



INSTRUCTION TO SERVICE

ITS60421		DATE: March 17, 2022
SECTION:	292-Electrical Harnesses	
WRITTEN BY:	Aditya Gadepalli	
SUBJECT:	MCI Main Distribution Panel Protection	
ISSUE:	<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).</p> <p>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>	
SUMMARY:	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.	

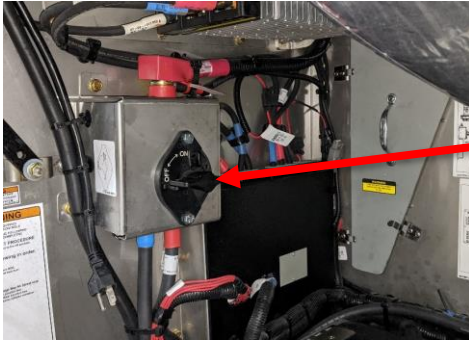
ITS60421

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.



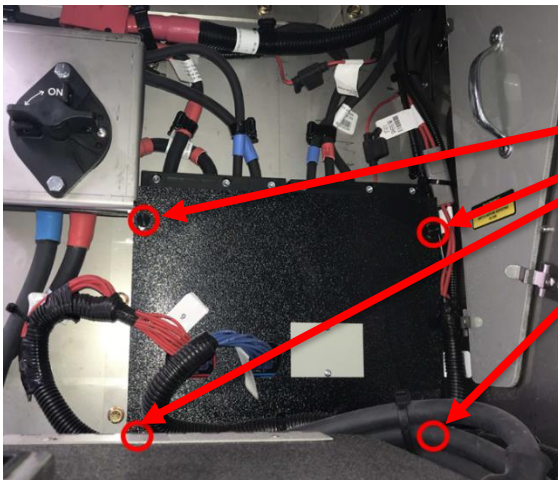
Turn off
MDS.

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.

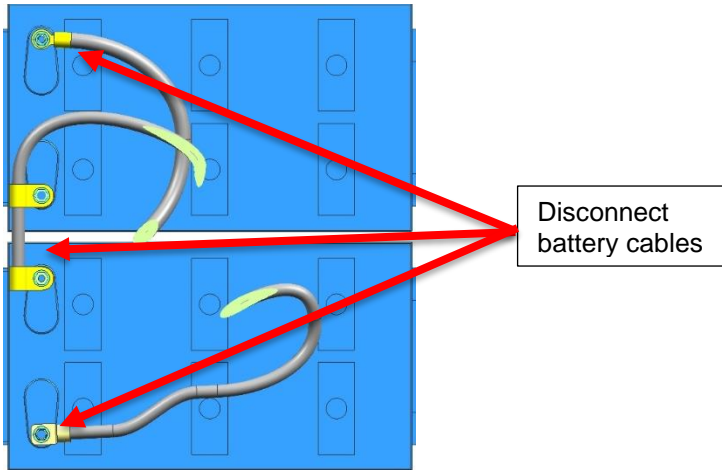
9. Follow steps 10 to 15 on D4000, D4500, D4005, D4005, and D4000 ISTV coach models.

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

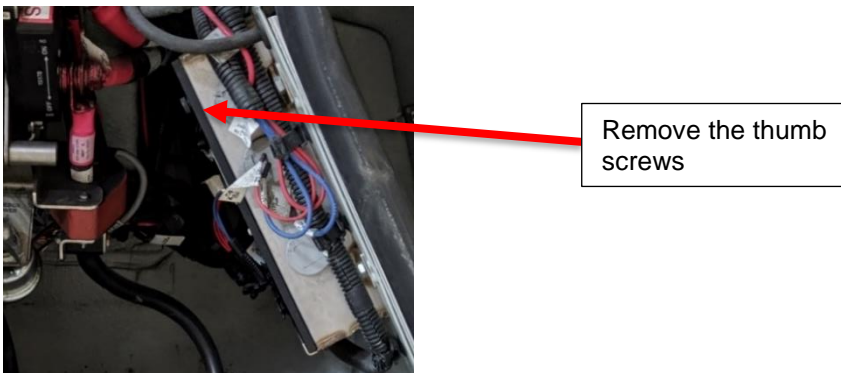


Turn off MDS.

