

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.

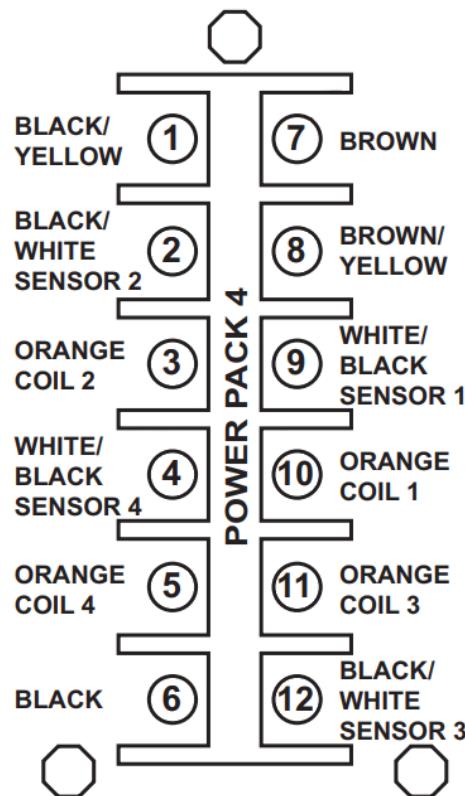
CDI P/N: 133-1900

This unit replaces P/Ns: 385433, 581300, 581900, and 763778.

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. Disconnect the Negative battery cable.
2. Remove the cover from the Power Pack.
3. Disconnect the old Timer Base and remove the flywheel, Stator, and old Timer Base according to the service manual for your engine.
4. Install the new linkage bushing in the Timer Base arm of the new Timer Base according to the service manual for your engine.
5. 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.
6. Install the White slip ring on the new Timer Base and 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. Connect the linkage to the new Timer Base.
9. Re-install the Stator and Flywheel according to the Service Manual for your engine.
10. Reconnect the wires according to the connection guide below
11. Reconnect the Negative battery cable.
12. Adjust and reset timing according to the service manual for your engine.





Installation and Troubleshooting Guide



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TROUBLESHOOTING

NO SPARK ON ANY CYLINDER:

1. 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.
2. Perform a visual inspection of all ground wire connections to make sure that they are clean and tight.
3. Disconnect the Black/Yellow stop wire from 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).
4. Disconnect the Yellow wires from the Rectifier and retest. If the engine now sparks, replace the Rectifier.
5. Inspect and clean all engine and ignition ground connections. Verify by using a jumper wire from engine ground to the ground terminal on the Power Pack.
6. Check the Stator and 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)	835-985 Ω (1973)	640-785 Ω	150-400 V	150-400 V
Brown (Stator)	Brown/Yellow (Stator)	555-705 Ω (1974-77)	640-785 Ω	150-400 V	150-400 V
White/Black (#1 Sensor)	Black/White (#3 Sensor)	10-20 Ω	35-55 Ω	0.6 V minimum	0.6 V minimum
Black/White (#2 Sensor)	White/Black (#4 Sensor)	10-20 Ω	35-55 Ω	0.6 V minimum	0.6 V minimum
Brown (Stator)	Engine Gnd	Open	Open	150-400 V	-
Brown/Yellow (Stator)	Engine Gnd	Open	Open	150-400 V	-
Black/White (all)	Engine Gnd	Open	Open	0.6 V minimum	-
White/Black (all)	Engine Gnd	Open	Open	0.6 V minimum	-

7. Check the DVA on the Black/Yellow kill wire on the screw terminal 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 wire on the screw terminal of the Power Pack is low, the Power Pack is likely faulty.
8. If equipped with an OEM Timer Base and the Timer Base DVA is low, you may try to reset the air gap between the Timer Base sensor and the Timer Base magnet using a Sensor Gap Gauge or use the following procedure:
 - a) Loosen the two mounting screws and the nuts on the Timer Base Sensor located in the epoxy on the outside of the heat shield of the Timer Base.
 - b) Slide the Timer Base sensor in toward the crankshaft until the sensor touches the stop boss located at the base of the sensor mounting area. Tighten the mounting screws.
 - c) Coat the face of the sensors with machinists bluing or equivalent.
 - d) Install the flywheel without the woodruff key and rotate the flywheel at least one full turn.
 - e) Remove the flywheel and check to see if the Timer Base magnet struck the face of the sensors. If it did, back the sensor out approximately 0.005" and repeat steps c, d, and e.
 - f) If the ignition now has spark, finger tight the nuts on the outside of the heat shield and coat them with RTV.
 - g) If still no spark, replace the Timer Base.
9. Check the DVA on each Black/White wire to engine ground. You should have a reading of at least 150 V minimum (while connected to the Power Pack). If the reading is low, disconnect the Timer Base wires from the Power Pack and recheck the Black/White terminals ON THE POWER PACK. If the voltage jumps up to an acceptable reading, the Timer Base may have a problem in the internal wiring
10. Check the Timer Base and Stator coil flywheel magnets for cracked, broken, or loose magnets.

NO SPARK OR INTERMITTENT SPARK ON ONE OR MORE CYLINDERS:

1. Disconnect the Yellow wires from the Rectifier and retest. If the engine now has good spark, replace the Rectifier.
2. Check the Timer Base resistance and DVA (see **NO SPARK ON ANY CYLINDER**).
3. Swap the Timer Base wire sets (swap the #1 & #3 pair with the #2 & #4 pair) and see if the no spark problem follows a Timer Base wire.
4. 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 minimum. 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 good, the Ignition coil is likely bad. A continued low reading indicates a bad Power Pack.
5. Visually inspect the Ignition coils for burned or discolored areas or cracks in the casing (indicating arcing inside the coil).
6. Swap the Ignition coil with one that has good spark.
7. Rare causes include a weak Timer Base magnet. If possible, try another flywheel.

CDI Electronics, LLC • 353 James Record Road SW • Huntsville, AL 35824 USA

Web Support: www.cdielectronics.com • Tech Support: 1-866-423-4832 • Order Parts: 1-800-467-3371

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POWER PACK OR TIMER BASE REPEATEDLY BLOWS ON SAME CYLINDER:

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

ENGINE WILL NOT STOP (KILL):

1. Disconnect the Black/Yellow wire at the Power Pack. Connect a jumper wire to the Black/Yellow 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 and retest. If the miss clears, replace the Rectifier.
2. 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**).
3. 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.
4. Check the Timer Base and Stator coil flywheel magnets for cracked, broken, or loose magnets.
5. Disconnect the Rectifier and retest. If the system now has spark, replace the Rectifier.