Operating Guide

CDI P/N: 511-4019 Optical Tester

NOTE: The 511-4019 tester is designed for the Johnson/Evinrude 3-Cylinder optical trigger only. Use the 511-4017 tester/timing tool for the 4 and 6 cylinder models.

Theory of Operation:

The 511-4019 tester provides the optical sensor with a controlled voltage to power the light emitters. The tester has two LEDs that will flash when one of the sensor's outputs is seeing light through one of the apertures in the plastic timing wheel. If you examine the timing wheel you will see that one LED should flash 3 times per revolution and the other one should flash 6 times. It is not necessary to count the flashes as the sensor usually fails completely on one or both outputs. A typical indication of failure is an LED on the tester failing to flash both on and off. An LED that is always on or always off indicates a failure.

Testing a Sensor:

1. Disconnect the OIS sensor plug (5-pin) from the ignition pack.
2. Firmly connect the 511-4019 to the OIS sensor ensuring that it latches.
3. Connect the tester's battery clips to 12 volts (Red) and Ground (Black). For pull-start models you will need a shop battery but no ground reference to the engine is required.
4. Crank the engine or use the pull-rope while observing the two LEDs on the tester and ensure that both LEDs flash properly as explained above.

Sensor Wire Colors:

Orange/Red:	Power to the sensor. This may be less than 3 volts.
Black:	Ground. Connects to engine ground inside the ignition pack.
Black/Orange:	Power return from sensor. Should read @2 volts less than orange/red. Connecting this line to ground will permanently damage the sensor.
White/Green:	Cylinder pulse output. (3 per revolution)
White/Blue:	Timing pulse output (6 per revolution)

NOTE: The two sensor outputs are only 1 volt peak, which may not be readable with some peak reading adapters.

Thank you for using CDI Electronics. 11/30/2009