

**PROJECTA**

12 & 24 VOLT

# DIODE BATTERY ISOLATOR



## WARNING

- **PLEASE READ THESE INSTRUCTIONS COMPLETELY PRIOR TO STARTING THE INSTALLATION.**
- **BATTERIES PRODUCE EXPLOSIVE GASES -**  
Ensure No sparks or flames are present.
- **Wear Eye protection.**
- **Vehicles must be in "NEUTRAL" or "PARK", park brakes "ON"**
- **Follow all vehicle manufacturer's instructions.**
- **Beware of moving parts.**
- **Battery Isolators are designed for negative ground alternator systems with batteries of the same nominal voltage.**
- **Batteries of differing voltages cannot be used.**
- **For use with externally sensed alternators ONLY.**
- **Not compatible with alternators without excitation diodes, that require V+ on the "BAT" terminal for excitation.**

## FEATURES

- Provides independent charging of the main and auxiliary batteries on vehicles with external sensing, self-exciting alternators.
- Can be used with dissimilar types and size batteries.
- Reliable solid state.
- High efficiency heat sinks.
- Water proof & vibration resistant.
- Surface/firewall mounting.
- Suits 12/24 Volt systems.

## SPECIFICATIONS

<b>P/No.</b>	<b>DBD070</b>	<b>DBD120</b>
Voltage:	6 – 50 Volts DC	6 – 50 Volts DC
Maximum Alternator:	70 Amp	120 Amp
Vehicle Ground:	Negative	Negative
Voltage Drop:	0.5 Volt	0.5 Volt
Size:	101mm x 114mm x 83mm	165mm x 114mm x 83mm
Weight:	0.8kg	1.2kg

# INSTALLATION

For most vehicles, installation is quite simple as long as you carefully follow these instructions. For some vehicles, knowledge of alternator or charging systems and relevant wiring diagrams may be needed.

What you will also need:

- Fully charged auxiliary battery - Deep cycle recommended.
- Auxiliary battery cradle & battery clamp.
- Battery terminals, lugs / connectors.
- Battery cable/wire.
- Fuse or circuit breaker.

## RECOMMENDED WIRE SIZE & FUSE / CIRCUIT BREAKER SIZE

P/No.	Max Alternator	Up to 3m	3-6m	Fuse / Circuit Breaker
DBD070	70 Amp	8 B&S (10mm <sup>2</sup> )	6 B&S (16mm <sup>2</sup> )	60A
DBD120	120 Amp	6 B&S (16mm <sup>2</sup> )	4 B&S (25mm <sup>2</sup> )	100A

### 1. Charging System Test (Before installing the Isolator).

With the engine off, using a Multimeter or Voltmeter (DC 0-30V) test the vehicle's battery, this should be between 11.0 –13.0 Volts. Start the vehicle's engine and operate at a fast idle speed, keep all accessories, lights & heater fan "OFF". Test the vehicle's battery, this should now be between 13.6 - 15 Volts indicating that the alternator's regulator is functioning correctly.

Note this voltage \_\_\_\_\_Regulator setting Voltage.

With the engine still running turn "ON" the vehicle's head lights, heater fan or any other accessories, the battery voltage should remain higher than 13.6 Volts, indicating that the alternator is generating sufficient current. If your reading is below 13.6V consult your local auto electrician before proceeding with your installation.

