

Sparking Along - Your Guide to Ignition Systems

- By Harry MacLean

This article deals with the different types of ignition systems available for our MGs. Ignition systems can often be a weak point on any MG. Simply put, if you have no spark, then your car doesn't run. Several types are available - the original points style system, the optical system, the magnetic pickup system and the capacitive discharge system.

Points Style Systems have been around for years and are standard on most MGs. They have a cam on the distributor shaft and a mechanical block that opens and closes the points to create the spark from the coil through a coil wire to the distributor cap. From there, it is routed through the rotor which spins with the distributor shaft, directing the spark to each cylinder, through a spark plug wire to the spark plug. A condenser stores energy and helps the points create the spark. The time the points remain closed is called dwell, which is normally from 30 to 34 degrees.

Advantages - Can be bought anywhere and can be easily changed when they wear out, even on the road.

Disadvantages - Can wear quickly (10-12k miles) and ignition timing changes as they wear out.

Magnetic Pickup Systems are similar to a points style system but better. These have also been around for years. On the plate inside the distributor is a stationary magnet. There is a piece mounted to the distributor shaft called a reluctor. As the shaft turns the reluctor breaks the magnetic field, sending a signal to the coil and providing a faster, stronger spark. There may be a box called an amplifier to further enhance the spark. A magnetic system that has no amplifier is a Pertronix system which uses a Hall Effect switch in the distributor. For those who want to retain the original look, a Pertronix system is almost undetectable, except for two wires.

Advantages - Consistent spark, timing remains constant, no moving parts to wear out, reliable.

Disadvantages - Harder to install, more costly, and if it fails it is unserviceable.

Optical Systems have also been around for years and is the stock ignition system on a 1980 MGB. Instead of a magnetic pickup, the optical system uses a light to break the field and send the signal to the Coil. This system always uses an amplifier. Crane is a popular brand of optical system.

Advantages - Excellent spark quality with more accuracy compared to a Hall Effect switch.

Disadvantages - Higher cost, harder to diagnose failure, if it fails it is unserviceable.

Capacitive Discharge Systems have an amplifier that stores the spark then discharges it very quickly. These systems create higher voltage, which it discharges extremely fast. Capacitive discharge systems are mostly used for racing applications, beyond the needs of the average MG owner in a stock or slightly modified car. MSD is a popular brand of capacitive discharge system.

Advantages - Extremely high voltage, very big spark, fast discharge time.

Disadvantages - High cost, can burn up a stock distributor cap and rotor, requires heavy duty spark plug wires.

When using electronic ignitions systems, should consider using 7mm or 8mm spark plug wires. The spark made by these systems can break down smaller wire and create current leakage.

You might consider using an electronic ignition system in your MG. Electronic ignitions systems are available for either positive or negative ground systems and are fairly priced considering the value.