

409 Littlefield Ave.
South San Francisco, CA

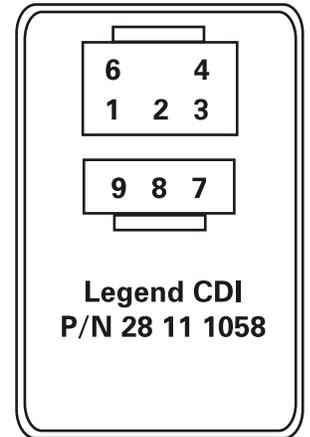
Subject / Vehicles:

Legend CDI Test and Block Function Diagram P/N 28111058

CDI stands for Capacitance Discharge Ignition.

The first test of this component should be for voltage and charge rate as outlined in the Service Manual.

The resistance values shown in the chart below were obtained using an analog multi-meter. Due to variations in internal components (diodes, resistors, capacitors) and multi-meters, these values are presented only as approximate. These values will serve to accomplish a preliminary function check, but are not sufficient for a complete diagnosis. Check for the 0 ohms and OPEN values first, this will be your primary test for failures within the CDI.



Note:

When needed, replace this CDI with P/N 28 11 1072. The new design has a larger circuit board for better heat dissipation in high heat environments.

Meter Range X 10 Ohm	Meter Negative (-ve) connection								
	1	2	3	4	6	7	8	9	
Meter Positive lead (+ve) connection	1	OPEN	OPEN	150	1.8K	OPEN	5K	0	
	2	150		55K	700	4K	OPEN	5K	150
	3	60	OPEN		320	2.5K	OPEN	5K	60
	4	OPEN	OPEN	OPEN		OPEN	OPEN	OPEN	OPEN
	6	1.6K	OPEN	OPEN	3.5K		OPEN	7K	1.6K
	7	8K	OPEN	20K	20K	10K		20K	7K
	8	10K	OPEN	20K	20K	15K	2K		10K
	9	0	OPEN	OPEN	160	1.8K	OPEN	5K	

How it works: (refer to the diagram on page 2)

The voltage output from the Charging Coil in the Magneto Assembly charges the Capacitor inside the CDI. The Capacitor is charged to a voltage of 150 to 300 volts, depending on engine rpm.

The Pulser Coil output, in the Magneto Assembly, is used to trigger a SCR (Silicone Controlled Rectifier) The Pulse Shaping Circuit and Gate Control Circuit adjusts this signal to determine the instant that the SCR receives the triggering pulse; controlling the Ignition Advance characteristics. When the SCR is triggered, the 150 to 300 volts stored in the Capacitor is released to the primary side of the Ignition Coil creating an output around 20,000 to 30,000 volts to the spark plug.

The Throttle Sensor is used to vary the Ignition Timing. Voltage to the Throttle Sensor is supplied by the CDI. With throttle positions of less than 1/2 open, the voltage output of the Throttle Sensor is 1.5 volts DC, which allows the CDI to vary the ignition advance from 16 to 30 degrees before Top Dead Center depending on engine rpm.

