



# Installation and Troubleshooting Guide



NOTE: This installation is to be completed by an Authorized Dealer or Professional Service Technician. For questions regarding installation or warranty, call CDI Tech Support at 866-423-4832. Do not return to the Dealer or Distributor where the part was purchased. Contact CDI Electronics Directly for Return Material Authorization.

## CDI P/N: 114-7778

This Switchbox replaces these P/N's: 332-5524, 332-7778A1, 332-7778A3, 332-7778A5, 332-7778A6, 332-7778A9 and 332-7778A12.

**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.**

### How to test the Engine Stop Circuit (Kill) for DC Voltage:

- DC voltage present on the kill circuit of the Switchbox due to a faulty key switch, boat harness, or engine harness will severely damage the switchbox's internal kill circuit. Connect a Digital Multi Meter to the Ignition Stop wire(s) AT THE SWITCHBOX(S) while disconnected from the Switchbox in reference to a known good engine ground. Turn the Ignition switch on and off several times. If, at any time, you see over 2 VDC on the kill wire(s), there is a problem with one or both harnesses and/or the Ignition switch. The Ignition Stop wire should not be connected back to the new Switchbox at any point until the problem is corrected **OR DAMAGE TO THE SWITCHBOX WILL OCCUR!**

## INSTALLATION

- Disconnect the negative battery cable.
- Check and clean all battery terminals and engine grounds.
- Unbolt and remove the old Switchbox, saving the original bolts and nuts.
- Install the new Switchbox using the original bolts and nuts.
- Connect the Black ground wire from the new Switchbox to a known good engine ground.
- Connect the Ignition coil ground wire to the extra stud in the new Switchbox if the engine originally had the coil ground wires connected to the side of the Switchbox.
- Reconnect battery cable.

## TROUBLESHOOTING

### Three Cylinder Engines 1976-1996

#### Three Cylinder Engines Using a Single Switch Box and Three Ignition Coils

#### NO SPARK ON ANY CYLINDER:

- Disconnect the Black/Yellow (or Orange) stop wire AT THE SWITCH BOX and retest. If the engine's Ignition now has spark, the stop circuit has a fault. Check the key switch, harness, and shift switch (if present).
- Disconnect the Yellow wires from the Stator to the Rectifier and retest. If the engine has spark, replace the Rectifier.
- Check the cranking RPM. A low cranking speed may not allow the system to spark properly. This can be caused by a weak battery, dragging starter, bad battery cables, or a mechanical problem inside the engine.
- Inspect and clean all engine and Ignition ground connections.
- Check the Stator resistance and DVA as given below:

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

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)	DVA (Disconnected)
Blue (Low Speed Coil)	Engine Gnd	5.8-7.0K $\Omega$	2.0-2.4K $\Omega$	180-400 V	180-400 V (*)
Red (High Speed Coil)	Engine Gnd	135-165 $\Omega$	45-55 $\Omega$	25-100 V	25-100 V (*)

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

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)	DVA (Disconnected)
Blue (Low Speed Coil)	Engine Gnd	3.25-3.65K $\Omega$	488-662 $\Omega$	180-400 V	180-400 V (*)
Red (High Speed Coil)	Engine Gnd	75-90 $\Omega$	28-32 $\Omega$	25-100 V	25-100 V (*)

#### Red Stator Kit

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)	DVA (Disconnected)
White/Green (Stator)	Green/White	500-700 $\Omega$	400-550 $\Omega$	180-400 V	180-400 V (*)
Blue (Adapter Module)	Engine Gnd	Open	Open	180-400 V	180-400 V (*)

(\*) This reading can be used to determine if a Stator or Switchbox 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 re-check the DVA. If the reading stays low, the Stator is bad. If the reading is now within specification, the Switchbox is bad.

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6. Check the Trigger and Stator coil flywheel magnets for cracked, broken, or loose magnets.

