



Date: February 24, 2020

Service Bulletin

Bulletin No.: 2020-0044

Product Models Affected:

Aerotech 240

FORM Rev 2020-0227

Purpose:

To remove and install the Disconnect to EP4 Board Power Cable.

Warranty Status:

Standard warranty coverage for all product models.

Tool(s) / Equipment Required:

- Chocks
- Safety Glasses (PPE)
- Hearing Protection (PPE)
- Gloves, Cut Resistant (PPE)
- Bump Cap (PPE)
- Open/Closed End Wrench Set
- Screwdriver, Phillips #2
- Wire Cutter
- Torque Wrench 3/8"
- Utility Knife
- 3/8" Drive Socket Set

Part(s) / Material Required:

<u>Description</u>	<u>Part Number</u>	<u>Quantity</u>
Power Cable	0030695-06	1
Contactora, Solid State	68059	1
Rubber Boot	68058	1
Zip-ties	N/A	A/R
Expandable Foam, Fire Retardant	N/A	A/R
Dielectric Grease (or equivalent)	E54598	A/R

Estimate Time-To-Complete:

2 hours

General:

1. Park the vehicle on a flat level surface.
2. Chock wheels of the vehicle.
3. Ensure that the product use date is not greater than one (1) year from the expiration/manufacturing date of adhesives and sealants. Ensure product handling and storage processes meet manufacturer requirements.
4. Protect adjacent areas, from weld spatter and debris from grinding during hot work operations.
5. Protect adjacent areas, from overspray of paints and adhesives during assembly/finish operations.
6. Disconnect battery(ies), PCM/ECM/Modules, and other electrical device connections as described in the Ford Service Manual for welding, or performing other service work, on the chassis.
7. Reconnect battery(ies), PCM/ECM/Modules, and other electrical device connections as described in the Ford Service Manual for welding, or other service work on the chassis only after completing all process operations.
8. Wear appropriate PPE during rework process operations.
9. Ensure a fire extinguisher or other fire control apparatus are available during hot work operations.
10. Follow OEM instructions regarding the removal and re-installation, or protection of alternate fuel cells and/or components of the alternate fuel system installed on the vehicle when completing hot work operations.
11. Move any hoses, electrical harnesses or wire, or other components from the immediate work area where hot work, or other service work, operations may be performed.
12. Follow appropriate industry standards and best practices for welding operations.
13. Follow manufacturer instructions for the handling and use of adhesives, sealants, and other materials used in sub-assembly and assembly processes.

Procedure:

1. Disconnect positive terminal from all batteries installed in vehicle.
2. Locate Disconnect in Battery Tray/Step Tray.
3. Remove Power Cables from Disconnect. Reference Image 1.

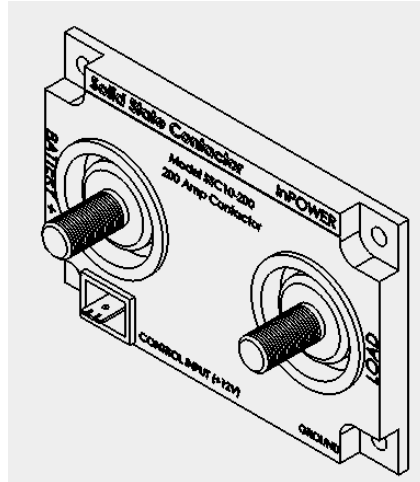


Image 1

4. Locate the Fuse in the Battery Tray/Step Tray.
5. Remove the Disconnect to EP4 Power Cable from the Fuse.
6. Remove Disconnect from chassis and discard old Disconnect.
7. Install new Disconnect by reversing tasks completed in Step 6.
8. Pull EP4 Power Cable through back of battery box. Continue pulling Power Cable out of P-Clamps along bottom of chassis. Reference Images 2 - 5.



Image 2



Image 3



Image 4



Image 5

9. Inside bus, remove screws from ABS behind and above driver to expose the electrical harness. Reference Images 6 - 8.
Note: ABS located above the driver may not need to be removed if the ABS behind the driver and above the driver are not one piece.



