



# INSTRUCTION TO SERVICE

ITS60422		March 17, 2022
<b>SECTION:</b>	292-Electrical Harnesses	
<b>WRITTEN BY:</b>	Aditya Gadepalli	
<b>SUBJECT:</b>	MCI Main Distribution Panel Inspection and Cleaning for Harsh/Corrosive Environment	
<b>ISSUE:</b>	<p>This is to inform you that your vehicle may contain a defect that could affect the safety of a person. The Main Distribution Panel (MDP) in the battery compartment has experienced failures that may result in thermal events and/or uncommanded vehicle shutdown.</p> <p>Due to the current global parts shortage, the components required to conduct the related recall repair instructions are not currently available. This is specific to repair instructions ITS60272 (J4500), ITS-60335 (J3500), ITS 60283 (D Coach), and ITS60298 (D45CRT and D4520 coach). In the interim period, prior to these repair instructions being incorporated on the buses identified above, MCI recommends conducting an immediate inspection of the MDP, MCI P/N: 07-08-7940, and regular interval inspections every three months for signs of thermal stress or corrosion following this inspection procedure</p>	
<b>SUMMARY:</b>	Due to the Main Distribution Panel failures resulting from supplier quality and environmental issues, it is recommended the MDP be inspected and replaced until the permanent solution of replacing the MDP with a circuit breaker assembly is applied.	

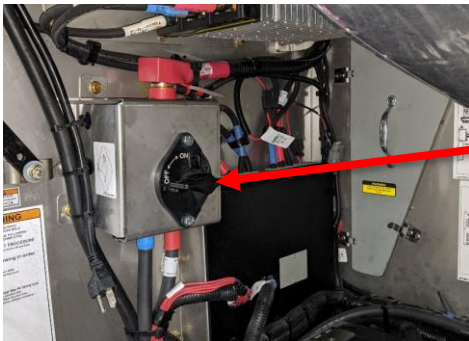
# ITS60422

Ref. NHTSA Recall No.	Ref. Transport Canada Recall No.
21V-748	2021-595

**THIS ITS DOCUMENT SHOULD BE RETAINED AND REFERRED TO FOR FUTURE MAINTENANCE UNTIL THE PARTS AND/OR SERVICE MANUAL IS UPDATED TO REFLECT WORK DONE AS A RESULT OF THIS DOCUMENT. ENSURE THAT THIS DOCUMENT IS AVAILABLE FOR PARTS AND MAINTENANCE STAFF GOING FORWARD.**

## PROCEDURE:

1. Set park brake and chock wheels.
2. Turn the main battery disconnect switch to the "OFF" position.
3. **Follow steps 4 to 8 on J4500, J3500, D45CRTLE, and D4520 coach models.**
4. Locate the Main Battery Disconnect Switch and ensure it is in the off position.



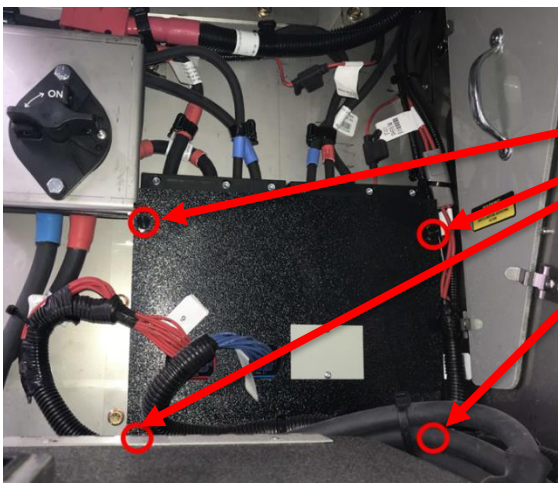
Turn off  
MDS.

5. Disconnect GND, 12V, and 24V battery cables from the coach batteries. Ensure the battery cables do not come in contact with each other or the coach.



Disconnect all  
battery cables.

6. Locate the MDP compartment mounted on the rear wall in the battery compartment. Remove and save the 4 thumb screws to release the MDP cover.



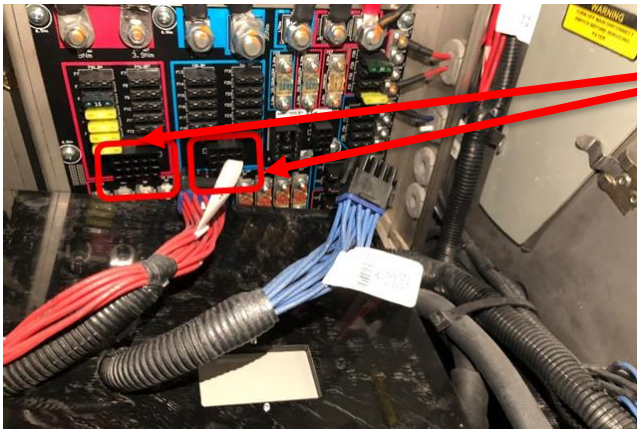
Remove and save 4  
thumb screws.

