DOCUMENT NAME: X BATTERY MODULE CONNECTOR AND WIRING (OCTOPUS) SUBASSEMBLY	MODEL: 13MY XMX PLATFORM	DOCUMENT NO: 88-05806 REV06

Items Required:

ITEM	P/N	DESCRIPTION	QTY
1	20-04898	XMX MF MODULE SEPARATOR	1
2	20-05109	BIKE SIDE COMPLIANT MODULE CONNECTOR MOUNT	2
3	20-05286	COMPLIANT MOUNT RETAINER AND NUT PLATE	2

Procedure:

1. Build MODULE SEPARATOR (ITEM 1); install (x2) CONNECTOR MOUNT (ITEM 2). See FIGURE 3.
2. Push (x2) MOUNT RETAINER (ITEM 3) through CONNECTOR MOUNT (ITEM 2). Note orientation; see FIGURE 5.

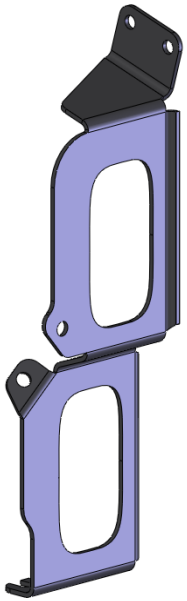

Figure 1: ITEM 1

Figure 2: ITEM 2

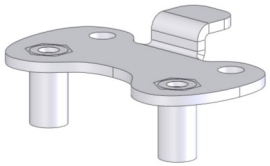

Figure 4: ITEM 3

Figure 3

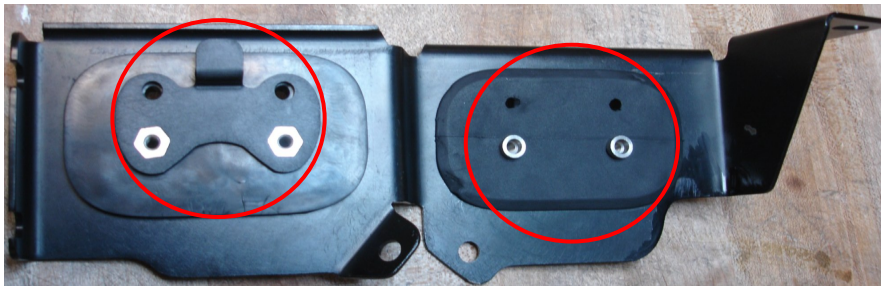

Figure 5

Items Required:

ITEM	P/N	DESCRIPTION	QTY
4	90-02513	HEXAGON SOCKET HEAD CAP SCREW ISO 4762 M4X40-8.8 ZM-F-01 REV 03	4
5	90-02102	WASHER ISO 7089 4-200 HV ZM-F-01	8
6	90-05465	HEXAGON THIN NUT DIN 439B M4 ZM-F-01 REV 03	4
7	56-04799	HARN X BIKE TO 2XMOD MY13	1
8	20-05450	XMX MODULE SUPPORT PLATFORM	1
8.1	20-05153	MODULE SEPERATOR BLOCK	1
8.2	90-02119	HEXAGON SOCKET BUTTON HEAD SCREW ISO 7380 M5x8-8.8 ZM-F-01	3

Procedure:

3. Attach black Anderson connector from X BIKE HARNESS (ITEM 7) to SEPARATOR BRACKET (ITEM 1), MOUNT RETAINER (ITEM 3). Use (x4) M4x40 SHCS (ITEM 4), (x8) M4 WASHERS (ITEM 5) and (x4) M4 THIN NUTS (ITEM 6). See FIGURE 6 for orientation.

3.5. Attach MODULE SEPERATOR BLOCK (ITEM 8.1) to XMX MODULE SUPPORT PLATFORM using (3) M5x8 BHCS (ITEM 8.2).

4. Take 'B-' wire from X BIKE HARNESS (ITEM 7), route through XMX MODULE SUPPORT PLATFORM (ITEM 8). See FIGURE 8.

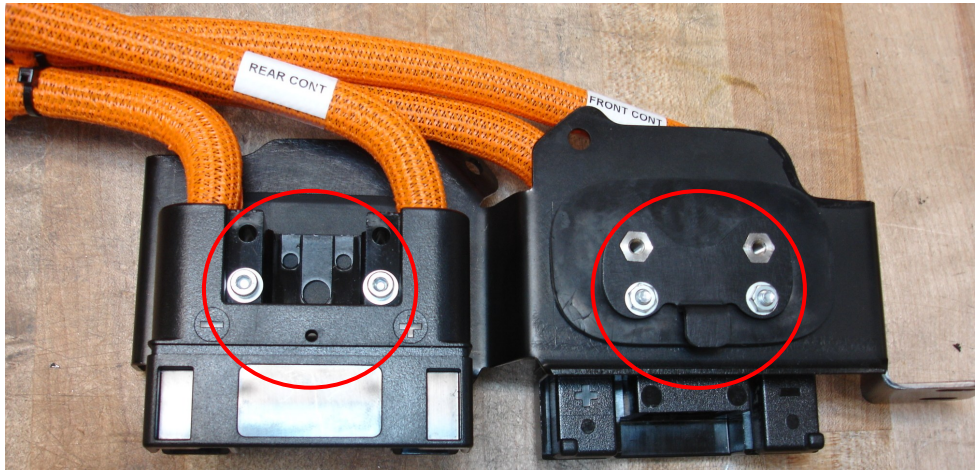

Figure 6

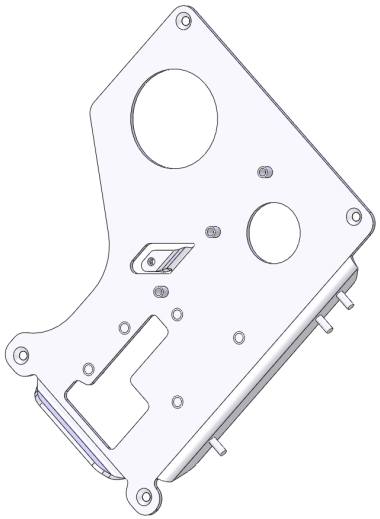

Figure 7: ITEM 8

Figure 8

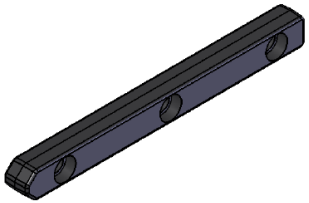

Figure 8.5: ITEM 8.1

Items Required:

ITEM	P/N	DESCRIPTION	QTY
9	56-04805	HARN X MBB CTRL CHS 2XMOD MY13	1
10	90-04719	SPIROL PIN .094" X 1.12" SST	2

Procedure:

5. Route connectors from 'REAR MOD' and ‘FRONT MOD’ of HARN X MBB CTRL (ITEM 9) through bottom of plate. ‘FRONT MOD’ goes to the TOP of the battery MODULE SEPARATOR (ITEM 1) and connector. See FIGURE 9 and 10.
6. Route REAR MOD cable through bracket and plug connector to LOWER female insert as is FIGURE 11. Insert SPIROL PIN (ITEM 10) thru X BIKE HARNESS (ITEM 7) and into HARN X MBB CTRL CHS 2X-MOD MY13 (ITEM 9). See the **dashed** location in FIGURE 10 and 11.

