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.

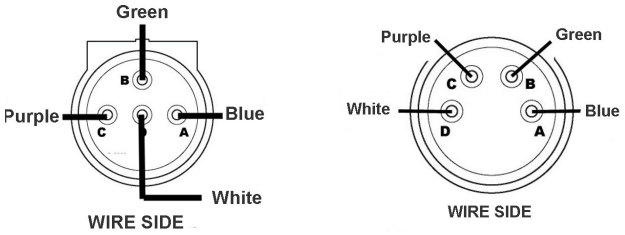
CDI P/N: 133-3378

This unit replaces P/N's: 581949, 582724, 583060, 583131, 583378, 584269, and 584562.

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. Disconnect the old Timer Base.
3. Remove the flywheel according to the service manual for your engine.
4. Remove the Stator and old Timer Base.
5. Inspect the center hub Timer Base magnet for damage. If found, replace the flywheel.
6. Lubricate the inside area of the new Timer Base where the White glide ring goes and the area where the inside of the new Timer Base contacts the upper bearing carrier.
7. Install the White glide ring on the new Timer Base.
8. Compress the White glide ring and seat the new Timer Base into the bearing carrier.
9. Make sure the Timer Base is fully seated and secure the glide ring using the retainers removed during disassembly.
10. If the 4 pin connector pin out pattern matches the pattern of the old Timer Base, connect the Timer Base to the Power Pack . If the old Timer Base has the semi-circle pattern, remove the 4 pin Amphenol connector from the new Timer Base and insert the pins into the 4 pin connector supplied with the new Timer Base as shown below, matching wires colors:



11. Remove the bushing link kit from the old Timer Base link arm and install it in the new Timer Base arm.
12. Connect the linkage to the new Timer Base.
13. Re-install the Stator and Flywheel according to the Service Manual for your engine.
14. Reconnect the Negative battery cable.
15. Adjust the ignition timing according to the Service Manual for your engine.

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. Disconnect the Yellow wires from the Rectifier and retest. If the engine now sparks, replace the Rectifier.
3. 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.
4. Inspect and clean all engine and ignition ground connections.
5. Inspect the Timer Base and Charge coil magnets for cracked, broken, or loose magnets.
6. Check the resistance and DVA of the Stator and Timer Base:

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)	DVA (Disconnected)
Brown (Stator)	Brown/Yellow (Stator)	360-440 Ω (9 A)	530-630 Ω	150-400 V	150-400 V
Brown (Stator)	Brown/Yellow (Stator)	750-950 Ω (12 A)	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)	9-21 Ω	9-21 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Purple (#2 Timer Base)	9-21 Ω	9-21 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Green (#3 Timer Base)	9-21 Ω	9-21 Ω	0.6 V Minimum	0.6 V Minimum

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NO SPARK OR INTERMITTENT SPARK ON ONE OR MORE CYLINDERS:

1. Check the resistance and DVA of the Stator and Timer Base:

Read from	Read to	OEM Ohms	CDI Ohms	DVA (Connected)	DVA (Disconnected)
Brown (Stator)	Brown/Yellow (Stator)	360-440 Ω (9 A)	530-630 Ω	150-400 V	150-400 V
Brown (Stator)	Brown/Yellow (Stator)	750-950 Ω (12 A)	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)	9-21 Ω	9-21 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Purple (#2 Timer Base)	9-21 Ω	9-21 Ω	0.6 V Minimum	0.6 V Minimum
White (Common)	Green (#3 Timer Base)	9-21 Ω	9-21 Ω	0.6 V Minimum	0.6 V Minimum

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. Disconnect the Timer Base connector and check to see if the pins have gotten pushed back either in the pack connector or the new Timer Base.
4. Remove the pins from the connectors and see if a pin is broken on the pack or the new Timer Base.
5. Visually inspect the Ignition coils for burned or discolored areas, leakage, or cracks in the casing (indicating arcing inside the coil).
6. Swap the Ignition coil with one that is sparking correctly.
7. Rare causes include a weak trigger 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 and retest. If the miss clears, replace the Rectifier.
2. In the water or on a Dynamometer, 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 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.
3. 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**).
4. 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.
5. Check the Trigger and Charge coil flywheel magnets for cracked, broken, or loose magnets.

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. Check the Timer Base resistance and DVA (see **NO SPARK ON ANY CYLINDER**).
3. Replace the Ignition coil on the cylinder dropping spark.