## NO SPARK OR INTERMITTENT SPARK ON ONE OR MORE CYLINDERS:

1. Check the Trigger resistance and DVA as given below:

Read from	Read to	Ohms	DVA (Connected)	DVA (Disconnected)
Brown (Trigger)	White/Black (or Black) (Trigger)	0.800-1.4K $\Omega$	4 V Minimum	4 V Minimum (*)
White (Trigger)	White/Black (or Black) (Trigger)	0.800-1.4K $\Omega$	4 V Minimum	4 V Minimum (*)
Purple (Trigger)	White/Black (or Black) (Trigger)	0.800-1.4K $\Omega$	4 V Minimum	4 V Minimum (*)
Brown (Trigger)	Engine Gnd	Open	1 V Minimum	-
White (Trigger)	Engine Gnd	Open	1 V Minimum	-
Purple (Trigger)	Engine Gnd	Open	1 V Minimum	-

(\*) This reading can be used to determine if a Switchbox has a problem in the Trigger 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 check the DVA again. If the reading stays low, the Trigger is more than likely bad. If the reading is now within specification, the Switchbox is more than likely bad.

2. Check the DVA on the Green wires from the Switchbox while connected to the Ignition coils. Check the reading on the Switchbox terminal AND on the Ignition coil terminal. You should have a reading of at least 150 DVA or more at both terminals. If the reading is low on one cylinder, disconnect the Green wire from the Ignition coil for that cylinder and reconnect it to a Pack Load Resistor. Retest. If the reading is now good, the Ignition coil is likely bad. A continued low reading symptom indicates a bad Switchbox.
3. If the cylinders are only misfiring above an idle, connect an inductive tachometer to all cylinders and try to isolate the problem cylinders.
4. Swap the wires on the Switchbox as shown below. If the miss or no fire problem moves to another cylinder, replace the Switchbox. If it stays on the same cylinder(s), retest the Trigger and check the Ignition coils ferrite core for cracks or broken cores (dismount the coils and carefully slide the coils out of the holder to expose the rubber boot covering the side opposite end of the coil from the sparkplug wire. If the dark grey ferrite core is damaged, replace the coil.
  1. Swap the Green Coil Wire with the Green/Red Coil Wire
  2. Swap the Green/White Coil Wire with the Green/Black Coil Wire
  3. Swap the Purple Trigger Wire with the Brown Trigger Wire
  4. Swap the White Trigger Wire with the White/Black (or solid Black) Trigger Wire
5. Check the Trigger and Stator coil flywheel magnets for cracked, broken, or loose magnets.

## SWITCH BOX OR TRIGGER REPEATEDLY BLOWS ON SAME CYLINDER:

1. Check the Trigger wires for shorts to engine ground as a shorted Trigger wire can destroy a SCR inside the Switchbox.
2. In contrast, a shorted SCR inside the Switchbox can destroy a Trigger coil. Check the Trigger resistance and DVA (see **NO SPARK OR INTERMITTENT SPARK ON ONE OR MORE CYLINDERS**).
3. Replace the Ignition coil on the cylinder dropping spark.

## ENGINE WILL NOT STOP (KILL):

1. Disconnect the Black/Yellow (or Orange) wire(s) at the Switchbox. Connect a jumper wire to the stop wire from the Switchbox and short it to engine ground. If this stops the Switchbox from sparking, the stop circuit has a fault. Check the key switch, harness, and shift switch (if present). If this does not stop the Switchbox from sparking, replace the Switchbox. Repeat the test as necessary for any additional Switchboxes.

## WILL NOT ACCELERATE BEYOND 3000-4000 RPM:

1. Disconnect the Yellow wires from the Stator to the Rectifier and retest. If the engine now has good spark, replace the Rectifier.
2. Connect a DVA meter between the Stator's Blue wire and engine ground. Run the engine up to the RPM where the problem is occurring. The DVA should increase with RPM. A sharp drop in DVA right before the problem occurs usually indicates a bad Stator. (Read from Blue wire out of the Adapter Module to engine ground if the engine has a Red stator kit installed).
3. Connect a DVA meter between the stator's Red wire and engine ground. The DVA should show a smooth climb in voltage and remain high through the RPM range. A reading lower than on the Blue wire reading indicates a bad stator.
4. Connect an inductive tachometer to each cylinder in turn and try to isolate the problem. A single cylinder dropping spark will likely be a bad Switchbox or Ignition coil. All cylinders not sparking properly usually indicates a bad Stator.
5. Perform a high-speed shutdown and read the spark plugs. Check for water. A crack in the block can cause a miss at high speed when the water pressure gets high, but a normal shutdown will mask the problem because the water will evaporate off the spark plug before you can identify it.
6. Check the Trigger and Stator coil flywheel magnets for cracked, broken, or loose magnets.