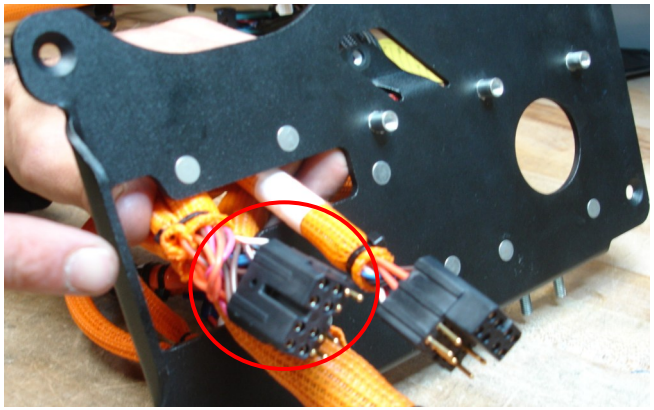

Figure 9

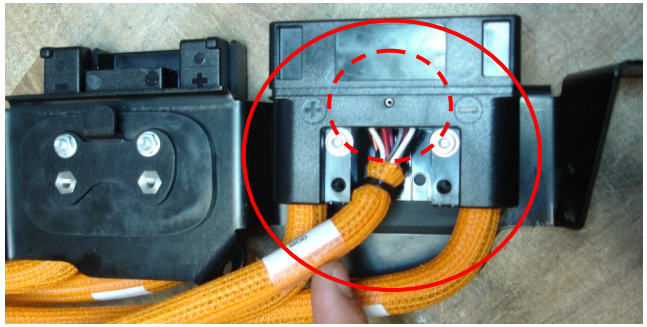

Figure 10

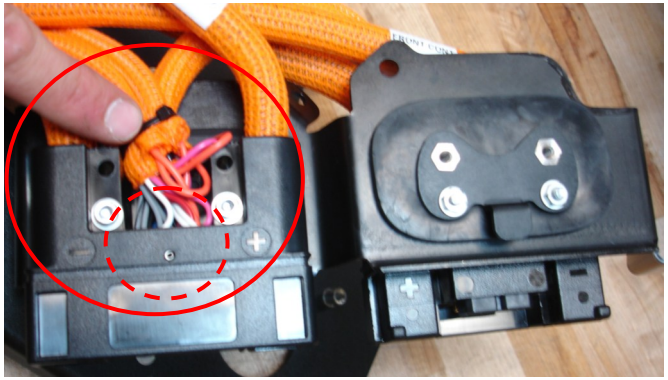

Figure 11

Items Required:

ITEM	P/N	DESCRIPTION	QTY
NA			

Procedure:

7. Insert front and rear contactor plate leads from HARN X MBB CTRL (ITEM 9) through front of hole in bracket. Orient the harness terminals as in FIGURE 12, 12b and 13.

Figure 12

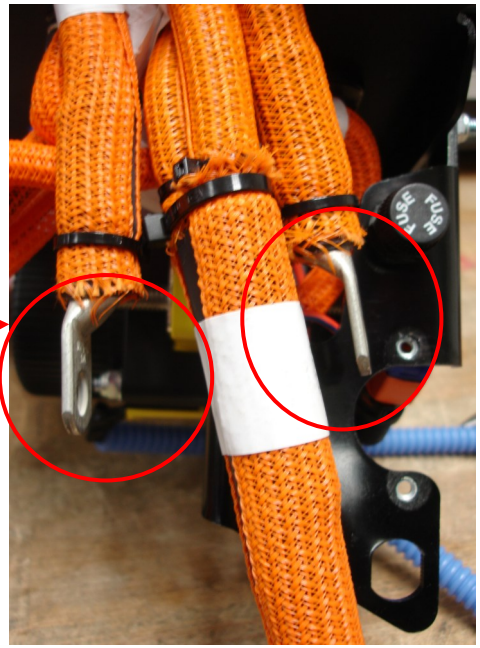

Figure 12 b

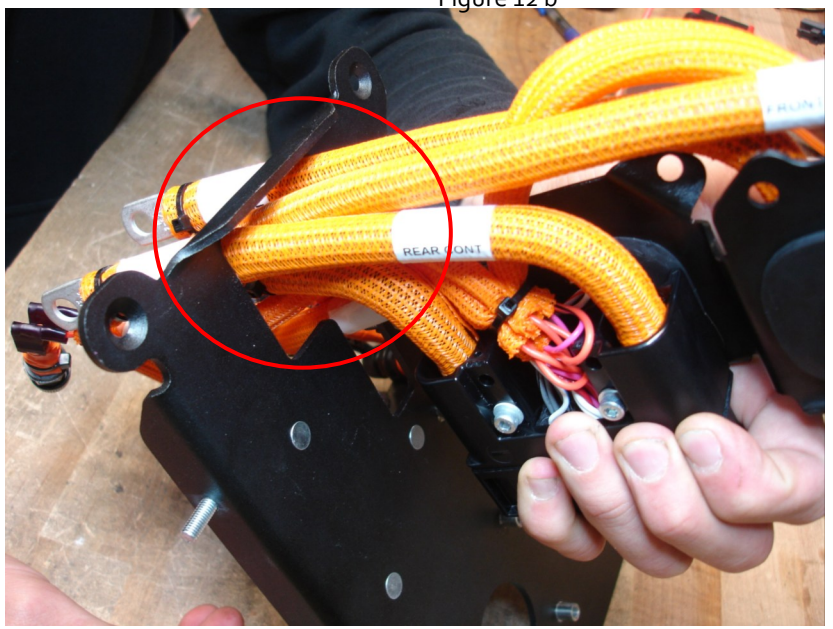

Figure 13

Items Required:

ITEM	P/N	DESCRIPTION	QTY
11	90-02054	PREVAILING TORQUE TYPE NUT DIN 985 M6-04 ZM-F-01	2
12	90-02103	WASHER ISO 7089 6-200 HV ZM-F-01	2

Procedure:

8. Attach the plate of the MODULE SEPARATOR (ITEM 1) and XMX MODULE SUPPORT PLATFORM (ITEM 8) together via (x2) M6 NUT and (x2) M6 WASHERS (ITEM 11 and 12). See FIGURE 14.
9. Route cables as in FIGURE 15.

