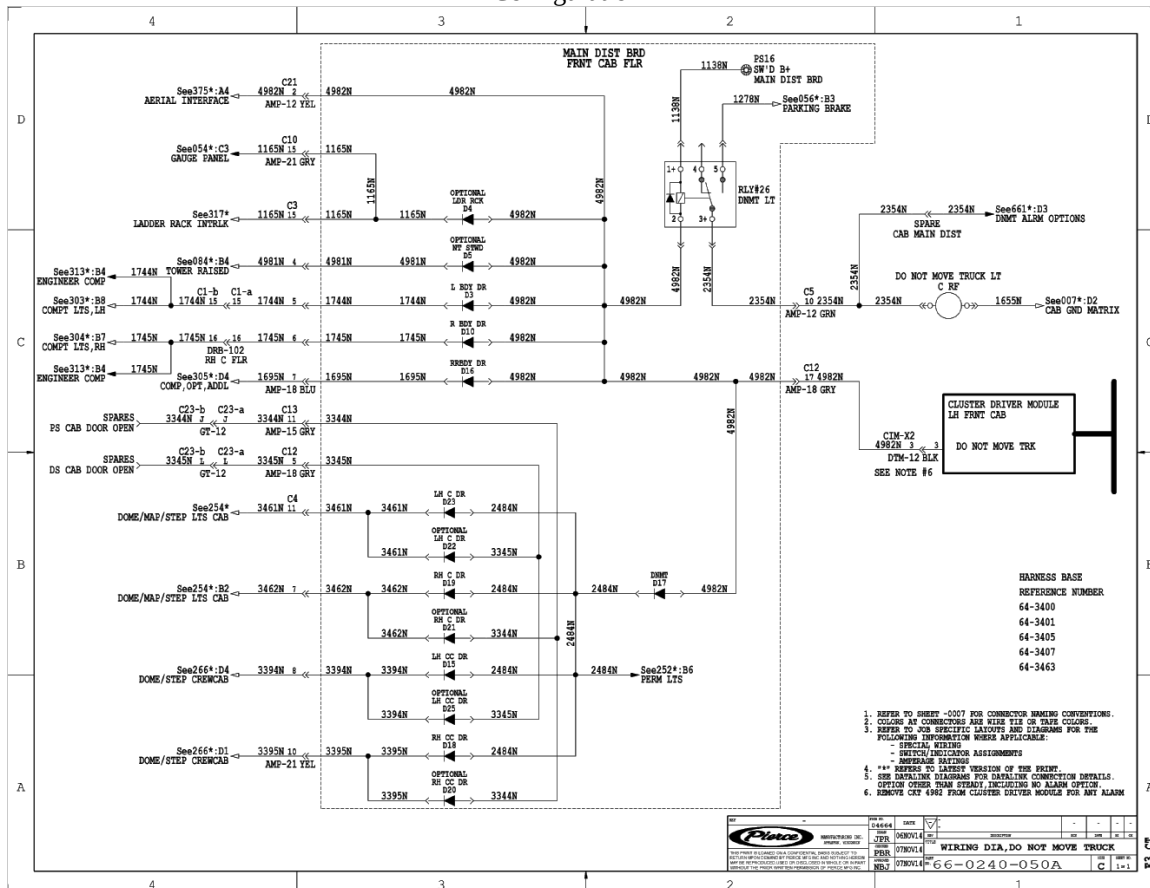
Service technicians may setup a jumper harness to gain efficiencies in the following procedures. Shown is one configuration (#1) that shows a door open scenario and configuration (#2) shows a door closed configuration.



Configuration #1



Configuration #2



Schematic

Step 5

See figure #2. Remove diodes in following order will enable user to easily determine what circuit(s) is activating the (DNMT) Do Not Move Truck and Alarm.

Caution!

Method #1

This method requires an occupant in the driver position to have battery power ON, Ignition ON, Truck in Neutral, Brake pedal depressed, Park Brake OFF and an assistant to remove diodes.

Method #2

A single individual can remove diodes for testing but **shall** have the Truck OFF, Park Brake ON when removing and replacing diodes. When diodes are removed the individual may set the truck to the first method to check the DNMT alarm and light status.

Step 6

- Check to ensure relay #26 is installed for power to the DNMT light. Circuit 4982N provides a ground signal to coil of relay #26 to activate the DNMT light and as a ground input signal to the cluster driver module to activate the steady tone alarm. Pulse tone alarm is optional and will be wired direct. Wiring diagram 66-0240-050*.