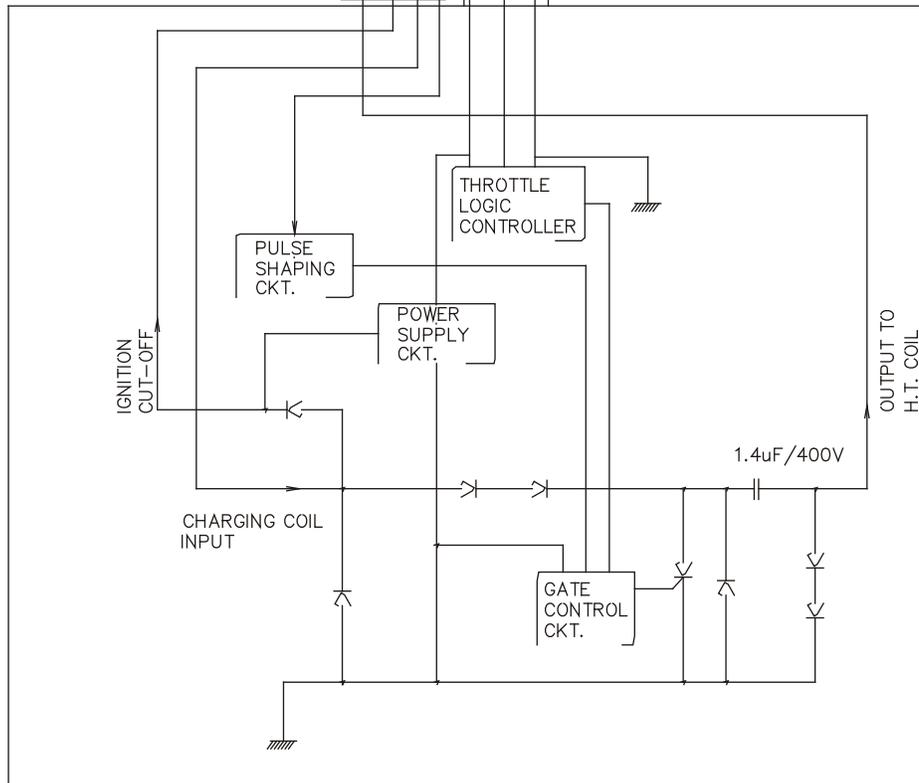
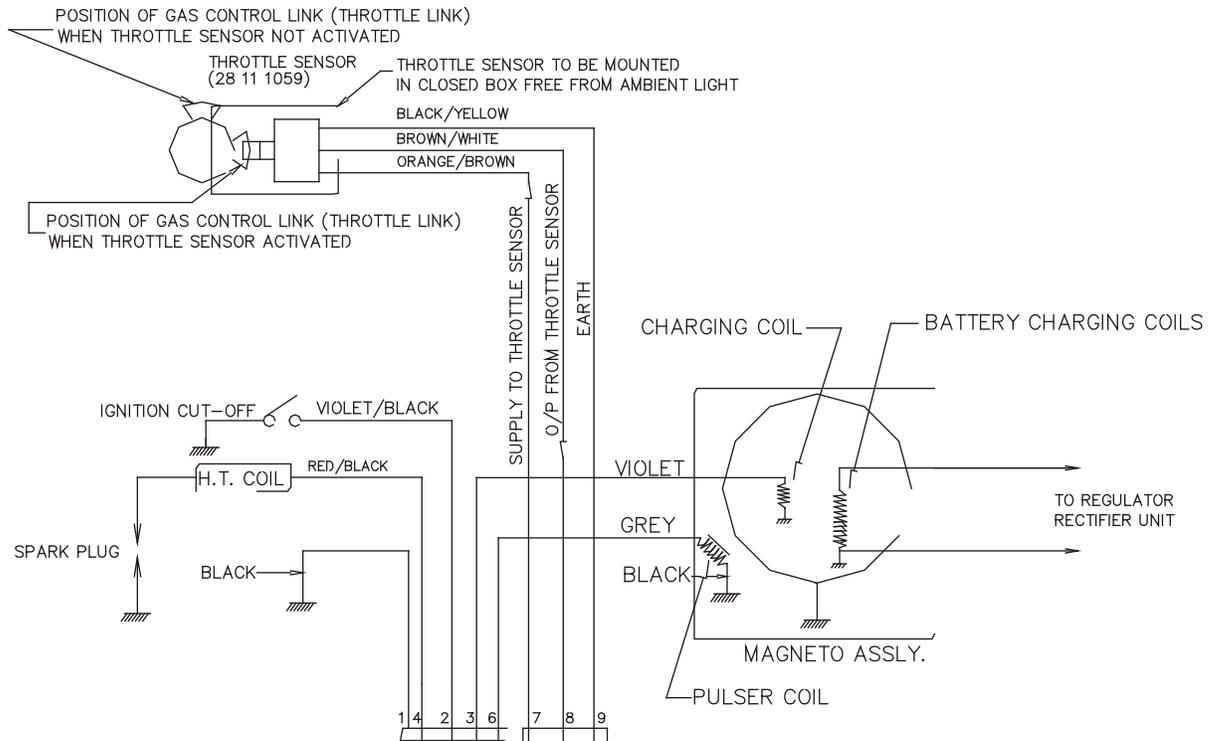
Output of the Throttle Sensor from 1/2 to full throttle is 300millivolts DC, which, regardless of engine speed, sets the ignition advance to 16 degrees Before Top Dead Center.

With this automatic adjusting ignition advance, optimum fuel economy is realized, and destructive preignition, common with fixed advance systems, is eliminated.

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Functional Block Diagram for Legend CDI Part No. 28 11 1058