INSTRUCTION TO SERVICE

ITS60272	October 18, 2021
SECTION:	292-Electrical Harnesses
WRITTEN BY:	Hugo Freire
SUBJECT:	MCI J Coach MDP Replacement with Circuit Breaker Assembly
ISSUE:	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.
SUMMARY:	Due to the Main Distribution Panel failures resulting from supplier quality and environmental issues, it is recommended the MDP be replaced with a circuit breaker assembly.

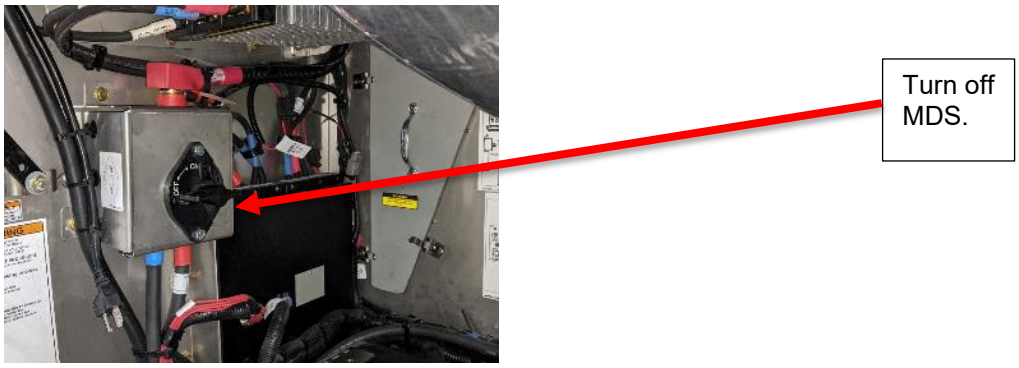
ITS60272

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

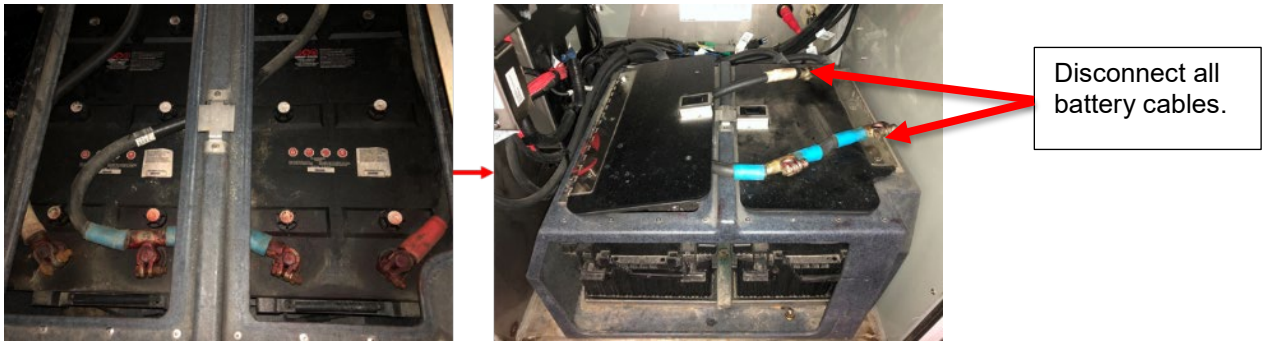
THIS ITS DOCUMENT SHOULD BE RETAINED AND REFERRED TO FOR FUTURE MAINTENANCE UNTIL THE PARTS AND/OR SERVICE MANUAL IS UPDATED TO REFLECT WORK DONE AS A RESULT OF THIS DOCUMENT. ENSURE THAT THIS DOCUMENT IS AVAILABLE FOR PARTS AND MAINTENANCE STAFF GOING FORWARD.

PROCEDURE:

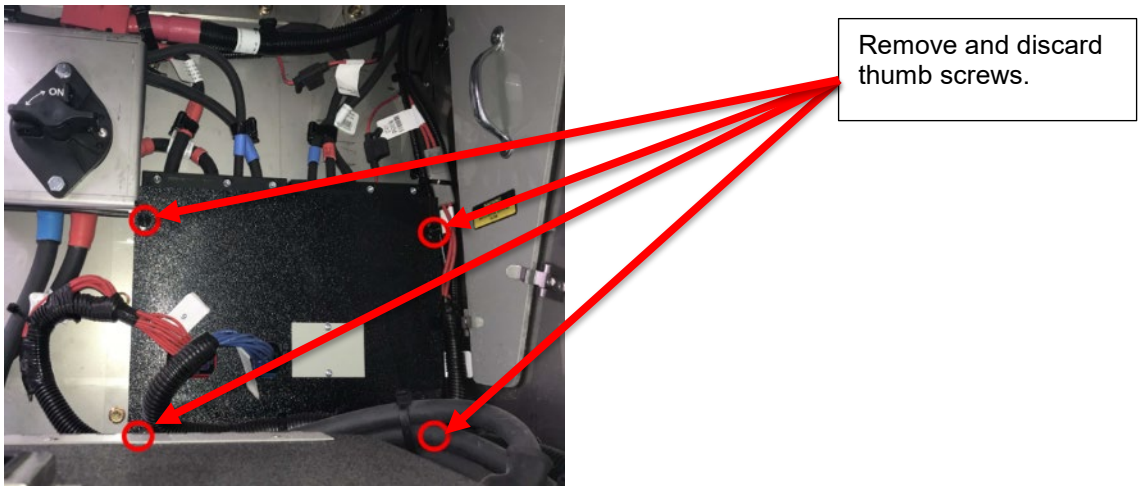
1. Set park brake and chock wheels.
2. Turn the Main Battery Disconnect Switch to the “OFF” position.



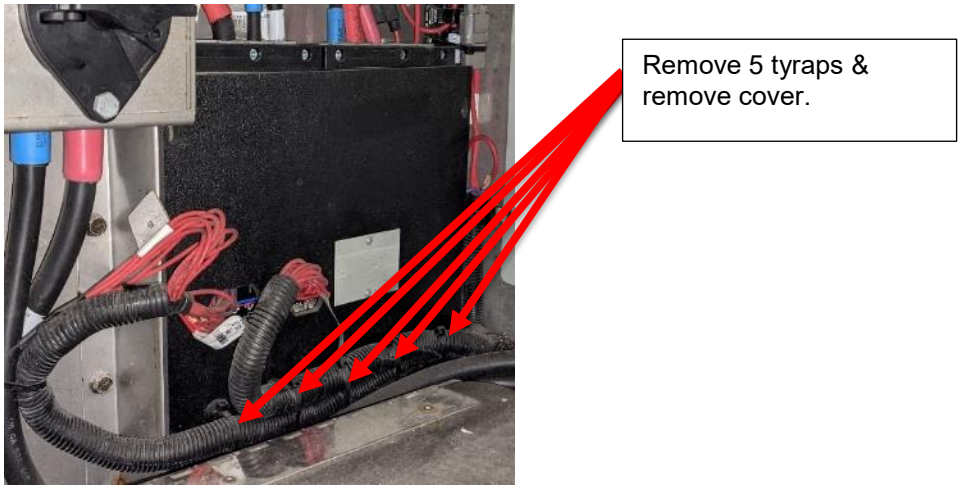
3. Disconnect GND, 12V, and 24V battery cables from the coach batteries. Ensure the battery cables do not come in contact with each other or the coach.



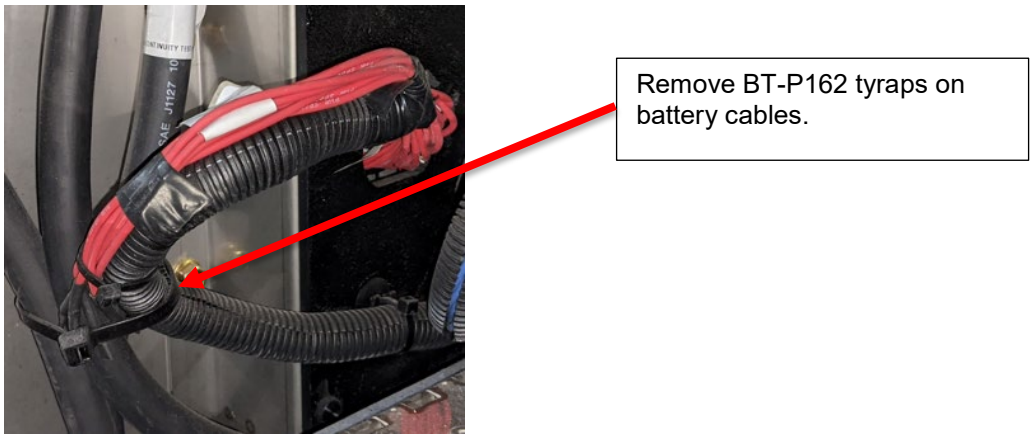
4. Locate the MDP compartment mounted on the rear wall in the battery compartment. Remove and discard the 4 thumb screws to release the MDP cover.



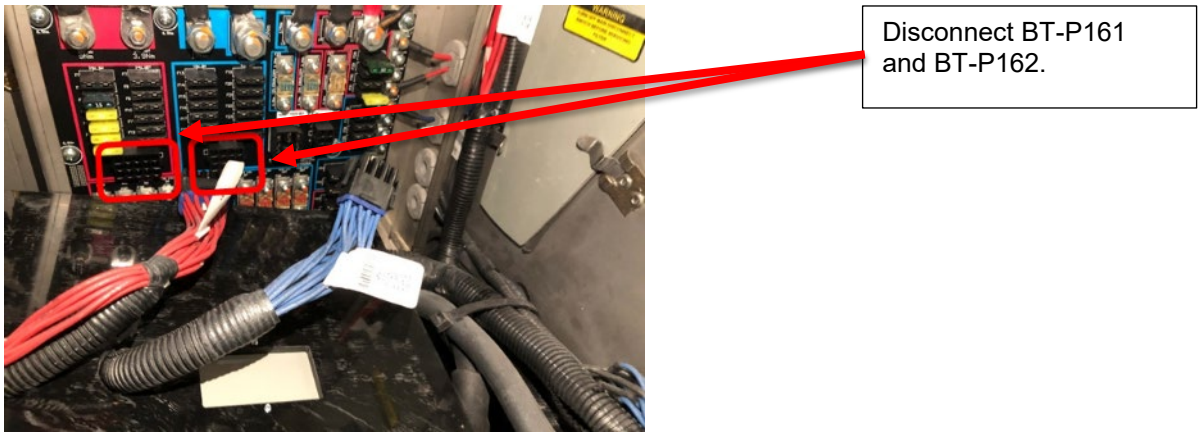
5. Remove 5 tyraps located at the bottom of the plastic MDP cover to remove the cover.



