

www.voltscooter.com

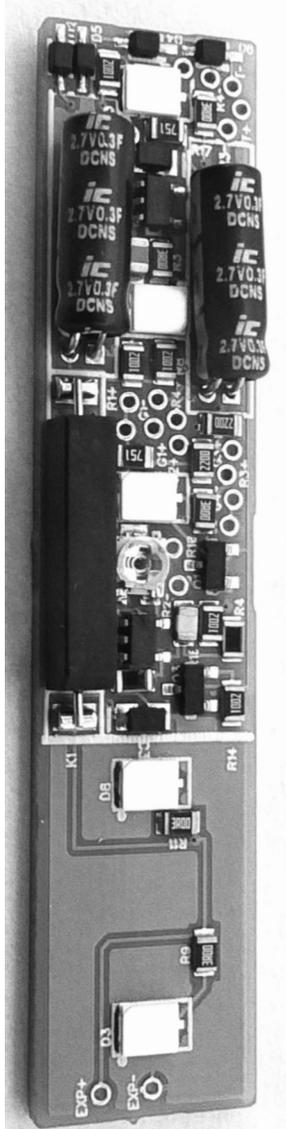
Voltscooter Electronics
56 Nonotuck Street
Holyoke, MA 01040-2666 USA

VOLTSOOTER ELECTRONICS

Lighting Kit for N-Scale Cabeese & Short Passenger Cars

Constant, adjustable, regulated
caboose & Passenger car lights:

- Super-capacitors and regulators for consistent lighting.
- 5 LEDs to insure uniform lighting.
- Connections for up to 8 marker lights (4 red and 4 green). The lights are in groups of 4 which can be selected by a magnetic wand.
- Cabin lights adjustable from dim to bright.
- When adjusted for normal light levels the car will remain lit at constant brightness for up to 15 seconds after power is removed.
- Size: 2.45" (62 mm) x 0.51" (13 mm) x 0.23" (6 mm).
- Can be shortened as much as 0.83" (21 mm) to a length of 1.61" (42 mm).



Warranty

If for any reason this product does not meet your needs you may return it for a full refund. The warranty will be honored even if the product has been modified by installation. This offer is valid for a minimum of one year from the date of purchase.

Condensed instructions are included.
More instructions are available at
www.voltscooter.com.

Installation

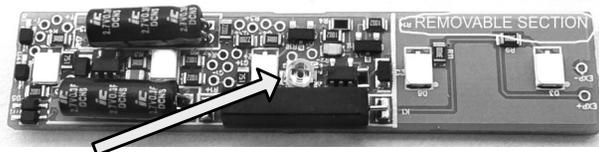
The bottom and top of the light board has connection points labeled.

T+ and T- is connected to the car's track pickups. Polarity is not important.

+R, -R and +G, -G are for connecting optional LED marker lights (not supplied). The marker light connection is at 3 Volts and is current limited by a series 750 Ohm for R and 220 Ohm for G resistors. Connect the anode of the LED to + and the cathode of the LED to -.

There are two sets of LED marker lights. Only one set is on at a times. R1, R2, G1 & G2 are in the first set and R3, R4, G3 & G4 are in the second set. Normally the R LEDs are visible from the rear of the train and the G LEDs are visible from the front of the train. Swiping the magnetic wand parallel to the length of the caboose will turn on one or the other set of LEDs. Once a set of LEDs is selected it will remain selected regardless and will not ever change until the magnetic wand is swiped in the opposite direction.

The board can be shortened by cutting off part of the removable section below.



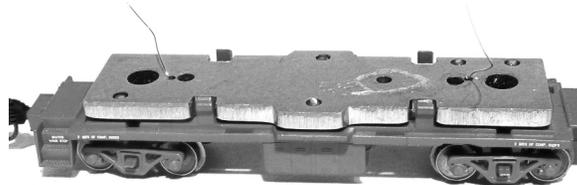
Brightness is adjusted with the supplied screwdriver at the point shown above.

Installing Your Own Pickups

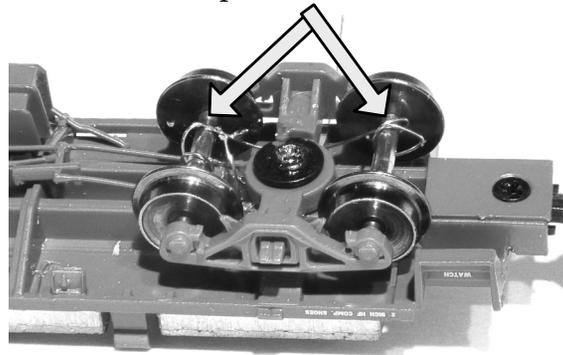
Recommended parts:

- Metal wheel sets
- Fine magnet wire (supplied)
- Phosphor bronze wire for contacts. (Supplied)

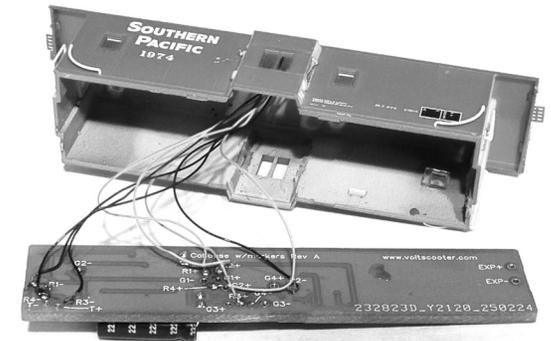
Drill a holes near the kingpins. These holes will be used for passing the magnet wire from the truck to the inside of the car. Be sure that the insulated side of the wheels are on the same side



Use the supplied phosphor bronze wire to create electrical pickups. Wrap the wire around each axle at least two times. If the wheel does not rotate freely then pull the wire to loosen the wrap.



Tin the end of the supplied magnet wire by placing a bead of solder on the iron's tip and holding the magnet wire in the solder bead until the insulation burns off and the wire is tinned. Insert the magnet wire into the drilled out holes. Solder the magnet wire to the copper phosphor bronze contact wire at a convenient place between the wrap and the plastic bolster. Be careful not to melt the bolster. Repeat for the other truck. The insulated wheels of the second truck are on the opposite side of the car.



Solder the other end of the magnet wire to the T+ and T- points on the light board. Do not remove the soldering iron until the magnet wire insulation is fully burned off at the point of contact. Solder the leads from your red and green marker lights to the R & G pads to on the light board.

Connect track power or 12 Volts DC to the trucks and test the operation of the light board. Install the light board into your car. Adjust the light with the supplied screwdriver to the desired brightness of the cabin lights. Caboose lights are normally very dim so as not to interfere with night vision by the crew.