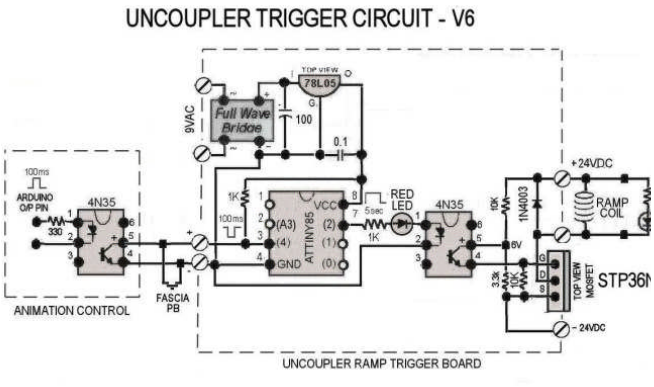
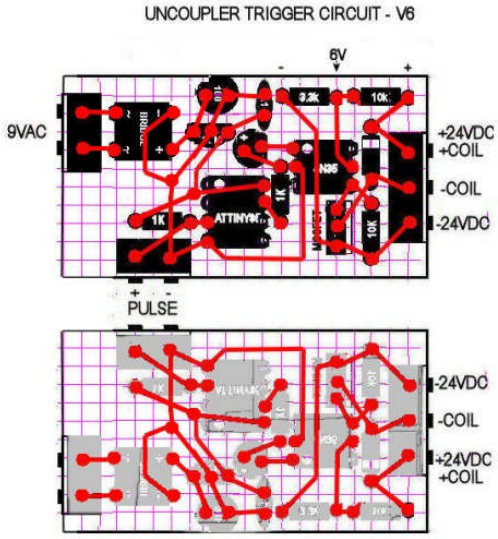
Powered Uncoupler Ramps

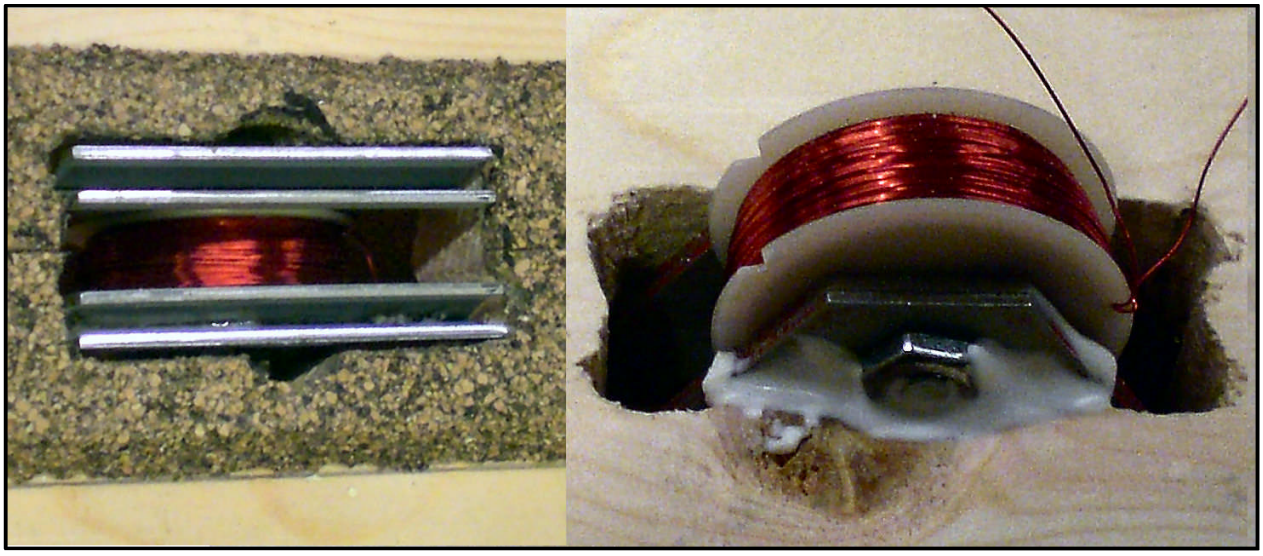
By F. Miller, MMR

The Kadee® #309 Magne-Electric Uncouplers, when mounted under the rails, provides a solution to inadvertent magnetic uncoupling of Kadee (HO) or MicroTrains (N) couplers which can be experienced with traditional magnet bars. However this powered uncoupler requires 3-4 amps of DC current at 18 or more volts, enough to overheat the coils if left on.



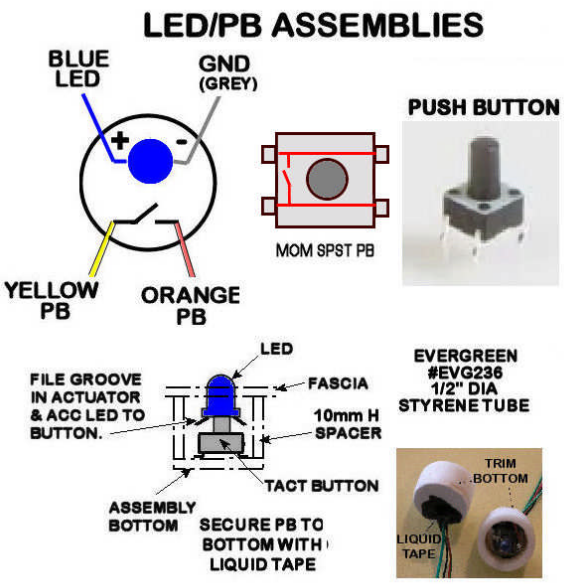


The ATTINY85 micro-controller circuit is powered from some available source but a separate 24VDC power source is used to power the uncouple magnet coil. Note that the coil power is isolated from the micro circuit to prevent coil spikes from effecting the ATTINY85 circuit. The program running in the ATTINY85 initiates a 5 second burst of the required power to prevent overheating of the coil.



The Kadee® #309 Magne-Electric Uncouplers is mounted under the rails, preferably before laying the track. As shown in the photo for N-Scale use, the brackets can be reassembled for a closer fit to match the smaller rail seperation.

Activation of the ramp circuit is accomplished by a LED light/pushbutton on the layout fascia, or by a momentary pulse from some other micro-controller animation circuit. The uncoupling circuit 'debounces' the input pulse to eliminate false triggers from noise.



Inexpensive illuminated fascia strip pushbuttons can be constructed by gluing an LED on to a printed circuit board pushbutton. The PC/LED unit is assembled into a protective cover made from styrene tube and sheet. Color coded #30 stranded wire makes for easy connection to controlling circuitry.