Installation and Troubleshooting Guide

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: 173-1670

This unit replaces P/N's: 581670, 584504, 584840, 585073, and 5000611.

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.

INSTALLATION

1. Remove the Negative battery cable.
2. Remove the flywheel according to the service manual for your engine.
3. Disconnect the original Stator wires from the Power Pack and Rectifier (if equipped).
4. Remove the Stator plate assembly (mark the location of the plate in relation to the engine block for reassembly).
5. Remove the wire clamp bracket on the top of the Stator plate. (Fig. 1)
6. Remove the wire clamp bracket on the bottom of the Stator plate. (Fig. 2)
7. Remove the auxiliary battery charge winding (if equipped).

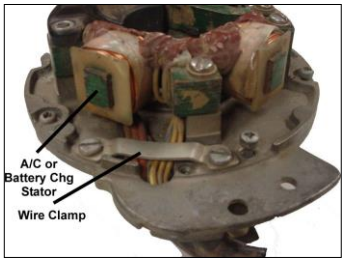


Fig. 1

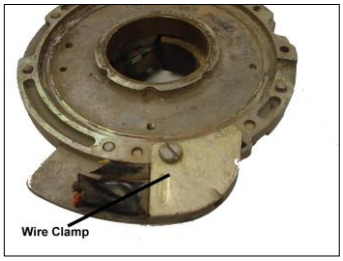


Fig. 2

8. Using the 553-2698 and 553-2699 Pin removal tools, push the Stator charge coil wire and pins out of the Amphenol connector.
9. Remove the Stator charge coil frame from the Stator plate and slide the wires back through the Stator plate.
10. Mark the side of the Stator frame on the side where the wires come out of the old coil.
11. Bend the locking tab up on the backside of the coil and remove the old coil from the frame. (Fig. 3)

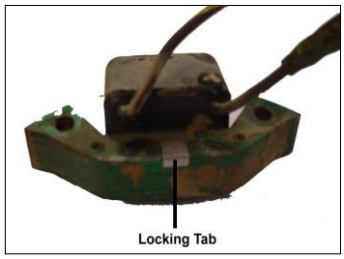


Fig. 3

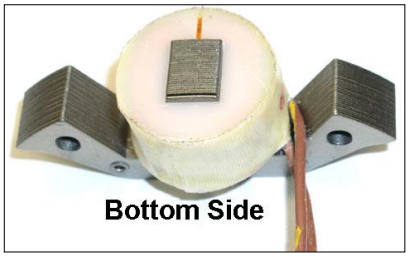


Fig. 4

12. Slide the new coil on the Stator frame.

    Note: The wires will come out on the side of the coil, not the bottom.

13. Fold the wires towards the outside and route them down and under the frame. (Fig 4) If the old coil had shunt plates (Fig. 5), you MUST use the new shunt plate provided with the new coil.

    Note: If the old coil did not use a shunt plate, do NOT install one.

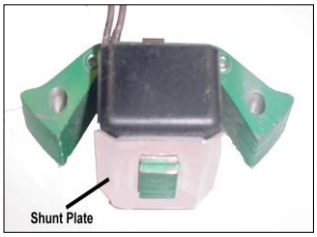


Fig. 5

14. Bend the top frame lamination up and the bottom lamination down to lock the coil on the frame.
15. Route the wires through the Stator plate and sleeving. Then, using the 553-2697 insertion tool, install the pins in the Amphenol connector plug.
16. Using the 553-4994 Locator Ring and the original bolts, install the Stator charge coil and the auxiliary battery charge winding (if equipped) with a good thread-locker applied to the bolts and tightened to the factory torque specifications.
17. Install the wire clamp bracket on the top of the Stator plate.
18. Install the wire clamp bracket on the bottom of the Stator plate.
19. Install the Stator plate assembly (remember to align the mark on the plate to the mark on the engine block).
20. Connect the Stator wires to the Power Pack and the auxiliary battery charge winding wires to the Rectifier (if equipped).
21. Replace the flywheel according to the service manual.
22. Replace the Negative battery cable.

