



FITTING INSTRUCTIONS

Part Number: **4246030 – DUAL BATTERY TRAY ONLY**
4346120 – DUAL BATTERY KIT *

Product Description: **CHASSIS MOUNTED BATTERY TRAY TO SUIT 10" OPTIMA BATTERIES (OPTIMA D34 OR EQUIVALENT)**

Suited to vehicle/s: **Mitsubishi Triton MQ 2015 ON**

WARNING

NOTE:

- ◆ This product must be installed exactly as per these instructions using only the hardware supplied.
- ◆ Do not use this product for any vehicle make or model, other than those specified by ARB.
- ◆ The installation of this product may require the use of specialized tools and/or techniques
- ◆ It is recommended that this product is only installed by trained personnel
- ◆ These instructions are correct as at the publication date. ARB Corporation Ltd. cannot be held responsible for the impact of any changes subsequently made by the vehicle manufacturer
- ◆ During installation, it is the duty of the installer to check correct operation/clearances of all components
- ◆ Work safely at all times
- ◆ Unless otherwise instructed, tighten fasteners to specified torque

*Kit 4346120 has been provided with a REDARC BCDC1225D charger and ARB wiring kit (4300020). If the tray has been purchased individually (4240010), the ARB Wiring kit (4300020), and a suitable REDARC BCDC charger can be purchased from ARB.

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FITTING REQUIREMENTS

REQUIRED TOOLS FOR FITMENT OF PRODUCT:

| | |
|----------------------------------|---|
| BASIC METRIC SPANNER SET | FLAT AND PHILIPS SCREWDRIVERS |
| SIDE CUTTERS | TORQUE WRENCH 5 - 80 Nm |
| SOLDERING IRON AND SOLDER | BASIC METRIC SOCKET SET (WITH EXTENSION) |

HAVE AVAILABLE THESE SAFETY ITEMS WHEN FITTING PRODUCT:

| | | | |
|---------------------------|---|---------------------------|---|
| Protective eyewear |  | Hearing protection |  |
|---------------------------|---|---------------------------|---|

NOTE: 'WARNING' notes in the fitting procedure relate to OHS situations, where to avoid a potentially hazardous situation it is suggested that protective safety gear be worn or a safe work procedure be employed. If these notes and warnings are not heeded, injury may result.

IMPORTANT:

- Ensure all electrical connections are correct and tight and that both main and auxiliary batteries have a good earth connection to engine or chassis. Failure to do this can result in the main wiring loom and vehicle catching fire.
- Make sure all wires are securely fastened away from any hot, sharp or moving surfaces. Do not fasten any wires to the brake or fuel lines.
- Good condition of the charging system and primary battery is important for the correct operation of this system. Any accessories connected to the battery must use the appropriate wiring and fuses.
- As the BCDC Charger priority charges the primary battery, it is desirable to wire additional driving lights to the primary battery. Other accessories such as a refrigerator should be wired to the auxiliary battery.
- CAUTION Additional driving lights can rapidly drain the primary battery.

INFORMATION ON THE BCDC Charger:

- **DUAL BATTERY CHARGING.** The BCDC Charger features technology designed to charge your batteries to 100%, regardless of their type or size. By providing a unique charging profile to each specific battery type, the BCDC charger can achieve and maintain an optimal charge in your auxiliary battery, at all times.
- **EFFICIENT CHARGING.** The BCDC Charger is designed to boost the low voltage present at the end of a long cable run to a level suitable to charge your auxiliary battery to 100%. The BCDC charger has a built-in battery isolator which protects your vehicle's start battery from going flat.
- **WORKS WITH ALL ALTERNATORS.** The BCDC Charger is designed to work with newer variable voltage alternators where the vehicle battery may not reach optimum voltage for a typical isolator to open. They are designed to boost the voltage to optimum levels, regardless of what input voltage they are getting from the primary battery.