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## MISS AT ANY RPM:

1. Disconnect the Yellow wires from the Stator to the Rectifier and retest. If the miss clears up, replace the Rectifier.
2. In the water or on a Dynamometer, check the DVA on the Green wires from the Switchbox while connected to the Ignition coils. You should have a reading of at least 150 DVA or more, increasing with engine RPM until it reaches 300-400 DVA maximum. A sharp drop in DVA right before the miss becomes apparent on all cylinders will normally be caused by a bad Stator. A sharp drop in DVA on less than all cylinders will normally be the Switchbox or Trigger.
3. Connect an inductive tachometer to each cylinder in turn and try to isolate the problem. A high variance in RPM on one cylinder usually indicates a problem in the Switchbox or Ignition coil. Occasionally, a Trigger will cause this same problem. Check the Trigger DVA (see **NO SPARK OR INTERMITTENT SPARK ON ONE OR MORE CYLINDERS**).
4. Perform a high-speed shutdown and read the spark plugs. Check for water. A crack in the block can cause a miss at high speed when the water pressure gets high, but a normal shutdown will mask the problem because the water will evaporate off the spark plug before you can identify it.
5. Check the Trigger and Stator coil flywheel magnets for cracked, broken, or loose magnets.
6. Rotate the Stator one bolt hole in either direction and re-test. If the miss is gone, leave the Stator as is. If the miss is worse, rotate the Stator back where it was.

## WILL NOT IDLE BELOW 1500 RPM:

1. Check the Bias resistance from the Black/White **terminal** (wire disconnected) on the Switchbox to engine ground. Reading should be 13-15K  $\Omega$ .
2. Check the Stator and Trigger Resistance and DVA (see **NO FIRE ON ANY CYLINDER**).
3. Check for air leaks.

## Six Cylinder Engines 1978-1999

### Inline 6 and V6 Carbureted Engines Using Dual Switch Boxes and Six Ignition Coils

**NOTE:** Whenever replacing one Switchbox, consider replacing the other Switchbox as well. Replacing just one Switchbox can result in damage to the engine if the remaining Switchbox on the engine has a problem in the Bias circuit. A rule of thumb is if one cylinder does not fire due to the Switchbox, replace the one faulty Switchbox. If two or more cylinders are not firing, replace both Switchboxes.

## 9 and 16 Amp Battery Charging Systems

### NO FIRE ON ANY CYLINDER:

1. Disconnect the Black/Yellow kill wire FROM BOTH SWITCHBOXES.
2. Check for broken or bare wires on the Switchbox, Stator, and Trigger.
3. Disconnect the Rectifier. If the engine has fire, replace the Rectifier.
4. Check the resistance and DVA of the Stator and Trigger as follows:

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)
Blue (Low speed Coil)	Engine Gnd	5-7K $\Omega$	2-2.4K $\Omega$	180 V Minimum
Blue/White (Low speed Coil)	Engine Gnd	5-7K $\Omega$	2-2.4K $\Omega$	180 V Minimum
Red (High speed Coil)	Engine Gnd	90-200 $\Omega$	27-55 $\Omega$	20 V Minimum
Red/White (High speed Coil)	Engine Gnd	90-200 $\Omega$	27-55 $\Omega$	20 V Minimum
Brown wire (#1 Trigger) (a)	White wire (#4 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
White wire (#3 Trigger) (a)	Purple wire (#6 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
Purple wire (#5 Trigger) (a)	Brown wire (#2 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
Brown wire (#1 Trigger) (a)	Engine Gnd	Open	Open	1 V Minimum
White wire (#3 Trigger) (a)	Engine Gnd	Open	Open	1 V Minimum
Purple wire (#5 Trigger) (a)	Engine Gnd	Open	Open	1 V Minimum
Brown wire (#2 Trigger) (b)	Engine Gnd	Open	Open	1 V Minimum
White wire (#4 Trigger) (b)	Engine Gnd	Open	Open	1 V Minimum
Purple wire (#6 Trigger) (b)	Engine Gnd	Open	Open	1 V Minimum

