Installation and Troubleshooting Guide

CDI P/N 121-BR50-1.5

WARNING! This product is designed to be installed by a professional marine mechanic. CDI Electronics cannot be held liable for injury or damage resulting from improper installation, abuse, neglect or misuse of this product.

Installation

1. Disconnect the negative battery cable.
2. Disconnect all wires from the positive post of the ignition coil.
3. Connect the Violet/Red (Purple/Red) wire from the ballast resistor to the positive post of the ignition coil.
4. Mount the ballast resistor to a metal surface for heat sinking. Any area where the ballast resistor will be flat against the metal surface will do.
5. Remove the ring terminals from the Violet (Purple) wires you disconnected from the positive post of the ignition coil and then slide the shield over the wire(s). Crimp and solder the bullet terminal onto the Violet (Purple) wires you disconnected from the positive post of the ignition coil. NOTE: If the ignition coil had a resistor wire (Violet/Red or Purple/Red) connected to the positive side of the ignition coil, replace it from the harness head to the ballast resistor with a Violet (Purple) wire.
6. Connect the Violet (Purple) wire to the Violet (Purple) wire from the ballast resistor.
7. The following is a color code/function explanation:
   A) **Violet** - Switched 12V to power the ESA module and feeding power to the ballast resistor.
   B) **Grey** – Negative side of ignition coil to the points. Also for the ESA to monitor the engine RPM and cause the engine to stumble when shifting and provide a Tachometer signal pulse to the dash mounted RPM gauge.
   C) **Black –** Engine ground reference for the ESA module.
   D) **Blue –** Ground signal from the shift switch indicating a shift is occurring.
8. Reconnect the negative battery cable.

Troubleshooting

Engine Does Not Stumble When Shift Switch is Activated:

1. Disconnect the wires coming from the ballast resistor and using an ohmmeter, measure the resistance between the wires. You should read approximately 1.5 ohms, depending upon your meter.
2. Back probe the Blue wire (you may remove the wire from the connector if needed) and with the engine idling in neutral, short the Blue wire from the ESA module to engine ground. (Note: If the engine is idling too fast, the ESA will not engage). You should notice a slight drop in engine RPM. If the engine works correctly with this test, but does not work when the Blue wire is connected to the shift switch, check the shift switch and wires. If the ESA does not work with the Blue wire shorted to engine ground, recheck the engine RPM, ground wire connection and 12V power to the ESA.

Engine Stalls When Shift Switch is Activated:

1. Verify that the ignition coil is correct. It should read approximately 1.5 ohms between the positive and the negative terminals with all wires disconnected from the coil.
2. Disconnect the negative side of the ignition coil and connect a jumper wire to the terminal. Connect a voltmeter to the positive side of the ignition coil and turn the key-switch to the on position. You should read approximately 6 volts. A high reading indicates a problem either with the resistor wire (Purple/Yellow) or the ballast resistor.
3. If the engine still stalls, replace the ballast resistor with a higher ohm value ballast resistor.

Thank you for using CDI Electronics 8/19/2009