



FITTING INSTRUCTIONS

Part Number: **4238040 – DUAL BATTERY TRAY ONLY**
4338120 – DUAL BATTERY KIT *

Product Description: **NISSAN NAVARA D23 NP300 CHASSIS MOUNTED BATTERY TRAY TO SUIT 10" OPTIMA BATTERIES**

Suited to vehicle/s: **Nissan Navara D23 NP300 ST/ST-X 15 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 4338120 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 SETS	ANGLE GRINDER
BASIC METRIC SOCKET SETS	PLIERS

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 – 4238040 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
	6151046	4	Washer Flat M6
BATTERY TRAY TO CHASSIS	6542142	1	Battery Tray
	6151511	3	Bolt M12 x 1.75 x 100
	6151574	3	Nut Nyloc M12 x 1.75
	4584335	6	Washer Flat M12 x 28 x 3
	5811068	3	Tube Spacer 64mm
	6151232	3	Bolt M10 x 1.5 x 30
	6151322	3	Nut Nyloc M10 x 1.5
	4584345	6	Washer Flat M10 x 26 x 2
	6582466	1	Clamp Chassis Large
	6582467	1	Clamp Chassis Small
	5848432	1	Packer Chassis Small
BATTERY CLAMP	6582457	1	Clamp Battery
	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.

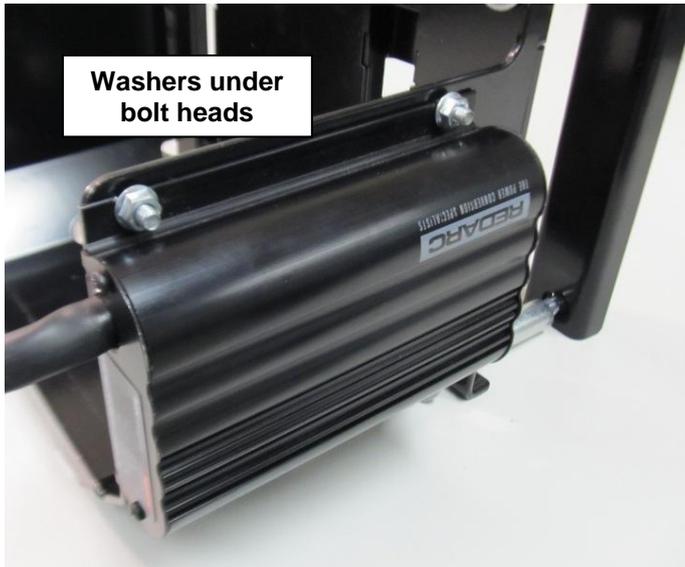
FASTENER TORQUE SETTINGS:

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.

BCDC AND BATTERY CLAMP PREPARATION

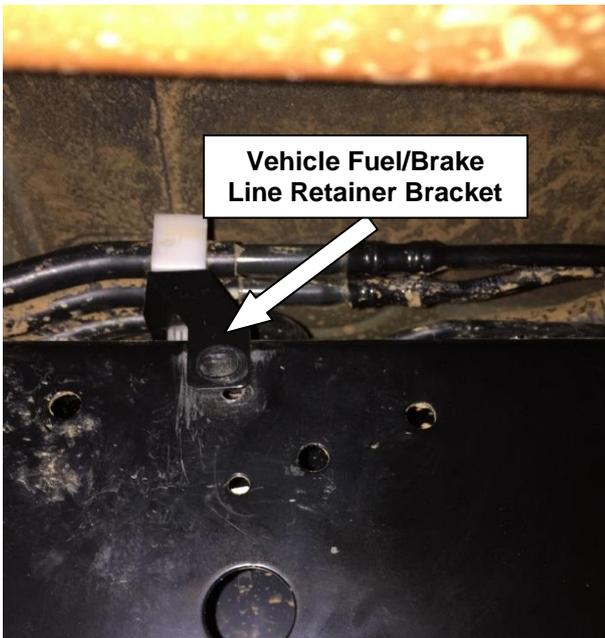


1. If installing a BCDC, fit to Battery Tray using 4X Bolt Hex M6 x 1.0 x 16, 4X Washer Flat M6 and 4X Nut Flange M6. Install washers under bolt heads.



