# Installation and Troubleshooting Guide



## CDI P/N: 134-9021-3

This item replaces the following P/N's: 99021A 3, 99021A 5, 99021A 9, 99021A13, 9921A15 and 99021A16.

## INSTALLATION

1. Disconnect the positive battery cable.
2. Check and clean all battery terminals and engine grounds.
3. Remove the flywheel and stator.
4. Remove the trigger wires from the switch box.
5. Check for DC voltage on the kill (stop) wires (usually Black/Yellow) with the key-switch in the on and off position. At no time should you see over 2 volts DC on this wire as severe damage to the switchbox can occur.
6. Install the new trigger, matching wire colors to the wires or stud legend in the plastic base plate.
7. Re-install the stator and flywheel according to the service manual.
8. Reconnect battery cable.
9. Re-set and verify the ignition timing according to the service manual.

## TROUBLESHOOTING

### NO SPARK:

1. Disconnect stop wire AT THE PACK. If spark returns, there is a problem in the Kill circuit. Check the Stop/Kill switch and engine harness. Remember, some engines have a RPM limiter that will stop the engine from firing.
2. Disconnect the rectifier. If the engine has spark, replace the rectifier.
3. Check for broken or bare wires on the unit, stator and trigger.
4. Check the stator resistance and DVA output as given below:

**Black Stator using Flywheel with Bolted-in Magnets**

| WIRE | READ TO | OEM OHMS | CDI OHMS | DVA (Connected) | DVA (Disconnected) |
|---|---|---|---|---|---|
| Blue | Engine GND | 5800-7000 | 2200-2400 | 180-400 V | 180-400 V (*) |
| Red | Engine GND | 135-165 | 45-55 | 25-100 V | 25-100 V (*) |

**Black Stator using Flywheel with Glued-in Magnets**

| WIRE | READ TO | OEM OHMS | CDI OHMS | DVA (Connected) | DVA (Disconnected) |
|---|---|---|---|---|---|
| Blue | Engine GND | 3250-3650 | 500-600 | 180-400 V | 180-400 V (*) |
| Red | Engine GND | 75-90 | 28-32 | 25-100 V | 25-100 V (*) |

**Red Stator Kit**

| WIRE | READ TO | OEM OHMS | CDI OHMS | DVA (Connected) | DVA (Disconnected) |
|---|---|---|---|---|---|
| White/Green | Green/White | 500-700 | 500-600 | 180-400 V | 180-400 V (*) |
| Blue | Engine GND | OPEN | OPEN | 180-400 V | 180-400 V (*) |

(*) This reading can be used to determine if a stator or pack has a problem. For instance, if you have no spark on any cylinder and the stator's DVA reading is low – disconnect the stator wires and recheck the DVA output. If the reading stays low – the stator is bad. If the reading is now within spec – the pack is bad.

5. Check the trigger resistance and DVA output as given below:

| WIRE | READ TO | OHMS | DVA (Connected) | DVA (Disconnected) |
|---|---|---|---|---|
| Brown | White/Black (or Black) | 800-1400 | 4 V + | 4 V + (#) |
| White | White/Black (or Black) | 800-1400 | 4 V + | 4 V + (#) |
| Purple | White/Black (or Black) | 800-1400 | 4 V + | 4 V + (#) |
| Brown | Engine GND | Open | 1 V + | N/A |
| White | Engine GND | Open | 1 V + | N/A |
| Purple | Engine GND | Open | 1 V + | N/A |

(#) This reading can be used to determine if a pack has a problem in the triggering circuit. For instance, if you have no spark on one cylinder and the trigger's DVA reading for that cylinder is low – disconnect the trigger wires and recheck the DVA output. If the reading stays low – the trigger is bad. If the reading is now within spec – the pack is bad.

6. Check the center hub triggering magnet in the flywheel. A loose magnet can cause this problem.
7. Check the triggering and charge coil flywheel magnets for cracked, broken and loose magnets.

### ENGINE WILL NOT STOP RUNNING:

Check stop/kill 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 the engine, the stop/kill circuit in the harness or on the boat is bad, possibly the ignition switch.

**HIGH SPEED MISS (OVER 2700 RPM):**

1. Disconnect the rectifier and retest. If miss is gone, the rectifier is usually at fault.
2. Check DVA voltage on the red wire of the stator to engine ground 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 mechanical problem.

**COILS ONLY HAVE SPARK WHEN THE SPARK PLUGS ARE OUT:**

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 and/or regulator.

**INTERMITTANT SPARK ON ONE OR MORE CYLINDERS:**

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 ENGINE WILL NOT RUN:**

1. Disconnect the white/black wire and check the bias circuit (white/black terminal) resistance reference to engine ground. Readings should be approximately 13-15,000Ω. A shorted bias circuit can advance the ignition timing as high as 40 degrees above the set point.
2. If the bias readings are correct on the pack, index the flywheel and check timing on all individual cylinders. If the timing varies, replace the pack.
3. Index the flywheel and check the firing order. Remember there are at least 4 different firing orders for these engines. Connect the Green wires to the ignition coils to match the firing order.