PARTS LISTING – 4246030 AUX BATT KIT

| APPLICATION. | PART NO. | QTY | DESCRIPTION |
|---|-----------|------------------|--------------------------|
| BCDC TO BATTERY TRAY | 6151017 | 4 | Bolt Hex M6 x 1.0 x 16 |
| | 6151128 | 4 | Nut Flange M6 x 1.0 |
| | 6151046 | 4 | Washer Flat M6 |
| BATTERY TRAY TO CHASSIS | 6542148 | 1 | Battery Tray |
| | 3759788 | 1 | Bracket Chassis |
| | 6582470 | 2 | Clamp Chassis Bracket |
| | 6151527 | 2 | Bolt M12 x 1.75 x 120 |
| | 6151574 | 2 | Nut Nyloc M12 x 1.75 |
| | 4584335 | 4 | Washer Flat M12 |
| | 5811033 | 2 | Tube Spacer 86mm |
| | 6151232 | 2 | Bolt M10 x 1.5 x 30 |
| | 4584345 | 4 | Washer Flat M10 x 25 x 3 |
| | 6151322 | 2 | Nut Nyloc M10 x 1.5 |
| | 6151021 | 5 | Bolt M8 x 1.25 x 20 |
| | 6151132 | 4 | Nut Flange M8 x 1.25 |
| | 4581044 | 4 | Washer Flat M8 |
| | 4581046 | 1 | Washer Spring M8 |
| 180302 | 4 | Cable Ties 200mm | |
| BATTERY CLAMP | 6582469 | 1 | Bracket Battery Clamp |
| | 6151216 | 2 | Bolt L M8 x 210mm |
| | 6151032 | 2 | Nut M8 x 1.25 Nyloc |
| | 4581044 | 2 | Washer Flat M8 |
| | 5848397 | 2 | Plastic Insulator |
| CHARGER & WIRING (Supplied with 4340110) | 4300020 | 1 | ARB Wiring Kit |
| | BCDC1225D | 1 | REDARC Battery Charger |

****NOTE:** This product is designed to fit on the inboard Passenger side of the chassis, between the Fuel tank and the Transmission.

FASTENER TORQUE SETTINGS:

| SIZE | Torque Nm | Torque lb/ft |
|------|-----------|--------------|
| M6 | 9Nm | 7lbft |
| M8 | 22Nm | 16lbft |
| M10 | 44Nm | 32lbft |
| M12 | 77Nm | 57lbft |

NOTE:

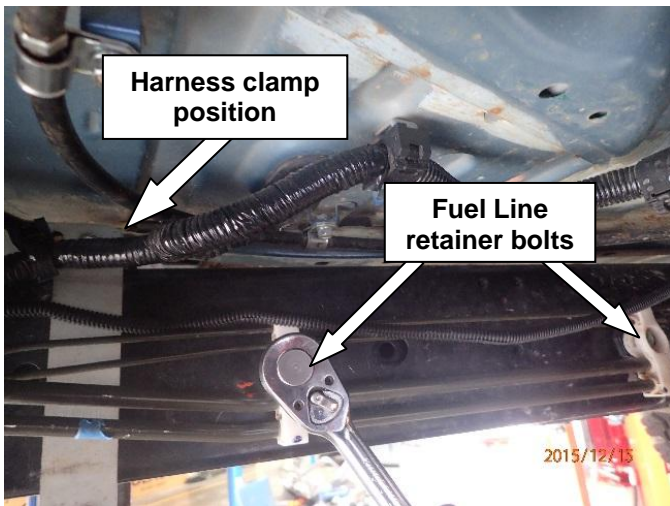
- ARB recommends installing a REDARC BCDC as part of this fitment. Refer to ARB/REDARC to determine the appropriate BCDC unit for your application.
- For details about the REDARC BCDC charger, refer to the manual provided with the unit.
- If using an alternative charging system and/or wiring, refer to the guidelines provided with those units.

CHASSIS AND BATTERY CLAMP PREPARATION



1. Press the 2 insulator pads into the back of the Bracket Battery Clamp as shown

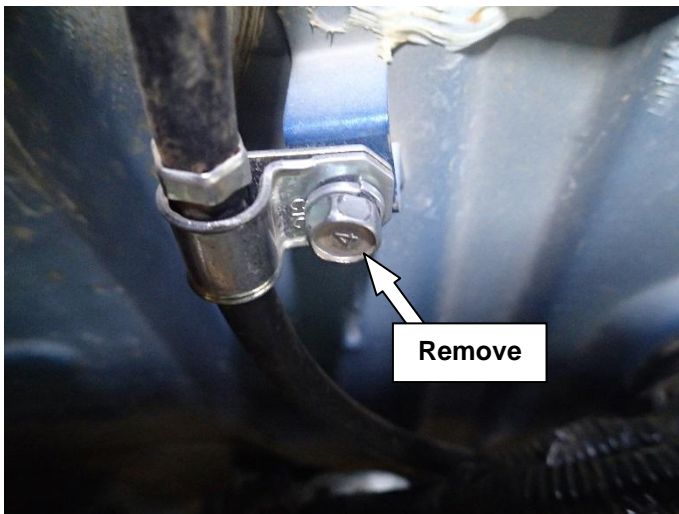
TIP: Use a soft mallet to aid in installation