**(a) Black band – Inside Switchbox (Engines using Studded Switchboxes)**

**(b) Yellow band – Outside Switchbox (Engines using Studded Switchboxes)**

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## NO SPARK ON ONE BANK (ODD OR EVEN CYLINDERS ON INLINE 6 CYLINDER):

1. Check the resistance and DVA of the Stator as follows:

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)
Blue (Low speed Coil)	Engine Gnd	5-7K $\Omega$	2-2.4K $\Omega$	180 V Minimum
Blue/White (Low speed Coil)	Engine Gnd	5-7K $\Omega$	2-2.4K $\Omega$	180 V Minimum
Red (High speed Coil)	Engine Gnd	90-200 $\Omega$	27-55 $\Omega$	20 V Minimum
Red/White (High speed Coil)	Engine Gnd	90-200 $\Omega$	27-55 $\Omega$	20 V Minimum

2. Swap both sets of the Stator wires between the Switchboxes. If the problem moves, replace the Stator.
3. If the problem stays on the same bank, swap physical location and all connections of the two Switchboxes. If the problem stays with one Switchbox, replace the Switchbox. If the Switchbox is bad, it is recommended that BOTH Switchboxes be replaced AS A SET.

## INTERMITTENT SPARK ON ONE OR MORE CYLINDERS:

1. Disconnect the White/Black wire between the Switchboxes on a 6 cylinder and retest. If all cylinders now fire, replace both Switchboxes as there is a problem in the Bias circuitry.
2. On all others, check for low DVA from the Stator and Trigger. Disconnect the Rectifier and retest. If the problem disappears, replace the Rectifier.
3. Check the Trigger as follows:

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)
Brown wire (#1 Trigger) (a)	White wire (#4 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
White wire (#3 Trigger) (a)	Purple wire (#6 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
Purple wire (#5 Trigger) (a)	Brown wire (#2 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
Brown wire (#1 Trigger) (a)	Engine Gnd	Open		1 V Minimum
White wire (#3 Trigger) (a)	Engine Gnd	Open		1 V Minimum
Purple wire (#5 Trigger) (a)	Engine Gnd	Open		1 V Minimum
Brown wire (#2 Trigger) (b)	Engine Gnd	Open		1 V Minimum
White wire (#4 Trigger) (b)	Engine Gnd	Open		1 V Minimum
Purple wire (#6 Trigger) (b)	Engine Gnd	Open		1 V Minimum

## ENGINE WILL NOT STOP (KILL):

1. Disconnect the Black/Yellow (or Orange) wire(s) at the Switchbox. Connect a jumper wire to the stop wire from the Switchbox and short it to engine ground. If this stops the Switchbox from sparking, the stop circuit has a fault. Check the key switch, harness, and shift switch (if present). If this does not stop the Switchbox from sparking, replace the Switchbox. Repeat the test as necessary for any additional Switchboxes.

## HIGH SPEED MISS OR WEAK HOLE SHOT:

1. Disconnect the Rectifier and retest. If the miss is gone, the Rectifier is usually at fault. Remember, a problem Rectifier can damage a Stator.
2. Perform a DVA test on the Blue and Blue/White wires in reference to engine ground and do a running test. The DVA should show a smooth climb and stabilize, gradually falling off at higher RPM's (above 3,000). If you see a sudden drop in DVA right before the miss becomes apparent, the Stator is likely at fault.
3. Check DVA on the Red wires reference to engine ground of the Stator at high speed. 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.

**NOTE: Use caution when doing this and do not exceed the rated voltage range of your meter.**

4. Rotate the Stator one bolt hole in either direction and re-test. If the miss is gone, leave the Stator as is. If the miss is worse, rotate the Stator back where it was.
5. Using extreme caution, on the water or connected to a dyno, take the engine to the RPM where the problem is occurring and hold it for a few seconds, then perform a high speed shutdown at that RPM. Check the sparkplugs for differences in color or the presence of water droplets on the sparkplug (an indicator of a possible crack in the engine block or a blown head gasket).

