

# CDI ELECTRONICS INSTALLATION/TROUBLESHOOTING GUIDE

**CDI P/N: R586292**

**This unit replaces the following P/N's: 586015, 586075 and 586292**

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

**SERVICE NOTE:** *This unit requires special spark plug wires and spark plugs. Please use the Factory Recommended Champion QL78YC (0.30 Gap) Spark Plugs and the Gray spark plug wires. DO NOT OPERATE ENGINE WITH PLASTIC ENCODER COVER OFF OF ENGINE.*

## Installation

1. Disconnect the battery cables.
2. Remove timing wheel cover, power pack cover and regulator/rectifier cover (Between the timing cover and the power pack).
3. Disconnect the stator wire connector from the power pack.
4. Disconnect the harness wire connector from the power pack.
5. Disconnect the timing wire connector from the sensor.
6. Disconnect the spark plug wires from the spark plugs.
7. Unbolt and remove the ignition coils and old power pack.
8. Disconnect the ignition coils from the old power pack and reconnect them to the new power pack.
9. Install the new power pack and ignition coils. (Take care not to over-torque the mounting bolts, OEM specification calls for 50-95 in lbs of torque). Make sure the RF Noise Shield is between the ignition coils and the power pack.
10. Connect the stator and harness connectors to the power pack. Use a small amount of dielectric silicone grease on the connector seal – Do not put any inside the sockets.
11. Connect the harness wire connector to the power pack.
12. Connect the timing wire connector to the sensor.
13. Connect all spark plug wires to a spark gap tester.
14. Disconnect the Port temperature switch's Tan and White/Black wires.
15. Connect a jumper wire to the Tan wire and short it to engine ground.
16. Connect a timing light to the # 1 spark plug wire.
17. Connect the battery cables.
18. Disconnect the engine harness from the boat harness.
19. Using a piston stop tool or dial indicator, verify the TDC timing pointer's accuracy. Reset as needed to correct.
20. Use a remote starter (511-6996 is recommended) and verify the ignition timing as follows:
21. 

ENGINE	IDLE Timing	WOT Timing
90/115/150/175	4-6 Deg ATDC	20 Deg BTDC
100/105/105WR/115JPL	4-6 Deg ATDC	22 Deg BTDC
22. NOTE: Adjust the idle timing to adjust the idle speed.
23. Reconnect the engine harness.
24. Replace the timing wheel cover, power pack cover and regulator/rectifier covers.
25. Connect the spark plug wires to the spark plugs.
26. Disconnect the jumper wire from the Tan temp sensor wire.
27. Connect Tan and White/Black temp switch wire to the temp switch on the Port side of the engine.
28. Using a motor flushing device or in the water, start and run the engine until it reaches operating temperature.
29. Verify the engine's QuikStart function is working by watching for the drop in engine RPM as the engine temperature goes above 105 Deg F and drops the timing back to running mode.
30. Stop the engine and restart it. You should have approximately a 5-10 second period of QuikStart timing advance before the engine settles down to a normal idle.
31. Disconnect the Port temperature switch's Tan and White/Black wires.
32. Connect a jumper wire to the Tan wire and short it to engine ground.
33. Using a motor flushing device or in the water, start and run the engine. Make sure the over-temp alarm is working and try to rev the engine up. You should not be able to exceed 2600 RPM as the engine should go into S.L.O.W. function at 2500 RPM. **Turn the engine off and wait 10 seconds for the processor inside the power pack to reset before continuing.**
34. Disconnect the jumper wire from the Tan temp sensor wire.
35. Connect Tan and White/Black temp switch wire to the temp switch on the Port side of the engine.

## Troubleshooting

No Fire at All:

1. Disconnect the 5 wire harness connector from the power pack. If the engine now fires, check the kill circuit and harness.
2. Check the stator resistance and DVA output to the pack.
3. Check the 12V power at cranking on the yellow/red wire going into the power pack. You should read above 11.5V. A low reading indicates a problem in the harness, battery or starter.
4. Check the DVA output from the power pack to the ignition coils. If it reads below 105V, recheck using a Pack Load Resistor. If the power pack output is now OK, the power pack is good but the ignition coils are likely bad.

Thank you for using RAPAIR/CDI Electronics.

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