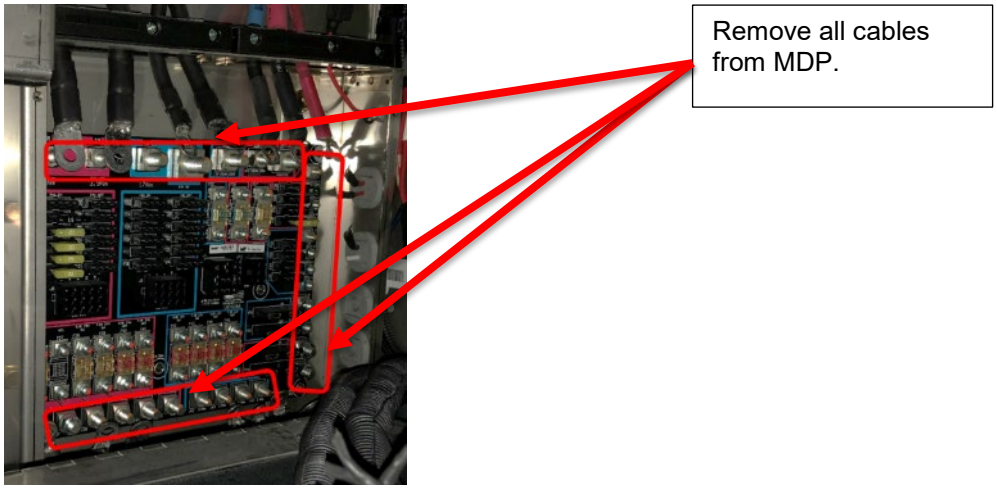
6. Remove tyraps that secure BT-P162 to the Main Disconnect Switch cables.



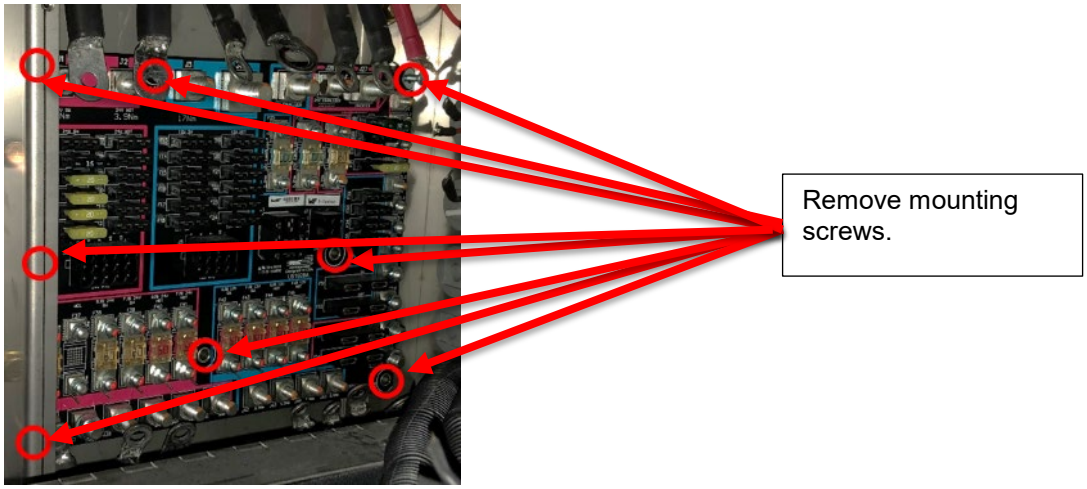
7. Disconnect connectors BT-P161 and BT-P162 from MDP.



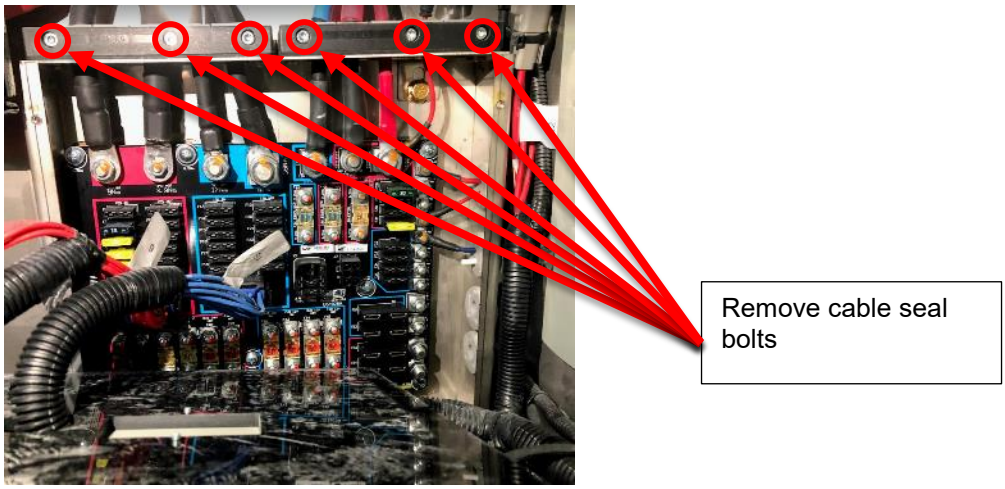
8. Remove all cables from MDP. Make a note of where each cable is connected on the board. Place nuts and lock washers back on studs after the cables are removed.



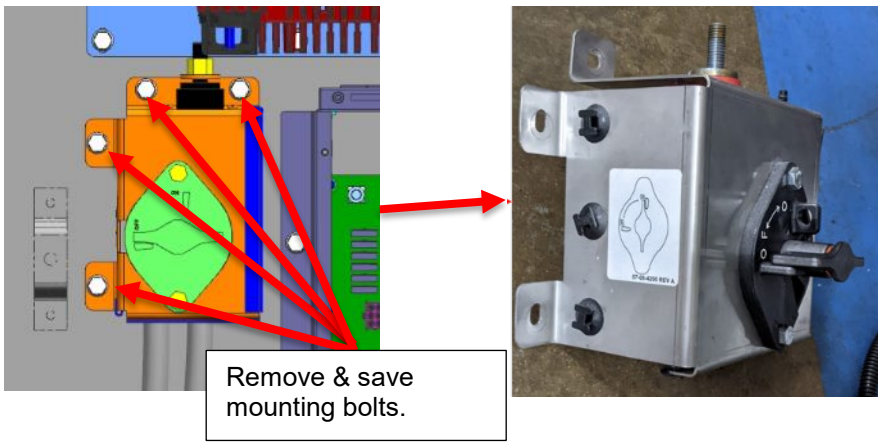
9. Remove & discard 8 MDP mounting screws and washers to remove the MDP from the coach.



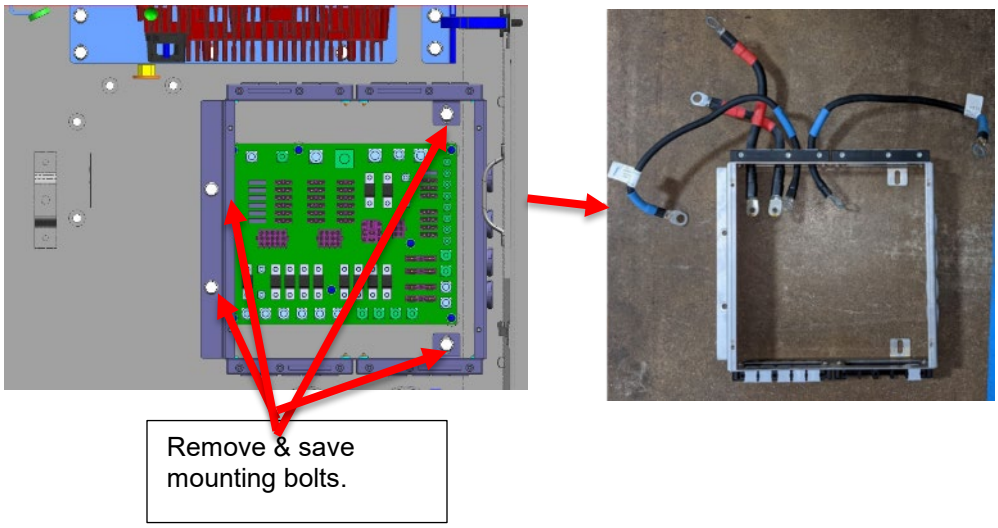
10. Remove & discard the hex bolts used to seal the cables on the top and bottom of the MDP enclosure.



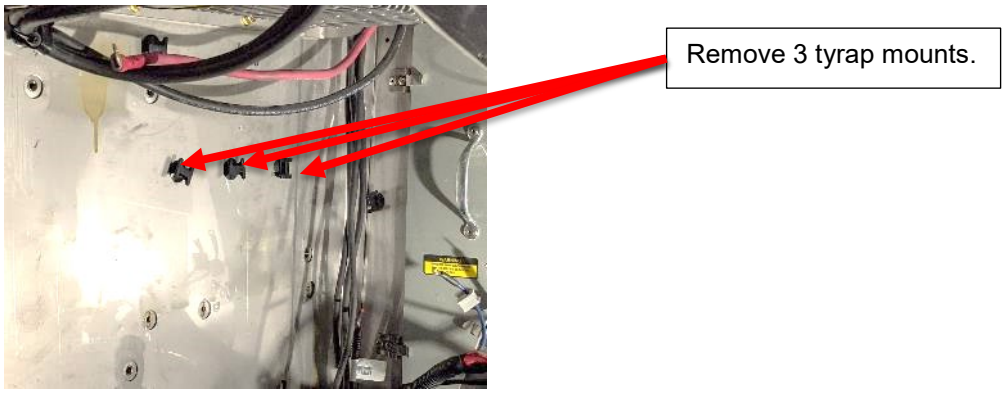
11. Remove & save Main Disconnect Switch mounting bolts. Disconnect battery cables from MDS and feed-through stud, saving hardware. Remove and save trim lock from the MDS.



