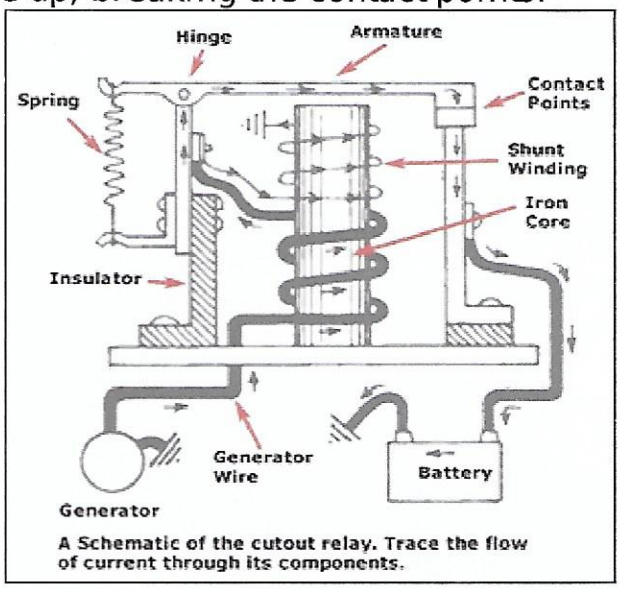
# Cutout Relay

Sometimes called the circuit breaker, this device is a magnetic "make-and-break" switch. It connects the generator to the battery (and therefore the rest of the car) circuit when the generator's voltage builds up to the desired value. It disconnects the generator when it slows down or stops.
The relay has an iron core that is magnetized to pull down a hinged armature. When the armature is pulled down a set of contact points closes and the circuit is completed. When the magnetic field is broken (like when the generator slows down or stops) a spring pulls the armature up, breaking the contact points.



A Schematic of the cutout relay. Trace the flow of current through its components.

An obvious failure mode is the contact points. As they open and close, a slight spark is generated, eventually eroding the material on the points until they either "weld" themselves together or become so high in resistance that they won't conduct current when closed. In the first case the battery would discharge through the generator overnight and in the second there would be no charging to the system.

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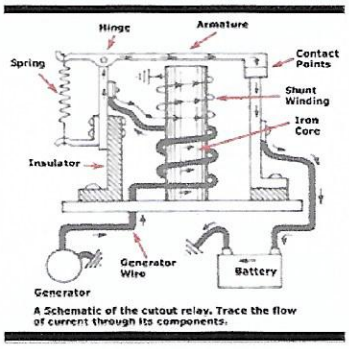


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