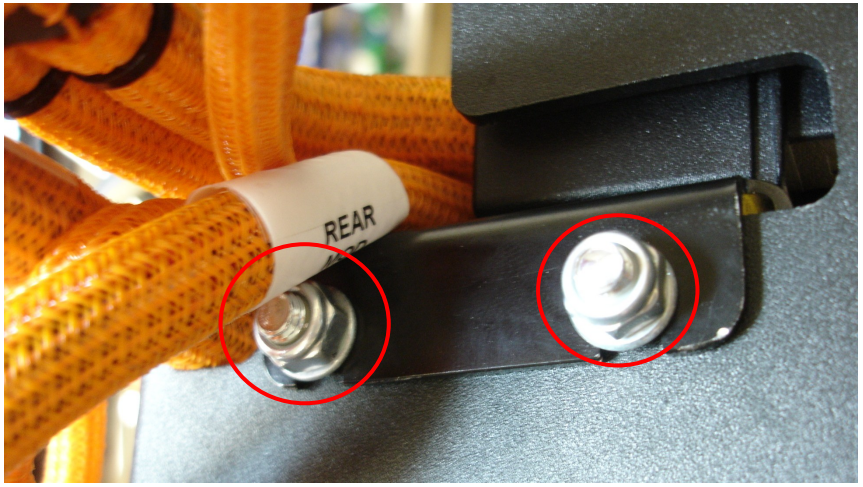

Figure 14

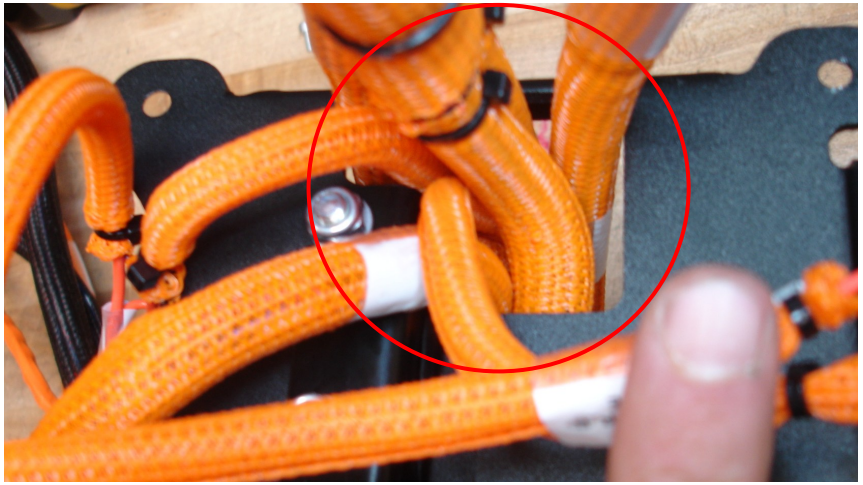

Figure 15

Items Required:

ITEM	P/N	DESCRIPTION	QTY
13	20-05236	MOUNT BRACKET CONTACTOR AND AUX CHARGE	1
14	90-02054	PREVAILING TORQUE TYPE NUT DIN 985 M6-04 ZM-F-01	3
15	90-02103	WASHER ISO 7089 6-200 HV ZM-F-01	3
16	90-02053	PREVAILING TORQUE TYPE NUT DIN 985 M5-04 ZM-F-01	7

Procedure:

10. Mount BRACKET CONTACTOR AND AUX CHARGE (ITEM 13) to XMX MODULE SUPPORT PLATFORM (ITEM 8). Use (x3) M6 NUT and (x3) M6 WASHERS (ITEM 14 and 15). See FIGURE 16 and 17.

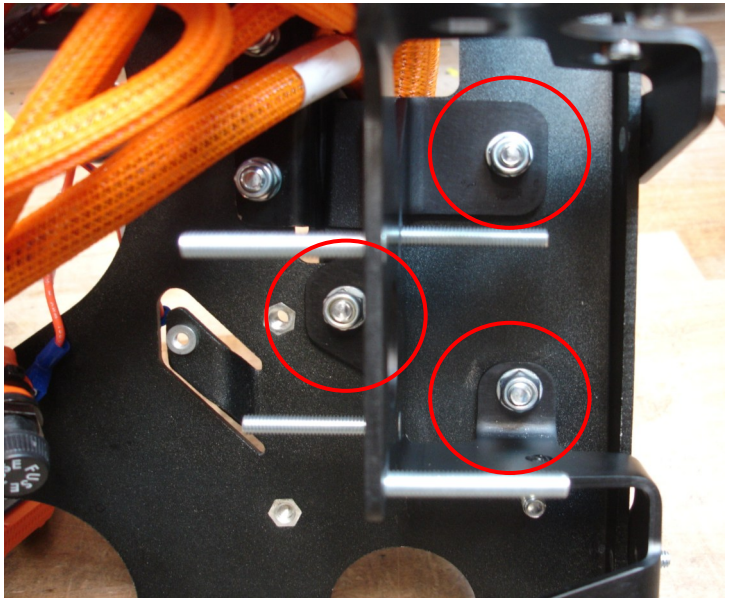

Figure 16

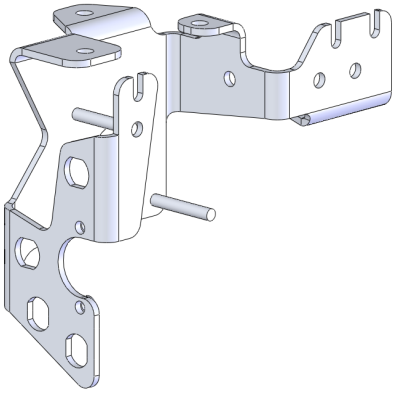

Figure 17: ITEM 13

Items Required:

ITEM	P/N	DESCRIPTION	QTY
17		—OMITTED—	
18	90-02101	WASHER ISO 7089 5-200 HV ZM-F-01	7
19	60-05235	CONTACTOR GIGAVAC GX11-013 120VDC COIL	2

Procedure:

11. Secure MOUNT BRACKET CONTACTOR (ITEM 13) to XMX MODULE SUPPORT PLATFORM (ITEM 8) with (x3) M5 NUTS (ITEM 17), (x3) M5 WASHERS (ITEM 18). See FIGURE 18 for placement.
12. Break negative tabs off CONTACTORS (ITEM 19) off with pliers or similar tool. This needs to be done for clearance. See FIGURE 21.
13. Mount CONTACTOR GIGAVAC (ITEM 19) on threaded posts of MOUNT BRACKET CONTACTOR AND AUX CHARGE (ITEM 13). Use (x2) M5 WASHERS and (x2) M5 NUTS (ITEM 17). See FIGURE 19 and 20 for location. Mount other CONTACTOR 180° from first so that *positive* tabs are back to back. Use (x2) M5 WASHERS (ITEM 18) and (x2) M5 NUTS (ITEM 16).