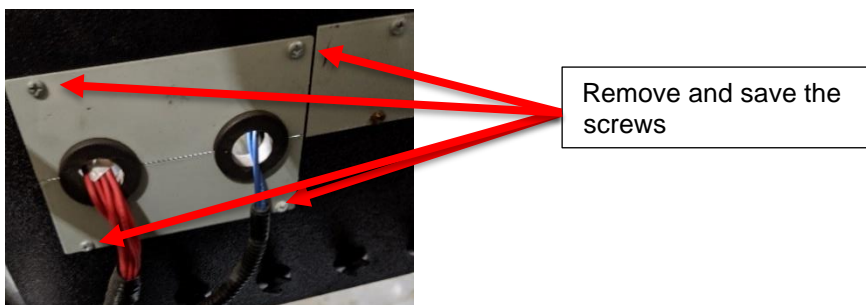
11. Disconnect GND, 12V, and 24V battery cables from the coach batteries. Ensure the battery cables do not come in contact with each other or the coach.



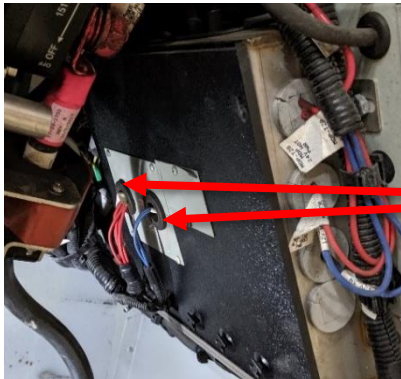
12. Remove and save the two thumbscrews from the MDP cover.