If ARB Side Steps/Rails are installed, refer to Step 4

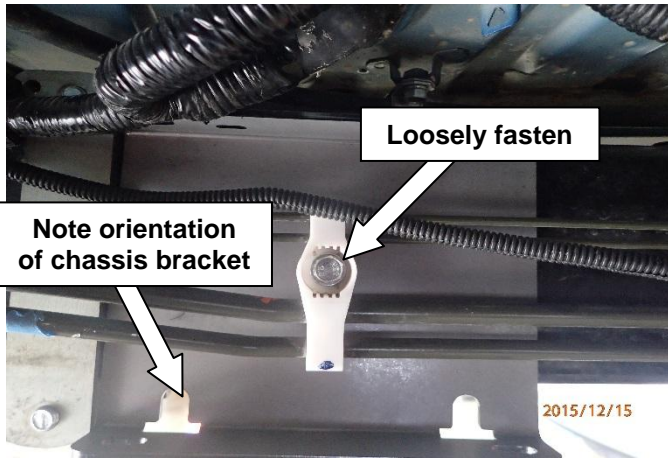
2. Remove the harness clamp from the top of the Chassis (**Note: not shown in picture as ARB side steps/rails are installed**).
3. Remove 2X Fuel line retainer bolts and set aside.
4. Discard the 10mm spacers behind the fuel line retainer bolts as shown below.

Discard spacers



5. Remove the 1X M8 bolt (*retaining the hand brake cable*) from the vehicle body and discard.

FITTING PROCEDURE



6. Move the fuel lines forward and slide the Chassis Bracket underneath as shown.

NOTE: Ensure the chassis bracket is in the correct vertical orientation as shown in the picture.

7. Replace the fuel line retainer bolts and loosely fasten.



8. Unclip vehicle loom from existing body mount.

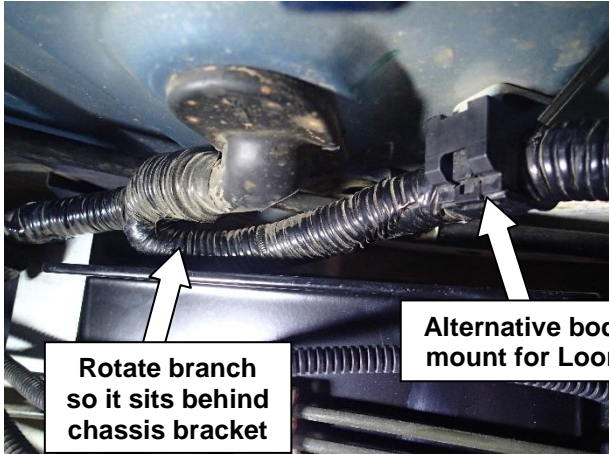
Existing body mount for Loom



Rotate branch so it sits behind chassis bracket



Alternative body mount for Loom



9. Rotate thick branch of vehicle wiring loom, so that it sits on top of the vehicle chassis and behind the chassis bracket.
10. Clip loom into alternative body mount that is closer to the chassis and chassis bracket as shown. This will ensure that the branch sits over the top of the vehicle chassis and behind the bracket.

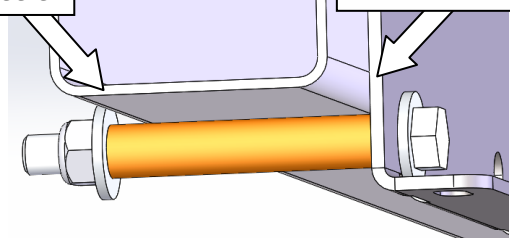


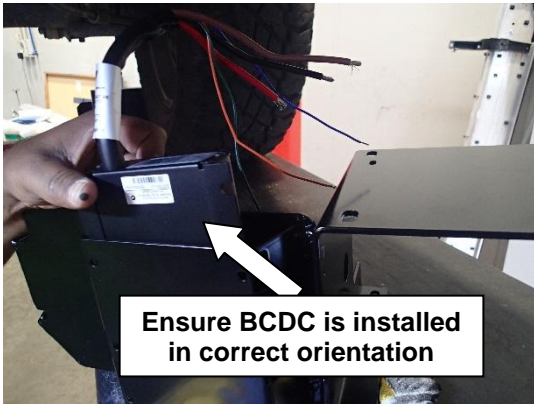
11. Feed 2X Bolt M12 x 1.75 x 120, 4X Washer Flat M12, 2X Tube Spacer 86mm and 2X Nut Nyloc M12 x 1.75 through chassis bracket in order as shown on picture. Loosely fasten nuts to prevent tube spacers and washers from falling off.

