

CDI Electronics

Installation and Troubleshooting Guide

CDI P/N: 213-6665K1

The 213-6665K1 digital ignition kit consists of a 213-6665 ignition pack and a 233-4586 digital crankshaft position sensor that replaces the timer base. This system is NOT compatible with the factory ignition power pack and timer base. The 213-6665 and 233-4586 must be used together as a kit.

This kit will work on 1988 through 2000 Johnson & Evinrude 185, 200 and 225 HP 6 cylinder engines.

WARNING! A professional marine mechanic should install this product. CDI Electronics cannot be held liable for any injury or damage resulting from improper installation, abuse, neglect or misuse of this product.

Installation

1. Disconnect the battery cables.
2. Remove ignition pack mounting bolts and disconnect all of the wires going to the old power pack.
3. Disconnect the yellow wires going to the regulator/rectifier.
4. Remove the flywheel and remove the stator.
5. Remove the power coil (it can be identified by the Orange wires coming from it) from the stator as it is not used in this application. This will also reduce flywheel drag. Be careful not to damage the battery charge windings.
6. Remove the original Timer Base.
7. Remove the linkage retainer from the old Timer Base and install it in the new Timer Base.
8. Lubricate the inside bearing area of the 233-4586 crankshaft position sensor (CPS) and install it on the engine.
9. Connect the timing linkage to the 233-4586 CPS.
10. Install the stator and connect the Yellow wires to the regulator/rectifier (remember to anchor the connector to the bracket).
11. Depending on the model year: a) Connect the 213-6665's purple wire to the terminal strip where the regulator/rectifier's purple wire is connected, **OR** b) disconnect the purple wire going to the regulator/rectifier and connect the male & female bullet terminals from the 213-6665 ignition pack to the male & female bullet terminals on the purple wire going to the regulator.
12. Connect the 233-4586's 4 and 5 pin connectors to the 4 and 5 pin connectors from the new ignition pack.
13. Connect the stator charge coils (brown wire sets) to the new ignition pack.
14. Terminate the kill/stop circuit wires (Black/Yellow) with male or female pins from the accessory connector kit and use either two single pin or a single 2-pin connector to match your boats harness.
15. Connect the Tan and White/Black temperature sensor wires to their respective wire colors.
16. Position the stator wire connectors in the lower slot provided in the electrical bracket.
17. Position the timer base wire connectors in the slot above the stator wire connectors in the electrical bracket.
18. Tape off the Yellow/Red wire from the harness to prevent it from contacting ground. It is not used in this application.
19. Mount the new ignition pack using the original bolts, grounding the Black wire to engine ground.
20. Connect the orange wires to the ignition coils (remember that the blue striped wires go to the top and the green striped wires go to the bottom).
21. Reconnect the battery cables.
22. Disconnect the spark plug high-tension leads from the spark plugs and connect a spark tester to the spark plug high-tension leads.
23. Connect a timing light to # 1 spark plug high-tension lead and set the ignition timing according to the service manual. Timing **MUST** be verified at 5000 RPM.

SERVICE NOTE: This ignition system uses battery voltage to operate. Please do not use maintenance free batteries with this engine because of a tendency to over charge in this application. This system will compensate for slow cranking speed caused by a dragging starter. Low voltage (below 10 volts) at cranking or high voltage (above 15.8 volts) at high speed may cause problems.

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Troubleshooting

No Spark at All:

1. Disconnect the black/yellow engine stop wires at the ignition pack and retest. If the engine's ignition now has spark, the stop circuit has a fault-possibly the key switch, harness or shift switch.
2. Disconnect the yellow wires from the stator to the regulator/rectifier and retest. If the engine now has spark, replace the regulator/rectifier.
3. Check the stator resistance. You should read approximately 1000 ohms from the Brown wire to the Brown/Yellow wire.
4. Check the DVA output from the stator to the pack while connected to the power pack. You should have a reading of at least 150V or more from the brown wire to the brown/yellow wire (while connected to the ignition pack) on each bank.
5. Check to make sure the Purple wire going to the power pack has at least 10 volts on it at cranking.
6. Check to make sure the Purple wire going to the timer base has at least 10 volts on it at cranking (it is normal for the reading here to be 0.5V less than the Purple wire to the ignition pack).
7. Check the cranking RPM. A cranking speed of less than 200-RPM may not generate sufficient charge voltage (DVA of 150) to fire the spark plugs properly.

No Spark or Intermittent Spark on One Cylinder:

Use a DVA to measure the ignition pack's output voltage to the ignition coils (orange wires). Do this with the pack connected to the coils. You should have a reading of at least 150V 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 ignition pack.

No Spark or Intermittent Spark on One Bank:

1. Disconnect the kill/stop wires at the ignition pack and retest. If you now have fire on all cylinders, there is a problem in the kill circuit, or possibly a shift switch.
2. Check the stator resistance. You should read approximately 1000 ohms from the brown wire to the brown/yellow wires.
3. Swap the Brown & Brown/Yellow wires sets from one connector to the other connector going to the stator.
4. Check the DVA output from the stator. You should have a reading of at least 150V or more from the brown wire to the brown/yellow wire (while connected to the pack) on each bank.
5. Check the DVA output on the orange wires from the power pack while connected to the ignition coils. You should have a reading of at least 150V or more. If the reading is low on one bank, disconnect the orange wires from the ignition coils for that bank and reconnect them to load resistors. Retest. If the readings are now good, one or more of the ignition coils are likely bad. A continued low reading indicates a bad power pack.
6. Disconnect the shift interrupter and retest. If all cylinders now have spark, replace the shift interrupter.

Engine will not rev beyond 2500 RPM:

1. Use a temperature probe and verify that the engine is not overheating.
2. Disconnect the tan temperature wire from the pack and retest. If the engine now performs properly, replace the temperature switch.
3. Make sure the tan temperature switch wire is not located next to a spark plug wire.

Thank You for Purchasing CDI Electronics

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