2. Press the 2X Plastic Insulators into Clamp Battery as shown.

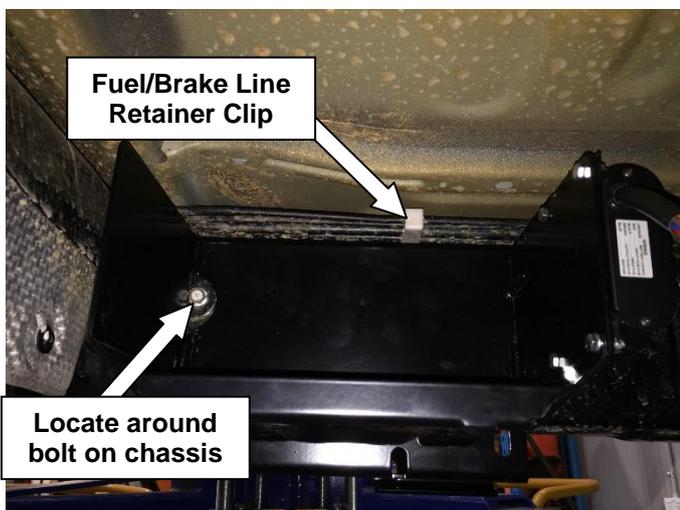
BATTERY TRAY INSTALLATION



3. Locate the Fuel and Brake Line retainer bracket on the outboard passenger side of the chassis towards the rear of the car behind the centre body mount of the vehicle.

Remove the M6 bolt from the vehicle fuel Line retainer bracket to loosen the fuel lines.

Retain M6 bolt to be refitted in **Step 15**.



4. Disconnect centre fuel and brake lines retainer clip from top of chassis rail.
5. Fit Battery Tray to Chassis by sliding top flange of tray along the top of the chassis and below the fuel and brake lines as shown. Locate tray around bolt on chassis as shown.

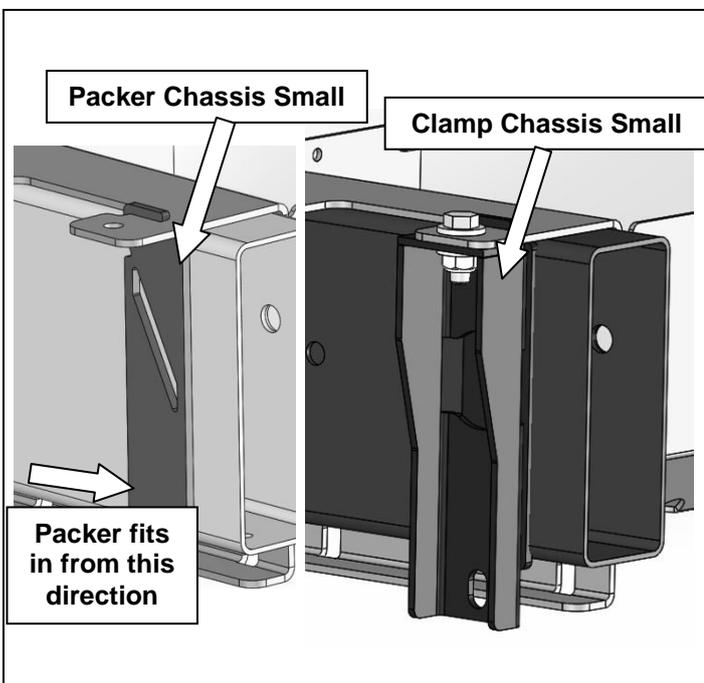
NOTE: You will have to carefully lift up the fuel and brake lines to pass the Battery Tray underneath them.

6. Locate the fuel and brake line retainer clip into the slot in top flange of Battery Tray as shown.



7. Ensure mounting holes (of the Battery Tray) are visible on the outboard side of the chassis. Fit Clamp Chassis Large onto the Battery Tray using 2X Bolt M10 x 1.5 x 30, 4X Washer Flat M10 x 25 x 2 and 2X Nut Nyloc M10 x 1.5. Tighten to specified torque.

NOTE: You will need to install Clamp Chassis Large at an angle as the brackets are intentionally undersized to ensure secure attachment to chassis.



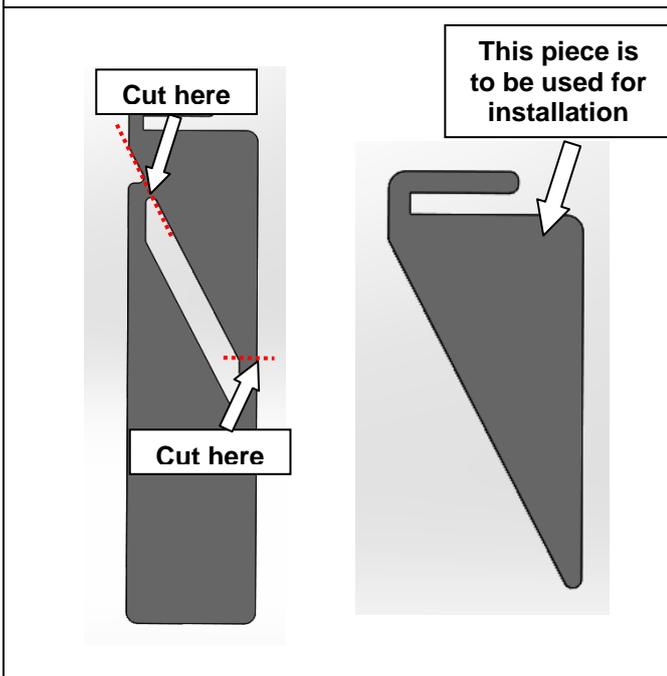
IF ARB STEPS ARE FITTED, PROCEED TO STEP 10-12