7. Remove tyrap that secure BT-P162 to the Main Disconnect Switch cables.



Remove BT-P162 tyrap on battery cables.

8. Disconnect connectors BT-P161 and BT-P162 from MDP.



Disconnect BT-P161 and BT-P162.

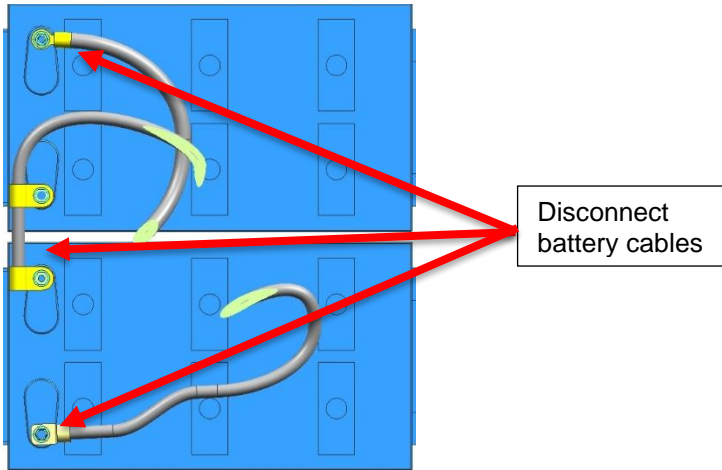
9. Follow steps 10 to 15 on D4000, D4500, D4005, D4005, and D4000 ISTV coach models.

10. Locate the Main Battery Disconnect Switch and ensure it is in the off position.

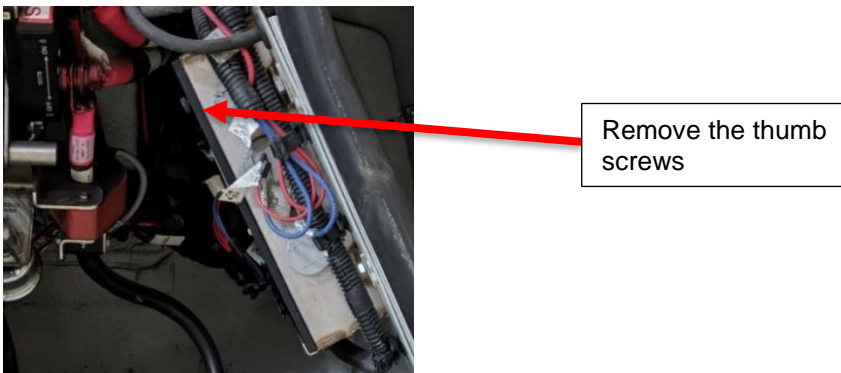


Turn off MDS.

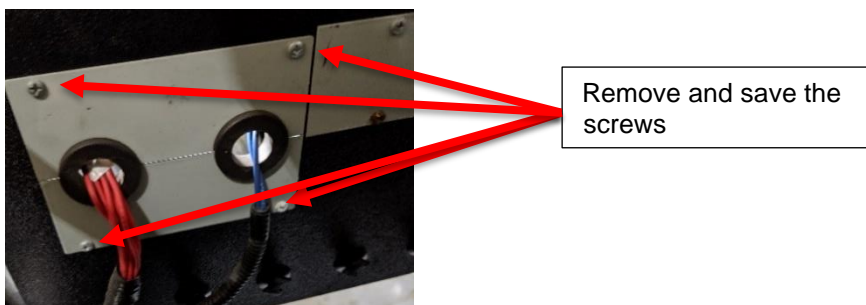
11. Disconnect GND, 12V, and 24V battery cables from the coach batteries. Ensure the battery cables do not come in contact with each other or the coach.