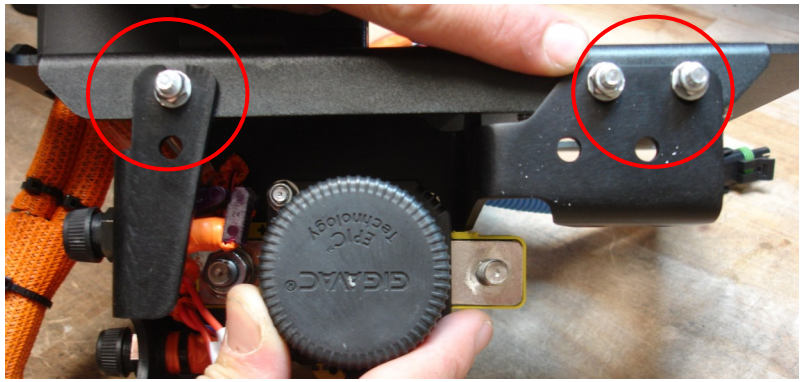

Figure 18

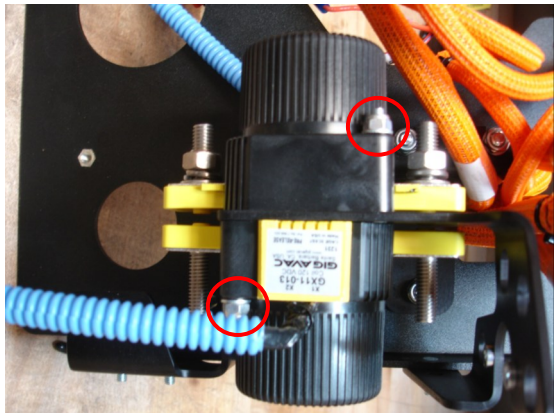

Figure 19

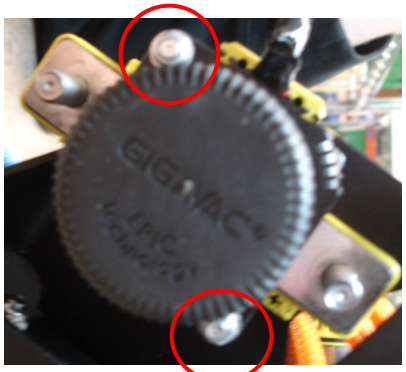

Figure 20

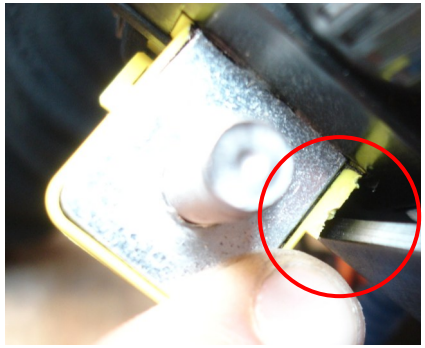

Figure 21

Items Required:

ITEM	P/N	DESCRIPTION	QTY
NA			

Procedure:

14. Remove threes fuses and locknuts from fuse holders on HARN X MBB CTRL CHS 2XMOD MY13 (ITEM 9) (x3). See FIGURE 22 for finished example.
15. **Bend** low power B- fuse terminal 90° as in FIGURE 23. This is done for clearance. Mount fuse in location per FIGURE 24. Reinstall fuse nut onto fuse as in FIGURE 25.

Figure 22

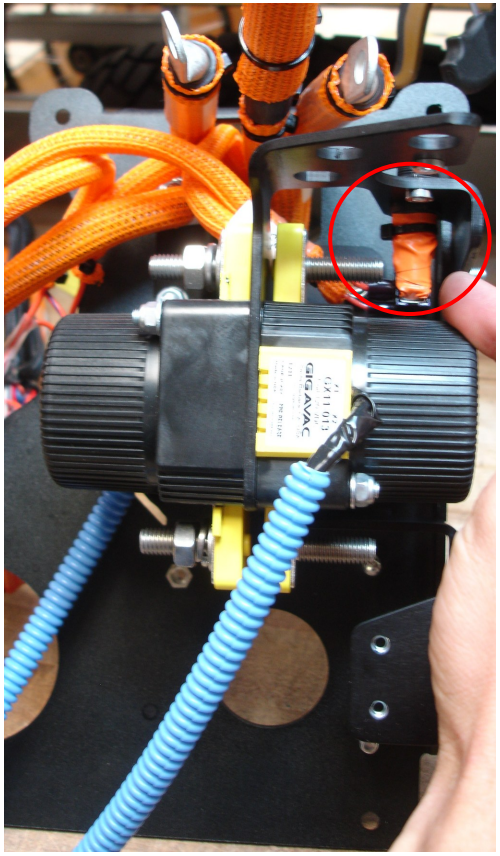

Figure 24

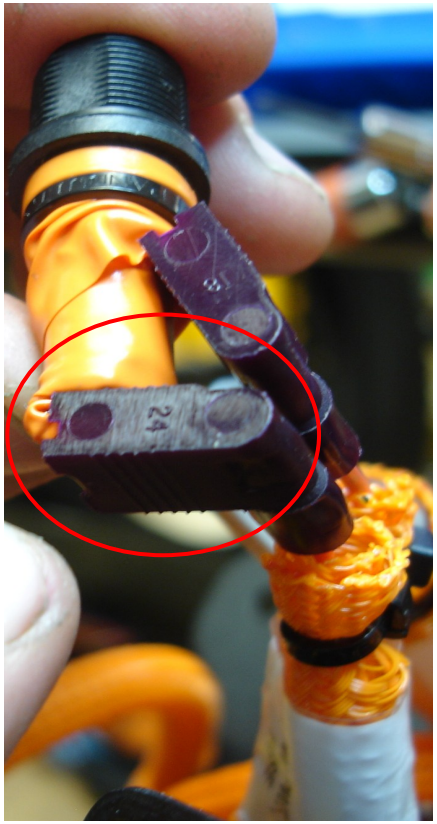

Figure 23

Figure 25

Items Required:

ITEM	P/N	DESCRIPTION	QTY
NA			

Procedure:

16. Route the DC-DC fuse wire as in FIGURE 26 and 27. Ensure these fuse terminals are *facing away from terminal post* as in FIGURE 26.

16.5. Install MBB FUSE. See FIGURE 28.

17. Reinstall the fuses (x3) into the appropriate fuse holders. See FIGURE 28.

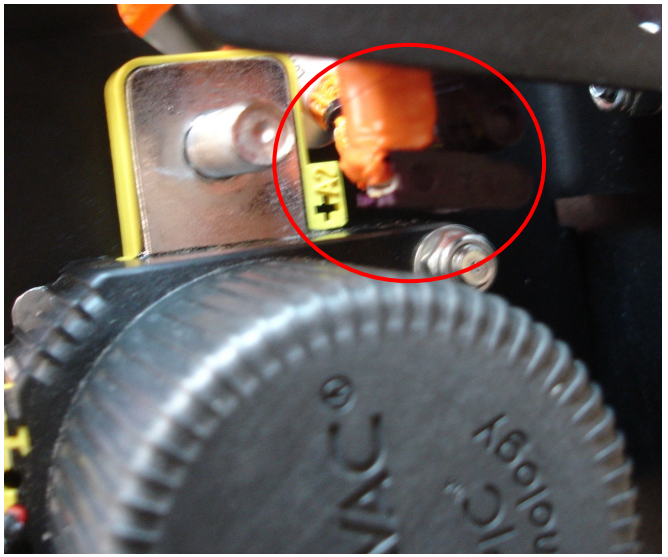

Figure 26

Figure 27

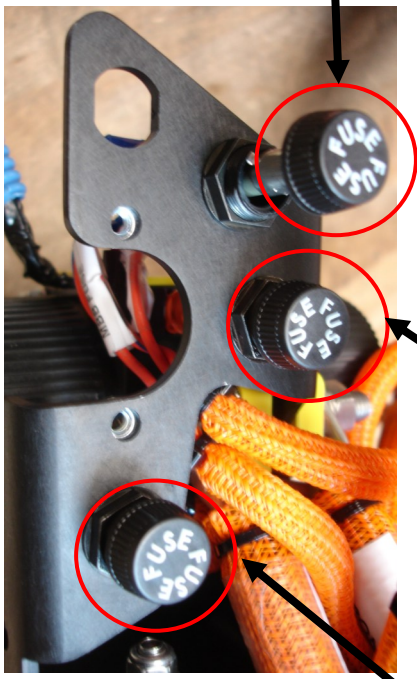

Figure 28

Items Required:

ITEM	P/N	DESCRIPTION	QTY
20	90-01363	PW 0.34x0.75x0.06IN CU	2

Procedure:

18. Install (x1) COPPER WASHERS (ITEM 20) to **positive contactor** posts of contactors; one washer per contactor post. See FIGURE 29.
19. Attach rear contactor lead; rotate 180° so that tab is facing as in FIGURE 30. Secure with washer, lock washer and nut **that came with contactor.** *Do not tighten* completely at this time. See FIGURE 31.

