



■ **CLASS DISCUSSION ITEM 3.2**  
**Inductive “Kick”**

The following inductive circuit illustrates a common application of a diode to reduce current arcs (sparks) between the switch contacts when the switch is opened. Diodes used in this way are called **flyback** or **freewheeling** diodes. Arcs can damage the switch and can create electromagnetic interference (EMI) that can affect surrounding circuits. Why does a switch arc when it is used to open an inductive circuit? What is the purpose of the diode? Consider the current flow in the inductor and how it changes as a function of time.