12. Remove and save the two thumbscrews from the MDP cover.

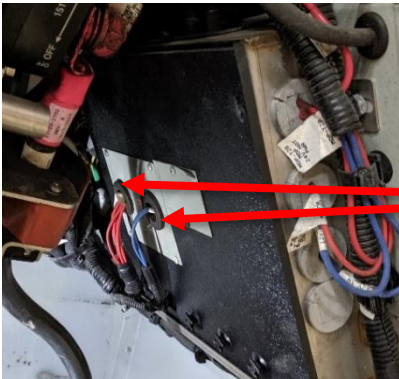


13. Remove and save 4 screws holding the MDP cut-out part to the MDP cover.



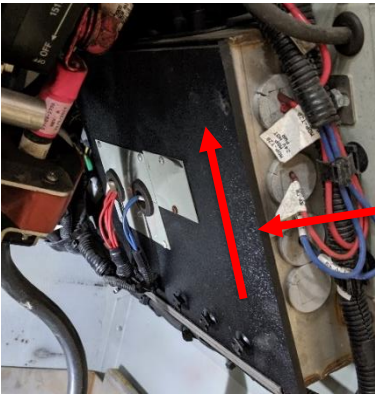


14. Disconnect the two connectors, BT-P162 and BT-P161, from the main distribution panel.



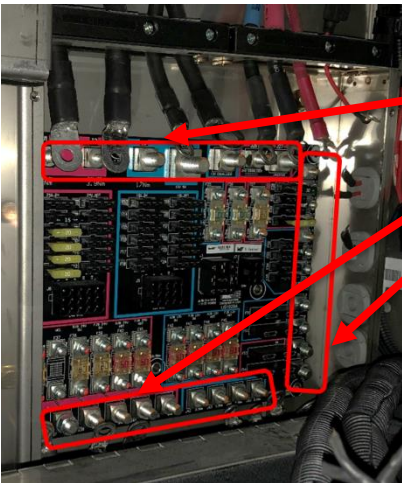
Disconnect the wires

15. Slide out and save the battery compartment cover out of the bracket.



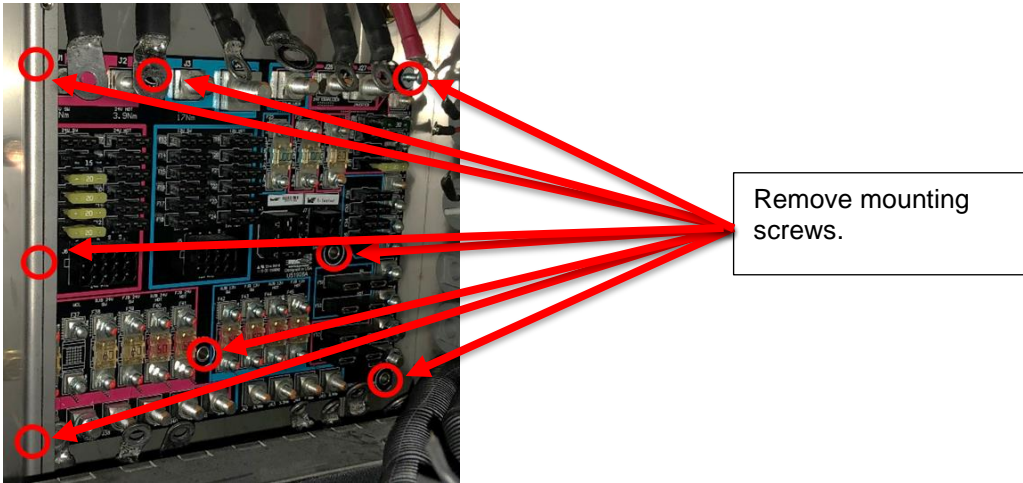
Slide the cover out

16. Remove all cables from MDP. Make a note of where each cable is connected on the board. Place nuts and lock washers back on studs after the cables are removed.

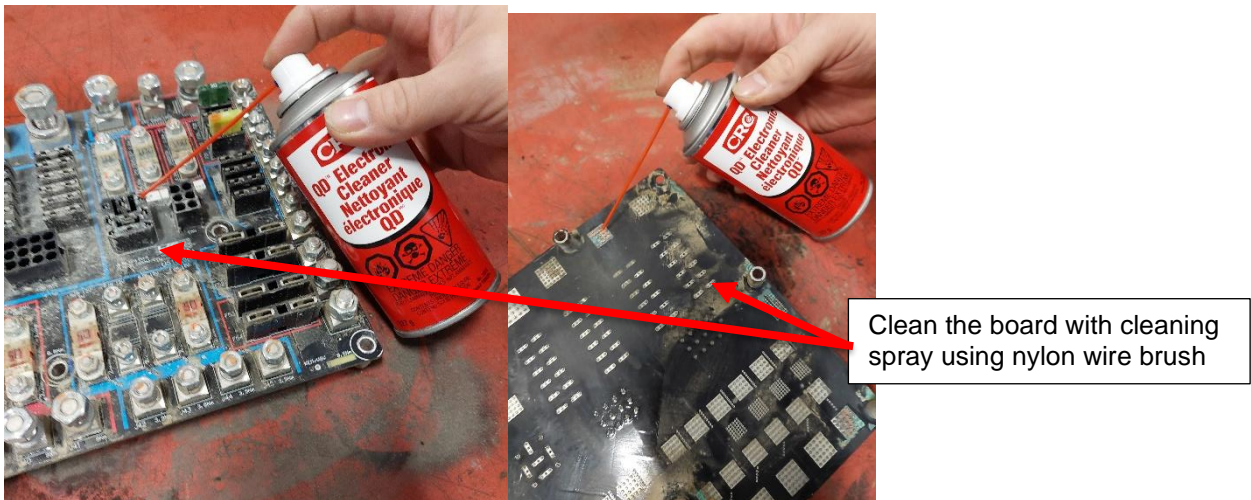


Remove all cables from MDP.