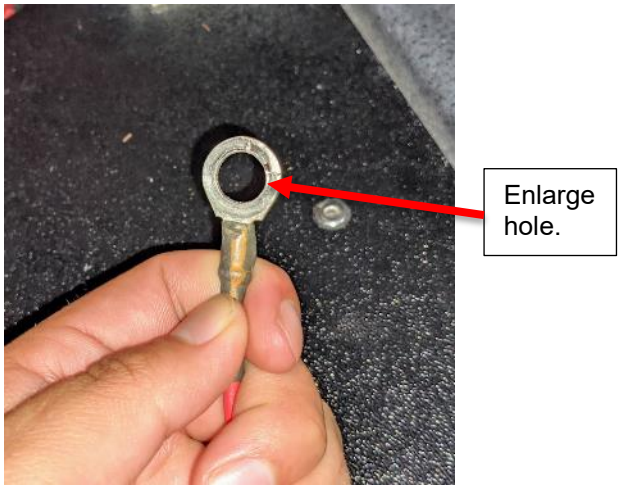
12. Remove & save the MDP box mounting bolts. Discard MDP box with cables connected to studs J1-J4.



13. Remove the 3 tyrap mounts from the left battery compartment wall.

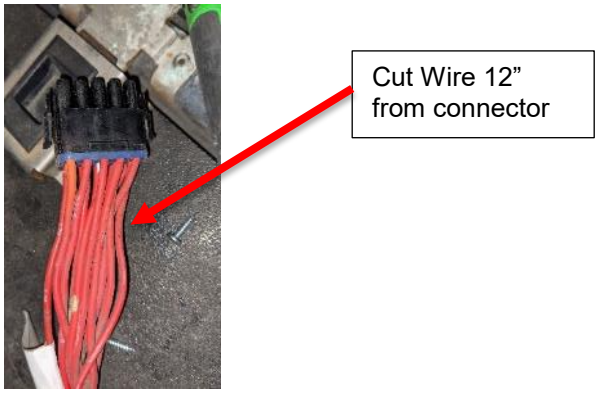


14. Using a step-up drill bit and the table below, carefully increase the stud size on 9 ring terminals removed for the MDP from ¼" to 5/16".

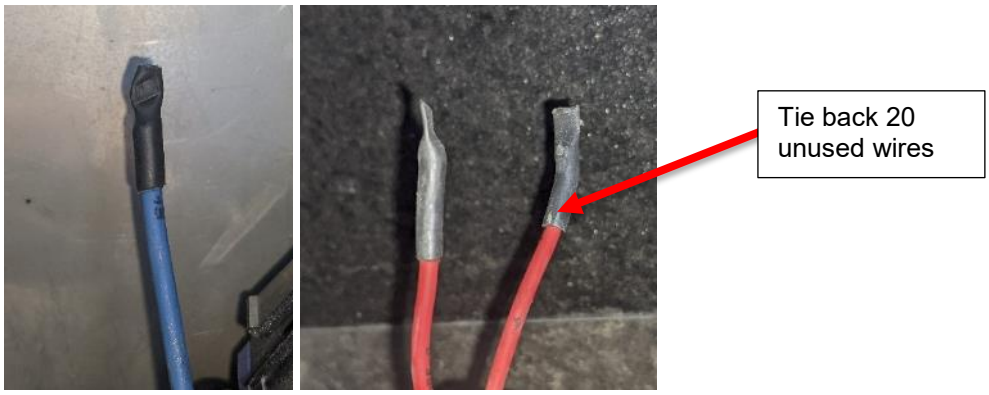


Source (MDP)	Source Wire ID	Description
J36	07-09-1814	EVAP 24V SW
J38	07-09-1803	RJB 24V SW
J39	07-09-1805	FJB 24V SW
J40	07-09-1807	RJB 24V HOT
J41	07-09-1809	FJB 24V HOT
J42	07-09-1804	RJB 12V SW
J43	07-09-1806	FJB 12V SW
J44	07-09-1808	RJB 12V HOT
J45	07-09-1810	FJB 12V HOT

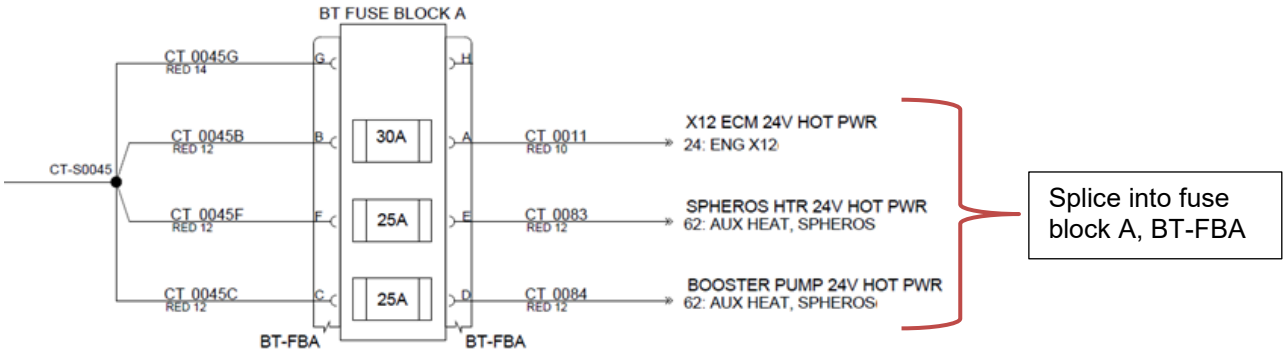
15. Cut the wires from BT-P162 and BT-P161 12 inches from the connector.



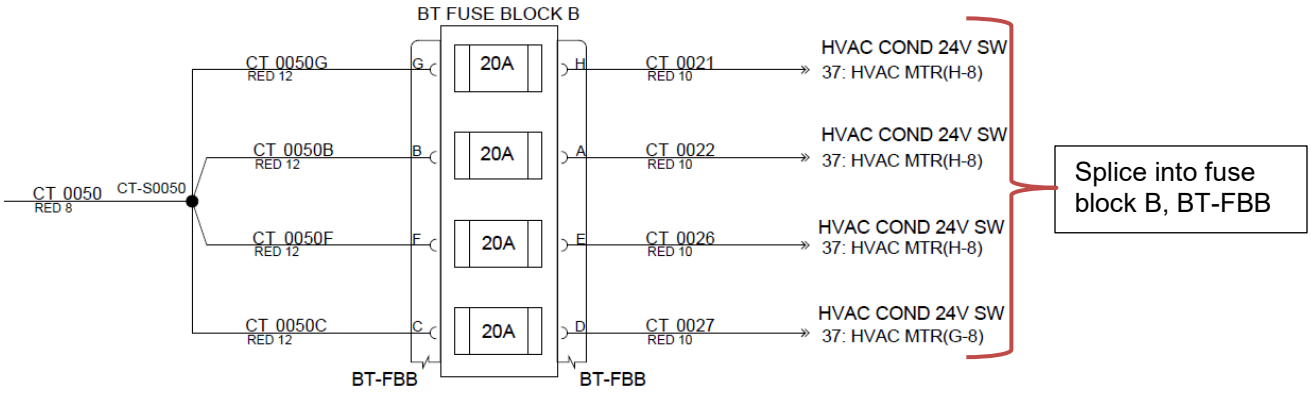
16. Tie back all spare wires from BT-P161 and BT-P162 using heat shrink, MCI P/N: 19-11-1465. Also, tie back Alt 55SI sense wire CT 0012D.



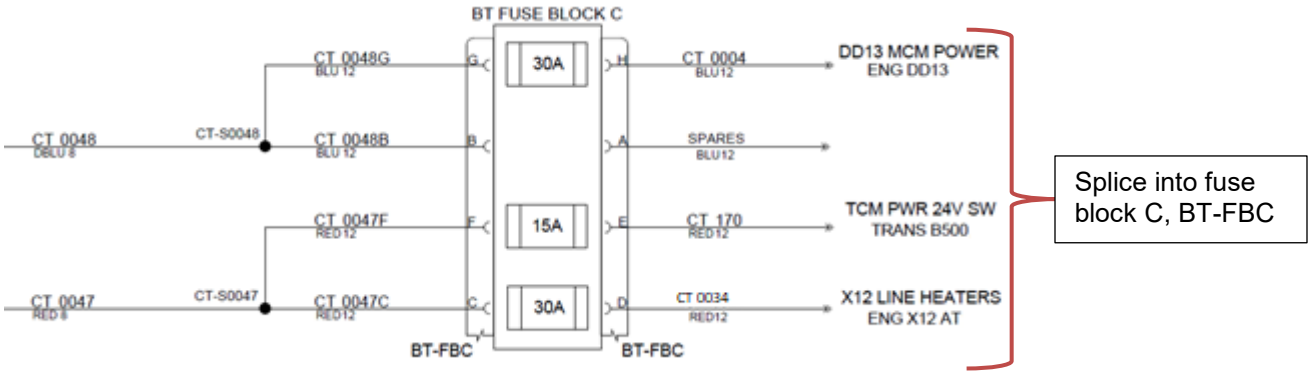
17. Using butt splices, MCI P/N: 19-11-431, and black heat shrink, MCI P/N: 19-11-1465, attach the ECM, Spheros, and booster pump power wires to BT-FBA part of fuse holder jumper, MCI P/N: 929287, as shown below.



18. Using butt splices, MCI P/N: 19-11-431, and black heat shrink, MCI P/N: 19-11-1465, attach the HVAC condenser wires to BT-FBB part of fuse holder jumper, MCI P/N: 929287, as shown below.