12. Tighten fasteners at **Step 19**.

Chassis

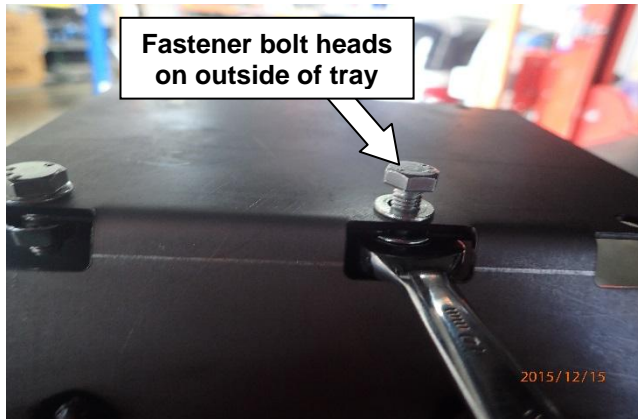
Chassis Bracket





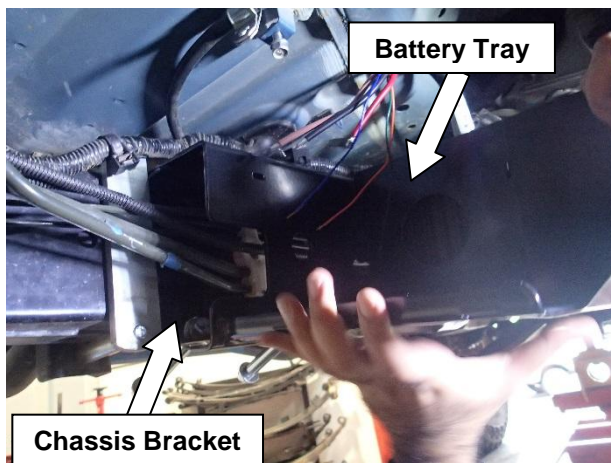
13. Insert BCDC (*not supplied*) into Battery Tray in the direction as shown.

NOTE: Ensure the protruding wire side of the BCDC exits the **top** of the tray.

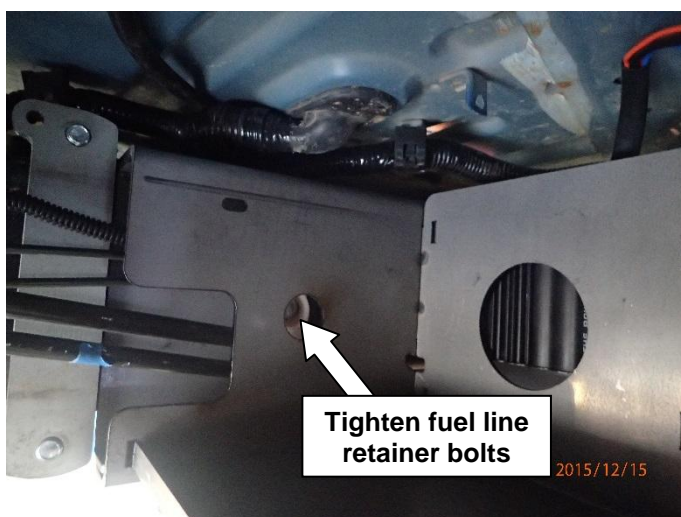


14. Fasten the BCDC (*not supplied*) to the tray using 4X Bolt M6 x 1.0 x 20, 4X Washer M6 Flat and 4X Nut Flange Hex M6 x 1.0. Tighten to specified torque.

NOTE: Ensure the fastener bolt heads are on the **outside** of the Battery Tray as shown.

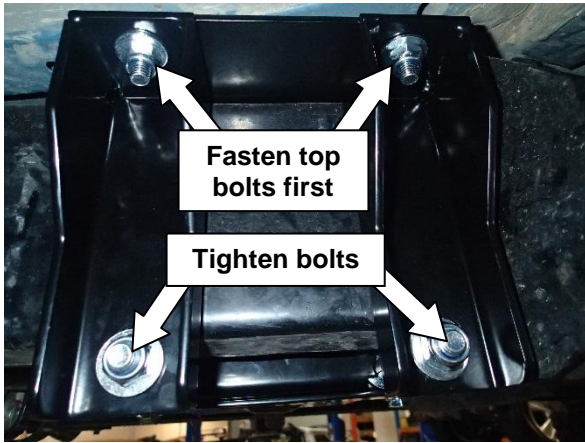


15. Slide Battery Tray over Chassis Bracket and vehicle chassis so that it protrudes on the outboard side of the chassis. Adjust height of tray and ensure it clears vehicle looms and sits flat over chassis.