Step 7

- Remove diode #D3 for left hand body compartment lights. See Figure #2.
 - If alarm and light is ON, reinstall diode. Left hand body compartment light circuit 1744N is not activating the DNMT alarm and light. Move to next Step #.
 - If alarm and light is OFF. Left hand body compartment light circuit 1744N is activating the DNMT alarm and light. Wire diagram 66-0240-303*
 - Disconnect main harness connector at Right Hand Side Rear Body. See Figure #3.

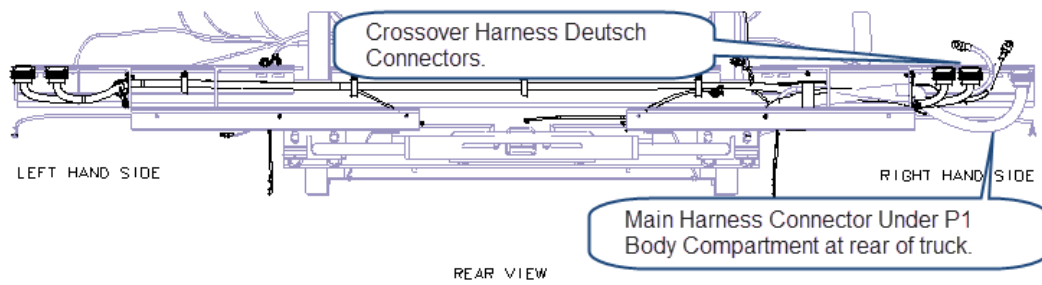


Figure #3

- If alarm and light is ON. Left hand body compartment light circuit 1744N is activating the DNMT alarm and light from circuit dropouts at the pump panel and not the body. Check 1744N at compartments at pump panel area.
- If alarm and light is OFF. Left hand body compartment light circuit 1744N is activating the DNMT alarm and light from circuits in the body. Reconnect main harness connector to continue.
- Check individual door switches. Left hand compartment door switches and rear compartment door switch provide signal for diode #D3 DNMT and to activate relay #1C in the body distribution center which provides power to the left hand and rear compartment lights.
- Disconnect door switch connector DTM04-3P. Connect Multimeter and set to diode tester audible alarm. Connect leads to terminal #1 and #2 at connector. With door open the meter alarm should be ON. See Figure #4. Close door and if the magnet is aligned properly the meter alarm will turn OFF. If switch operates as stated the switch and magnet alignment are good. Repeat steps at next compartment

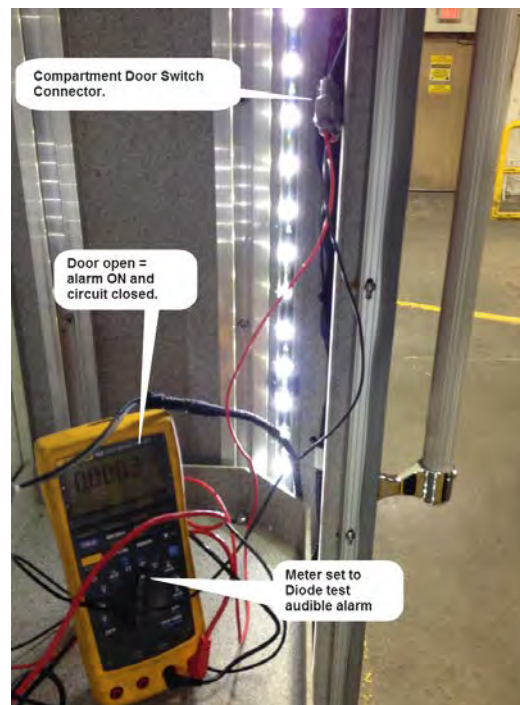


Figure #4

- If door switch does not operate as stated above continue to the following steps.
- If the alarm continues to be active, check for magnet alignment in rollup door. Switch may be moved to secondary mounting hole and checked again to see if alignment is achieved. Refer to reference prints (2674074 Gortite), (2785884 Amdor), (2786950 ROM) Body Compartment Magnet Install.
- If magnet is aligned properly, use any magnet and place in front of switch and the meter alarm should deactivate with magnet in front of it and activate when magnet is removed. See Figure #5. If it does not change state the switch is defective. Replace switch.