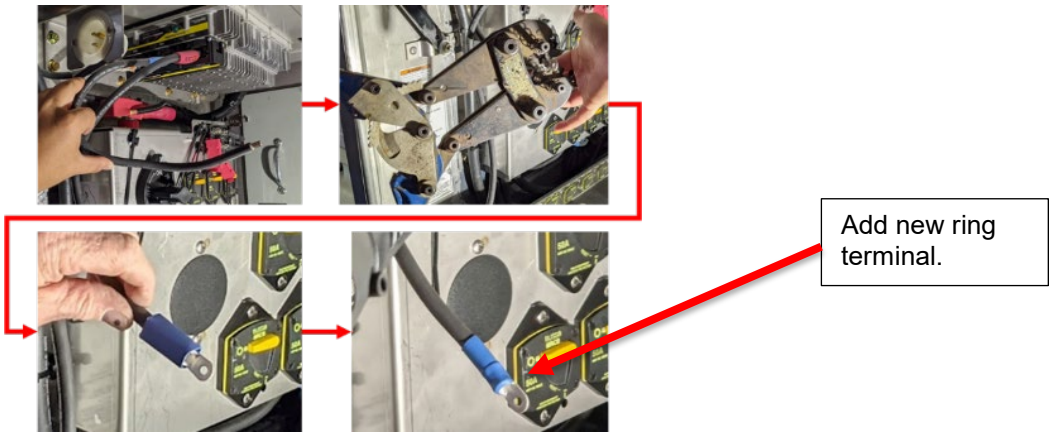


19. Using butt splices, MCI P/N: 19-11-431, and black heat shrink, MCI P/N: 19-11-1465, attach the MCM, TCM, and line heater power wires to BT-FBC part of fuse holder jumper, MCI P/N: 929287, as shown below.

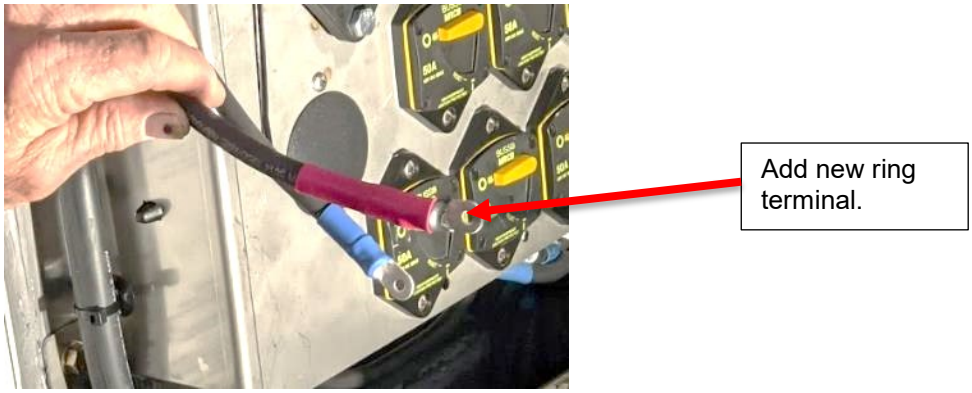


20. If coach has a DD13 engine, use butt splices, MCI P/N: 19-11-431, and black heat shrink, MCI P/N: 19-11-1465, attach the ACM power wire (Wire ID 0006) to fuse holder A (FHA), part of the jumper harness, MCI P/N: 929287. Otherwise, tie back the inline fuse holder.

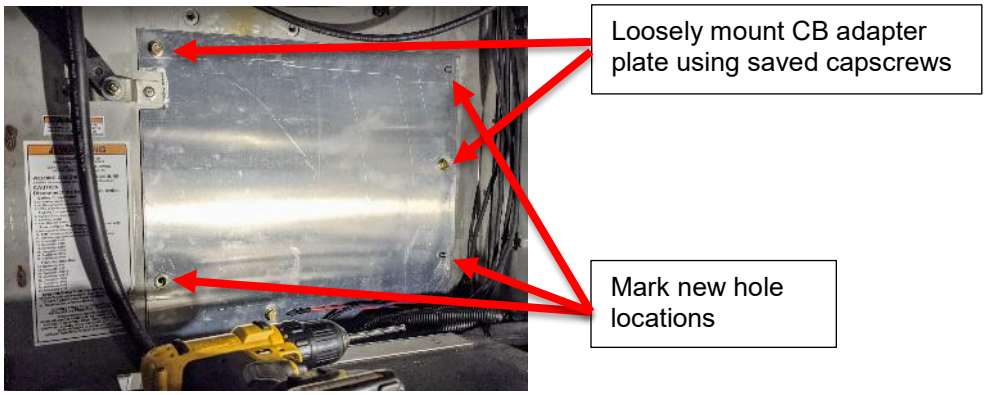
21. Cut 18.5” from 12 SW EQ cable, MCI P/N: 07-09-1812. Place a 2” piece of adhesive heat shrink, MCI P/N: 19-11-67, and 2” blue heat shrink, MCI P/N: 117202, and crimp ring terminal, MCI P/N: 19-11-3763 to the cable. Use a heat gun on heat shrink, the blue heat shrink should be on top.



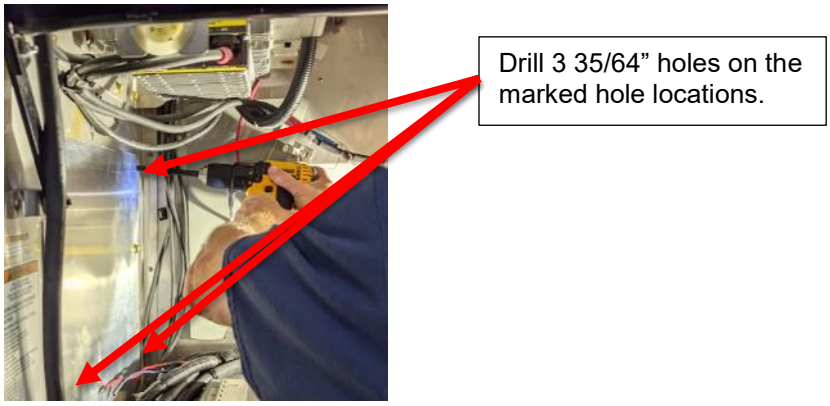
22. Cut 16.5” from 24 SW EQ cable, MCI P/N: 07-09-1811. Place a 2” piece of red heat shrink, MCI P/N: 19-11-2371, and crimp ring terminal, MCI P/N: 19-11-3763 to the cable. Use a heat gun on adhesive heat shrink.



23. Loosely mount the adapter plate, MCI P/N: 929386, on the left wall using the 2 saved cap screws, MCI P/N: 19-01-1532, at the highlighted locations. Mark the 3 remaining mounting locations of the CB assembly.

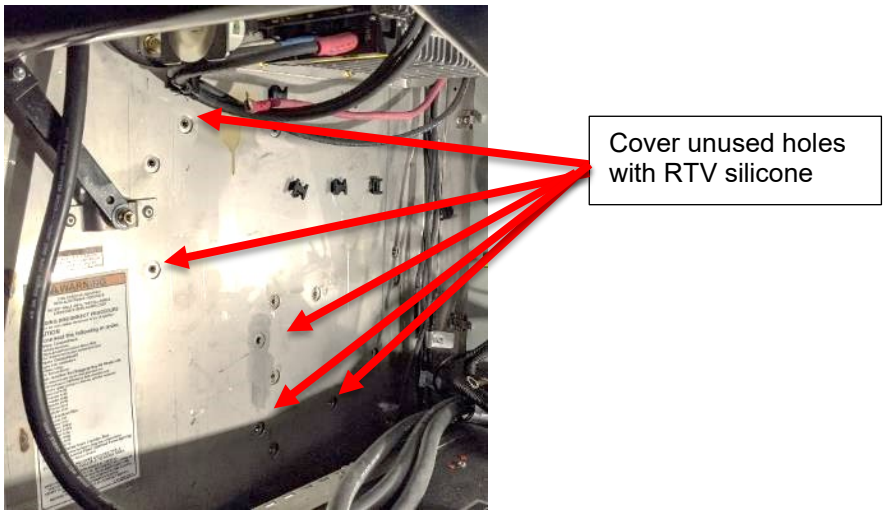


24. Remove adapter plate, MCI P/N: 929386. Using a drill stop, drill three 35/64” holes at the marked circuit breaker assembly locations. Pay close attention to not to puncture the fuel tank on the other side of the wall.

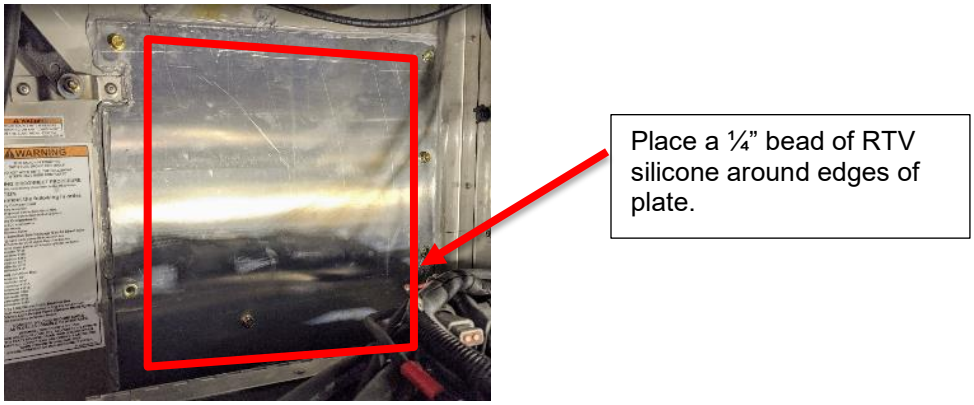


☞ **NOTE:** Ensure extreme caution while drilling on the left battery compartment wall to avoid puncturing the fuel tank on the other side of the wall.

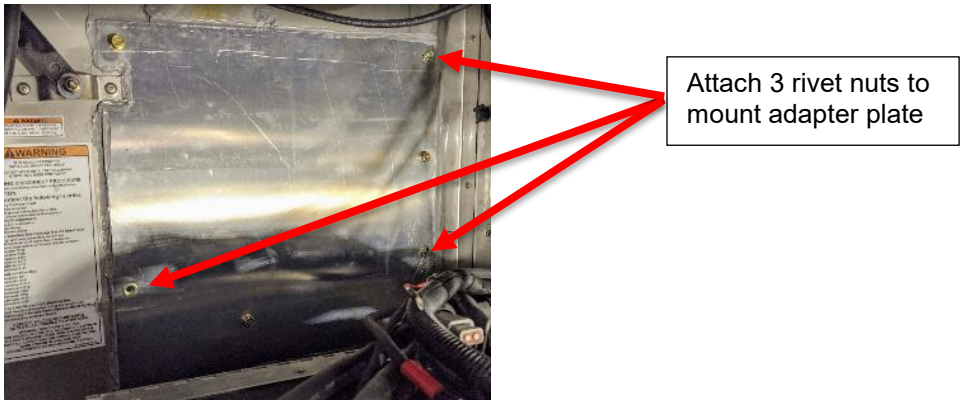
25. Cover 10 unused holes on the left battery compartment wall with RTV silicone.



