



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: 113-4767

This unit replaces the following P/N's: 18-5768, 584767, 584768, 584908, 585074, 585224, 585260, 5000014, and 5001344.

Warning! This product is designed for installation 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 spark plug (currently Champion QL77JC4) gapped at 0.030".

How to test the Engine Stop Circuit (Kill) for DC Voltage:

1. DC voltage present on the kill circuit of the Power Pack due to a faulty key switch, boat harness, or engine harness will severely damage the Power Pack's internal kill circuit. Connect a Digital Multi Meter to the Ignition Stop wire(s) AT THE POWER PACK while disconnected from the Power Pack in reference to a known good engine ground. Turn the Ignition switch on and off several times. If, at any time, you see over 2 VDC on the kill wire(s), there is a problem with one or both harnesses and/or the Ignition switch. The Ignition Stop wire should not be connected back to the new Power Pack at any point until the problem is corrected **OR DAMAGE TO THE POWER PACK WILL OCCUR!**

Installation

1. Disconnect the negative battery cable.
2. Remove Power Pack mounting bolts and disconnect all of the wires going to the old Power Pack.
3. Connect the wires from the new Power Pack to the Stator and trigger.
4. Mount the new Power Pack using the original bolts.
5. Connect the Orange/Blue coil lead to the top Ignition coil and the Orange coil lead to the bottom Ignition coil.
6. Reconnect the battery cable.

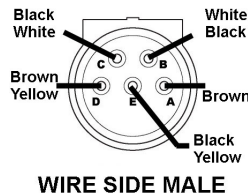
Troubleshooting

NO SPARK ON ANY CYLINDER:

1. Perform a visual inspection of the Stator and Trigger wiring to the Power Pack. Check to make sure that the wiring is correct, clean, free of corrosion, and that all connections are tight.
2. Disconnect the Black/Yellow kill wires AT THE POWER PACK and retest. If the engine's Ignition now has spark, the stop circuit has a fault. Check the key switch, harness, and shift switch (if present).
3. Check the cranking RPM. A cranking speed of less than 250 RPM will not allow the system to fire properly.
4. Disconnect the Yellow wires from the Rectifier and retest. If the engine now sparks, replace the Rectifier.
5. Check the resistance and DVA of the Stator and Timer Base:

Read from	Read to	Ohms	DVA Connected
Brown (Stator)	Brown/Yellow (Stator)	450-850 Ω	150 V Minimum
Brown (Stator)	Engine Gnd	Open	150 V Minimum
Brown/Yellow (Stator)	Engine Gnd	Open	150 V Minimum
Black/White (#1 Trigger)	White/Black (#2 Trigger)	40-60 Ω	0.5 V Minimum

6. Check wire pin-out as follows:



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- 7. Check the Stator input diodes connected inside the Power Pack using a meter set to diode scale. If the readings show a short or open, replace the Power Pack.

Red meter lead	Black meter lead	Reading
Black wire	Brown (Stator)	0.500 (a)
Black wire	Brown/Yellow (Stator)	0.500 (a)
Black wire	Black/Yellow (Kill)	0.500 (a)
Brown wire (Stator)	Black/Yellow (Kill)	0.500 (a)
Brown/Yellow (Stator)	Black/Yellow (Kill)	0.500 (a)

(a) Use a comparison reading as different brands of meters will give different readings. The typical range is .500 on the Diode scale. You should get a reading in one direction, but not the other. If you get a reading in both directions or neither direction, the diode has failed.

- 8. Check the DVA on the Black/Yellow kill wires coming out of the Power Pack. You should have a reading of at least 150 DVA or more. The Stator and Timer Base should be connected to the Power Pack for this test. If you do not, check the DVA on the Stator and Timer Base. If the DVA on the Stator and Timer Base is good but the DVA on the Black/Yellow Kill wires coming out of the Power Pack is low, the Power Pack is likely faulty.

NO SPARK OR INTERMITTENT ON ONE OR MORE CYLINDERS:

- 1. Check the kickback diodes connected inside the Power Pack using a meter set to diode scale.

Read from	Read to	Reading
Black	Orange/Blue	0.500 (a)
Black	Orange	0.500 (a)

(a) Use a comparison reading as different brands of meters will give different readings. The typical range is .500 on the Diode scale. You should get a reading in one direction, but not the other. If you get a reading in both directions or neither direction, the diode has failed.

- 2. 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 V or more. 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 now good, the Ignition coil is likely bad. A continued low reading usually indicates a bad 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). If this does not stop the Power Pack from sparking, replace the Power Pack.

HIGH SPEED MISS:

1. Verify the engine RPM. If the engine is turning over 5900 RPM, the engine is likely hitting the RPM limiter. Check the propeller for slipping.
2. Disconnect the Yellow wires from the Stator to the Rectifier and retest. If the miss clears, replace the Rectifier.
3. 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 Base.
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 Base will cause this same problem. Check the Timer Base 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 Trigger and Charge coil flywheel magnets for cracked, broken, or loose magnets.

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.

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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.

S.L.O.W. FUNCTION IS ACTIVATED:

5. Use a temperature probe and verify that the engine is not overheating.
6. 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.
7. 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).
8. 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.

SLOW CIRCUIT WILL NOT ACTIVATE:

1. Disconnect the Tan temperature wire and short it to engine ground.
2. If the SLOW circuit now operates, replace the temperature sensor.
3. If the SLOW circuit still does not work, replace the Power Pack.