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

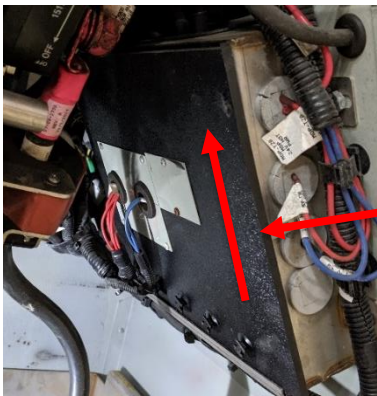


14. Disconnect the two connectors, BT-P162 and BT-P161, from the main distribution panel.



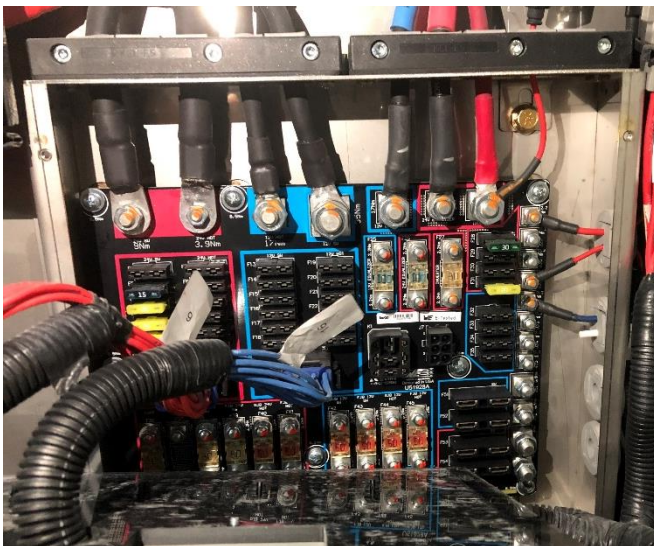
Disconnect the wires

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



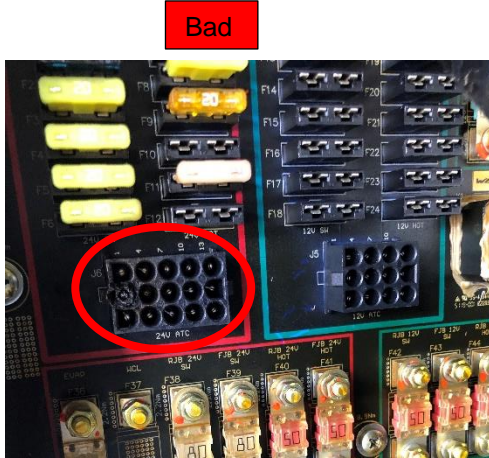
Slide the cover out

16. Inspect the front of the MDP for corrosion at all connectors and verify the retaining nuts for all the power cables are properly torqued. If corrosion is found, consult your local MCI representative for more heavier duty inspection and cleaning ITS-60422.



NOTE: Refer to the step 35 for power stud torque specifications of the MDP.

17. If no corrosion is found, inspect for heat damage on the BT-P162 connector. If heat damage is observed, perform steps 18 to 21. Otherwise, skip to step 22.