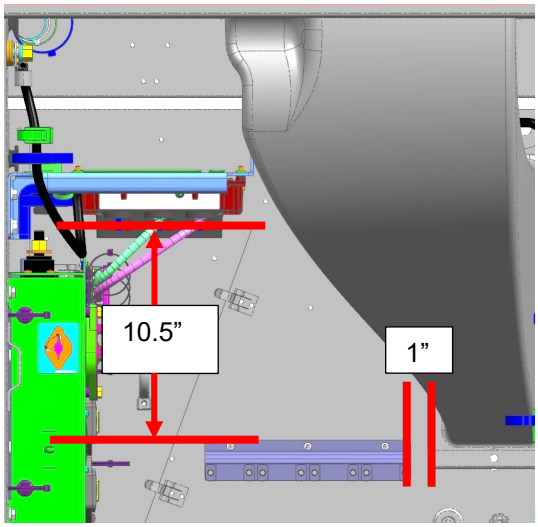
26. Place a ¼” bead of RTV silicone around 1” inside edge of the back side of the adapter plate, MCI P/N: 929386, before mounting.

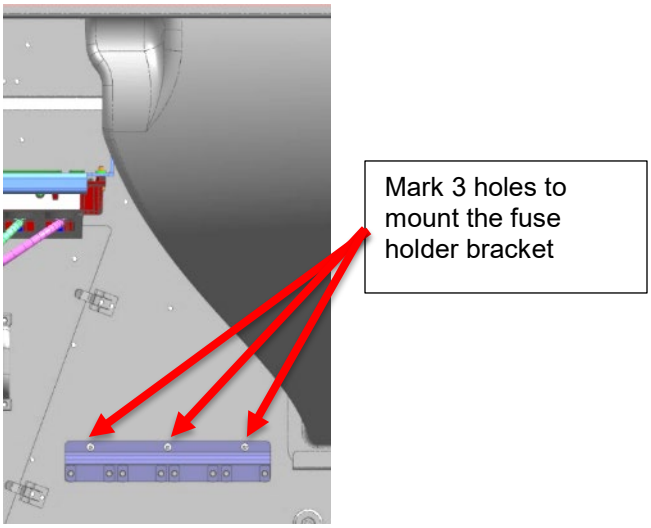


27. Mount adapter plate, MCI P/N: 929386. Install 3 rivet nuts, MCI P/N: 6485136, to the newly drilled holes.

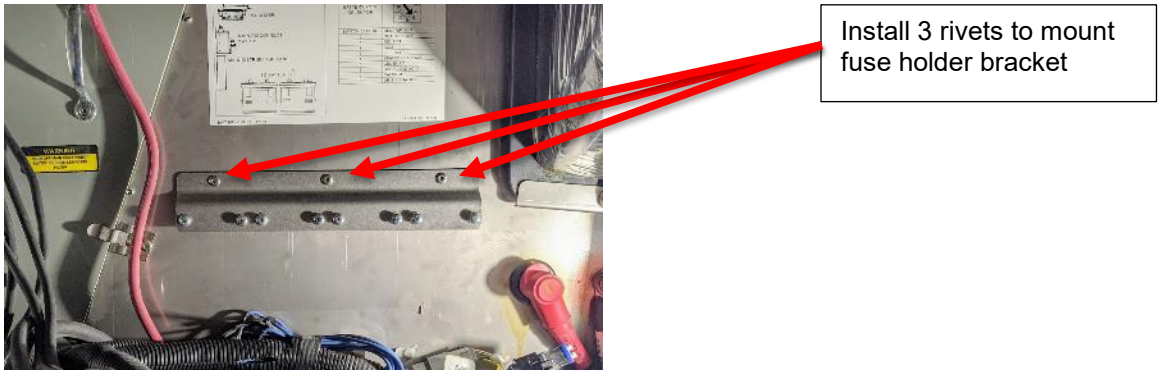


28. Remove MDP decal from the back wall. Use the fuse holder bracket assembly, MCI P/N: 07-10-2254, as a template to mark 3 mounting holes 10.5” from the top of the Evap filter door and 1” from the HVAC duct.



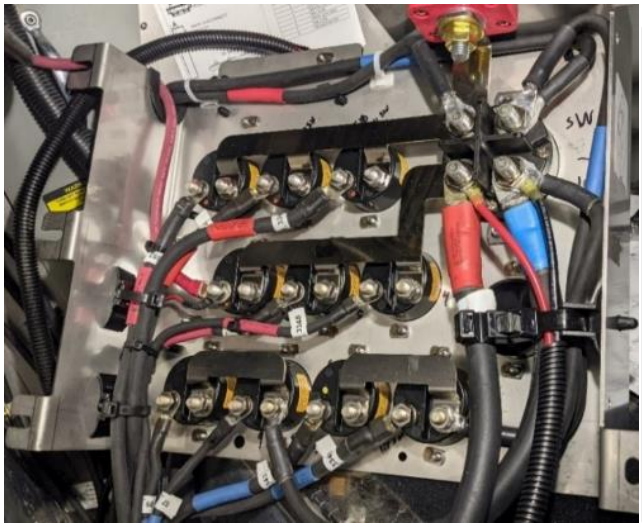


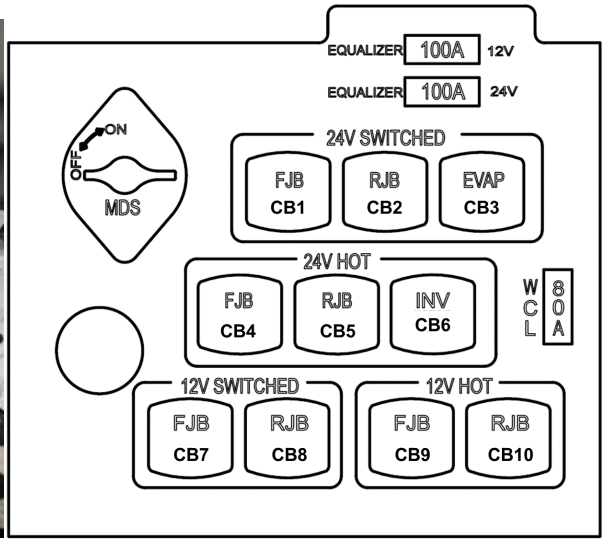
29. Use a 13/64” drill bit to drill the 3 marked holes. Mount the FH bracket assembly using 3 rivets, MCI P/N: 19-13-137.



30. Install fuse holder decal, MCI P/N: 929387, and CB panel decal, MCI P/N: 07-10-2283 above the fuse holder bracket.

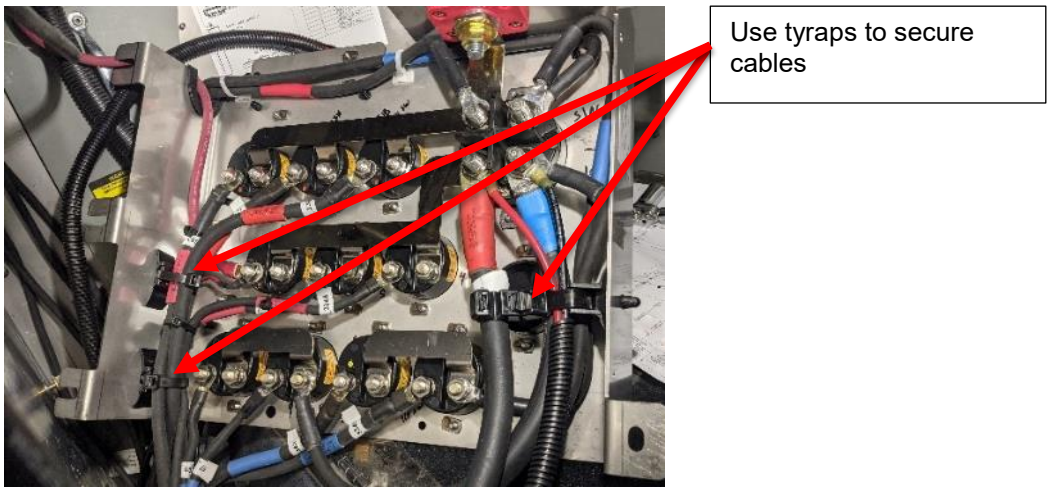
31. Install cables and fuse holder jumper ring terminals, MCI P/N: 929287, to the CB assembly. Add adhesive Loctite, MCI P/N: 21-7212-18, to threads before tightening. Torque studs using the reference connection chart below.