17. Remove & save 8 MDP mounting screws and washers to remove the MDP from the coach.



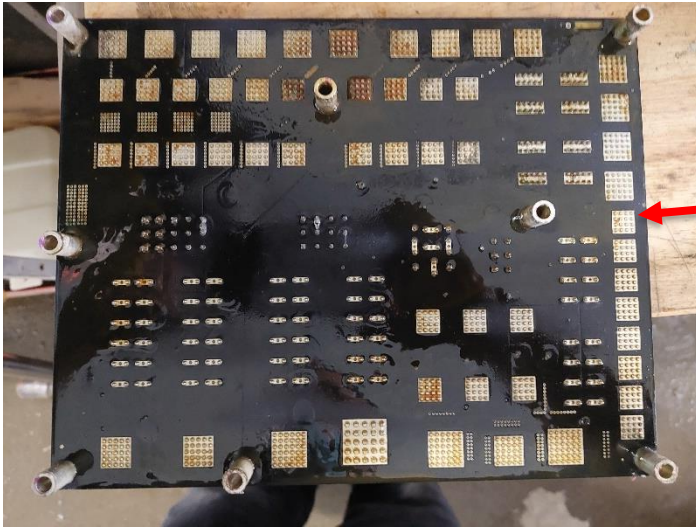
18. Blast the MDP board with air and clean the board with hard nylon wire brush by spraying cleaning spray lightly to eliminate the dirt.



☞ **NOTE:** Maintain caution to spray the cleaner lightly as it could remove the existing conformal coating and also maintain caution not to damage the pins on the MDP.

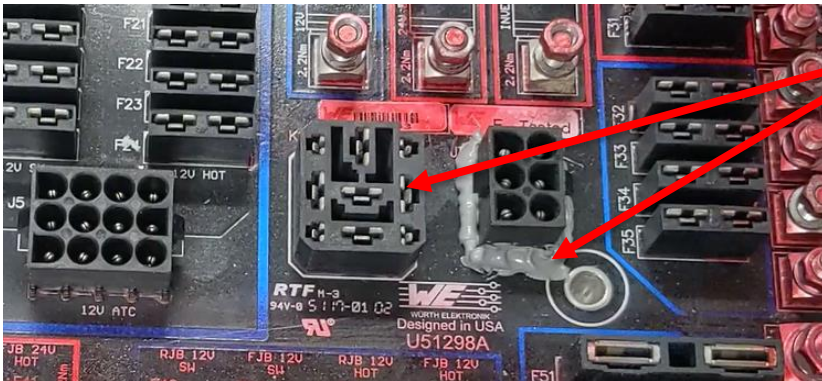
☞ **NOTE:** If the board is found damaged/corroded beyond repair, please contact your local MCI representative for the replacement board.

19. Using short sprays, apply the corrosion inhibitor, MCI P/N: 23-02-0119, on back of the board and allow 5-10min for it to dry.



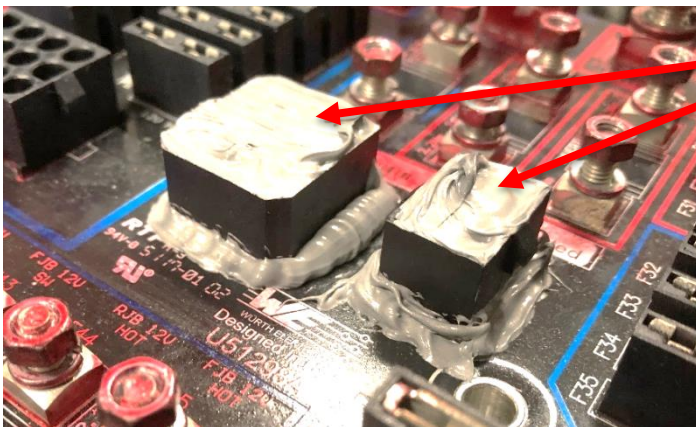
Spray corrosion inhibitor, MCI P/N: 23-02-0119

20. Using RTV silicon, place a bead of silicone around fuse checker connectors K1 and J7.



Apply RTV around K1 and J7 connectors.