16. Tighten fuel line retainer bolt through clearance hole on Battery Tray.

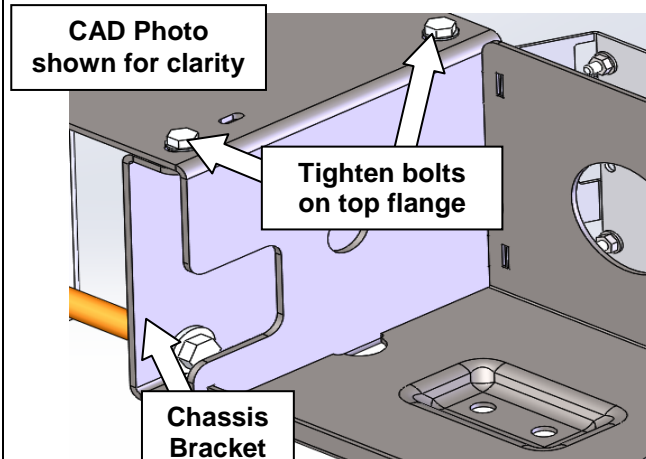
17. Tighten previously removed fuel line retainer bolt along chassis rail from Step 3.



18. Fit 2X Clamp Chassis Bracket onto chassis rail and fasten to Battery Tray using 2X Bolt M10 x 1.5 x 30, 4X Washer Flat M10 and 2X Nut Nyloc M10 x 1.5. Tighten to specified torque.

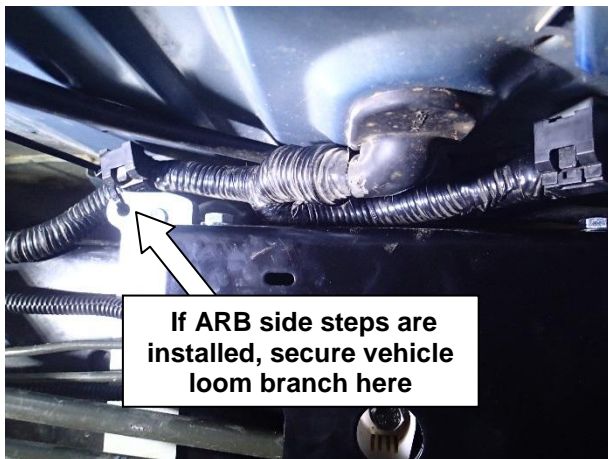
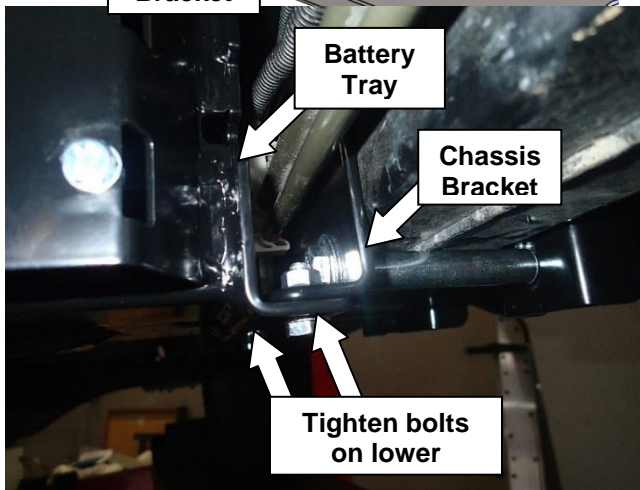
19. Fasten Clamp Chassis Brackets with previously installed fasteners in **Step 11**. Tighten to specified torque.

NOTE: Ensure the Tube spacers sit between the Chassis bracket and the Clamp Chassis brackets.



20. Fasten Battery Tray through the 4 slots, each located on the top and lower flanges of the Chassis Bracket using 4X Bolt M8 x 20, 4X Washer Flat M8 and 4X Nut Flange M8. Tighten to specified torque.

NOTE: Ensure the bolt heads are on the outside of the Battery Tray as shown in the pictures

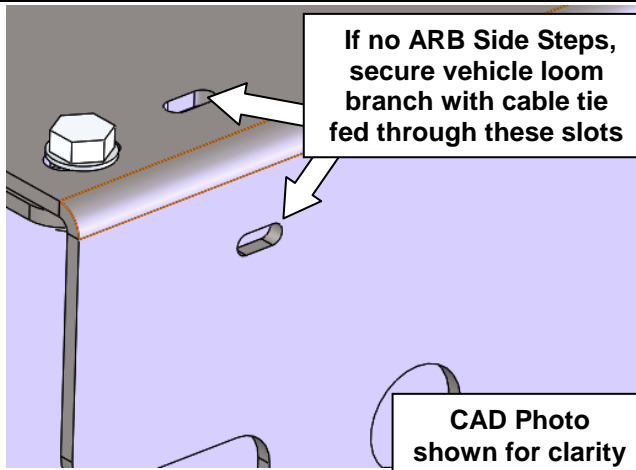


IF ARB SIDE STEPS/RAILS ARE INSTALLED:

21. Cable tie vehicle loom branch to ARB Side step bracket as shown in the picture.

IF ARB SIDE STEPS/RAILS ARE NOT INSTALLED:

22. Insert cable tie through slots on Battery Tray and secure vehicle loom branch.



If no ARB Side Steps,
secure vehicle loom
branch with cable tie
fed through these slots

CAD Photo
shown for clarity

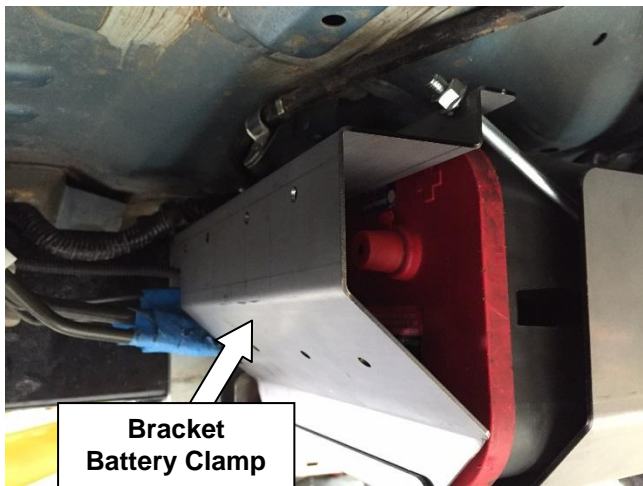


Terminals facing
the top of the tray

23. Insert (Optima D34 or equivalent) Battery into Battery Tray. Ensure terminals are towards the top of the tray.

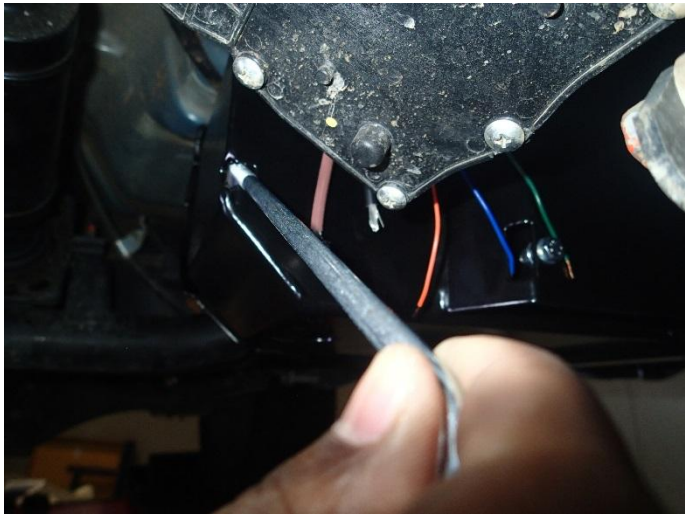
24. If a BCDC has been fitted, install the wiring as per detailed on pages 10-12.

*You may use the optional **4300010** ARB Aux Battery Wiring Kit to install wiring for BCDC 1220/1220-IGN/1225/1225-LV.*



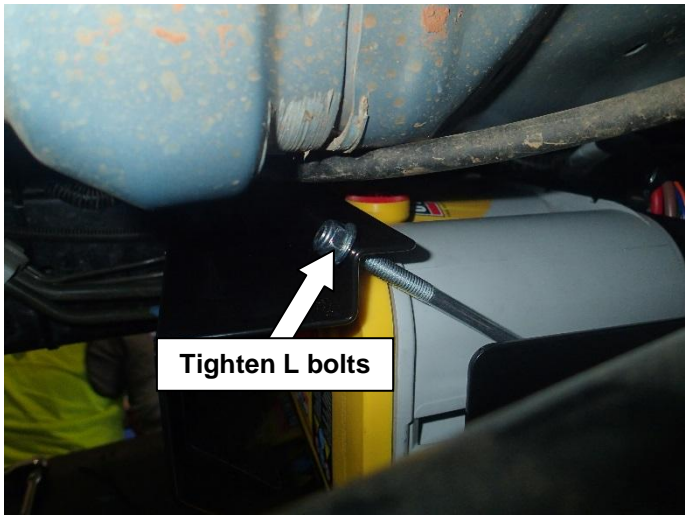
Bracket
Battery Clamp

25. Place Bracket Battery Clamp in position onto the Battery Tray.



26. Pass in 2X Bolt L M8 x 210mm from rear of battery tray through to holes on Bracket Battery Clamp.

TIP: Move battery sideways in tray to aid in clearance for the 'L' bolts.