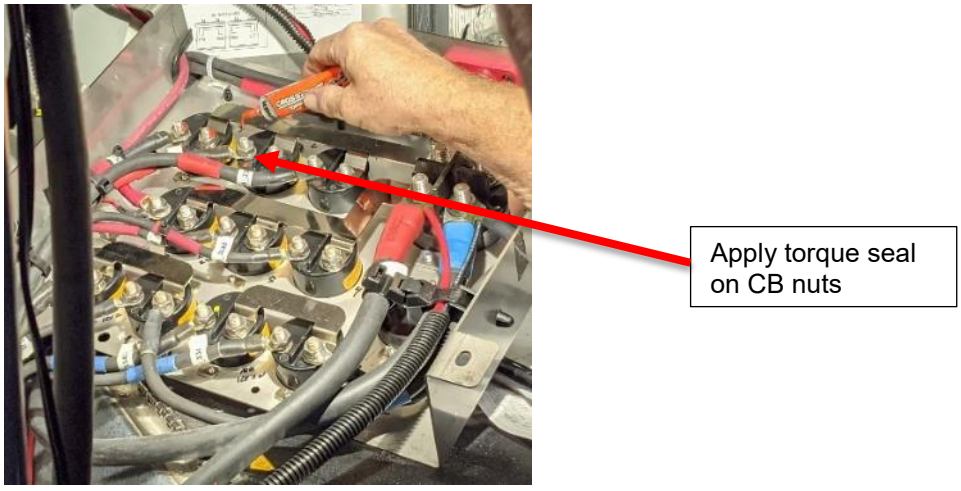


Source	Source Wire ID	Description	Target	Description	Torque Rating
J25	07-09-1812	12 SW EQ	BT-T125	BT-F25	36-40 IN-LBS
J26	07-09-1811	24 SW EQ	BT-T126	BT-F26	36-40 IN-LBS
J27	07-09-1815	24 HOT INV (OPTION)	BT-T516	CB6	70-75 IN-LBS
J27	07-08-2627	BATT CHARGER	BT-T516A	CB6	70-75 IN-LBS
J27	-	AMEREX (INLINE Fuse)	BT-T516	CB6	70-75 IN-LBS
J36	07-09-1814	EVAP 24V SW	BT-T513	CB3	70-75 IN-LBS
J38	07-09-1803	RJB 24V SW	BT-T512	CB2	70-75 IN-LBS
J39	07-09-1805	FJB 24V SW	BT-T511	CB1	70-75 IN-LBS
J40	07-09-1807	RJB 24V HOT	BT-T515	CB5	70-75 IN-LBS
J41	07-09-1809	FJB 24V HOT	BT-T514	CB4	70-75 IN-LBS
J42	07-09-1804	RJB 12V SW	BT-T518	CB8	70-75 IN-LBS
J43	07-09-1806	FJB 12V SW	BT-T517	CB7	70-75 IN-LBS
J44	07-09-1808	RJB 12V HOT	BT-T520	CB10	70-75 IN-LBS
J45	07-09-1810	FJB 12V HOT	BT-T519	CB9	70-75 IN-LBS
-	0045	FUSE BLOCK A	BT-T3B	24V HOT MDS	150 IN-LBS
-	0050	FUSE BLOCK B	BT-T4B	EC PWR BUSBAR	65 IN-LBS
-	0048	FUSE BLOCK C1	BT-T1B	12V HOT MDS	150 IN-LBS
-	0047	FUSE BLOCK C2	BT-T4C	EC PWR BUSBAR	65 IN-LBS
-	07-09-1819	12V BATTERY	BT-T1C	12V HOT MDS	150 IN-LBS
-	07-09-1818	24V BATTERY	BT-T3A	24V HOT MDS	150 IN-LBS
BT-T4	07-09-2208	EC PWR STUD	BT-T4	EC PWR STUD	300 IN-LBS

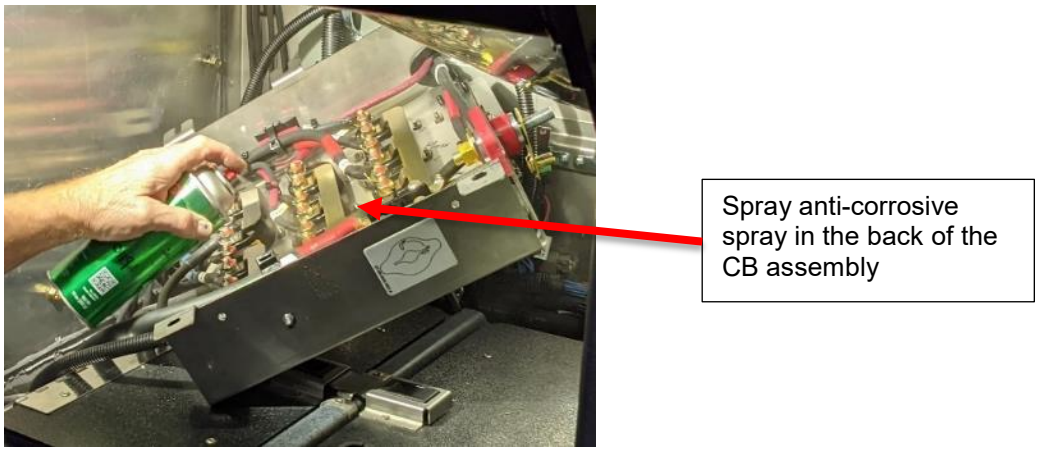
32. Using tyraps included in the switch assembly, secure cables connected to the MDS and circuit breakers. Ensure smooth curves and routing on all cables.



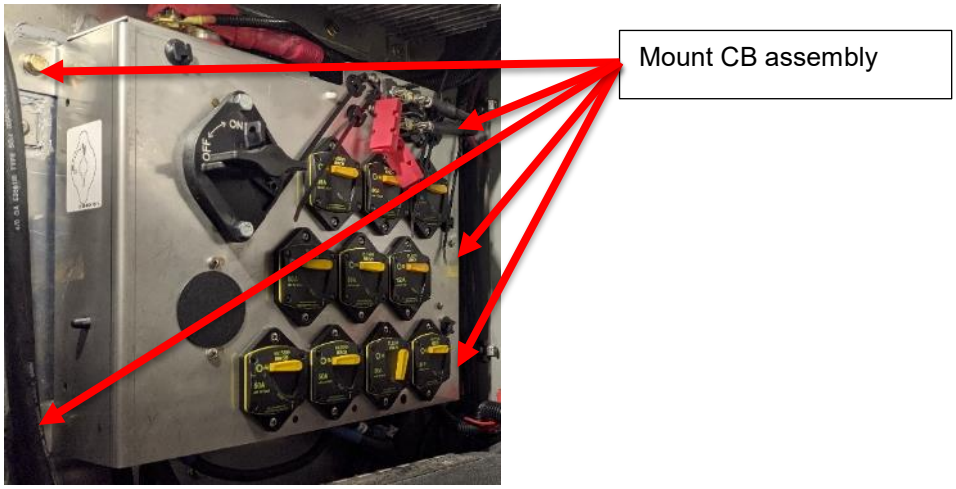
33. Apply torque seal, MCI P/N: 5023844, to each stud after being torqued.



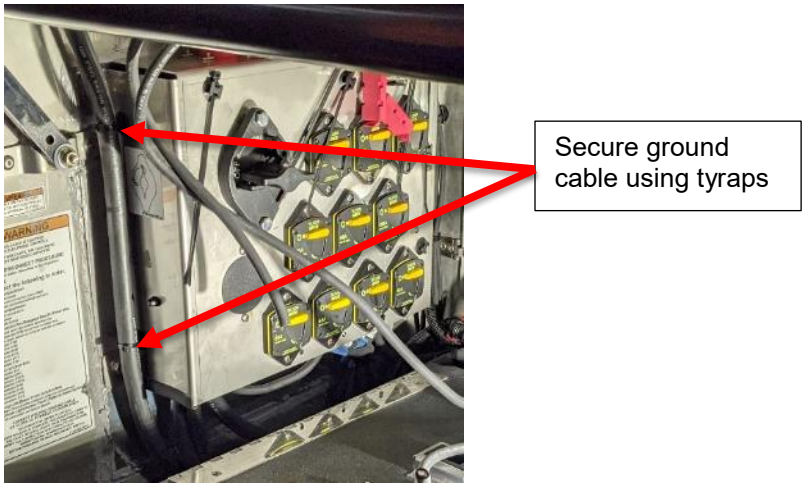
34. Spray back of circuit breaker assembly (bus bars and studs), MCI P/N: 07-09-3366, with anti-corrosive spray, MCI P/N: 23-02-0119.



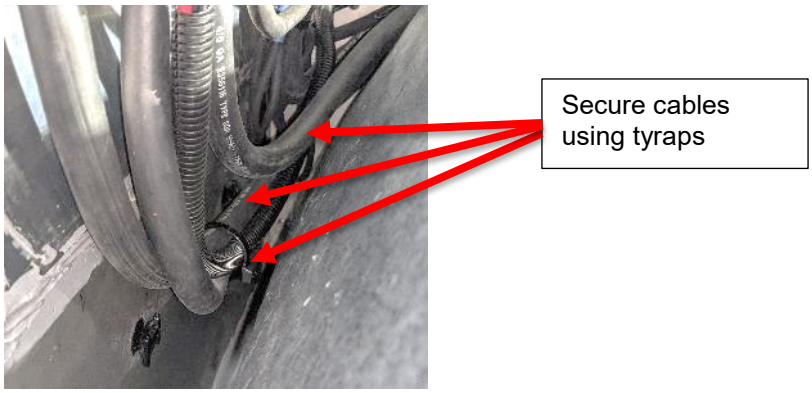
35. Mount the circuit breaker assembly, MCI P/N: 07-09-3366, to the adapter plate using 5 saved capscrews, MCI P/N: 19-01-1532. Torque capscrews to 9 FT-LBS.



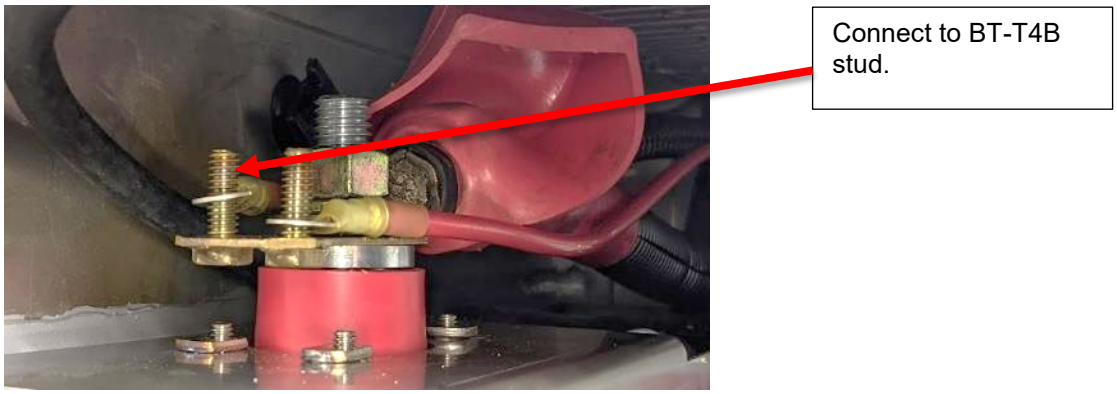
36. Using tie cable with mount, MCI P/N: 19-11-3472, and tyraps to secure the battery ground to the left side of the CB assembly.