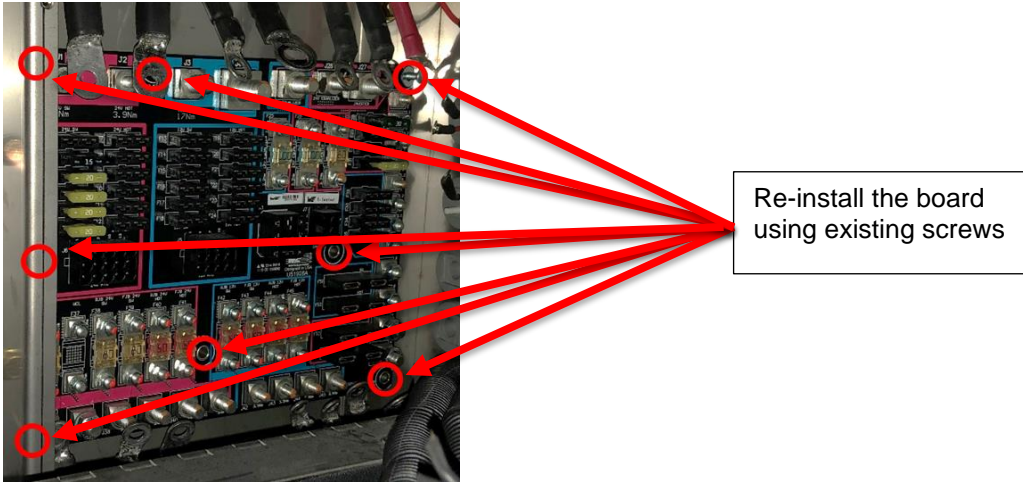
21. Using RTV silicon, seal the top of fuse checker connectors K1 and J7. Let the silicon dry (approximately 30 minutes).



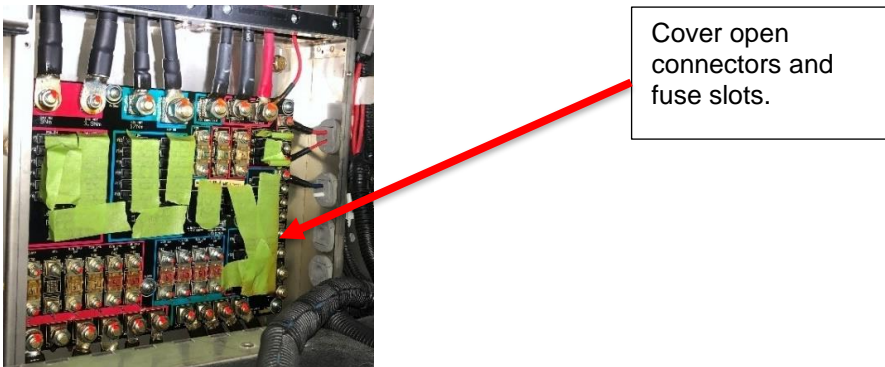
Apply RTV on top of K1 and J7 connectors.



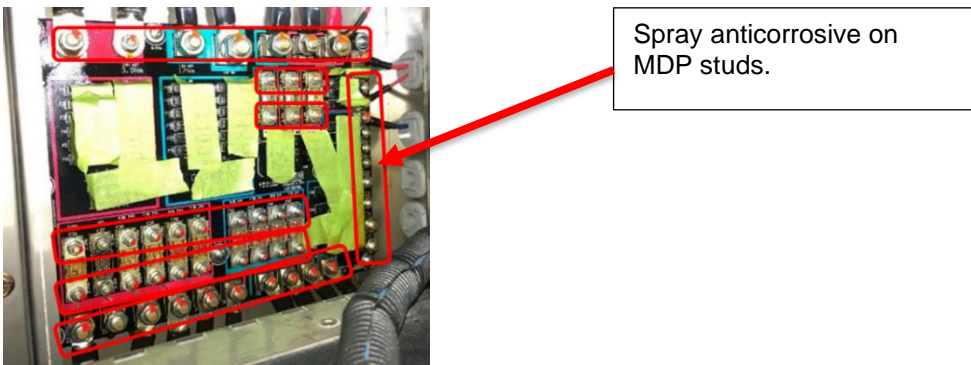
22. Re-install the MDP to the wall using existing screws and torque the screws to 75 In-Lbs. Re-install the cables referencing the torques specified in step 39.