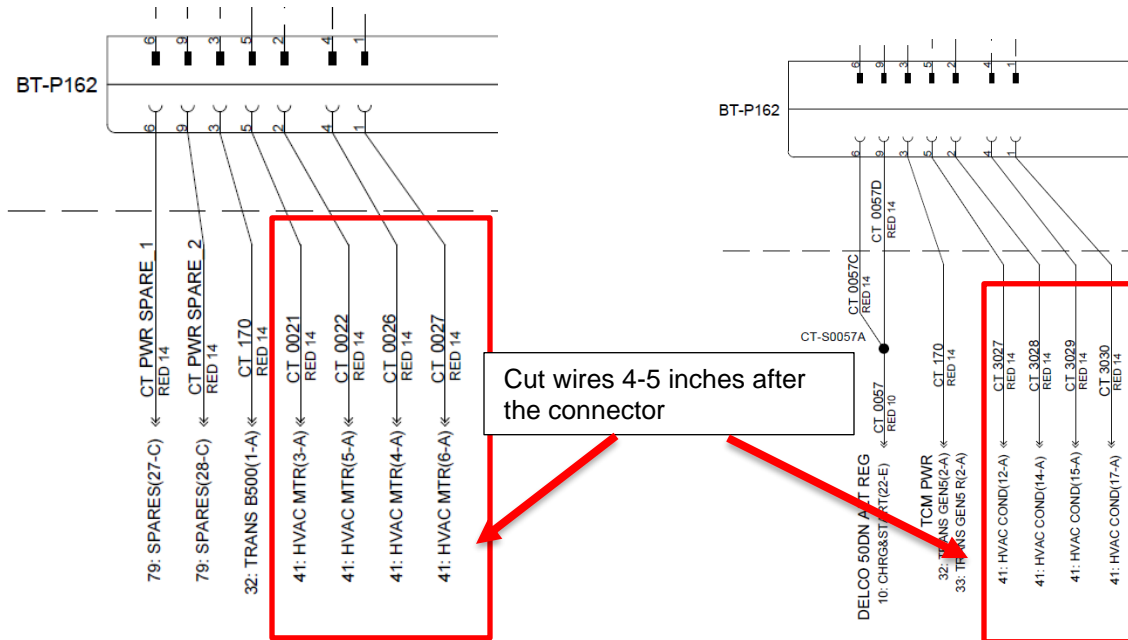


Perform steps 18 to 21



Skip to step 22

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



Schematic of J4500, J3500, D45CRTLE and D4520 coach models

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

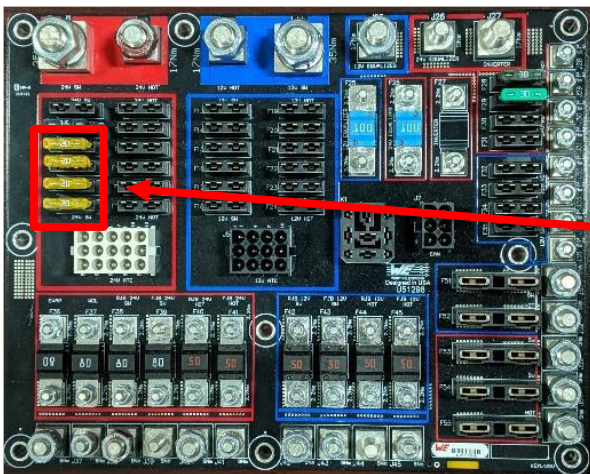
NOTE: Heatshrink and tie back the wire attached to the pins to avoid corrosion.

19. 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

20. 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

21. 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

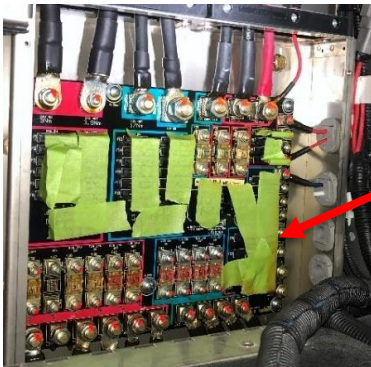
J4500/J3500/D45CRT-
Le/D4520 coach models



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

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

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



Cover open connectors and fuse slots.

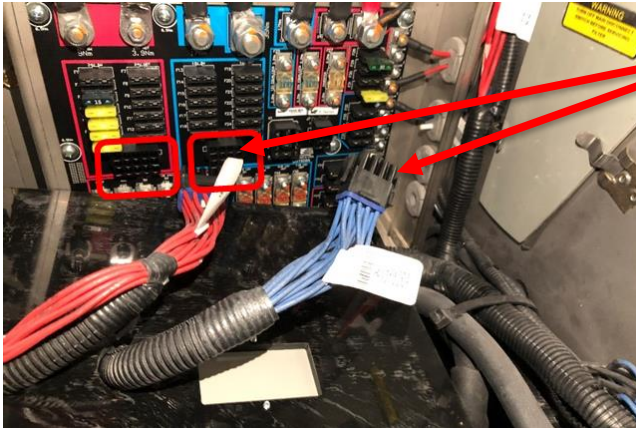
23. Using short sprays, apply the corrosion inhibitor, MCI P/N: 23-02-0119, on all power and fuse studs. Wipe off any excessive corrosion inhibitor from the fuse windows using a dry rag.



Spray anticorrosive on MDP studs.

24. Follow steps 25 to 28 for J4500/J3500/D45CRT-Le/D4520 coach models.

25. Route through the MDP cover holes and secure connectors BT-P161 and BT-P162 to the MDP board.



Connect BT-P161 and BT-P162.

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



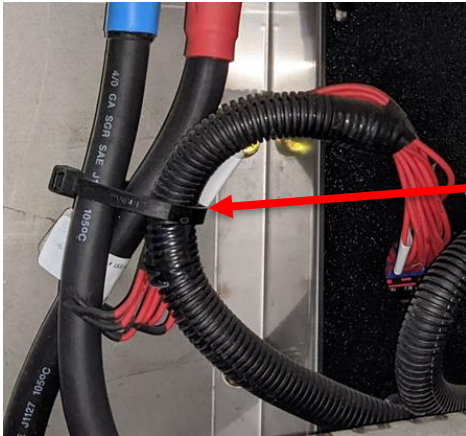
Install 4 thumb screws.

27. Secure the BT-P161/BT-P162 harnesses to the MDP cover using 5 tyraps, MCI P/N: 19-11-258, and existing mounts.



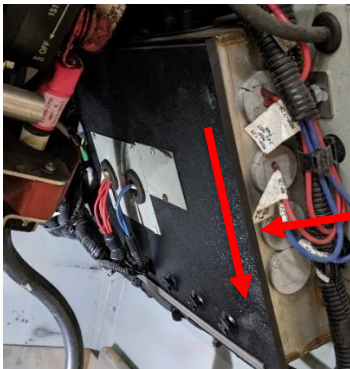
Secure harness using 5 tyraps.

