

The fire in your ATV

Ignition Coil Sealing Instructions

Revision 1.0

Parts Required (available at your local auto parts store):

- Dielectric Grease
- High Temp RTV Silicone



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- Waterproof crimp on terminals. 0.250" female, sealed, quick disconnect for 18-22 AWG wire, with adhesive lining. Molex/Waldom P/N 19164-0017 or equivalent. Please note: The 14-16 AWG terminals will work if 18-22 AWG are not available.



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Time Required:

- One to two hours depending on access to the coils.

Difficulty:

- 1/10

Tools Required:

- Terminal crimpers to install the new ends
- Heat gun, or lighter to shrink heat shrink on the terminals
- Small piece of sandpaper to clean coil terminals
- Rubbing alcohol or acetone to clean the coil base. Do not use gasoline or paint thinner, as they contain oils that will prevent proper adhesion of the silicone to the coil
- Tools to remove plastic panels and fairings (if necessary to gain access to the coils).

Supported Machines:

- All ATV's utilizing non-environmentally sealed coils.

Introduction:

Many ATV's are shipped utilizing coils that have non-environmentally sealed primary connectors (automotive quick disconnects). This can lead to corrosion and possible failure over time. Some users have reported that the first run of Copperhead CDIs may be susceptible to decreased spark performance when these terminals get contaminated with water or mud. By following the instructions below, you can ensure optimum performance in all conditions, regardless of which brand of ignition you are utilizing.

Also outlined is the procedure for upgrading your troublesome stock spark plug wires, with high performance NGK racing wires for trouble free operation.



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Installation:

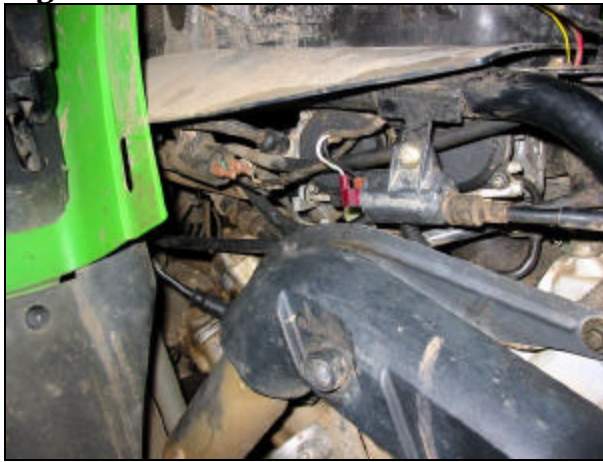
Step 1:

Disconnect the negative battery cable.

Step 2:

Remove the necessary panels to gain access to the two ignition coils. See Figure 1.

Figure 1:



Step 3:

Unplug the terminals from the coils. Take note to which terminal connects to which coil location. Cut off the old corroded ends and strip back ¼" of insulation. See Figure 2.

Figure 2:



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Step 4:

Crimp new terminals onto each of the four ends, and using a heat gun or lighter, heat to shrink the waterproof tubing. Use uniform heat to ensure the tubing shrinks uniformly. Be careful not to melt the terminal or wires. You must ensure that the tubing contracts around the wire. See Figure 3. The terminals on the left have just been crimped, the terminals on the right have been crimped and heated.

Figure 3:



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Step 5:

Removed the coils from the machine. Using a piece of sandpaper, gently polish the two terminals on each coil to get rid of any corrosion. See Figure 4. Then, using soap, water and a brush, fully scrub the terminal areas as well as the whole coil. Allow the coil to fully dry.

Figure 4:



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Step 6:

Inspect the coil wires for signs of cracking, abrasion, or oil contamination. Replace the wires if necessary. We recommend upgrading to the NGK Racing wires for trouble free operation. Pick the boot style that works best for your machine. Typically, the CR1 cable (straight boot) will work fine for most applications. If a 90-degree boot will make installation and removal easier, then use the CR5 cable. See Figures 5 and 6 for the CR1 and CR5 cables. They can be found at your local auto parts store, or online at <http://www.clubplug.net>.

Figure 5:



Figure 6:





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Step 7:

If you are keeping your old wires, unscrew the wire from the spark plug boot end, as well as the coil. Both ends utilize a tapered screw to attach themselves to the wire. If you are upgrading the wires, just unscrew the wire from the coil. Make sure you save the rubber boot that seals the wire to the coil. This will be reused. See Figure 7.

Figure 7:



For the old wires, cut ¼" off each end of the cable. For the new wires, cut the wire so that it's about the same length as the ones you removed. Please note, certain machines use different length wires, so make sure you measure and cut both separately. See Figure 8.

Figure 8:



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Step 8:

Apply a thin film of dielectric grease to the last 1.5" of the bare cable. Apply a film around the shank of the coil (where you removed the rubber boot from), and apply some inside the terminal end (where the spark plug lead will be inserted). Slide the boot onto the wire. See Figure 9.

Figure 9:



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Step 9:

Push the wire end into the coil opening, and screw it clockwise until it is tight. Slide the boot down to ensure a good seal. Repeat with the second coil. See Figure 10. If you are re-using the old wires, apply a thin film of dielectric grease to the last 1.5" of the bare cable, and screw on the old boot. Place a dab of dielectric grease in the spark plug boot to ensure a good seal, and no risk of the boot fusing to the plug.

Figure 10:



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Step 10:

Fully clean the terminals and back of the coil with rubbing alcohol or acetone. Make sure it is fully dry before proceeding.

Step 11:

Hook the two coils back up to the wiring harness on the machine, noting the correct +/- wire orientation. On the P650/P700's, the front coil has the shorted lead. Using the high temperature RTV, encapsulate the base of the coil where the two terminals connect.

Make sure there is no bare metal from the connectors shown. Fill the space between the terminals. Since the new quick disconnects utilize heat shrink tubing for sealing, you do not have to carry the silicone up to the wire. See Figure 11. Position the coils so that the silicone doesn't touch anything.

Figure 11:



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Step 12:

Allow the silicone to fully cure. Silicone relies on humidity in the air has a catalyst to make it cure. Colder and/or dry conditions will cause the silicone to take longer to cure. Please note, it is recommended that the silicone cures for at least 24 hours per ¼" depth of material. Since the encapsulation is much deeper, we recommend that it remains untouched for 48-72 hours to ensure that it's 100% cured before you continue. Rushing the installation at this point may lead to removing and re-applying the silicone to the terminals, so be patient.

Step 13:

Reinstall the coils, and make sure the spark plug leads are tied off so they do not rub on anything. Reinstall any plastic panels and fairings that were removed. Re-connect the negative battery terminal.

Step 14:

Go riding!