23. Cover all open connectors and fuse slots with masking tape.

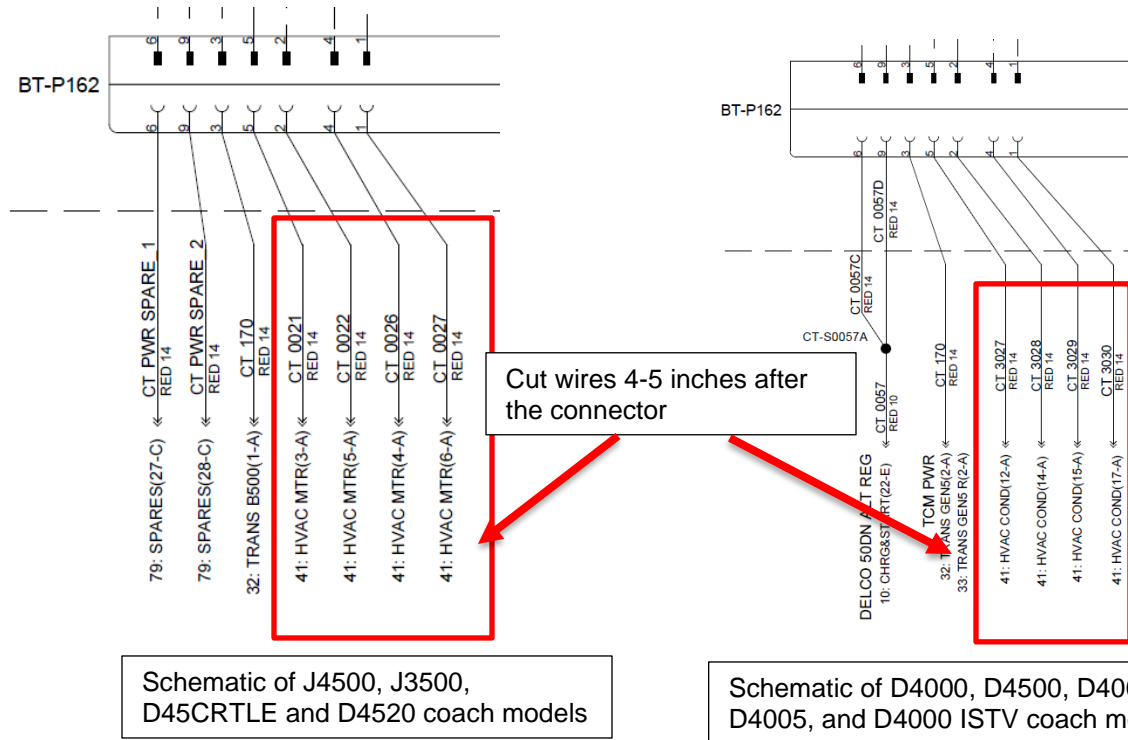


24. Using short sprays, apply the corrosion inhibitor, MCI P/N: 23-02-0119, on all power and fuse studs. Wipe off any excessive corrosion inhibitor from the fuse windows using a dry rag.





25. Cut HVAC wires CT0021, CT0022, CT0026, and CT0027 4-5 inches from the 24V BT-P162 connector.



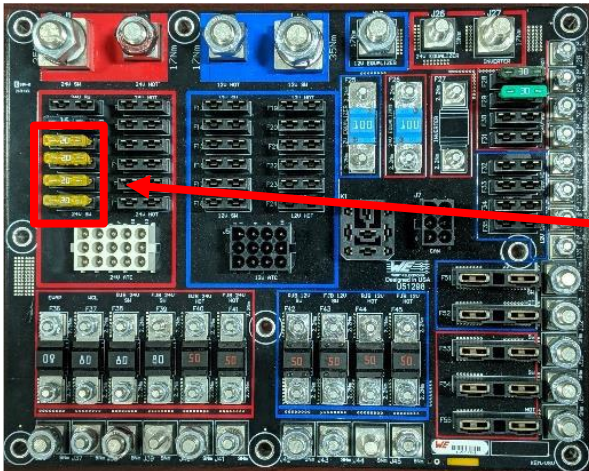
**NOTE:** Heatshrink and tie back the wire attached to the pins to avoid corrosion.

26. Crimp HHG in-line fuse holders, MCI P/N: T19-1168, to the HVAC wires using splice connector, MCI P/N: 19-11-431, black heat shrink, MCI P/N: 19-11-1465, and a 1/2" ring terminal at the end, MCI P/N: 19-11-393.



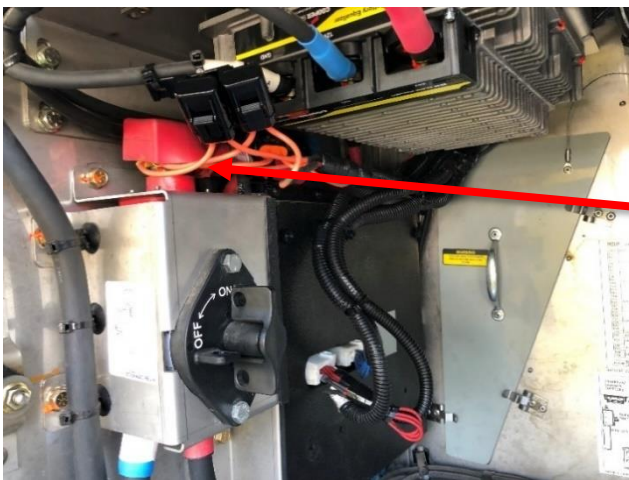
Crimp inline fuse holder to the HVAC wires

27. Remove 20A fuses from the MDP and install them in the in-line fuse holders.



Remove 20A fuses and install in in-line fuse holders

28. Connect the modified HVAC wires to either 24V SW stud on the MDS as shown below for various coach models. Torque the nut to 300 In-lbs.