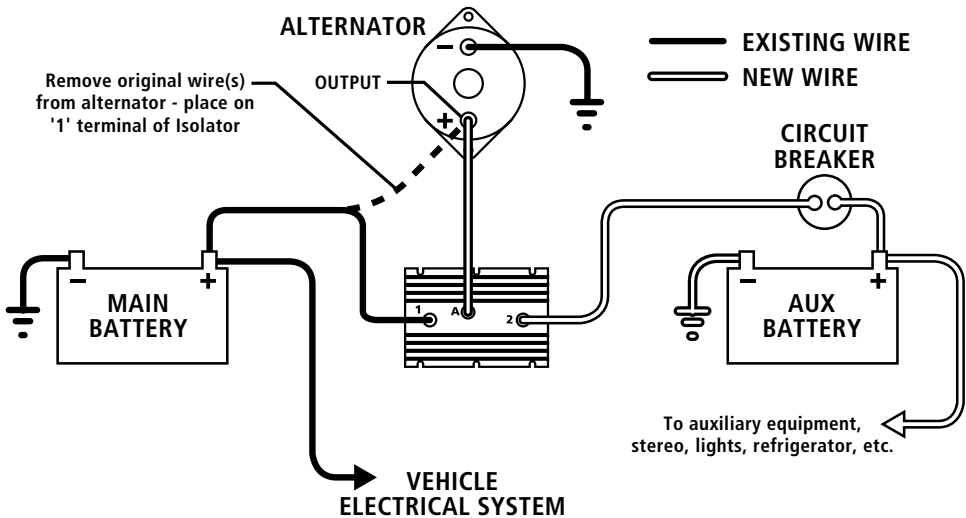
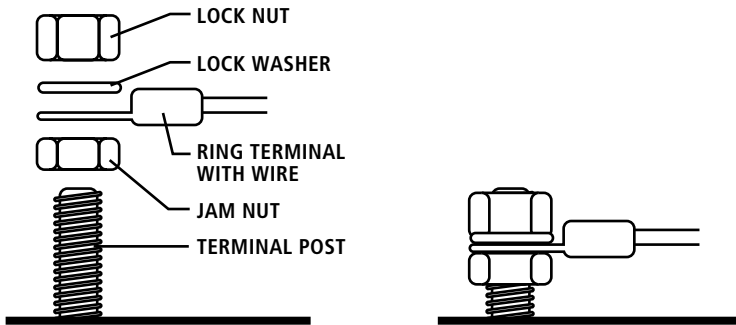
### 2. Disconnect the negative battery cable from the vehicle's cranking (main) battery.

Note: To prevent the loss of vehicle electronic memories, radio presets & security codes, it is recommended that an "Electrical System Memory Protector" be used.

### 3. Mount the auxiliary battery cradle and fit the auxiliary battery.

4. Mount the diode isolator in a convenient location as near to the alternator as possible. Keep the isolator as far as possible from the exhaust manifold or any other high temperature components. Allow for proper ventilation. Do not mount on the engine. Using the supplied template, drill 4 x 3mm (1/8") holes and mount the isolator with the screws provided.

5. Install bottom jam nuts to the isolator's studs as per diagram. Failure to install bottom jam nut will void warranty and result in poor electrical connections. When tightening the connections it is important to use two spanners, one on the jam nut and one on the lock nut.



6. Locate the "BAT" or "B+" terminal at the rear of the alternator. It is usually the largest connection. Disconnect ALL the wires (including the voltage regulator sensing wire if present) from the "BAT" terminal of the alternator. Reconnect these same wires to the "1" terminal of the battery isolator. Lengthen the wires, if necessary. Be sure you follow proper splicing and insulation techniques.

NOTE: DISCONNECTING OR CUTTING THESE WIRES IN A LOCATION OTHER THAN AT THE ALTERNATOR MAY RESULT IN IMPROPER FUNCTIONING OF THE CHARGING SYSTEM.

7. Connect one end of a new wire of the correct size (see Recommended Wire Size) to the battery "BAT" or "B+" terminal of the alternator and the other end to the "A" terminal of the isolator. This should now be the only wire connected to either of these terminals.

8. Mount a fuse or circuit breaker as near to the auxiliary battery as practical, and away from the engine or exhaust heat. Connect one end of a new wire of the proper size to the "2" terminal of the Isolator. Run the wire to the fuse / circuit breaker and connect it to the "AUX" terminal. Run another wire from the "BAT" terminal of the circuit breaker to the positive "+" terminal of the auxiliary battery.

9. Connect all of the auxiliary loads (phone, lights, stereo, refrigerator, etc.) to the positive battery terminal of the auxiliary battery, use appropriate circuit protection fuses.

10. Connect a new cable (of suitable size, commonly 2 B&S) from the vehicle chassis or engine block to the negative terminal of the auxiliary battery. Reconnect the negative ground cable removed in step 1 to the main cranking battery.

11. Charging System Test (After installing the Isolator)

With the engine off, using a Multimeter or Voltmeter (DC 0-30V) test the vehicle's cranking and auxiliary batteries, these should be between 11.0 –13.0 Volts. Test the voltage at the isolator:

"1" terminal of isolator should read vehicle's battery voltage.

"2" terminal of the isolator should read auxiliary battery's voltage.

Start the vehicle's engine and operate at a fast idle speed, keep all accessories, lights & heater fan "OFF", test the vehicle's cranking battery and auxiliary battery, they should both be at the Regulator setting voltage (+/- 0.2V) as noted in test 1 before the installation.

"A" post should read approximately 0.5V higher than the regulator's setting voltage (14.8 to 15.5 volts)

If the "A" terminal reads the same as the regulators setting 13.8 to 14.2 volts the regulator may be sensing the alternator output rather than the main battery. This situation needs to be corrected for proper charging of the batteries.

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