FOR VEHICLES WITHOUT ARB SIDE STEPS:

8. Place Packer Chassis Small over flange of Battery Tray as shown. Locate slot in packer over flange of Battery Tray.
9. Fit Clamp Chassis Small to Battery Tray using 1X Bolt M10 x 1.5 x 30, 2X Washer Flat M10 x 25 x 2 and 1X Nut Nyloc M10 x 1.5. Tighten to specified torque.

GO TO STEP 13

NOTE: You will need to install Clamp Chassis Small at an angle as the brackets are intentionally undersized to ensure secure attachment to chassis.



FOR VEHICLES WITH ARB SIDE STEPS:

10. Use an angle grinder to cut away the lower section of the Packer Chassis Small as shown to provide clearance to ARB Side Steps mount. Keep the top piece of Packer Chassis Small and discard bottom piece.

CAUTION: Wear adequate eye and hearing protection when completing this step.



FOR VEHICLES WITH ARB SIDE STEPS:

11. Place top section of Packer Chassis small over flange of Battery Tray as shown
HINT: Lift Battery Tray to help fit top section of Packer Chassis Small
12. Fit Clamp Chassis Small to Battery Tray using 1X Bolt M10 x 1.5 x 30, 2X Washer Flat M10 x 25 x 2 and 1X Nut Nyloc M10 x 1.5. Tighten to specified torque.

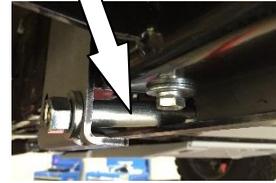
NOTE: You will need to install Clamp Chassis Small at an angle as the brackets are intentionally undersized to ensure secure attachment to chassis.



Tube Spacer

13. Complete fitment of Battery Tray to vehicle chassis by installing 3X Bolt M12 x 1.75 x 100, 3X Tube Spacer 64mm, 6X Washer Flat M12 and 3X Nut Nyloc M12 x 1.75 to Clamp Chassis Large and Small as shown. Tighten to specified torque.

The Tube Spacers sit between the brackets like below.



NOTE: Check to ensure adequate clearance is maintained between Battery Tray and floor. The top edge of the tray should be parallel with the chassis rail.

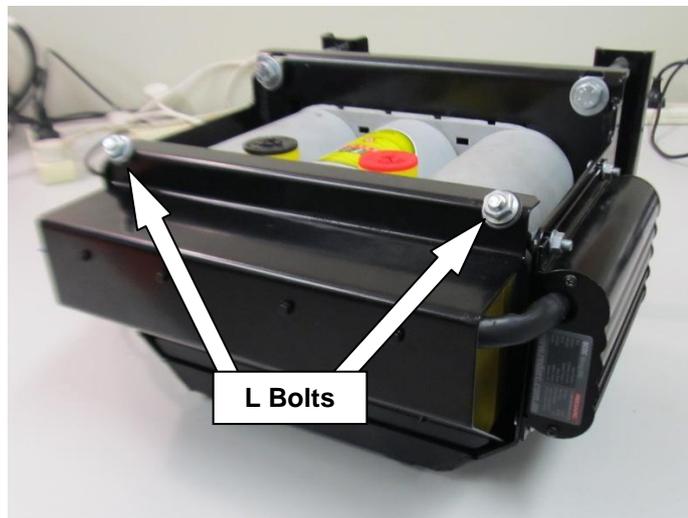


14. Fit the Battery (Optima D34 or equivalent) into Battery Tray. If a BCDC is being fitted, install the wiring as per detailed on pages 8-10.

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

15. Refit Vehicle Fuel Line retainer bracket with previously removed M6 bolt from Step 3.

WARNING: Ensure vehicle fuel and brake lines clear the Battery Tray and are refitted into their original positions along the chassis rail.

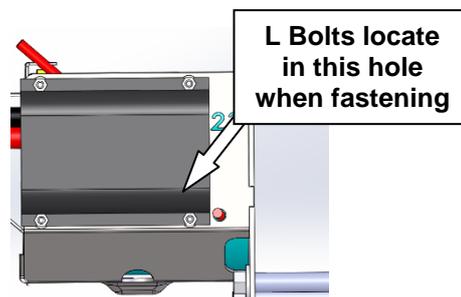


L Bolts

16. Install 2X Bolt "L" M8 x 210mm through Bracket Battery Clamp and fasten with 2X Nut Nyloc M8 x 1.5 and Washer Flat M8.

