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: 133-5386

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.

Please use the Factory recommended sparkplug (currently Champion QL78YC) gapped at 0.030".

INSTALLATION

1. Disconnect the Negative battery cable.
2. Disconnect the old Timer Base.
3. Remove the flywheel, Stator, and old Timer Base.
4. Lubricate the inside area of the new Timer Base where the White slip ring goes and the area where the inside of the new Timer Base contacts the upper bearing carrier.
5. Install the White slip ring on the new Timer Base.
6. Compress the White slip ring and seat the new Timer Base into the bearing carrier.
7. Make sure the Timer Base is fully seated and secure the slip ring using the retainers removed during disassembly.
8. Remove the bushing link kit from the old Timer Base link arm and install it in the new Timer Base arm.
9. Connect the linkage to the new Timer Base.
10. Re-install the Stator and Flywheel according to the Service Manual for your engine.
11. Reconnect the Negative battery cable.
12. Start and run the engine, adjusting the ignition timing according to the Service Manual.

TROUBLESHOOTING

NO SPARK ON ANY CYLINDER:

1. Disconnect the Black/Yellow Kill wire AT THE POWER PACK and retest. If the engine's ignition now has spark, the Stop circuit has a fault. Check the key switch, engine harness, and boat harness.
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 Stator to the Regulator/Rectifier and retest. If the engine now has spark, replace the Regulator/Rectifier.
4. Check the Timer Base resistance and DVA as given below:

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)	DVA (Disconnected)
Brown (Stator)	Brown/Yellow (Stator)	750-950 Ω	650-850 Ω	150-400 V	150-400 V
Orange (Power Coil)	Orange/Black (Power Coil)	360-440 Ω	45-55 Ω	11-22 V	45-120 V
White (Common)	Blue (#1 Timer Base)	22-32 Ω	25-30 Ω	100-400 V	0.6 V Minimum
White (Common)	Green (#2 Timer Base)	22-32 Ω	25-30 Ω	100-400 V	0.6 V Minimum
White (Common)	Engine Gnd	Open	Open	-	-
Blue (#1 Timer Base)	Engine Gnd	Open	Open	100-400 V	-
Green (#2 Timer Base)	Engine Gnd	Open	Open	100-400 V	-

5. Check the Timer Base and Charge Coil flywheel magnets for cracked, broken, or loose magnets.

NO SPARK ON ONE OR MORE CYLINDERS:

1. Check the Timer Base's resistance and DVA (see **NO SPARK ON ANY CYLINDER**).
2. Check the DVA on the Orange Primary wires from the Power Pack while connected to the Ignition coil. You should have a reading of at least 150 V or more.
3. Visually inspect the Ignition coils for burned or discolored areas or cracks in the casing indicating arcing inside the Ignition coil.
4. Swap the Ignition coil with one that is sparking correctly.
5. Rare causes include a weak Trigger magnet. If possible, try another flywheel.

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6. Check the Power Pack resistance as given below:

Read from	Read to	Ohms
Orange/Blue (#1 Primary)	Blue (#1 Timer Base)	110 Ω (a)
Orange/Purple (#2 Primary)	Purple (#2 Timer Base)	110 Ω (a)
White (Common)	Black (Engine Gnd)	Shorted
Brown (Stator)	Black (Engine Gnd)	Open or M range
Brown/Yellow (Stator)	Black (Engine Gnd)	Open or M range

(a) Use a comparison reading as different brands of meters will give different readings. The typical range is 90-150 Ω for the Orange wires. You should have approximately the same ohm reading on all six tests with the Orange wires. If one of the SCR's inside the Power Pack is shorted or open, the readings will be quite a bit different.

7. Check the DVA to the Ignition coils from the Power Pack while connected in reference to engine ground. You should have a reading of 150 DVA minimum. If the reading is low on one cylinder, disconnect the Orange wire from the Ignition Coil for that cylinder and reconnect it to a Pack Load Resistor. Retest. If the reading is over 150 DVA, the Ignition Coil is likely bad. A continued low reading indicates a defective Power Pack. You can also swap the Orange Primary wire with the low DVA with another cylinder that is sparking correctly. If the low DVA follows the Orange Primary wire, replace the Power Pack if all other readings are within specification.

ENGINE WILL NOT ACCELERATE BEYOND 2500 RPM (Runs smooth below that RPM):

1. Use a temperature probe and verify that the engine is not overheating.
2. Disconnect the Tan temperature wire from the Power Pack and retest. Make sure to cut the key switch off killing the engine, and then crank the engine back again. This resets the circuit board inside the Power Pack. If the engine now performs properly, check the temperature switch, harness, and System Check Gauge.
3. Make sure the Tan temperature switch wire is not located next to a spark plug wire (RF interference can activate the S.L.O.W function without sounding the warning horn).
4. If the engine will not rev above 2500 RPM and the Tan wire is disconnected from the Power Pack (and not near a spark plug wire), the Power Pack is likely defective. Make sure to cut the key switch off killing the engine, and then crank the engine back again. This resets the circuit board inside the Power Pack.

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).

ENGINE ENGAGES S.L.O.W. (Limits at 2500 PM) WHEN THE NO OIL, LOW OIL OR OVERHEAT ALARM SOUNDS:

1. Disconnect the Boat Side harness and the Tan wire from the temperature sensor in the cylinder head.
2. Using an Digital Multi Meter, check the diode in the engine harness as shown below. If open or shorted, replace it.

Red Meter Lead	Black Meter Lead	Reading
Tan pin in Engine Harness Connector	Tan Lead to the Cyl Head Temp	0.500 on Diode scale
Tan Lead from the Cyl Head	Tan pin in Engine Harness Connector	OL or over 1.0 M Ω

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