



CDI P/N: 174-9610A18

# Installation and Troubleshooting Guide

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This conversion kit stator replaces the following Regulator/Rectifiers and 40 Amp Stators: 18736A 3, 18736A 8, 18736A14, 18736A15, 18736A20, 18736A21, 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.

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

## To Replace the 398-9610A3, A5, A6, A9 and A14 stators and 18736 Regulator/Rectifier:

1. Disconnect the battery cables.
2. Disconnect the stator wires from the switch box, engine ground and the rectifier/regulator.
3. Remove the flywheel.
4. Mark the position of the stator mounting screws in relation to where the stator wires come out of the old stator.
5. Disconnect the old regulator/rectifier.
6. Disconnect the green wires from the ignition coils and the high tension leads from the spark plugs.
7. Remove the coil plate covering the regulator/rectifier.
8. Disconnect the stator leads from the switch boxes.
9. Remove the old stator and regulator/rectifier.
10. 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.
11. Clean the gasket area where the o-ring sealed the old regulator/rectifier.
12. Using the new spacers and bolts, mount the new regulator/rectifier plate assembly with the coil plate. (Wires up).
13. Reconnect the wires to the ignition coils.
14. Connect the new regulator/rectifiers to the stator, tachometer lead, and terminal strip. *The small red wire and the purple wire are not used in this application.* Match the short yellow stator wires to one regulator/rectifier and the long yellow stator wires to the other regulator/rectifier.  
SERVICE NOTE: It is recommended that dielectric grease (i.e. CDI P/N 991-9705) be used in the bullet nose connectors to help prevent corrosion.
15. Install the flywheel on the engine, following the service manual instructions.
16. Connect the red leads from the rectifier/regulator to the positive battery terminal of the starter solenoid and the gray tachometer lead from the harness to one of the regulator/rectifiers. *INSTALLATION NOTE: These regulator/rectifiers will cause a small spark when you reconnect the battery and will draw a very small amount of current from the battery (Less than 0.001 amp).*
17. Connect the red, red/white, blue and blue/white wires to the switch boxes.
18. Connect the Black wire to engine ground.
19. Reconnect the battery cables.

## Troubleshooting the stator

### Will not charge 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. Resistance to ground indicates a bad stator.

### No fire at all:

1. Inspect the flywheel outer and trigger magnets to see if they are loose or broken.
2. Check resistance from the blue and blue/white stator wires to engine ground. OEM reads from 3350 - 4050 ohms (CDI stators will read approximately 2100 - 2400 ohms. Check resistance from red and red/white to engine ground. It should be 90 - 140 on OEM stators, and 28-35 ohms on CDI's. DVA (peak voltage) test stator output. It should be 180v or more on the blue low speed coils and 25v or more on the red high-speed coils.
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.

*Continued on the next page.....*

### No fire on one bank:

1. DVA test stator (see #1 under no fire at all above).



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2. Swap the blue with the blue/white stator leads, and the red with the red/white stator leads to see if the no fire problem changes. If it does the stator is bad. If the problem remains on the same cylinder(s), the switch box or trigger is probably at fault.

## High speed miss or weak hole shot:

1. Connect DVA meter to the blue wire 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. Repeat the test for the blue/white, red and red/white wires. There should be a smooth climb in voltage with no drop at all up to wide open throttle.
2. Connect DVA meter to the red and red/white wires. The voltage should show a smooth climb throughout the RPM range, a sudden drop or decrease in voltage indicates a problem usually found in the stator, although a rectifier can cause the same symptom.
3. Disconnect the rectifier/regulators and retest. If the problem disappears, replace the rectifier/regulators and retest.

## Regulator/Rectifier Troubleshooting

### No Tachometer

1. At 800-1000 RPM, check output on the gray wire, reading should be at least 8 volts with a DVA meter. A low reading usually indicates a bad regulator if the system is charging the battery.
2. Check the resistance between the gray wire and engine ground. You should read above 100K (100,000) ohms. Gray to red, and gray to the yellow wires should be a high reading, usually in the M range.

### Output Test

1. Install an ammeter capable of reading at least 40 amps in-line on the red wire connected to the starter solenoid.
2. Connect a load bank to the battery.
3. In the water or on a Dynometer, start the engine and bring the RPM up to approximately 4500 in gear.
4. Turn on the load bank switches to increase the battery load to equal 40 Amps.
5. Check the ammeter.
6. If the amperage is low,
  - A) Check the load bank for battery draw.
  - B) Reconnect the ammeter between the red wires from one of the regulator/rectifiers and the terminal strip. Retest. You should show about 20 Amps from each regulator/rectifier.
  - C) If the output is still low, check and clean all connections between the battery and the regulator/rectifier plate.
7. If the amperage is correct, but the battery voltage remains low, replace the battery.

### Bench Test

#### Diode plate check:

Test the forward diodes between the two yellow wires and the red wire. You should get a reading of about 45K (45,000) on one and a high reading on the other. Check the resistance from each of the yellow wires to case ground, you should get a reading of about 56K (56,000) on one and a high reading on the other. The red wire should read about 14K (14,000) ohms to ground.

#### Tachometer Circuit:

Check the resistance between the gray wire and engine ground. You should read above 100K (100,000) ohms. Gray to red, and gray to the yellow wires should be a high reading, usually in the M range.

Thank you for using CDI Electronics

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