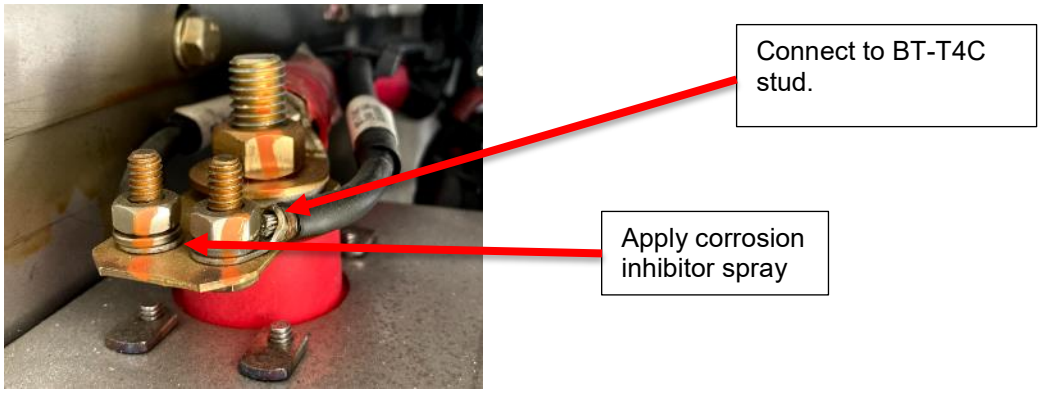
37. Secure battery cables to the 3 bottom tyrap mounts using tyraps, MCI P/N: 5958112.



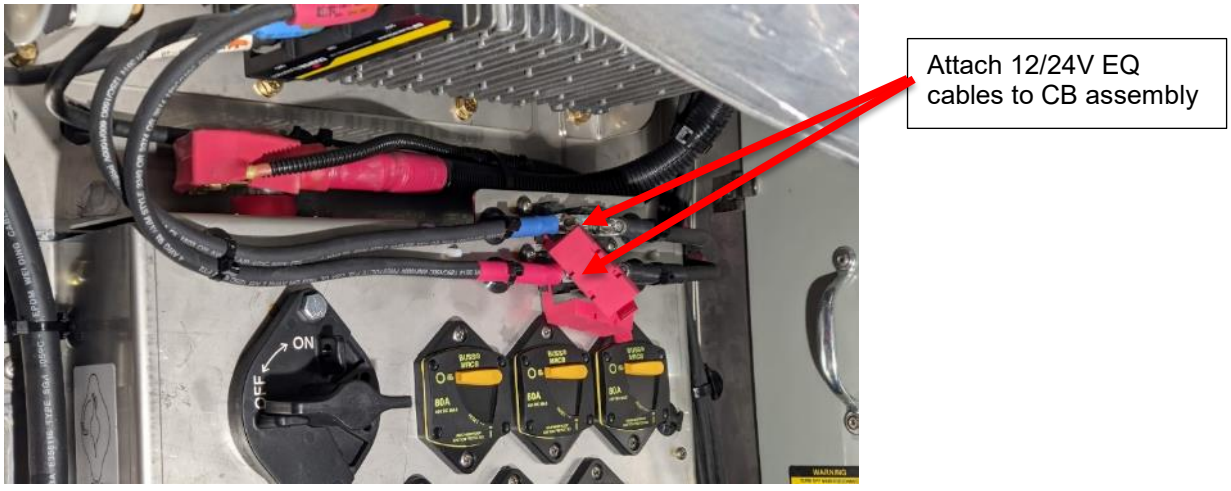
38. Connect the fuse block B ring terminal (Wire ID 0050) to the 24V SW stud (BT-T4B) on the circuit breaker busbar, MCI P/N: 7L-8-5055, using lock washer, MCI P/N:19-2-37, and nut, MCI P/N: 19-3-32. Torque nut to 65 IN-LBS. Torque main power feeder to 20-25 FT-LBS.



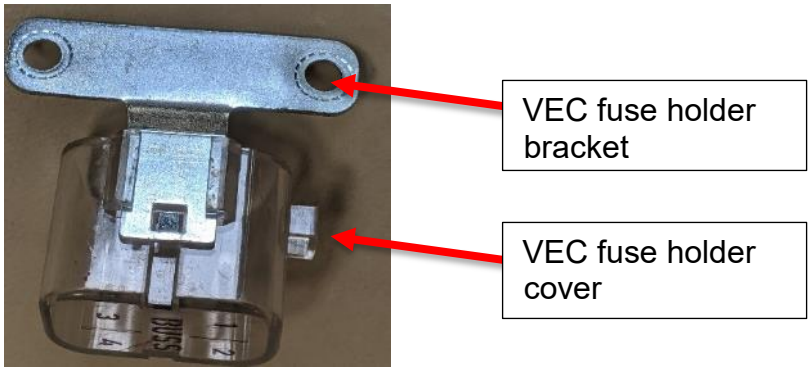
39. Connect the fuse block C ring terminal (Wire ID 0047) to the 24V SW stud (BT-T4C) on the circuit breaker busbar, MCI P/N: 7L-8-5055, using lock washer, MCI P/N:19-2-37, and nut, MCI P/N: 19-3-32. Torque stud to 65 IN-LBS. Spray 3 studs with anti-corrosive spray, MCI P/N: 23-02-0119.



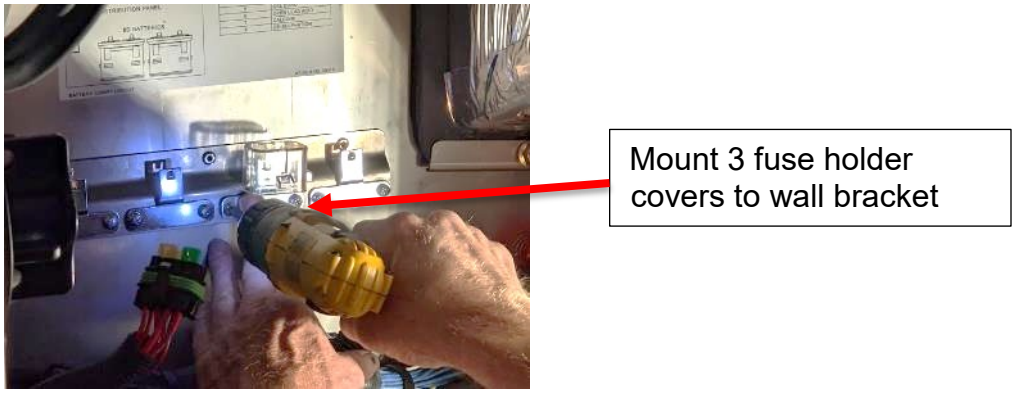
40. Attached reworked equalizer cables to fuse holder BT-125/BT-126. Ensure a smooth curve from the equalizer to the fuse holders. Torque studs to 40 IN-LBS.



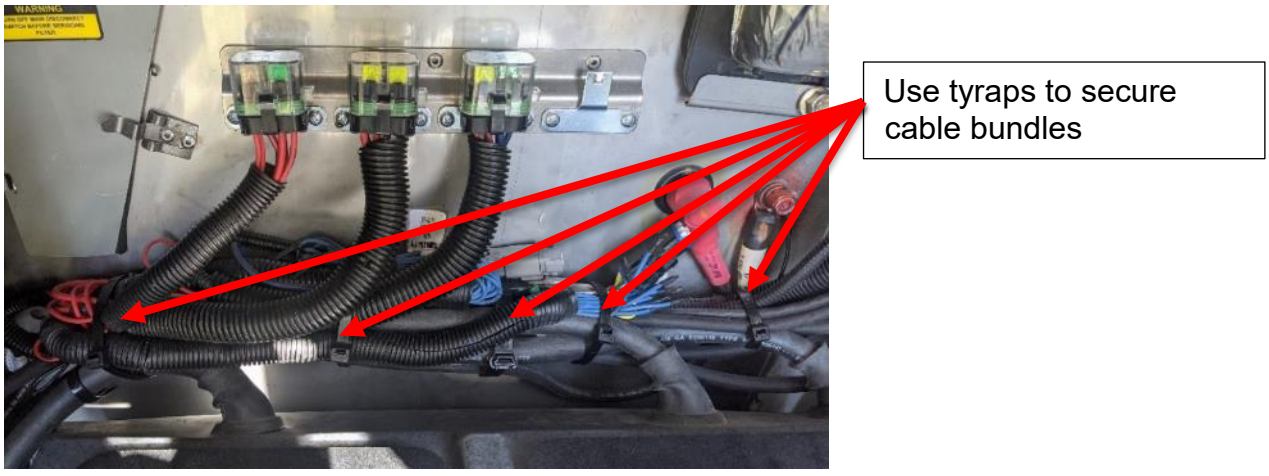
41. From the kit, locate the VEC fuse holder cover, MCI P/N: 07-08-5651, bracket, MCI P/N: 07-08-5652, and assemble them as shown below.



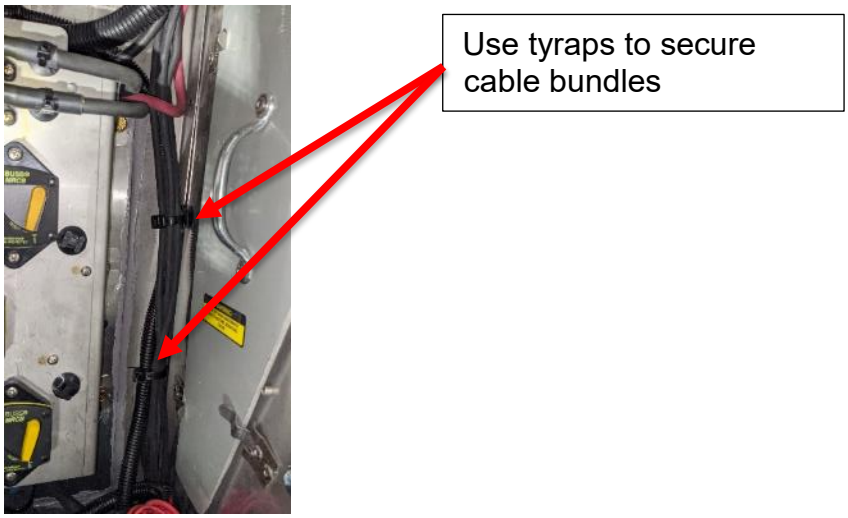
42. Attach 3 VEC fuse holder cap brackets, MCI P/N: 07-08-5652, using 6 screws, MCI P/N:19-1-386, 6 lock washer, MCI P/N:19-2-37, and 6 flat washers, MCI P/N:19-2-23.



