

# OPERATING INSTRUCTIONS

## 102020 CCCI Spark Simulator 1987-1989 turbo 3.8L

This tester is designed to detect weak or malfunctioning ignition coils on GEN I Computer Controlled **OEM (Delco ONLY)** Coil Ignition systems used on the 1986-1987 Buick turbo Regal and 1989 Turbo Trans-Am using the same ignition system. It allows the user to simulate a spark load using an increased spark gap – which simulates the greatest load – and also simulates engine RPM using an adjustable control. **NOTE: This simulator will not test aftermarket modules sold by auto parts retailers. It is designed to ONLY test the Delco CCCI modules. Aftermarket designs differ electronically and won't test properly. This tester is only designed for the above model years. Earlier turbo engines from 1984 and 1985 require a wiring adapter, Caspers part number 102022, available separately.**

### TO OPERATE: Be sure to read the WARNINGS below

Locate module and remove plug wires. Using a ¼" nut driver or socket wrench, loosen the single screw that secures the engine wiring connector to the coil module. Next, insert the tester connector into the module receptacle. Position Simulator tester on the top of the coil as shown in illustration below. **BE SURE** the tester is completely and properly seated on the spark posts. Refer to "Correct" installation of sockets to posts. **DO NOT MOVE or TOUCH IT** once it is in place on the coil pack.

Clamp the positive (red) and negative (black) clamps onto the fully charged battery posts. **BE SURE** you position them properly as damage will occur if they're not in the correct position.

Carefully turn the switch knob clockwise until the switch clicks on. The three windows on the top will sequentially display ignition spark. Slowly rotate the knob clockwise to simulate increasing RPM while observing sparks within the three windows. They should be bright and blue in color. Also observe the sound; a stuttering sound will confirm defective coils and a misfire in the spark sequence will also confirm a coil defect. See troubleshooting procedure on the other side of this document.



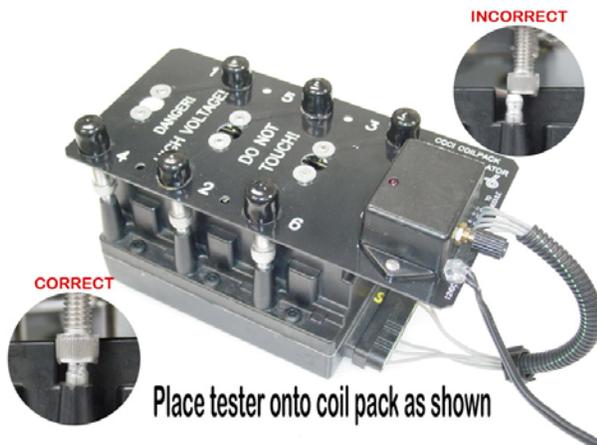
### WARNING! SHOCK HAZARD!

DISCONNECT BATTERY CLAMPS BEFORE REMOVING OR HANDLING SIMULATOR TESTER OCCASIONALLY THE COILS *CAN FIRE RANDOMLY* AFTER THE SWITCH IS TURNED OFF!

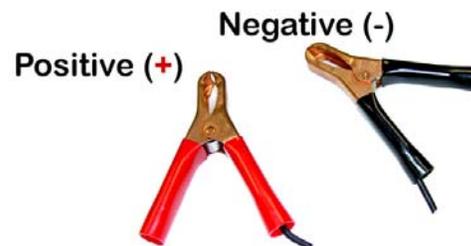


### WARNING! FIRE HAZARD!

BE SURE TOP OF UNIT IS KEPT CLEAN AND FREE OF GREASE, OIL, GASOLINE, ETC. SPARKS CAN IGNITE COMBUSTIBLE MATERIALS! DO NOT USE WHEN FLAMMABLE LIQUID OR COMBUSTIBLE VAPORS ARE PRESENT!



Place tester onto coil pack as shown



**BE SURE YOU ATTACH THESE CLAMPS PROPERLY!**

Accidental reversal of polarity will damage tester and void warranty

## **TO DETERMINE WHICH PART OF THE COIL ASSEMBLY IS DEFECTIVE**

STEP 1: Check the assembly using the CCCI Simulator. If you find a coil that is misfiring, or doesn't sound right, proceed to step 2.

STEP 2: Remove six screws that attach the coil pack to the ignition module. Underneath, you will find four wires: Blue (common) with three female spade terminals "daisy-chained" together, Yellow/Black Stripe (1-4 coil), Green/Black Stripe (2-5 coil), and Blue/Black Stripe (3-6 coil).

STEP 3: Determine which coil or coils are malfunctioning.

EXAMPLE: You've determined the 1-4 coil is malfunctioning...Lift the coil up off the module and unplug the Yellow/Black wire. Next, unplug the Green/Black wire and put it in the location where the Yellow/Black wire was. Then, plug the Yellow/Black wire into the location where the Green/Black wire was – essentially cross these wires.

If the Simulator still shows the 1-4 coil to be malfunctioning, the coil is defective and must be replaced. If, however, the Simulator shows the 2-5 coil is defective, it would be a defective module instead, which must be replaced.

As a simple rule-of-thumb, if the malfunctioning coil stays in the same location regardless of which order the colored wires are in, the coil pack is defective (this is usually the case-coils commonly go bad); but, if the malfunctioning coil location changes with the order of the colored wires, the module is defective.

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