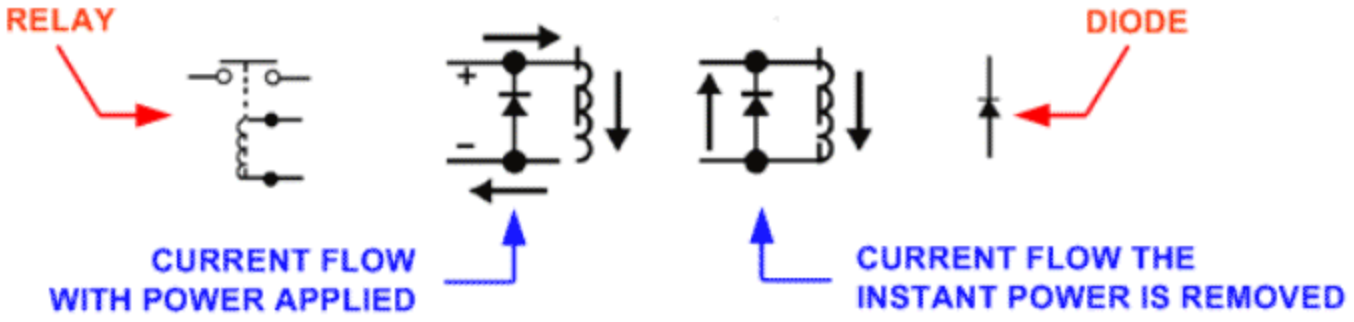
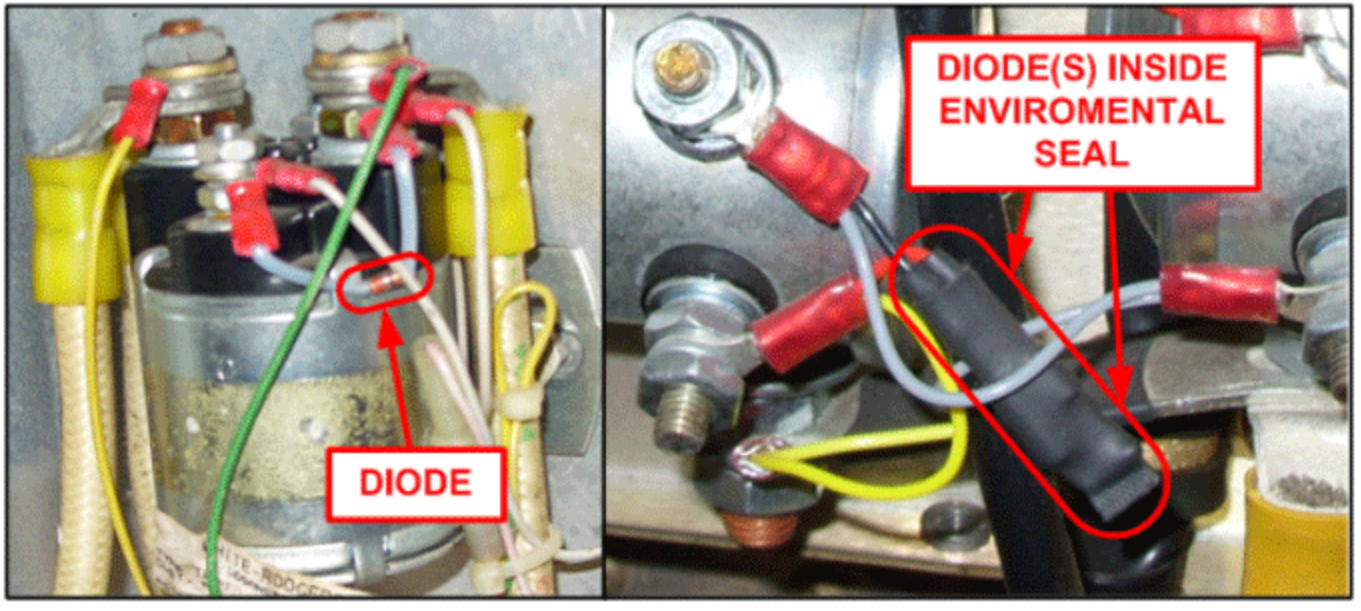
In a typical battery and engine starting wiring diagram, the electrical schematic shows a diode installed in the circuit. Notice the location of the diodes in the electrical circuit drawing below. The diodes are installed in parallel with the relay coil.




In the photographs below, two battery relay installations in Cessna single engine airplanes are shown. The components circled in red, highlight where the diode installations are.

## BATTERY RELAY INSTALLATIONS




A diode is connected across the input wires of inductive loads, such as relays, to protect voltage sensitive avionics, electrical components and switches. The diode (known as a “Fly-Back Diode”) is reverse-biased. When the circuit is energized, no current flows through the diode. However, with the current flowing through the inductive load there is a magnetic field which provides power to the relay motor, or valve.

Without a diode installed, the instant power removed from the coil will collapse the magnetic field causing a momentary high voltage spike. The diode installation allows voltage to dissipate through the inductive load preventing an arcing condition from occurring across the switch contacts.

During inspections of relays and diodes, check the wire connection(s) for integrity and signs of damage or discoloration of the parts which may indicate a developing or existing problem.