



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: 174-9610K 2 Stator 6 Cylinder

This stator replaces the following 6 cylinder 40 Amp stators:
398-9610A 3, A 5, A 6, A 9, A14, A17, A19, A22 and A24.

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.

If more than one battery charge post winding is burned, please replace the rectifier/regulators before installing the stator.

It is recommended that dielectric grease (i.e. CDI P/N: 991-9705) be used in the bullet nose connectors.

INSTALLATION

To replace the 398-9610A 3, A 5, A 6, A 9 and A14 stators with two yellow leads:

1. Disconnect the stator wires from the switch box, engine ground and the rectifier/regulator.
2. Remove the flywheel.
3. Mark the position of the mounting screws in relation to where the stator wires come out of the old stator.
4. Remove the old stator.
5. Orient and install the new stator (using a good thread-locker applied to the bolts) in the same position as the old stator on the engine and install the flywheel, following the service manual instructions.
6. Install the jumper leads included with the new stator to the stator leads, matching the color sets (Solid yellow and Yellow/Black Stripe).
7. Connect the Yellow stator leads to the rectifier/regulator.
8. Connect the stator black wire to engine ground.
9. Connect the Red and Blue wires to one switch box and the Red/White and Blue/White wires to the other switch box. It does not matter which set of wires goes to which switch box.

To replace the 398-9610A17, A19, A22 and A24 stators with four yellow leads:

1. Disconnect the stator wires from the switch box, engine ground and the rectifier/regulator.
2. Remove the flywheel.
3. Mark the position of the mounting screws in relation to where the stator wires come out of the old stator.
4. Remove the old stator.
5. Orient and install the new stator (using a good thread-locker applied to the bolts) in the same position as the old stator on the engine and install the flywheel, following the service manual instructions.
6. Connect the stator leads to the rectifier/regulators, matching the short yellow stator wires to one regulator/rectifier and the long yellow stator wires to the other regulator/rectifier.
7. Connect the stator black wire to engine ground.
8. Connect the Red and Blue wires to one switch box and the Red/White and Blue/White wires to the other switch box. It does not matter which set of wires goes to which switch box.

TROUBLESHOOTING

NOT CHARGING THE BATTERY:

1. Check resistance between the yellow wires in each set, you should read approximately 0.3 ohms between the wires in each set.
2. Check the resistance from each yellow wire to engine ground, you should not read any resistance (NOTE: If your fingers are touching both test leads, you will show a high resistance – your body's resistance). Resistance to ground indicates a bad stator.

NO FIRE ON ANY CYLINDER:

1. Inspect the flywheel outer and trigger magnets to see if they are loose or broken.
2. Check stator resistance and DVA output

From	To	Ohms	DVA Connected	DVA Disconnected
Blue	Eng Ground	2100-2500	140 or more	140 or more
Blue/White	Eng Ground	2100-2500	140 or more	140 or more
Red	Eng Ground	28-32	20 or more	20 or more
Red/White	Eng Ground	28-32	20 or more	20 or more

3. Disconnect the rectifier/regulator and retest. If the fire returns, replace the rectifier/regulator.
4. Disconnect red and red/white wires and retest. If DVA test above was OK, the switch box is usually bad.

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

1. Check the resistance and DVA voltage of the stator as follows:

From	To	Ohms	DVA Connected	DVA Disconnected
Blue	Eng Ground	2100-2500*	140 or more	140 or more
Blue/White	Eng Ground	2100-2500*	140 or more	140 or more
Red	Eng Ground	28-32*	20 or more	20 or more
Red/White	Eng Ground	28-32*	20 or more	20 or more

* Verify the resistance readings are in the same ballpark. i.e. If one coil reads 30 ohms and the other reads 50, the stator is likely defective.

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2. Swap both sets of the stator wires between the packs. 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 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 AS A SET.

INTERMITTANT SPARK ON ONE OR MORE CYLINDERS:

1. 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.
2. On all others, check for low voltage from the stator and trigger. Disconnect the rectifier and retest. If the problem disappears, replace the rectifier.
3. Check the trigger as follows:

BLACK SLEEVE TO	YELLOW SLEEVE TO		Resistance	DVA Reading
Brown wire	White wire		800-1400	4V or more Connected
White wire	Purple wire		800-1400	4V or more Connected
Purple wire	Brown wire		800-1400	4V or more Connected
Brown wire	-	Engine Ground	Open	1 V or more Connected
White wire	-	Engine Ground	Open	1 V or more Connected
Purple wire	-	Engine Ground	Open	1 V or more Connected
-	Brown wire	Engine Ground	Open	1 V or more Connected
-	White wire	Engine Ground	Open	1 V or more Connected
-	Purple wire	Engine Ground	Open	1 V or more Connected

ENGINE WILL NOT STOP RUNNING:

Connect a jumper wire to the Black/Yellow terminal or wire coming out of the switchbox and short it to ground. If this kills the engine, the kill circuit in the harness or on the boat is bad, possibly the ignition switch.

HIGH SPEED MISS OR WEAK HOLE SHOT:

1. Disconnect the rectifier and retest. If miss is gone, the rectifier is usually at fault. Remember a problem rectifier can damage a stator.
2. DVA check the Blue and Blue/White wires to engine ground and do a running test. The voltage should show a smooth climb and stabilize, gradually falling off at higher RPM's (above 3000). If you see a sudden drop in voltage right before the miss becomes apparent, the stator is likely at fault.
3. Check DVA voltage on the Red wires reference 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 mechanical problem.
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).

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.

SPARK ON ALL CYLINDERS BUT ENGINE WILL NOT 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. 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.

DESTROYED ONE OR TWO CYLINDERS/PISTONS:

1. Check Bias resistance, from the White/Black stud to engine ground, you should read 13,000-15,000 ohms. Readings above 15,000 ohms or less than 13,000 ohms indicate a defective switchbox. **REPLACE BOTH SWITCHBOXES AS A SET!!!!**
2. Use an ANALOG DC Voltmeter to 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 the inside switchbox to the outside switchbox. 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.

OVER-CHARGING THE BATTERY:

1. Verify the cranking battery is not an AGM, Maintenance free or Gel Cell battery. It needs to be a traditional flooded cell battery.
2. Disconnect one of the regulators at a time and see if one or both are causing the problem. Replace as needed.



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3. Swap the battery with a known good one. If no change, check the resistance of the Yellow wires to engine ground. It should read open. A short on one wire can cause over-charging.