

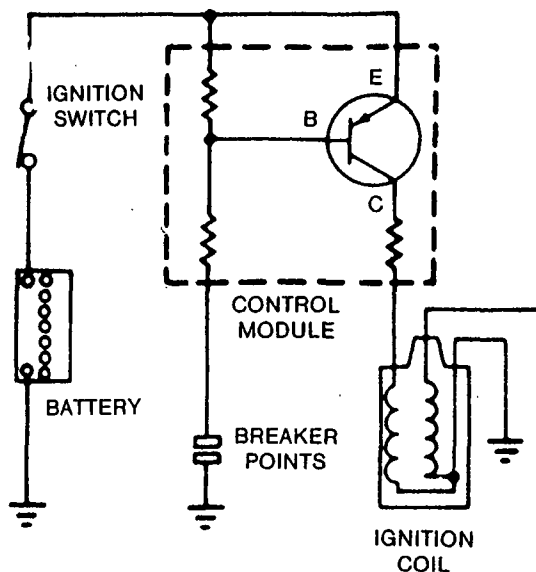
ELECTRONIC IGNITION SYSTEMS

As the number of automobiles and the quantity of dangerous pollutants emitted by them has increased, air quality standards have been established to help protect our environment and health. In order to meet these increasingly strong standards, the automobile manufacturers were pushed into developing more efficient ignition systems.

Although solid-state ignition systems had been around for some time, they had not been used extensively. They were adopted by manufacturers and improved to help meet clean air standards in the early 1970's, when they came into widespread use on domestic vehicles.

Solid-state, or electronic ignition systems are designed to provide higher secondary voltage, reliable performance for longer periods of time, better operation under a wider range of conditions, and longer component life for decreased maintenance. The development of the transistor (an electronic semi-conductor switch with no moving parts) made it possible to replace the weakest link in conventional systems, the breaker points.

Breaker Point Transistor Systems



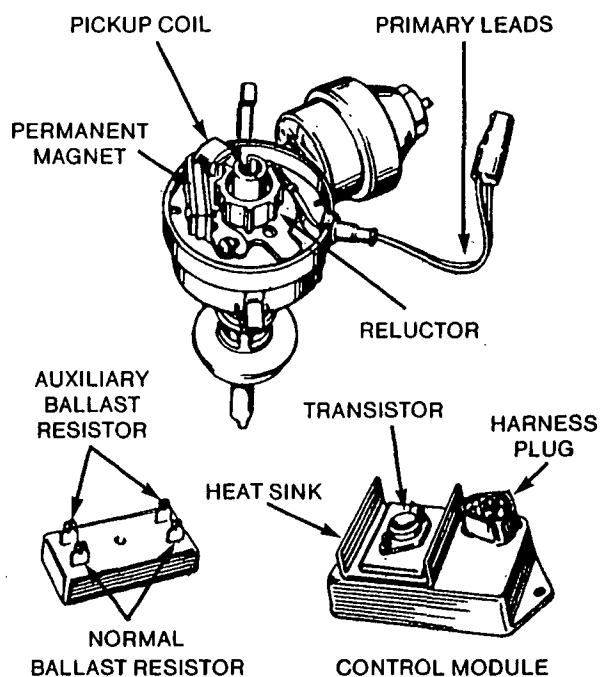
(Figure 26) Breaker Point Transistor System.

The first transistorized ignition systems still used breaker points as a signal for the transistor

to control primary current flow. The points no longer conduct primary current, just a small signal current, and point life and performance are greatly improved. However, there is still mechanical wear, and high speed efficiency is not aided.

In this system, when the breaker points close, the transistor is switched on, allowing primary current flow through the coil to develop the magnetic field. As the points open, the transistor switches off, interrupting primary current and thus inducing secondary voltage.

Breakerless Transistor Systems



(Figure 27) Breakerless Transistor System.

The transistorized ignition system was improved with the introduction of a magnetic pulse control unit, which replaced the breaker points. Output of the transistorized ignition system is increased, even at high engine speeds. The increased available secondary voltage reduces engine misfiring, which in turn reduces plug fouling, increases plug life, improves fuel economy, and reduces exhaust gas emissions.

In the breakerless transistor system, the breaker points and condenser used in a conventional system are replaced by a magnetic or optical triggering device.