27. Fasten L bolts with 2X Nut Nyloc M8 x 1.25 and 2X Washer Flat M8.



28. Refit the saddle clamp that contains the handbrake cable to the vehicle as shown. Use the Bolt M8 x 20mm supplied with the Battery Tray Kit in place of the factory bolt to fasten the saddle clamp.

When complete, ensure there is clearance between the bolt head and the Battery Tray.



Before

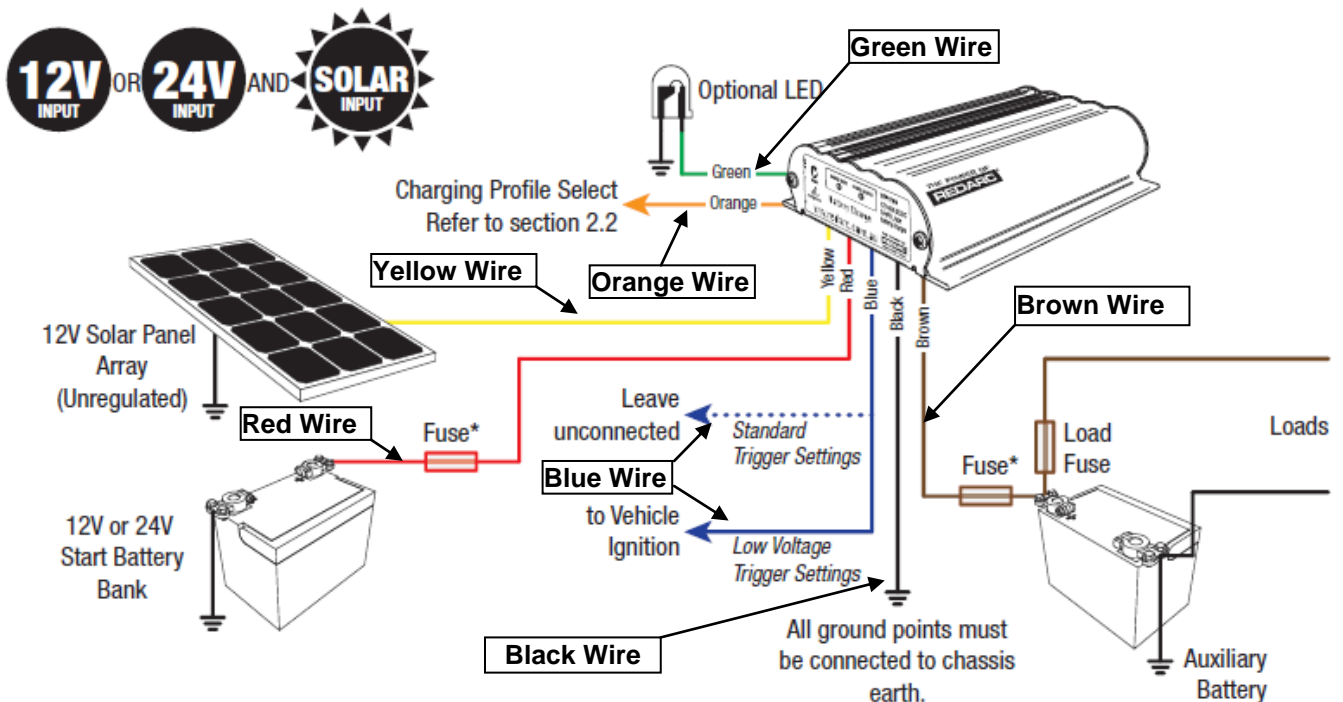
After

1 CONNECTING THE CHARGING CIRCUIT

- ARB recommends fitting a REDARC BCDC charger to achieve optimum performance from the auxiliary battery.
- To achieve safe and reliable operation of the BCDC charger, follow the steps below.
- Do not fasten any wires to brake or fuel lines.
- If the charging circuit is not working after correct installation, please consult a qualified automotive electrician for assistance.
- Make sure all wires are securely fastened away from any hot, sharp or moving surfaces
- Read these instructions in conjunction with the installation and operating instructions provided with the REDARC BCDC unit.
- Refer to this material from REDARC for further information and fault finding/troubleshooting.

Refer to diagram below for a typical setup of a 12V Battery connected with a BCDC Charger.
For detailed steps on how to wire the BCDC charging circuit, go to page 11.

Installation Setup diagram courtesy of REDARC Electronics.