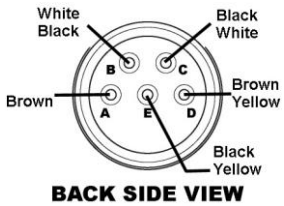
TROUBLESHOOTING

NO SPARK ON ANY CYLINDER:

1. Disconnect the Black/Yellow stop wire from the Power Pack and retest. If the engine's ignition has spark, the stop circuit has a fault. Check the key switch, harness, and shift switch (if present).
2. Check the cranking RPM. A cranking speed of less than 250 RPM 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.
3. Disconnect the Yellow wires from the Rectifier (if equipped) and retest. If the engine now sparks, replace the Rectifier.
4. Check Stator and Timer Sensor as follows:

Check from	Check to	Resistance	DVA (Connected)	DVA (Disconnected)
Brown (Stator)	Brown/Yellow (Stator)	520-600 Ω	150-400 V	150-400 V
Brown (Stator)	Brown/Yellow (Stator)	520-600 Ω	150-400 V	150-400 V
Brown (Stator)	Engine Gnd	Open	150-400 V	Less than 2 V
Brown/Yellow (Stator)	Engine Gnd	Open	150-400 V	Less than 2 V
Black/White (#1 Sensor)	White/Black (#2 Sensor)	45-55 Ω	0.6 V Minimum	0.6 V Minimum
Black/White (#1 Sensor)	Engine Gnd	Open	0.6 V Minimum	Less than 2 V
White/Black (2 Sensor)	Engine Gnd	Open	0.6 V Minimum	Less than 2 V

5. Inspect the flywheel magnets to see if they are loose or broken.
6. Check the wire pin-out as follows:



BACK SIDE VIEW

Installation and Troubleshooting Guide

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.

NO SPARK OR INTERMITTENT ON ONE OR MORE CYLINDERS:

1. Check the resistance and DVA of the Stator and Timer Sensor (see **NO SPARK ON ANY CYLINDER**).
2. Check the DVA on the Orange Primary wires from the Power Pack while connected to the Ignition coils. You should have a reading of at least 150 V or more. If the reading is low on one cylinder, disconnect the Orange Primary 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 usually indicates a bad Power Pack.
3. Swap the Brown stator wire with the Brown/Yellow wire and see if the problem moves. If it does, one of the Stator wires is likely arcing or shorted to engine ground.
4. Swap the Black/White Timer Sensor wire with the White/Black Timer Sensor wire and see if the problem moves. If it does, one of the Timer Sensor wires is likely shorted to engine ground.
5. Swap the Ignition coil with one that is sparking correctly.
6. Rare causes include a weak Timer Sensor magnet. If possible, try another flywheel.

ENGINE WILL NOT STOP (KILL):

1. Disconnect the Black/Yellow wire at the Power Pack. Connect a jumper wire to the stop wire from the Power Pack and short it to engine ground. If this stops the Power Pack from sparking, the stop circuit has a fault. Check the key switch, harness, and shift switch (if present). If this does not stop the Power Pack from sparking, replace the Power Pack.

MISS AT ANY RPM:

1. Disconnect the Yellow wires from the Stator to the Rectifier (if equipped) and retest. If the miss clears, replace the Rectifier.
2. In the water or on a Dynamometer, check the DVA on the Orange wires from the Power Pack 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 Power Pack or Timer Sensor.
3. Connect a DVA meter between the Brown and Brown/Yellow wires and do a running test. AT NO TIME SHOULD THE VOLTAGE EXCEED 400 V. If it does, the regulator circuit in the Power Pack is bad. The voltage should show a smooth climb and stabilize, gradually falling off at high RPM (above 5,000 RPM). If you see a sudden drop in voltage right before the miss becomes apparent, the problem is likely in the Stator.
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 Power Pack or Ignition coil. Occasionally a Timer Sensor will cause this same problem. Check the Timer Sensor DVA (see **NO SPARK ON ANY CYLINDER**).
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 Timer Sensor and Charge coil flywheel magnets for cracked, broken, or loose magnets.

POWER PACK OR TIMER SENSOR REPEATEDLY BLOWS ON SAME CYLINDER:

1. Check the Timer Sensor wires for shorts to engine ground as a shorted Timer Sensor wire can destroy a SCR inside the Power Pack.
2. In contrast, a shorted SCR inside the Power Pack can destroy a Timer Sensor. Check the Timer Sensor resistance and DVA (see **NO SPARK ON ANY CYLINDER**).
3. Replace the Ignition coil on the cylinder dropping spark.