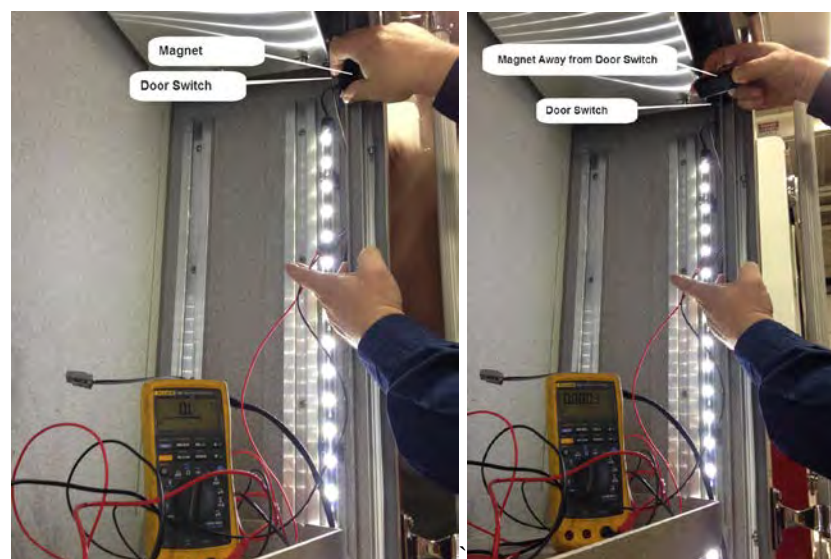


Figure #5

Step 8

- Remove diode #D10 for right hand body compartment lights. See Figure #2.

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- o If alarm and light is ON, reinstall diode. Right hand body compartment light circuit 1745N is not activating the DNMT alarm and light. Move to next Step #.
- o If alarm and light is OFF. Right hand body compartment light circuit 1745N is activating the DNMT alarm and light. Wire diagram 66-0240-304*
 - Disconnect main harness connector at Right Hand Side Rear Body. See Figure #3.
 - If alarm and light is ON. Right hand body compartment light circuit 1745N is activating the DNMT alarm and light from circuit dropouts at the pump panel and not the body. Check 1745N at compartment at pump panel area.
 - If alarm and light is OFF. Right hand body compartment light circuit 1745N is activating the DNMT alarm and light from circuits in the body. Reconnect main harness connector to continue.
 - Check individual door switches. Right hand compartment door switches provide signal for diode #D10 DNMT and to activate relay #9C in the body distribution center which provides power to the right hand compartment lights.
 - Disconnect door switch connector DTM04-3P. Connect Multimeter and set to diode tester audible alarm. Connect leads to terminal #1 and #2 at connector. With door open the meter alarm should be ON. See Figure #4. Close door and if the magnet is aligned properly the meter alarm will turn OFF. If switch operates as stated the switch and magnet alignment are good. Repeat steps at next compartment.
 - If door switch does not operate as stated above continue to the following steps.
 - If the alarm continues to be active, check for magnet alignment in rollup door. Switch may be moved to secondary mounting hole and checked again to see if alignment is achieved. Refer to reference prints (2674074 Gortite), (2785884 Amdor), (2786950 ROM) Body Compartment Magnet Install.
 - If magnet is aligned properly, use any magnet and place in front of switch and the meter alarm should deactivate with magnet in front of it and activate when magnet is removed. See Figure #5. If it does not change state the switch is defective. Replace switch.

Step 9

- Remove diode #D16 for rear compartment door open. See Figure #2.
 - o If alarm and light is ON, reinstall diode. Rear compartment door open circuit 1695N is not activating the DNMT alarm and light. Move to next Step #.
 - o If alarm and light is OFF. Rear compartment door open circuit 1695N is activating the DNMT alarm and light. Wire diagram 66-0240-305* (Circuit assigned for doors without lighting) Wire routes to both sides in the rear bulkheads.
 - If alarm and light is OFF. Rear compartment door open circuit 1695N is activating the DNMT alarm and light from circuits in the body.
 - Check individual door switches. Rear compartment door switches provide signal for diode #D16 DNMT.
 - If door switch does not operate as stated above continue to the following steps.
 - If the alarm continues to be active, check for magnet alignment on rear door. Refer to reference print (2681687 Hinged Door) Ladder/Equipment Hinged Door Magnet Install.
 - If magnet is aligned properly, use any magnet and place in front of switch and the alarm should deactivate with magnet in front of it and activate when magnet is removed. If it does not change state the switch is defective. Replace switch.