## NO SPARK WITH THE SPARKPLUGS INSTALLED:

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.

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## SPARK ON ALL CYLINDERS BUT ENGINE WILL NOT RUN:

1. Disconnect the White/Black wire and check the Bias circuit (White/Black terminals) resistance to engine ground. Readings should be between 13-15K  $\Omega$  for standard Switchboxes. If the readings are correct on the Switchboxes, index the Flywheel and check timing on all individual cylinders. If the timing varies, replace BOTH Switchboxes.

## DESTROYED ONE OR TWO CYLINDERS/PISTONS:

1. Check the Bias resistance from the Black/White **terminal** (wire disconnected) on the Switchbox to engine ground, you should read 13-15K  $\Omega$ . Readings above 15K  $\Omega$  or less than 13K  $\Omega$  indicate a defective Switchbox. Due to the design of the Switchboxes, a Switchbox with a defective bias circuit can damage a mating Switchbox (domino effect). **REPLACE BOTH SWITCHBOXES AS A SET!!!!**
2. Use an ANALOG DVA meter to check the voltage on the White/Black (Bias) terminal. With everything connected, run the engine at various Rpm's and monitor the DVA. 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 the inside Switchbox to the outside Switchbox. Retest, if the problem persists, replace **BOTH** Switchboxes. If the problem went away, reconnect the items taken off of the White/Black terminal one at a time. Re-test after every reconnection until you locate the source of the problem.

## 40 Amp Battery Charging Systems 1989-1999

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)
Blue (Low speed Coil)	Engine Gnd	3.2-4.2 $\Omega$	2.1-2.4K $\Omega$	180-400 V
Blue/White (Low speed Coil)	Engine Gnd	3.2-4.2 $\Omega$	2.1-2.4K $\Omega$	180-400 V
Red (High speed Coil)	Engine Gnd	90-140 $\Omega$	28-32 $\Omega$	25-100 V
Red/White (High speed Coil)	Engine Gnd	90-140 $\Omega$	28-32 $\Omega$	25-100 V

3. Check the DVA on the Green wires from the Switchbox while connected to the Ignition coils. Check the reading on the Switchbox terminal AND on the Ignition coil terminal. You should have a reading of at least 150 DVA or more at both terminals on all cylinders. If the reading is low on one bank and the Stator voltage is good, the Switchbox is usually bad.
4. Check the cranking RPM. A cranking speed less than 250 RPM will not allow the system to spark properly.

## NO SPARK OR INTERMITTENT SPARK ON ONE OR MORE CYLINDERS:

1. Check the Trigger resistance and DVA as shown below:

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)
Brown wire (#1 Trigger) (a)	White wire (#4 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
White wire (#3 Trigger) (a)	Purple wire (#6 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
Purple wire (#5 Trigger) (a)	Brown wire (#2 Trigger) (b)	0.8-1.4K $\Omega$	0.8-1.4K $\Omega$	4 V Minimum
Brown wire (#1 Trigger) (a)	Engine Gnd	Open		1 V Minimum
White wire (#3 Trigger) (a)	Engine Gnd	Open		1 V Minimum
Purple wire (#5 Trigger) (a)	Engine Gnd	Open		1 V Minimum
Brown wire (#2 Trigger) (b)	Engine Gnd	Open		1 V Minimum
White wire (#4 Trigger) (b)	Engine Gnd	Open		1 V Minimum
Purple wire (#6 Trigger) (b)	Engine Gnd	Open		1 V Minimum

2. Check the DVA on the Green wires from the Switchbox while connected to the Ignition coils. Check the reading on the Switchbox terminal AND on the Ignition coil terminal. You should have a reading of at least 150 DVA or more at both terminals. If the reading is low on one cylinder, disconnect the Green wire from the Ignition coil for that cylinder and reconnect it to a Pack Load Resistor. Retest. If the reading is now good, the Ignition coil is likely bad. A continued low reading symptom indicates a bad Switchbox.
3. Connect a spark gap tester and verify which cylinders are misfiring. If the cylinders are only misfiring above an idle, connect an inductive tachometer to all cylinders and try to isolate the problem cylinders.
4. Check the Trigger and Charge coil flywheel magnets for cracked, broken, or loose magnets.