WIRING – AUX BATTERY CHARGING SYSTEM

1. Disconnect main battery terminals, negative terminal first.

2. **RED WIRE**

Connect BCDC Red Wire to Positive Terminal on Vehicle Main Battery. This wire must have a fuse as close as possible to the positive terminal of Main Battery. Use the fuse listed below for the BCDC being installed.

| Fuse Guide | |
|-------------------------|---------------|
| Type of BCDC | Fuse Size (A) |
| BCDC 1220/1220-IGN | 30* |
| BCDC 1225/1225-LV/1225D | 40* |
| BCDC 1240/1240-LV/1240D | 50 |

** If using the ARB wiring kit (4300020), use the 50A MIDI fuses supplied with this kit as the wire is the correct size for these fuses.*

When lengthening the wire, use the wire size listed below for the BCDC being installed.

| Input Battery Positive – Wire Size Guide | | |
|--|------------|--|
| Type of BCDC | Length (m) | Recommended Wire Size (mm ²) |
| BCDC 1220/1220-IGN | 1-3 | 3.5 mm ² OR 6mm auto |
| | 3-5 | 5.7 mm ² OR AWG 8 |
| | 5-9 | 10.2 mm ² OR AWG 8 |
| BCDC 1225/1225-LV/1225D | 1-5 | 7.71 mm ² OR AWG 8 |
| | 5-9 | 13.56 mm ² OR AWG 6 |
| BCDC 1240/1240-LV/1240D | 1-5 | 13.56 mm ² OR AWG 6 |
| | 5-9 | 20.28 mm ² OR AWG 4 |

3. **BLUE WIRE**

For BCDC 1220/1225/1240

Connect BCDC Blue Wire to Positive Terminal of Vehicle Start Battery (12V Positive Supply).

For BCDC 1220-IGN/1225-LV/1240-LV

Connect BCDC Blue Wire to Vehicle Ignition Power (12V Accessories).

For BCDC 1225D/1240D

Leave Blue Wire disconnected for *standard trigger settings Refer to Redarc manual for directions on when this wire should be connected.*

4. **ORANGE WIRE**

Leave orange wire disconnected. Tape back to loom. If installing a different type of battery, refer to Redarc BCDC user manual for correct installation.

5. **GREEN WIRE**

If customer requires a visual indicator to show when the BCDC is charging the aux battery, connect green wire to positive terminal of a LED. Connect LED negative terminal to ground. The LED can be placed inside the vehicle on the dash.

NOTE: This wire can be left disconnected if visual indicator is not required.

6. **BLACK WIRE**

Connect BCDC Black Wire to Chassis Ground/Earth.

NOTE: Do not connect to vehicle tub.

7. **BROWN WIRE**

Connect BCDC Brown Wire to Positive Terminal on Auxiliary Battery. This wire must have a fuse as close as possible to the positive terminal of Aux battery. Use the fuse listed below for the BCDC being installed.

| Fuse Guide | |
|-------------------------|----------------------|
| Type of BCDC | Fuse Size (A) |
| BCDC 1220/1220-IGN | 30* |
| BCDC 1225/1225-LV/1225D | 40* |
| BCDC 1240/1240-LV/1240D | 50 |

* If using the ARB wiring kit (4300020), use the 50A MIDI fuses supplied with this kit as the wire is the correct size for these fuses.

When lengthening the wire, use the wire size listed below for the BCDC being installed.

NOTE: The BCDC brown wire may be connected directly to the aux battery positive terminal without any extra wire length added on to it.

| Output Battery Positive – Wire Size Guide | |
|--|---|
| Type of BCDC | Recommended Wire Size (mm²) |
| BCDC 1220/1220-IGN | 3 mm ² OR 5mm auto |
| BCDC 1225/1225-LV | 7.71 mm ² OR AWG 8 |
| BCDC 1240/1240-LV | 7.71 mm ² OR AWG 8 |

8. **YELLOW WIRE**

Connect Yellow Wire to Solar Panel input if option is available.

NOTE: This wire can be left disconnected if Solar Panel is not required.

9. Connect Negative Terminal of Auxiliary Battery to Chassis Ground/Earth.
10. Reconnect Vehicle Main Battery Terminals.

TESTING

Start the engine.

Observe the LEDs on the BCDC Charger.

Normal Operation:

BCDC 1220, 1225, 1240, 1225LV, 1240LV

Under battery type, the one of the three LEDs (Standard, AGM/Gel or Calcium) must be blinking.

Under charge status, one of the three LEDs (boost, absorption or float) must be blinking.

BCDC 1225D, 1240D

Under Charge Profile, the one of the three LEDs (A, B, C or Li) must be blinking.

Under Charge Status, "Stage" must be on or blinking.

Faulty Operation:

If all the LEDs on the BCDC are blinking at the same time, consult the Redarc BCDC user manual or a qualified auto electrician to diagnose the issue.