Step 10

- Remove diode #D4 for ladder rack not stowed. (Optional) See Figure #2.
 - o If alarm and light is ON, reinstall diode. Ladder rack not stowed circuit 1165N is not activating the DNMT alarm and light. Move to next Step #.
 - o If alarm and light is OFF. Ladder rack not stowed circuit 1165N is activating the DNMT alarm and light. Wire diagram 66-0240-317*. Wire routes to both sides in the rear bulkheads.
 - If alarm and light is OFF. Ladder rack not stowed circuit 1165N is activating the DNMT alarm and light from circuits in the body.
 - Check individual circuit locations. Ladder rack not stowed circuit 1165N provide signal for diode #D4 DNMT.
 - If the alarm continues to be active, isolate circuit 1165N from left and right hand compartment sides by disconnecting the two Deutsch connectors on the crossover harness next to the main harness at the passenger side rear body. See Figure #3.

- If the alarm continues to be active, circuit 1165N is providing a ground signal from the right hand side rear bulkhead body area. Check ladder rack harness interface.
- If the alarm and light is OFF, Reconnect crossover harness. Circuit 1165N is providing a ground signal from the left hand side rear bulkhead body area. Check ladder rack harness interface.

Step 11

- Remove diode #D5 for tower not stowed. (Optional) See Figure #2.
 - If alarm and light is ON, reinstall diode. Tower not stowed circuit 4981N is not activating the DNMT alarm and light. Move to next Step #.
 - If alarm and light is OFF. Tower raised circuit 4981N is activating the DNMT alarm and light. Wire diagram 66-0240-084*. Wire routes to both sides in the rear bulkheads and pump panel.
 - Check individual circuit locations. Tower raised circuit 4981N provide signal for diode #D5 DNMT.
 - Disconnect main harness connector at Right Hand Side Rear Body. See Figure #3.
 - If alarm and light is ON. Tower not stowed circuit 4981N is activating the DNMT alarm and light from circuit dropouts at the pump panel and not the body. Check 4981N at compartment on pump panel.
 - If alarm and light is OFF. Tower not stowed circuit 4981N is activating the DNMT alarm and light from circuits in the body. Reconnect main harness connector to continue.
 - If the alarm continues to be active, isolate circuit 4981N from left and right hand compartment sides by disconnecting the two Deutsch connectors on the crossover harness next to the main harness at the passenger side rear body. See Figure #3.
 - If the alarm continues to be active, circuit 4981N is providing a ground signal from the right hand side rear bulkhead body area. Check magnetic tower stowed switch and harness interface.
 - If the alarm and light is OFF, Reconnect crossover harness. Circuit 4981N is providing a ground signal from the left hand side rear bulkhead body area. Check magnetic tower stowed switch and harness interface.

Step 12

- Remove diode #D17 for cab door switches. See Figure #2.
 - If alarm and light is ON, reinstall diode. Cab door switch circuit 2484N is not activating the DNMT alarm and light. Move to next Step #.
 - If alarm and light is OFF. Cab door switch circuit 2484N is activating the DNMT alarm and light. Wire diagrams 66-0240-254* and 66-0240-266*.
 - Reinstall diode #D17 for cab door switches. See Figure #2.
 - Circuit 2484N at diode #D17 combines door open ground signals from each cab door switch.
- Ensure all cab doors are closed for the next steps.**
- Remove diodes D23, D22, D19, D21, D15, D25, D18 and D20. This will eliminate all ground signals from cab doors or dome lights. Reinstall one diode at a time until DNMT alarm and light are ON. This will identify circuit that will need to be traced.
 - Install diode #D23 for left hand cab door. If alarm and light is ON. Left hand cab mechanical plunger type door switch circuit 3461N is activating the DNMT alarm and light. Check wiring and door switch. If alarm and light is OFF, left hand cab door is not activating alarm and light. Remove diode #D23 and continue to next door.
 - Remove diode #D19 for right hand cab door. If alarm and light is ON. Right hand cab mechanical plunger type door switch circuit 3462N is activating the DNMT alarm and light. Check wiring and door switch. If alarm and light is OFF, Remove diode #D19 and continue to next door.
 - Remove diode #D15 for left hand crew cab door. If alarm and light is ON. Left hand crew cab mechanical plunger type door switch circuit 3394N is activating the DNMT alarm and light. Check wiring and door switch. If alarm and light is OFF, Remove diode #D15 and continue to next door.
 - Remove diode #D18 for right hand crew cab door. If alarm and light is ON. Right hand crew cab mechanical plunger type door switch circuit 3395N is activating the DNMT alarm and light. Check wiring and door switch. If alarm and light is OFF, Remove diode #D18 and continue.

- Reinstall diodes D23, D22, D19, D21, D15, D25, D18 and D20 when complete.

Following these procedures will allow service technicians to maintain door switches and Do Not Move Alarm and Light on the Saber FR and Enforcer chassis electrical system.