## SWITCH BOX OR TRIGGER REPEATEDLY BLOWS ON SAME CYLINDER:

1. Check the Trigger wires for shorts to engine ground as a shorted Trigger wire can destroy a SCR inside the Switchbox.
2. In contrast, a shorted SCR inside the Switchbox can destroy a Trigger coil. Check the Trigger resistance and DVA (see **NO SPARK OR INTERMITTENT SPARK ON ONE OR MORE CYLINDERS**).
3. Replace the Ignition coil on the cylinder dropping spark.

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## ENGINE WILL NOT STOP (KILL):

1. Disconnect the Black/Yellow (or Orange) wire(s) at the Switchbox. Connect a jumper wire to the stop wire from the Switchbox and short it to engine ground. If this stops the Switchbox from sparking, the stop circuit has a fault. Check the key switch, harness, and shift switch. If this does not stop the Switchbox from sparking, replace the Switchbox. Repeat the test as necessary for any additional Switchboxes.

## WILL NOT ACCELERATE BEYOND 3000-4000 RPM:

1. Disconnect the Yellow wires from the Stator to the Rectifier and retest. If the engine now has good spark, replace the Rectifier.
2. Disconnect the Idle Stabilizer (advance module) and reset the timing between 23-25 degrees Wide Open Throttle. If the problem clears, discard the Idle Stabilizer as it is not needed.
3. Connect a DVA meter between the Stator's Blue wire and engine ground. Run the engine up to the RPM where the problem is occurring. The DVA should increase with RPM. A sharp drop in DVA right before the problem occurs usually indicates a bad Stator. (Repeat the test from Blue/White to engine ground and compare the readings).
4. Connect a DVA meter between the Stator's Red wire and engine ground. The DVA should show a smooth climb in voltage and remain high through the RPM range. A reading lower than on the Blue wire reading indicates a bad Stator. (Repeat the test from Red/White to engine ground and compare the readings).
5. If all cylinders become intermittent, replace both Switchboxes.
6. Connect an inductive tachometer to each cylinder in turn and try to isolate the problem. If two or more cylinders on the same bank are dropping out, the problem is likely going to be either the Stator or the Switchbox. A single cylinder dropping spark will likely be a bad Switchbox or Ignition coil. All cylinders not sparking properly usually indicates a bad Stator.
7. Perform a high-speed shutdown and read the spark plugs. Check for water. A crack in the block can cause a miss at high speed when the water pressure gets high, but a normal shutdown will mask the problem.
8. Check the Trigger and Stator coil flywheel magnets for cracked, broken, or loose magnets.

## MISS AT ANY RPM:

1. Disconnect the Yellow wires from the Stator to the Rectifier and retest. If the miss clears, replace the rectifier.
2. Disconnect the idle stabilizer (advance module) and reset the timing between 23-25 degrees Wide Open Throttle. If the problem clears, discard the idle stabilizer as it is not needed.
3. In the water or on a Dynameters, check the DVA on the Green wires from the Switchbox while connected to the ignition coils. You should have a reading of at least 150 DVA or more, increasing with engine RPM until it reaches 300-400 DVA maximum. A sharp drop in DVA right before the miss becomes apparent on all cylinders will normally be caused by a bad Stator. A sharp drop in DVA on less than all cylinders will normally be the Switchbox or Trigger.
4. Connect an inductive tachometer to each cylinder in turn and try to isolate the problem. A high variance in RPM on one cylinder usually indicates a problem in the Switchbox or Ignition coil. Occasionally a Trigger will cause this same problem. Check the Trigger DVA (see **NO SPARK OR INTERMITTENT SPARK ON ONE OR MORE CYLINDERS**).
5. Perform a high-speed shutdown and read the spark plugs. Check for water. A crack in the block can cause a miss at high speed when the water pressure gets high, but a normal shutdown will mask the problem.
6. Check the Trigger and Stator coil flywheel magnets for cracked, broken, or loose magnets.
7. Rotate the Stator one bolt hole in either direction and re-test. If the miss is gone, leave the Stator as is. If the miss is worse, rotate the Stator back where it was.