



# Installation and Troubleshooting Guide

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## CDI P/N: 114-4953-32

This Switch Box replaces these P/N's: 18495A22 and 18495A32.

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

**Disconnect the engine stop wire(s):** Connect a DC volt meter between the engine stop wires and engine ground. Turn the ignition switch on and off several times. If, at any time, you see DC voltage on the kill wires, there is a problem with the harness or ignition switch. Battery voltage on the kill circuit will destroy most ADI type switch boxes.

1. Disconnect the positive battery cable.
2. Check and clean all battery terminals and engine grounds.
3. Remove the wires from the switch box.
4. Unbolt and remove the old switch box, saving the original bolts and nuts.
5. Install the new switch box using the original bolts and nuts.
6. Connect the black ground wire to engine ground.
7. Connect the wires to the new switch box as they were on the old switch box (IF THE OLD SWITCH BOX DID NOT HAVE ANY WIRES CONNECTED TO THE RED TERMINAL, DO NOT CONNECT ANY WIRE TO THE RED TERMINAL ON THE NEW SWITCH BOX). The second black/yellow wire is for use with the rev limiter (if equipped).
8. Reconnect battery cable.

## TROUBLESHOOTING

### **No spark at spark plugs:**

1. Disconnect stop wire AT THE PACK.
2. Check for broken or bare wires on the unit, stator and trigger.
3. Check the DVA voltage of the stator, (Read from each red and blue wire to engine ground), with everything connected. The readings should be approximately 180 volts or more on the blue wires, and 30 volts or more on the red wires.
4. Disconnect the rectifier. If the engine now has spark, replace the rectifier.

### **Engine will not stop:**

1. Check the stop circuit in the pack by using a jumper wire connected to the black/yellow wire coming out of the pack and shorting it to ground. If this stops that bank from sparking, the stop circuit in the engine harness, boat harness or the Key-switch is bad. Use a remote starter that plugs into the engine harness and see if the engine now stops. If it does, disconnect the Black and Black/Yellow wires from the Key-switch and short them together. If the engine has no spark, replace the key-switch.

### **High speed miss:**

1. Disconnect the rectifier and retest. If miss is gone, the rectifier is usually at fault.
2. Check the DVA voltage on each of the red wires to engine ground of the stator at high speed. **NOTICE:** Use caution when doing this and do not exceed the rated voltage range of your meter. The readings should show a smooth climb in voltage. If there is a sudden or fast drop in voltage right before the miss becomes apparent, the stator is usually at fault. If there is no indication of the problem, it could be a mechanical problem.

### **Coils fire with spark plugs out but not in:**

1. Check for dragging starter or low battery causing slow cranking speed. DVA test stator and trigger.
2. Disconnect rectifier/regulator and retest. If the problem goes away, replace the rectifier/regulator.

### **No spark on one bank:**

1. Disconnect the Black/Yellow stop wires and retest. If you now have spark on both banks, you have a problem with one switch box and the stop circuit.
2. Check the DVA voltage of the stator, checking from each red and blue wire to engine ground. The readings should be approximately 180 volts or more on the blue wires and 30 or more on the red wires. If a DVA meter is not available, swap both sets of the stator wires between the packs. If the problem moves, replace the stator. If the problem stays on the same bank, swap physical location and all connections of the two packs. If the problem stays with one pack, replace the pack. NOTE: If the pack is bad, it is recommended that BOTH packs be replaced. If the packs lose ground, internally or externally, the packs usually have severe damage to the bias circuit and have to be replaced as a set.

### **Intermittent spark on one or more cylinders:**

Disconnect the white/black wire between the packs on a 6 cylinder and retest. If all cylinders now fire, replace both packs as there is a problem in the bias circuitry. On all others, check for low voltage from the stator and trigger. Disconnect the rectifier and retest. If the problem disappears, replace the rectifier.

### **All cylinders have spark but the engine will not crank and run:**

Disconnect the white/black wire and check the bias circuit (white/black terminals) resistance to engine ground. Readings should be approximately 15,000Ω for standard packs and 9600Ω for racing units. If the readings are correct on the packs, index the flywheel and check timing on all individual cylinders. If the timing varies, replace BOTH packs as a set.

### **Destroyed one or two cylinders:**

Using an analog DC Voltmeter, check the voltage on the white/black (Bias) terminal. With everything connected, run the engine at various Rpm's and watch the voltage reading. It should remain steady for a set RPM. Fluctuation in voltage indicates a problem in the bias circuit. If there is a problem, disconnect everything on the white/black terminal except the jumper from pack to pack. Retest, if the problem persists, replace BOTH switch boxes. If the problem went away, reconnect the items taken off of the white/black terminal one at a time, retest after every reconnection until you locate the source of the problem.

Thank you for using CDI Electronics.

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