Connect the modified HVAC wires to 24V SW stud on MDS

J4500, J3500, D45CRTLE and D4520 coach models



Connect the modified HVAC wires to 24V SW stud on MDS

D4000, D4500, D4005, D4005, and D4000 ISTV coach models

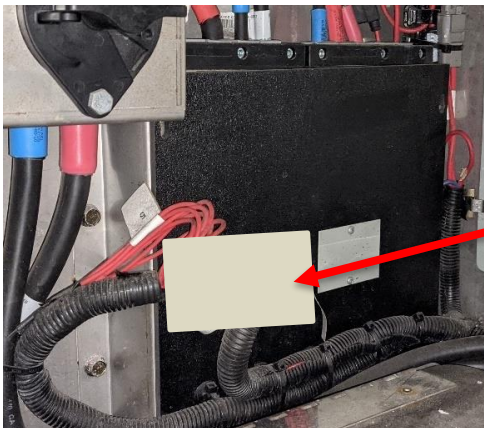
29. Follow steps 31 to 33 for J4500/J3500/D45CRT-Le/D4520 coach models.

30. Secure the MDP cover using the 4 thumb screws, MCI P/N: 07-08-9231.



Install 4 thumb screws.

31. Seal the opening on MDP cover for BT-P161 and BT-P162 connectors over the wires with duct tape.



Cover the openings with duct tape

**NOTE:** Ensure smooth routing of cables and ensure no rubbing on the remaining wires.

32. Re-install the battery cables and torque the studs following the maintenance manual.

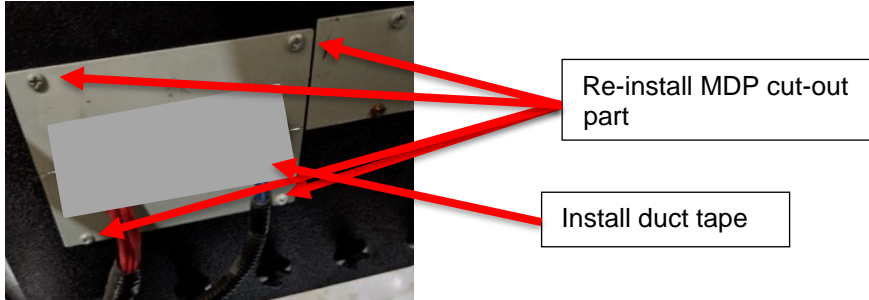


Reconnect all battery cables.



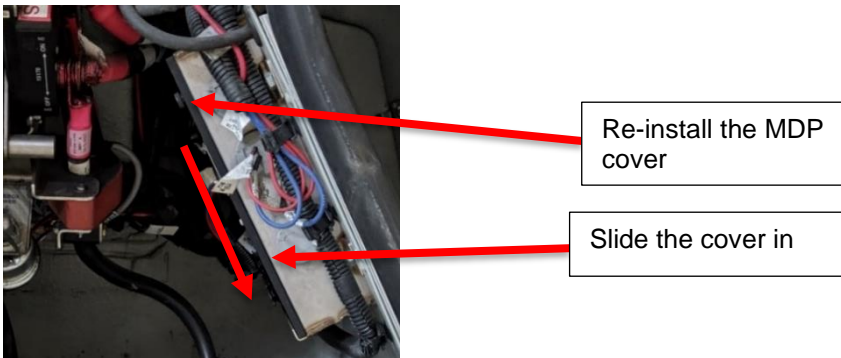
34. Perform steps 35 to 37 on D4000, D4500, D4005, D4005, and D4000 ISTV coach models.

35. Prior to installing the MDP cover, re-install the MDP cut-out part to the MDP cover using existing screws. Duct tape over the BT-P161 and BT-P162 connectors around the wires to seal the area.