HINT: Use pliers to hold L bolts when fastening.

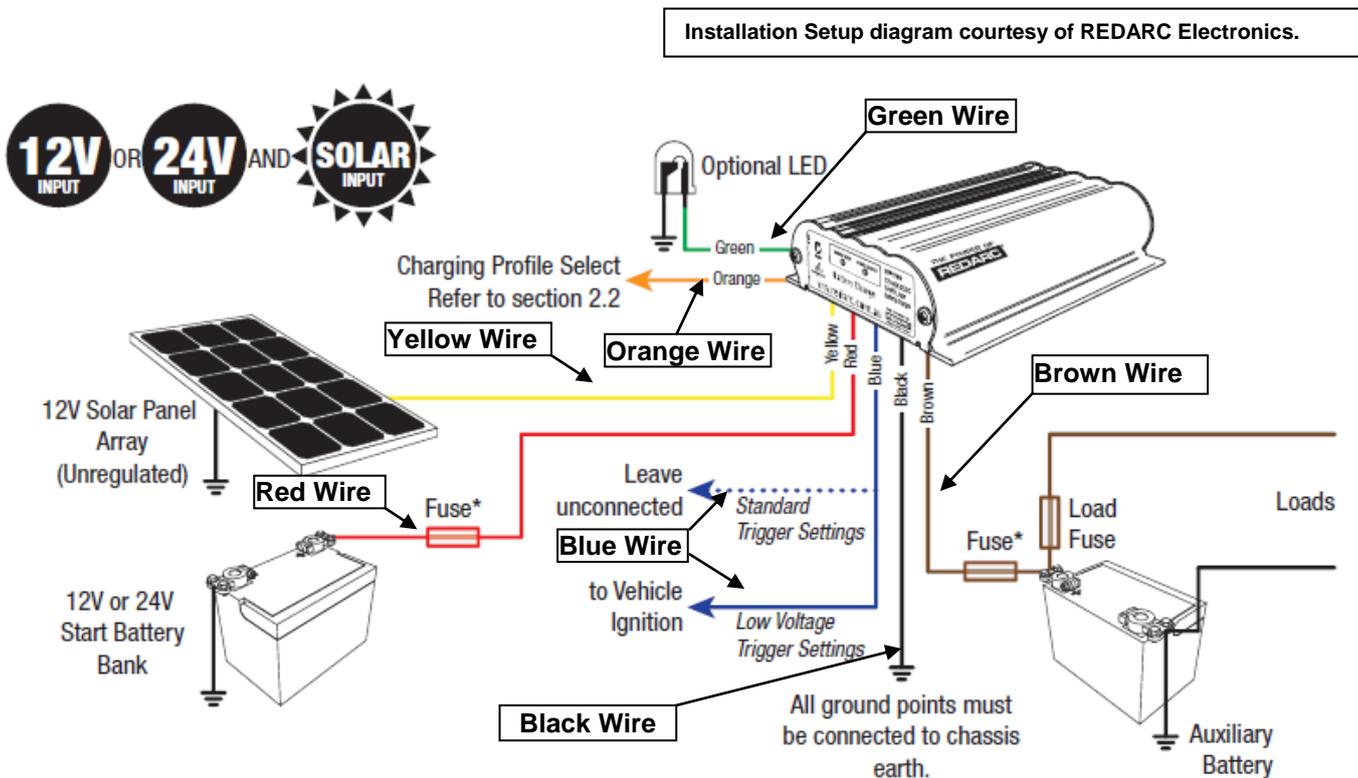
NOTE: Photo shown off the vehicle for clarity.



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 9.



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)	Minimum Wire Size (mm ²)	Recommended Wire Size (mm ²)
BCDC 1220/1220-IGN	1-3	3 mm ²	3.5 mm ² OR 6mm auto
	3-5	3 mm ²	5.7 mm ² OR AWG 8
	5-9	3 mm ²	10.2 mm ² OR AWG 8
BCDC 1225/1225-LV/1225D	1-5	6 mm ²	7.71 mm ² OR AWG 8
	5-9	6 mm ²	13.56 mm ² OR AWG 6
BCDC 1240/1240-LV/1240D	1-5	6 mm ²	13.56 mm ² OR AWG 6
	5-9	6 mm ²	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 for installation of Optima Battery. 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	Minimum Wire Size (mm ²)
BCDC 1220/1220-IGN	3 mm ² OR 5mm auto
BCDC 1225/1225-LV/1225D	7.71 mm ² OR AWG 8
BCDC 1240/1240-LV/1240D	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.