19.5. Install other COPPER WASHER (ITEM 20) on **other positive** contac tor post. See FIGURE 32.

20. Attach front contactor lead to **positive side** of the other contactor. **Ensure wires are routed per FIGURE 32.**

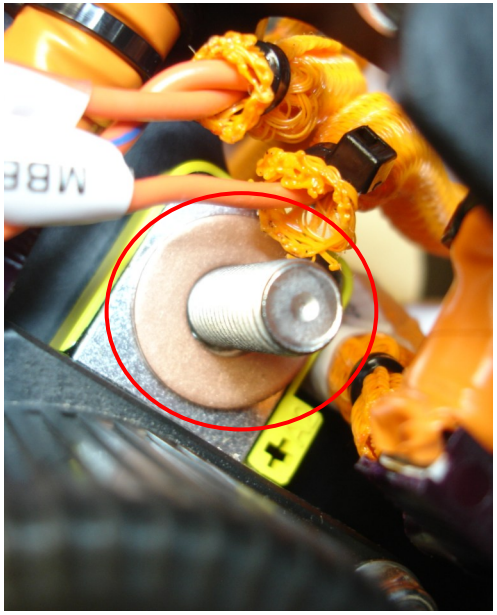

Figure 29

Figure 30

Figure 31

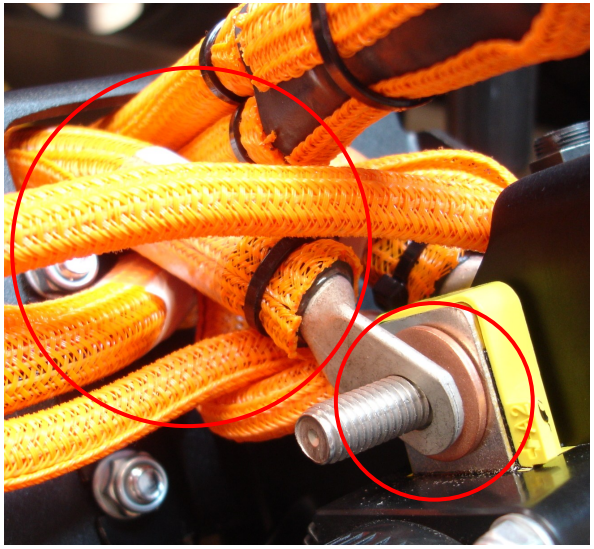

Figure 32

Items Required:

ITEM	P/N	DESCRIPTION	QTY
21	XXXXX	SPACING TOOL	
22	90-01362	CABLE TIE, 5.56 IN, BLK	3
23	20-02875	UMBRELLA PUSH MT 6.3MM DIA X 7.0MM PNL THKNS	1

Procedure:

21. Before tightening the contactor post' nuts, space the cables in FIGURE 33 from the XMX MODULE SUPPORT PLATFORM (ITEM 8) 10mm.
22. Tighten the contactor post' nuts as in FIGURE 31.
23. Secure one CABLE TIE (ITEM 22) around cable bundle. Needs to be separated from power leads. Use the provided hole for zip tie. This will bundle signal wires and *not* power leads. See FIGURE 35.
24. Insert one UMRELLA PUSH MOUNT (ITEM 23) into XMX MF MODULE SEPARATOR (ITEM1). See FIGURE 38 for location.
25. Secure one CABLE TIE (ITEM 22) through FUR TREE CLIP installed in STEP 24, and around battery positive and negative cable bundle. See FIGURE 36.
26. Secure one CABLE TIE (ITEM 22) around battery positive and negative *and lower battery lead* cable bundle. This will encompass three cables. See FIGURE 37.

Figure 33

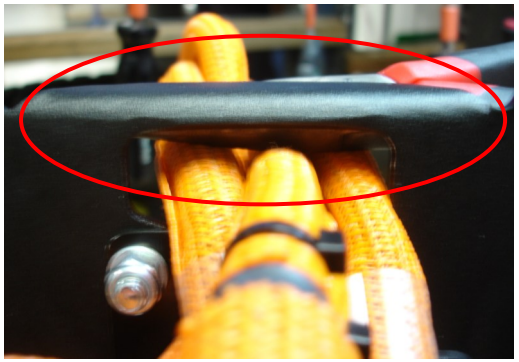

Figure 34

Figure 35

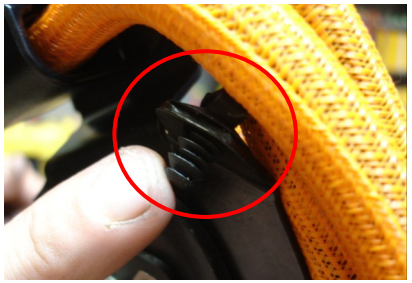

Figure 38

Figure 36

Figure 37

Items Required:

ITEM	P/N	DESCRIPTION	QTY
NA			

Procedure:

27. Ensure cable tie heads are oriented as FIGURE 39 and 40.

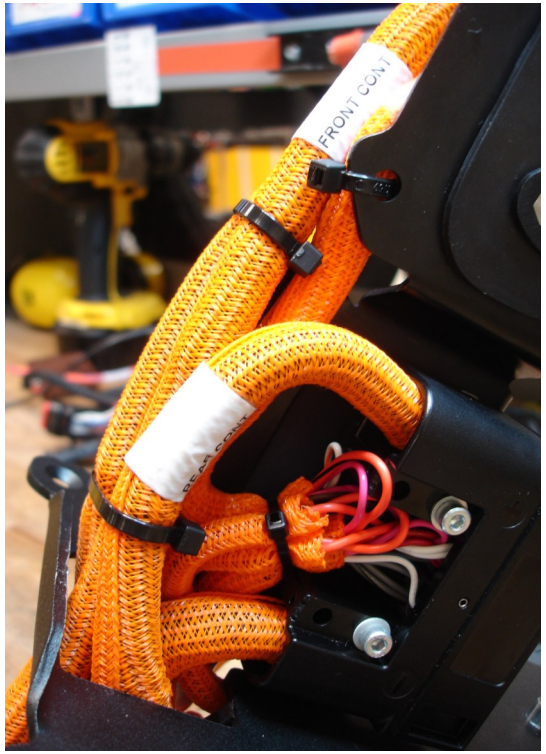

Figure 39

Figure 40

Items Required:

ITEM	P/N	DESCRIPTION	QTY
24	20-05468	XMX BIKE SIDE MODULE CONNECTOR FORMEX	1
25	90-02513	HEXAGON SOCKET HEAD CAP SCREW ISO 4762 M4X40-8.8 ZM-F-01	4
26	90-02102	WASHER ISO 7089 4-200 HV ZM-F-01	4