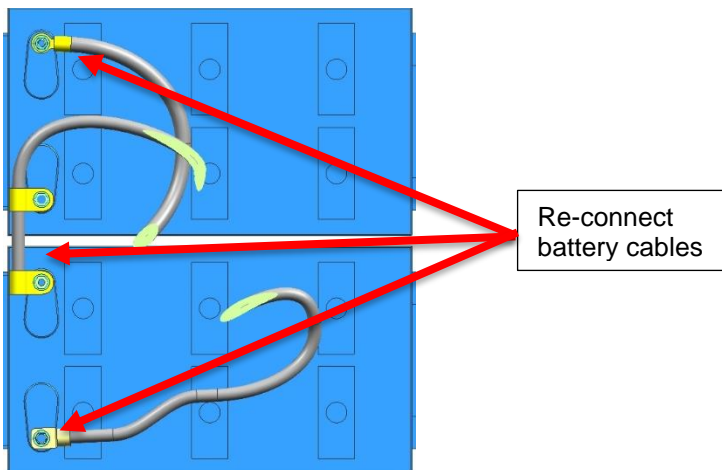


**NOTE:** Ensure smooth routing of cables and ensure no rubbing on the remaining wires.

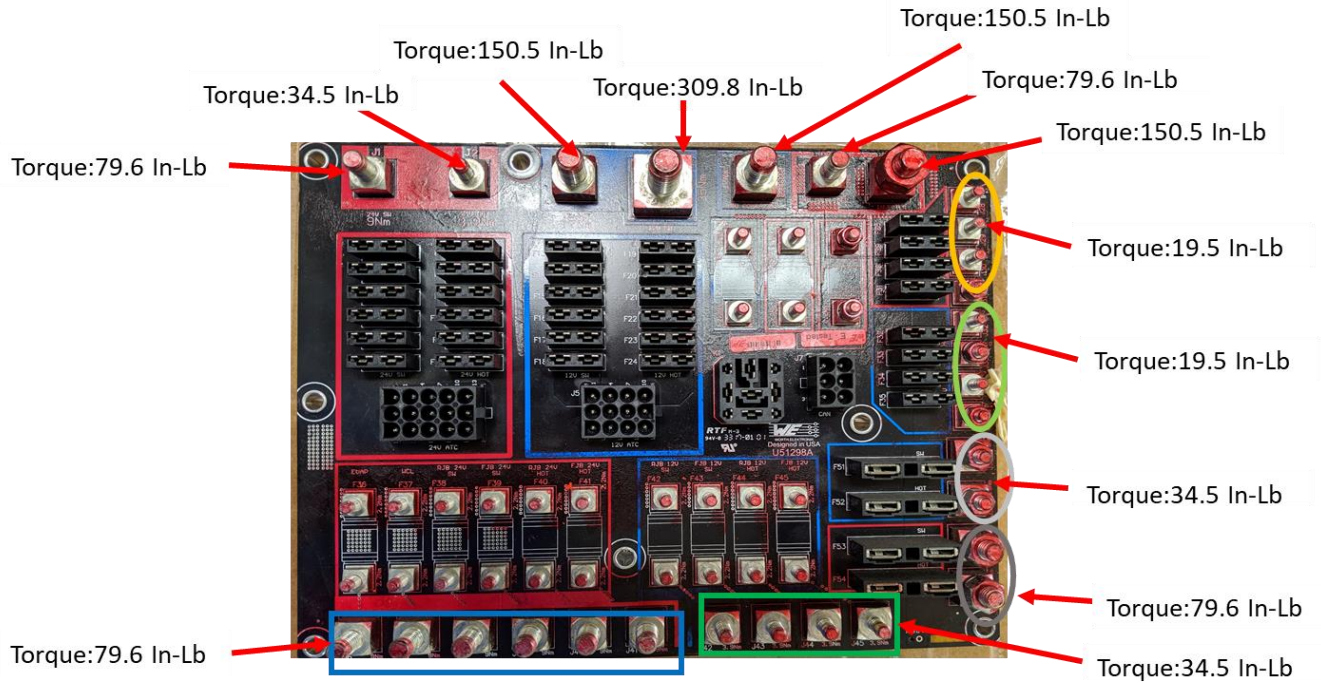
36. Slide in and re-install the MDP cover using the existing two thumbscrews.



37. Re-install the battery cables and torque the studs following the maintenance manual.



38. Following are the torque values for the MDP studs:



**NOTE:** Inspection and preventive maintenance are no longer required once the MDP is replaced with circuit breakers as per ITS60272 (J4500), ITS-60335 (J3500), ITS 60283 (D Coach), and ITS60298 (D45CRT and D4520 coach).



LABOUR ESTIMATE				
	Operation	Number of Technician(s)	Hours	Labor Time T X HR
1	MDP Inspection and cleaning for harsh/corrosive environment	1	3	3

PARTS REQUIRED					
Item	Part Number	Description	Qty. per Coach	Units	Notes
1	19-11-393	Ring Terminal, ½ IN 12AWG	4	EA	
2	T19-1168	Holder-Fuse, Inline, HHG, W/Cap	4	EA	
3	19-11-431	Connector-Splice, Butt, 12 10 AWG,	4	EA	
4	19-11-1465	Heatshrink, 2"	4	EA	

SPECIAL TOOLS REQUIRED					
Item	Part Number	Description	Qty.	Units	Notes
1	23-02-0119	Sealant-Corrosion Inhibitor	1	EA	
2	N/A	Duct tape	1	EA	
3	N/A	Nylon brush	1	EA	
4	N/A	Electrical cleaning spray (vendor: CRC, VPN: 5102)	1	EA	
5	N/A	Ultra Grey RTV Silicone (Vendor: Imperial, VPN: 9166)	1	EA	