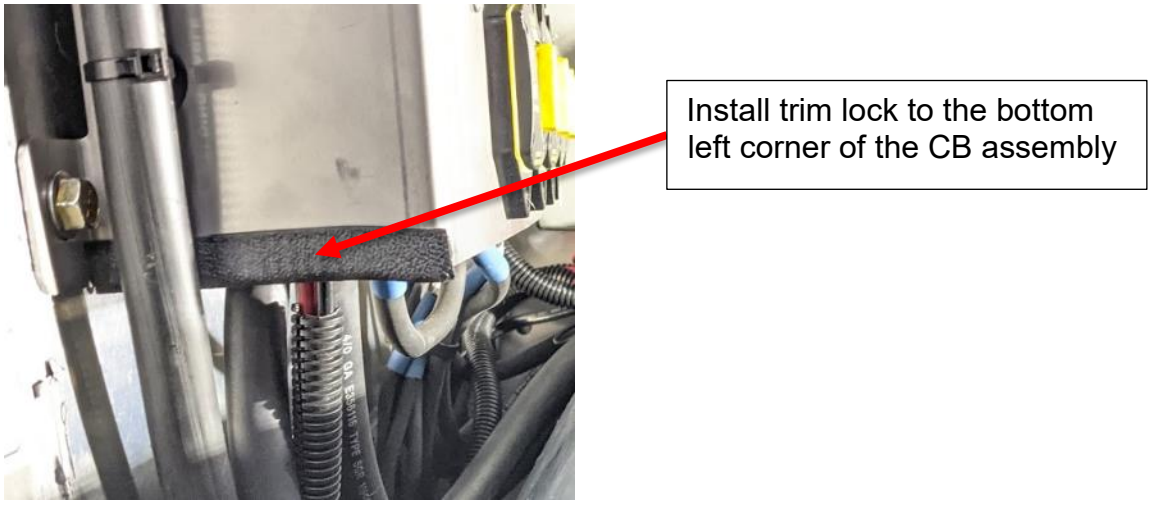
43. Add 20A/30A/15A fuses according to the fuse layout decal, MCI P/N: 929387, to the fuse holder jumper harness, MCI P/N: 929287. Connect the fuse holder jumper harness to the bracket assembly.
44. Use tyraps, MCI P/N: 5958112, to secures fuse cables to the harness bundle behind the batteries.



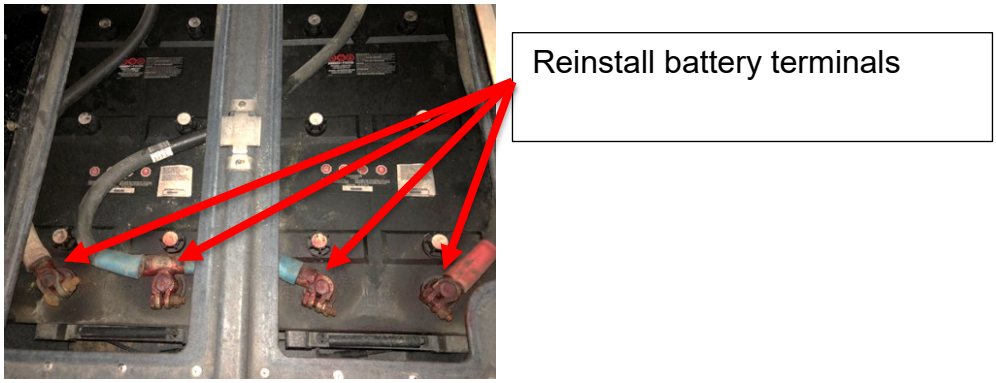
45. Use tyraps, MCI P/N: 5958112, to secure cables behind the batteries circuit breaker assembly.



46. Remove a piece of the trim lock from MDS and install it at the bottom left corner of the circuit breaker assembly.



47. Reconnect the battery cables, torque nuts to 54-60 IN-LBS. Turn on MDS and turn on coach ignition to verify rework.



LABOUR ESTIMATE				
	Operation	**Number of Technician(s)**	**Hours**	**Labor Time T X HR**
1	MDP replacement with circuit breaker assembly	1	7.5	7.5

PARTS REQUIRED					
Item	**Part Number**	**Description**	**Qty. per Coach**	**Units**	**Notes**
1	117202	HEATSHRINK - 3/4IN, BLUE	1	AR	
2	6485136	NUT, RIVET 5/16" - 18 UNC OPEN END ZINC PLATED	3	EA	
3	07-08-1059	FUSE - MINI, 15A	1	EA	
4	07-08-1061	FUSE - MINI, 20A	5	EA	
5	07-08-1429	FUSE - MINI, 30A	2	EA	
6	07-08-3954	FUSE – MINI 25A	2	EA	
7	07-08-5651	VEC FUSE HOLDER COVER	3	EA	
8	07-08-5652	VEC FUSE HOLDER BRACKET	3	EA	
9	07-09-3366	SWITCH ASSY-MAIN DISCONNECT & BREAKERS	1	EA	
10	07-10-2254	ASSY-BRKT, 4 FUSE HOLDER	1	EA	
11	19-11-2371	HEATSHRINK - 3/4IN, RED	1	EA	
12	19-11-3472	TIE CABLE - WITH MOUNT	2	EA	
13	19-11-3763	#10 RING TERMINAL	2	EA	
14	19-11-431	CONNECTOR-SPLICE, BUTT,12 10 AWG	11	EA	
15	19-11-67	HEATSHRINK - DUAL WALL, 3/4IN, BLK	1	EA	
16	19-13-137	RIVET-.187	3	EA	
17	19-1-386	SCREW-CAP, HEX,1/4-20UNC X 1/2 SST 18-8	6	EA	
18	19-2-23	WASHER-FLAT,1/4 ID, SST	6	EA	
19	19-2-37	WASHER - LOCK, SST, 1/4 ID	8	EA	
20	19-3-32	NUT-1/4-20, SST	2	EA	
21	5958112	TYRAP-7.31” LONG	15	EA	
22	19-11-1465	HEAT SHRINK- 4FT, BLACK	2	FT	
23	7L-8-5055	BAR ASSY-BUS	1	EA	
24	929386	PLATE – ADAPTER CIRCUIT BREAKER BT COMP J45	1	EA	
25	929287	HARNESS – FUSE HOLDER JUMPER	1	EA	
26	929387	DECAL - FUSE LAYOUT BATT COMPT J45	1	EA	
27	07-10-2283	DECAL-CIRCUIT BREAKER PANEL, D45 CRT	1	EA	

SPECIAL TOOLS REQUIRED					
Item	**Part Number**	**Description**	**Qty.**	**Units**	**Notes**
1	IMP9166-1	Ultra Grey RTV Silicone	1	EA	
2	23-02-0119	CRC SP-400 Corrosive Inhibitor	1	EA	
3	21-7212-18	Adhesive – Loctite 242, Thread Locking	1	EA	
4	5023844	TORQUE SEAL, ORANGE,5 OZ.	1	EA	
5	NA	Step-Up Drill Bit	1	EA	
6	NA	35/64” Drill Stop	1	EA	
7	NA	Rivet Nut Gun	1	EA	
8	NA	13/64” Drill Bit	1	EA	
9	NA	Heat Gun	1	EA	
10	NA	IN-LBS Torque Wrench	1	EA	
11	NA	FT-LBS Torque Wrench	1	EA	
12	NA	Heavy Duty Terminal Crimp tool	1	EA	

CABLE REPLACEMENT PART NUMBERS						
MDP				**Circuit Breakers**		
SOURCE	**TARGET**	**CABLE**	**DESCRIPTION**	**SOURCE**	**TARGET**	**CABLE**
J1	BT-T4	07-09-1799	24V SW	-	-	-
J2	BT-T3B	07-09-1800	24V HOT	-	-	-
J3	BT-T1B	07-09-1802	12V HOT	-	-	-
J4	BT-T2	07-09-1801	12V SW	-	-	-
J25	BT-T5	07-09-1812	12 SW EQ	BT-T125	BT-T5	07-09-3352
J26	BT-T6	07-09-1811	24 SW EQ	BT-T126	BT-T6	07-09-3351
J27	-	07-08-2627	BATT CHARGER	BT-T516	-	07-10-2198
J27	INV 24V	07-09-1815	24 HOT INV	BT-T516A	INV 24V	07-09-3354
J36	EVAP-J2	07-09-1814	EVAP 24V SW	BT-T513	EVAP-J2	07-09-3353
J38	RJDP-J3	07-09-1803	RJB 24V SW	BT-T512	RJDP-J3	07-09-3342
J39	FJDP-J3	07-09-1805	FJB 24V SW	BT-T511	FJDP-J3	07-09-3344
J40	RJDP-J4	07-09-1807	RJB 24V HOT	BT-T515	RJDP-J4	07-09-3346
J41	FJDP-J4	07-09-1809	FJB 24V HOT	BT-T514	FJDP-J4	07-09-3348
J42	RJDP-J1	07-09-1804	RJB 12V SW	BT-T518	RJDP-J1	07-09-3343
J43	FJDP-J1	07-09-1806	FJB 12V SW	BT-T517	FJDP-J1	07-09-3345
J44	RJDP-J2	07-09-1808	RJB 12V HOT	BT-T520	RJDP-J2	07-09-3349
J45	FJDP-J2	07-09-1810	FJB 12V HOT	BT-T519	FJDP-J2	07-09-3347
BT-T4	EC-STUD24	07-09-2208	MAIN FEEDER	BT-T4	EC-STUD24	07-09-2208
BATT 12V	BT-T1A	07-18-1819	BATT 12V HOT	BATT 12V	BT-T1A	07-18-1819
BATT 24V	BT-T3A	07-18-1818	BATT 24V HOT	BATT 24V	BT-T3A	07-18-1818
BATTGND	BT-T8A	07-09-1820	BATT GND	BATT GND	BT-T8A	07-09-1820