Figure 41: ITEM 24 flattened state

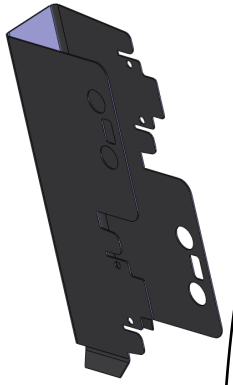

Figure 42: ITEM 25 assembled state

Figure 44

Procedure:

28. Attach XMX BIKE SIDE MODULE CONNECTOR FORMEX (ITEM 24) to assembly. Locate the tabs in the lower connector first; see FIGURE 43 44 and 45. Install (x2) M4x40 SHCS (ITEM 25) and (x2) M4 WASHERS (ITEM 26). See FIGURE 45 green circle for locations. Hardware is for the two holes on the opposite side of the lower connector; see FIGURE 45 green circles.
29. Ensure tab is located as in FIGURE 46.
30. Repeat STEP 28 and 29 for the UPPER CONNECTOR; see DASHED RED LINE in FIGURE 43.
31. **IMPORTANT——To continue on with the next directions, determine what model of bike this assembly is being built for. DC-DC converter is required for bikes with a 12V headlight system (ie. FX, XU, S, DS and MX Military models).**

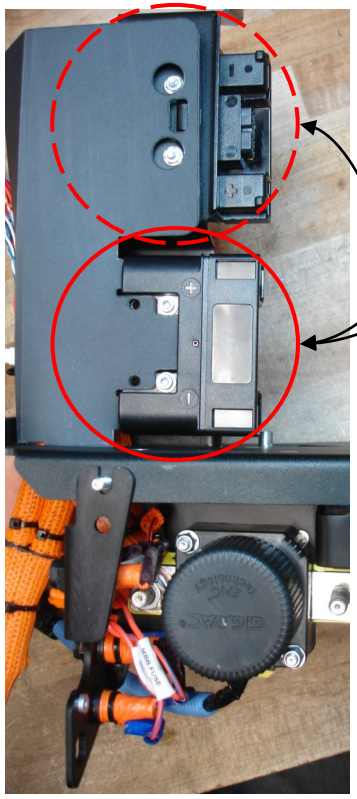

Figure 43

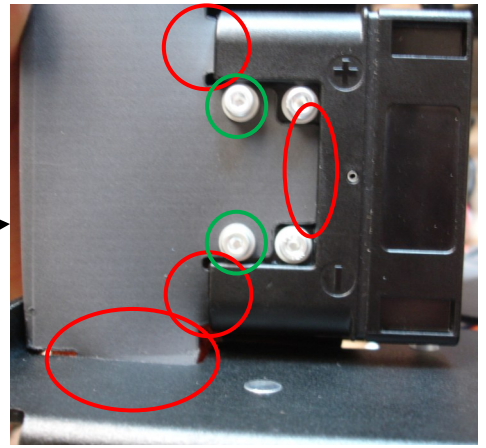

Figure 45

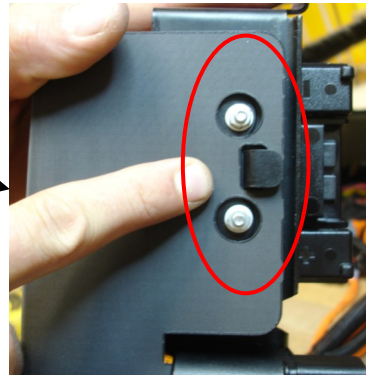

Figure 46

Items Required:

ITEM	P/N	DESCRIPTION	QTY
27	60-04015	DC-DC CONV SEVCON 622-11202	1
28	90-02054	PREVAILING TORQUE TYPE NUT DIN 985 M6-04 ZM-F-01	4
29	45-05305	CONTACTOR JUMPER MY13	1

Procedure:

32. If required from STEP 31, install DC-DC CONVERTER (ITEM 27) on XMX MODULE SUPPORT PLATFORM (ITEM 8) now. Install with (x4) M6 NYLOC NUTS and (x4) M6 WASHERS (ITEM 15). See FIGURE 47.
33. Install right side only CONTACTOR JUMPER (ITEM 29) with supplied hardware. See FIGURE 48 and 48b.

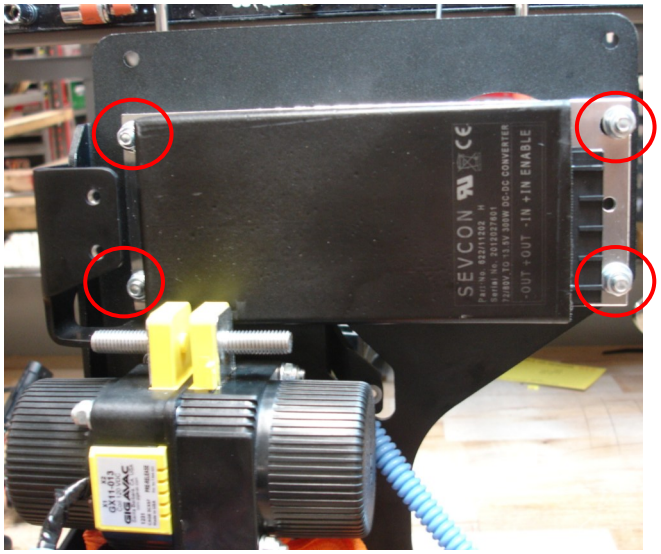

Figure 47

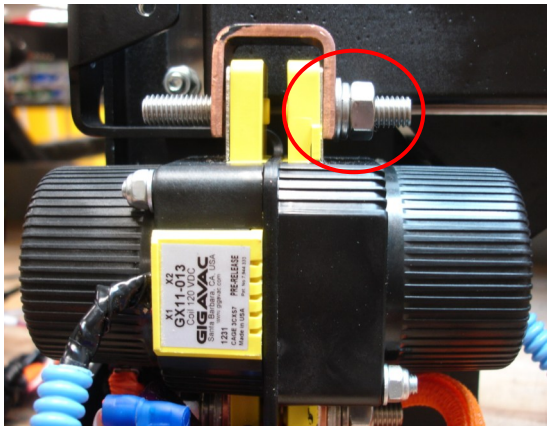

Figure 48

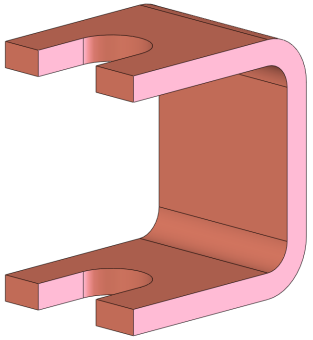

Figure 48b: ITEM 29

Items Required:

ITEM	P/N	DESCRIPTION	QTY
30	56-04798	HARN X CONT TO CTRL S4 MY13	1
31	90-03843	HEXAGON SOCKET BUTTON HEAD SCREW ISO 7380 M3x20-8.8 ZM-F-01 REV 03	2

Procedure:

34. Install **CONT B+** end of HARN X CONT TO CTRL S4 MY13 (ITEM 30) to the **left side** of the contactor. Install with tab facing OUT. See FIGURE 49 and 50.
35. Install brown Anderson connector (attached to existing wiring harness) to MOUNT BRACKET CONTACTOR (ITEM 13) over DC-DC CONVERTER (ITEM 27) (**if model applicable). Mount using (x2) M4x20 SHCS (ITEM 31). See FIGURE 51.