28. Loosely secure the BT-P162 branch to the MDS battery cables, allowing a smooth curve on the harness.
Ensure there is no side strain at the connector.



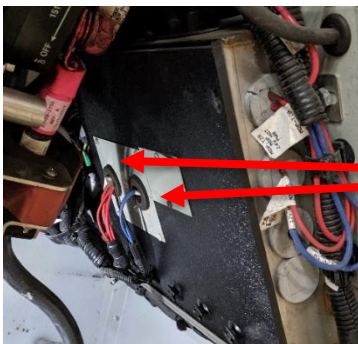
Loosely secure BT-162 to MDS Cables.

29. Perform steps 30 to 34 on D4000, D4500, D4005, D4005, and D4000 ISTV coach models.
30. Slide in and discard the battery compartment cover out of the bracket.



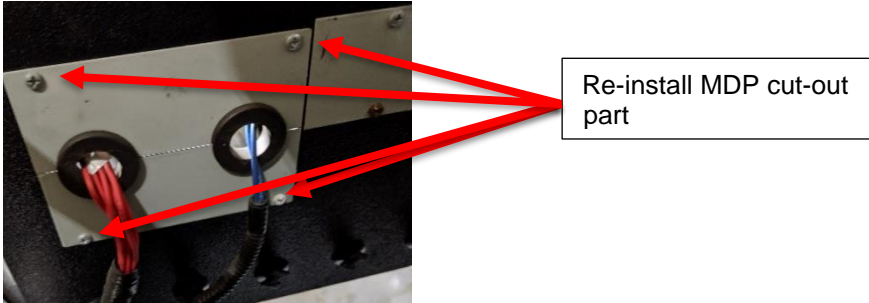
Slide the cover in

31. Connect the two connectors, BT-P162 and BT-P161, to the main distribution panel.

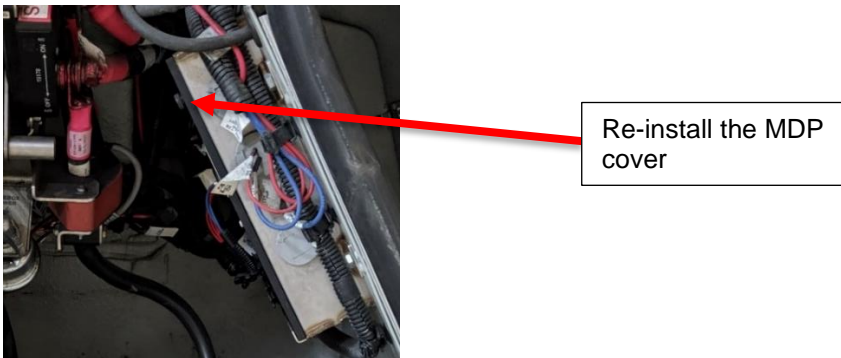


Connect the wires

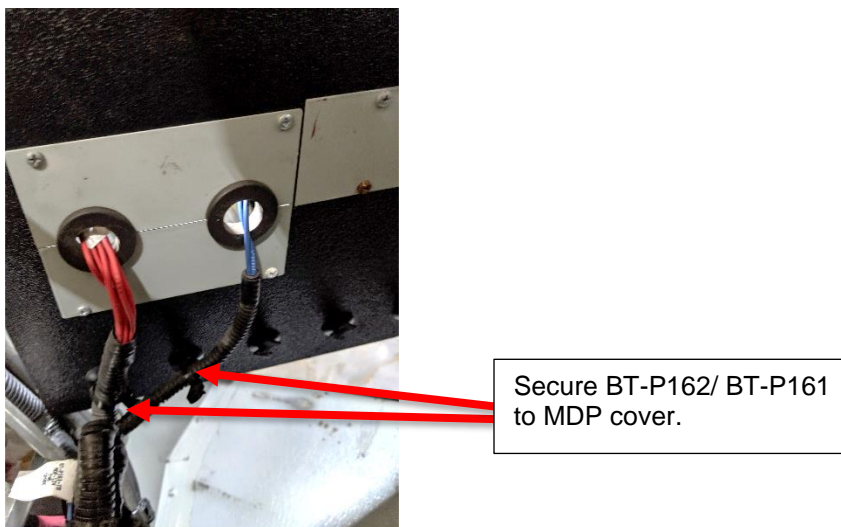
32. Re-install the MDP cut-out part to the MDP cover using existing screws.