Image 6



Image 7



Image 8

10. Locate harness behind driver once ABS is removed. Free electrical harness from zip-ties and/or P-clamps. Continue pulling harness through the hole in the floor. Reference Image 9.



Image 9

11. Open electrical panel door above driver. Reference Image 10.



Image 10

12. Remove EP4 Board by removing the 4 screws securing the Board. Reference Image 11.



Image 11

13. Disconnect the L-shaped connector on back of the EP4 board. Reference Image 12.

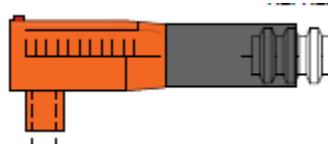


Image 12

14. Pull the electrical harness out from behind the electrical panel and discard harness.
15. Install new Power Cable reversing tasks completed in Steps 3 – 5 and 8.
 - Note: Ensure L-shaped connector is located behind the electrical panel above the driver.
 - Note: Ensure electrical harness is bundled using zip-ties and all P-clamps are installed and secured to prevent chafing of power cable.
 - Note: Ensure there is enough slack in power cable behind electrical panel to avoid pulling on L-shaped connector to Board connection during attachment.
16. Connect L-shaped Connector to back of EP4 Board.

17. Install EP4 Board by reversing tasks completed in Step 12.
18. Place Power Cables back onto the Fuse mounting stud, and torque to 13 ft/lb.
Reference Image 15 for proper placement of power cables on fuse block.
19. Torque seal nut after completion of the torque operation.
20. Inspect heat shrink on ring/eyelet to ensure heat shrink does not extend over the ring portion of the eyelet.



Image 13

21. Cut back the heat shrink, as necessary, allowing the nut to sit flat on the ring/eyelet and post.
Reference Image 14.



Image 14

22. Place the Power Cables onto the new Disconnect mounting studs, and torque to 13 ft/lb. Reference Image 1.
Note: Ensure there is enough slack in the power cable to allow the Battery Tray to freely move, as applicable.
Note: Ensure the power cable is bundled and secured to avoid chafing of the cable during vehicle operation and/or Battery Tray open/close operations.
23. Torque seal nut after completion of the torque operation.
24. Apply dielectric grease to the Fuse and Disconnect mounting studs. Reference Image 15 and 1.

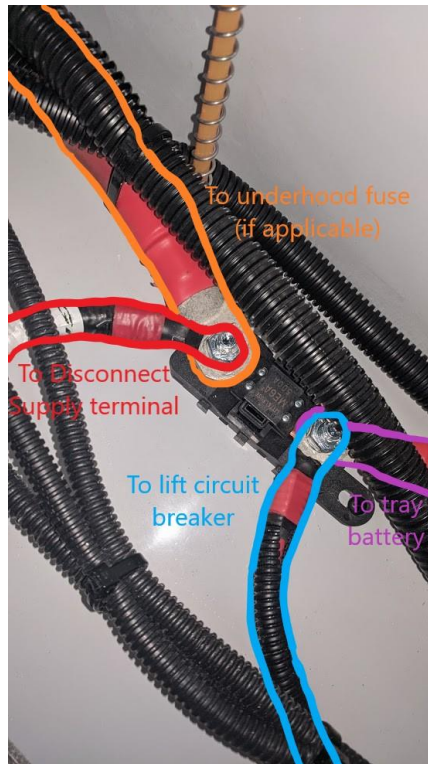


Image 15

25. Reconnect positive terminals to batteries installed in vehicle, reversing tasks completed in Step 1.
26. Torque the post terminal clamps to 7 ft/lb.
27. Close and latch/secure the Battery Tray/Step Tray.
28. Turn ignition key to ignition on.
29. Inspect EP4 Board for illumination of LED status light. Reference Image 16.



Image 16

30. Close Electrical Panel Door.
31. Spray Expandable Foam in the pass-thru hole in the floor behind driver. Reference Image 9.
32. Install ABS behind the driver, and above the driver as applicable, reversing tasks completed in Step 9.

Contact Information:

Contact Eldorado Customer Service, 1655 Wall Street, Salina, KS 67401; or by calling (785) 827-1033 / (800) 955-9086; or by Email: bussupport@eldorado-bus.com; or by Fax: (785) 823-9471.