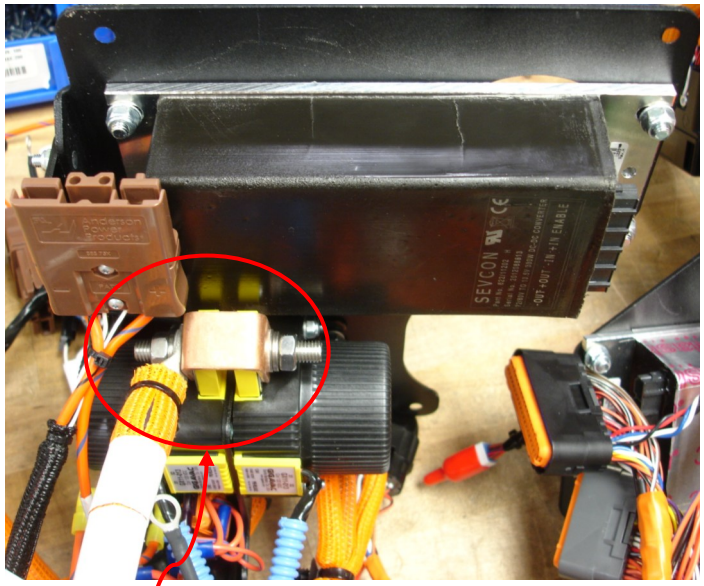

Figure 49

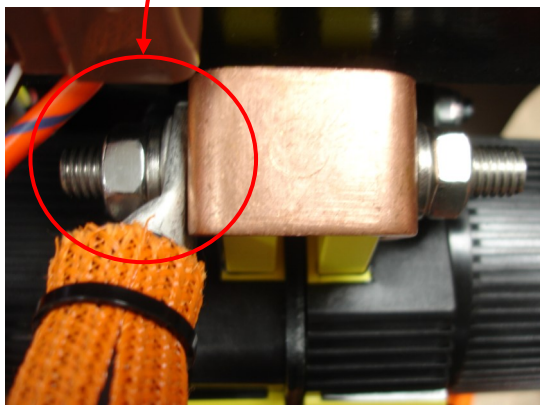

Figure 50

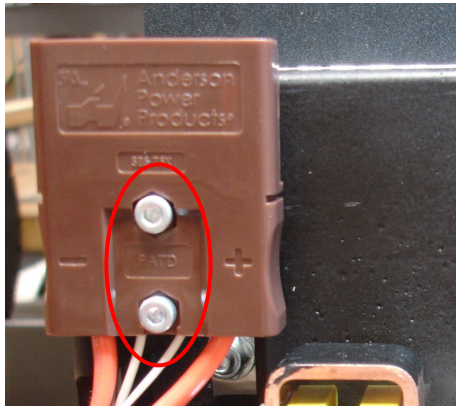

Figure 51

Items Required:

ITEM	P/N	DESCRIPTION	QTY
32	90-02441	HEXAGON SOCKET THIN HEAD CAP SCREW DIN 7984 M4X10-8.8 ZM-F-01	2
33	56-05497	HARN X MW CHG INLET MOD MY13	1

Procedure:

36. Mount quick charge fuse with (x2) M4x10 (ITEM 32). Ensure orientation as in FIGURE 52 and 53. This fuse is already attached to the harness (ITEM 9).
37. Attach HARN X MW CHG INLET (ITEM 33) to remaining fuse hole. See FIGURE 52.

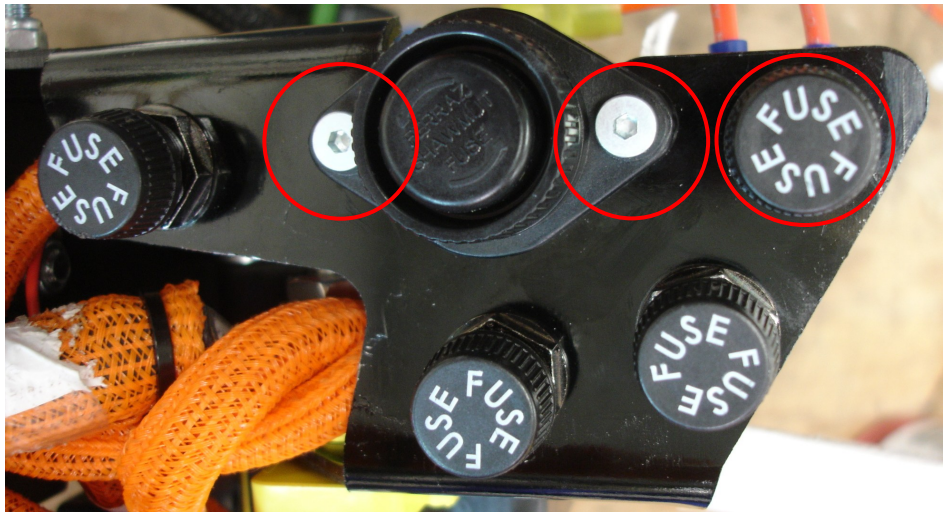

Figure 52

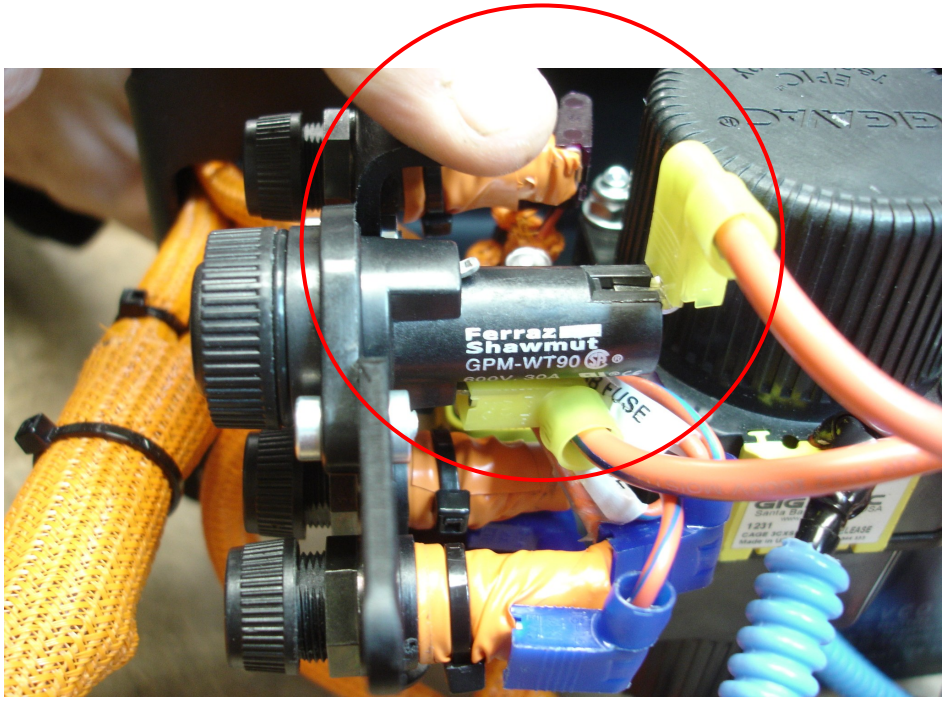

Figure 53

Procedure:

Connecting FRONT AND REAR Contactors

38. Identify 'CONT REAR' LABEL for connector on the wire harness HARN X MBB CTRL (ITEM 9). See FIGURE 54 and 55.

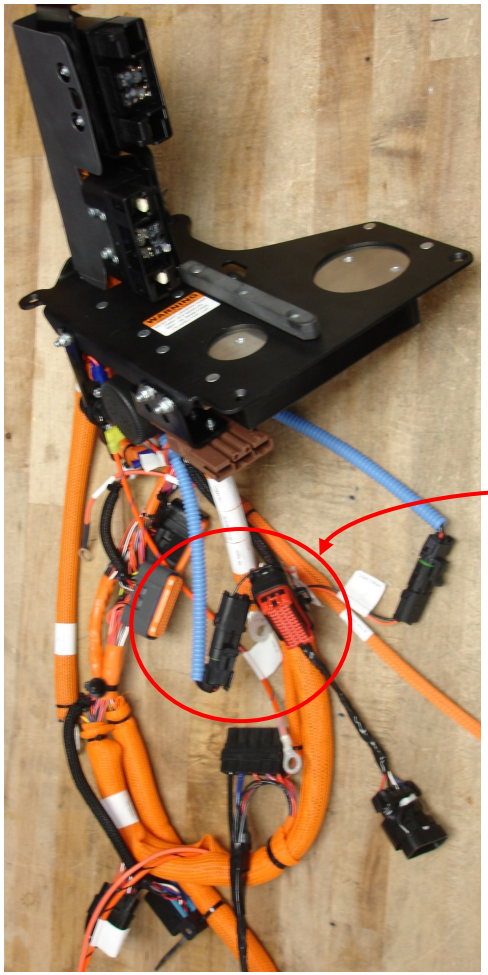

Figure 54

Figure 55

Procedure:

39. Locate the REAR contactor signal connector. This is the connector on the contactor located towards the *rear of the bike.* See FIGURE 61 and 62.
40. Using a DMM, verify the REAR contactor signal connector is common to the module battery connector by setting the meter to the **continuity measurement setting and plugging in the test leads.** See FIGURE 56 and 57.
41. Next locate the **lowest left-most pin** on the lower (rear) module connector. See circled pin in FIGURE 58. Place one test lead on the pin. See FIGURE 59.
42. Place the second lead on the **BLACK wire** pin in the 'CONT REAR' connector. Ensure the lead is in good contact with this pin. See FIGURE 60.
43. The meter is on the continuity measurement, and an **audible beep** will be heard when the correct REAR contactor *signal* pin/REAR contactor *connector* pin combo is made. Confirm this now.
44. If the audible beep is **not** heard, probe the other female connector labeled 'CONT FRONT' per FIGURE 60. If the beep **is now** heard, notify your supervisor immediately.

Figure 60

Figure 56

Figure 57

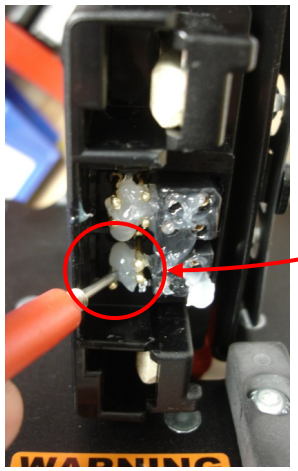

Figure 59

Figure 58

Procedure:

44. Once the audible beep in the previous step has been verified, one has confirmed the female REAR contactor signal connector labeled 'CONT REAR'. Connect 'CONT REAR' female connector to the REAR contactor male connector. See **SOLID CIRCLE** in FIGURE 63.
45. The other connector is for the FRONT contactor and is now to be plugged in to the harness connector labeled 'CONT FRONT'. See **DASHED CIRCLE** in FIGURE 63.
46. The assembly is complete.

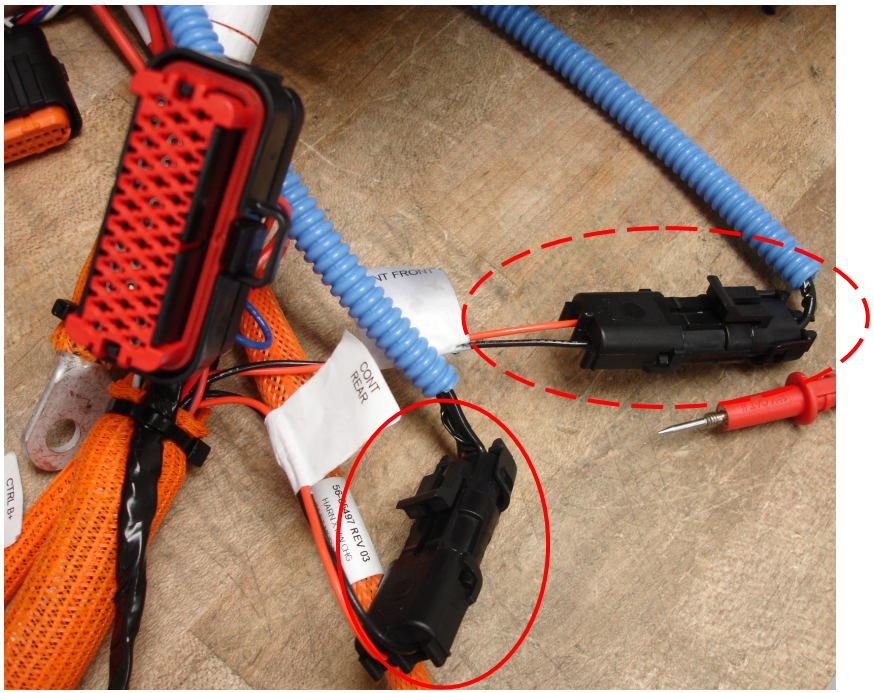

Figure 63

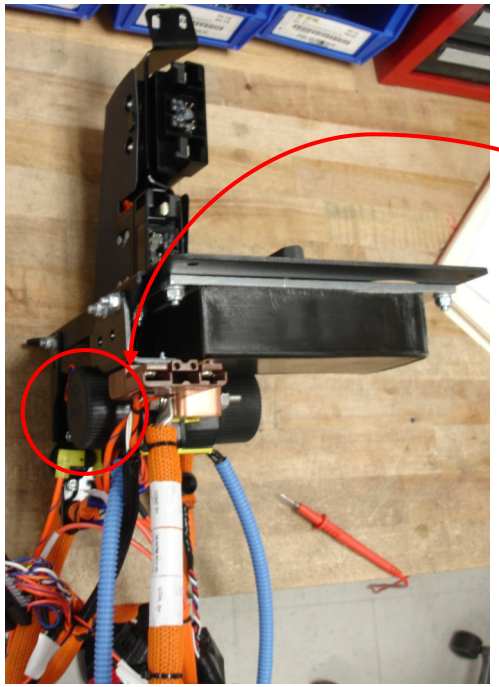

Figure 61

Figure 62