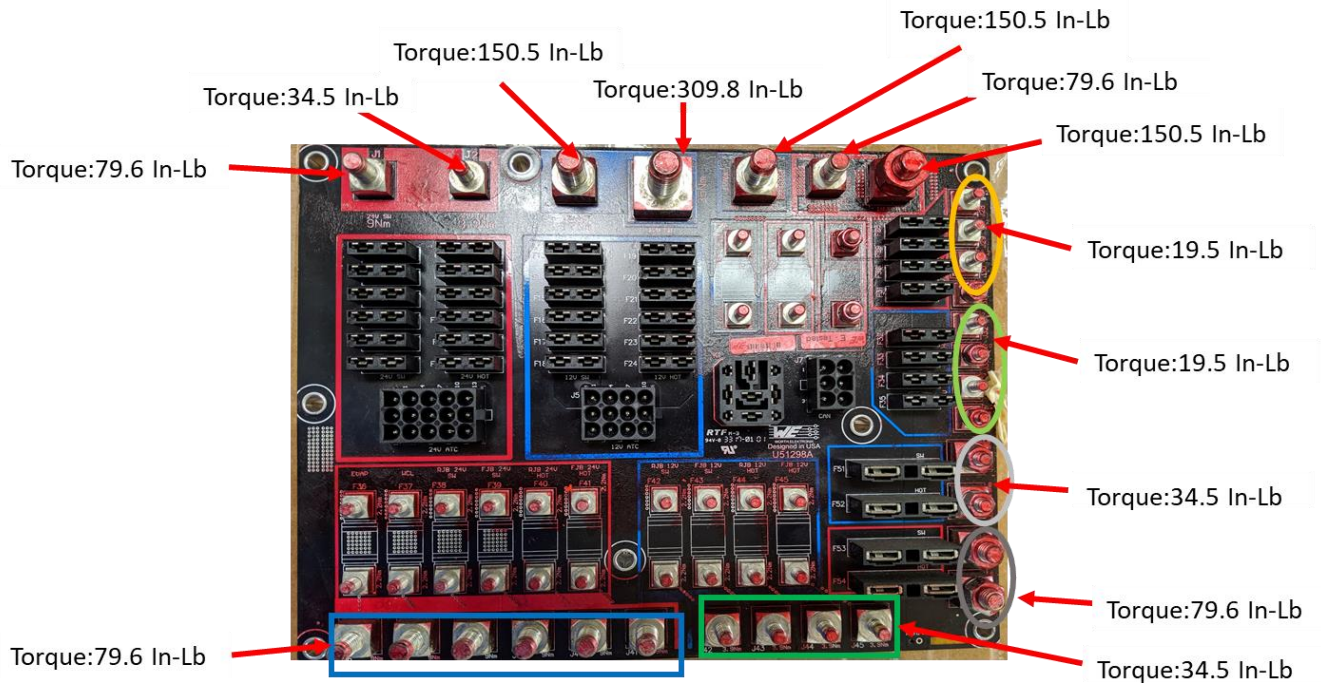
33. Secure the MDP cover using the existing two thumbscrews.



34. Secure the BT-P162 and BT-P161 connectors to the MDP cover using 2 tyrap, MCI P/N: 19-11-258. Ensure the tyrap do not create tension at the pins or connectors.



35. 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	1	2	2

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	