

Lionel Fastrack Switch LED Replacement

By: Steve Bergerson
Pine River, MN

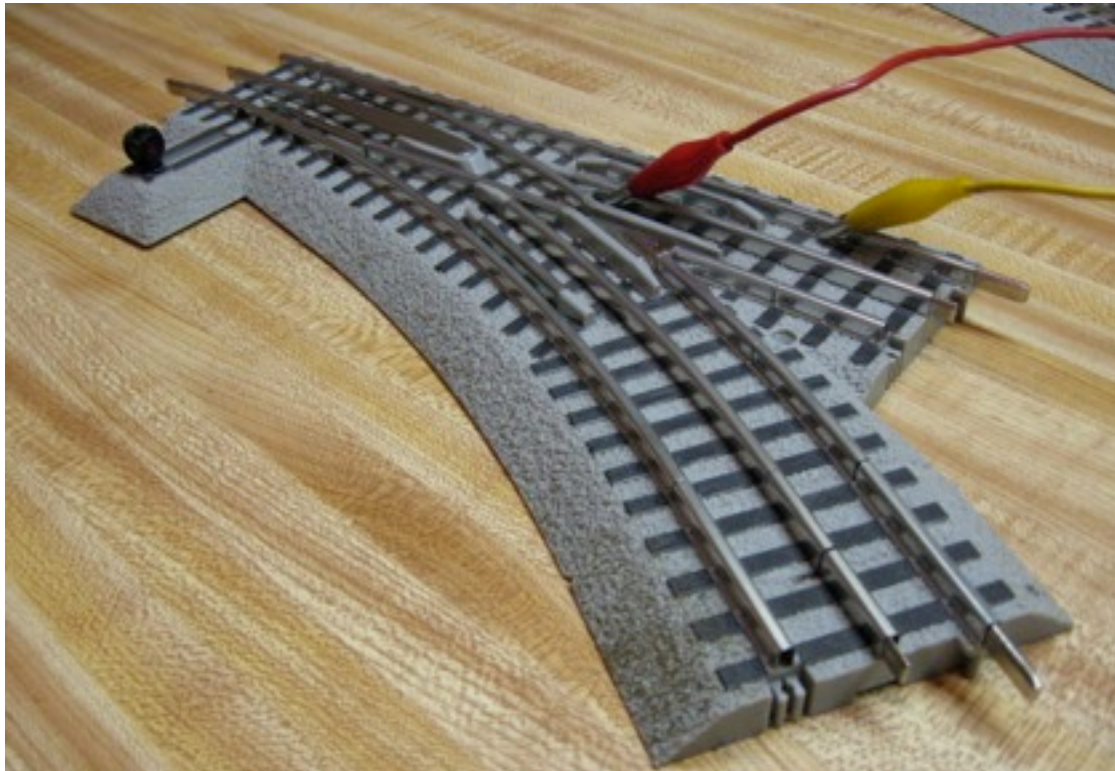
Before starting, you should have decent soldering skills and a very fine tip on your soldering pen. I've done this with a cheap Radio Shack soldering pen, but prefer to use an adjustable soldering station. Also, a "third hand" (Radio Shack part number 64-2063 \$9.99).

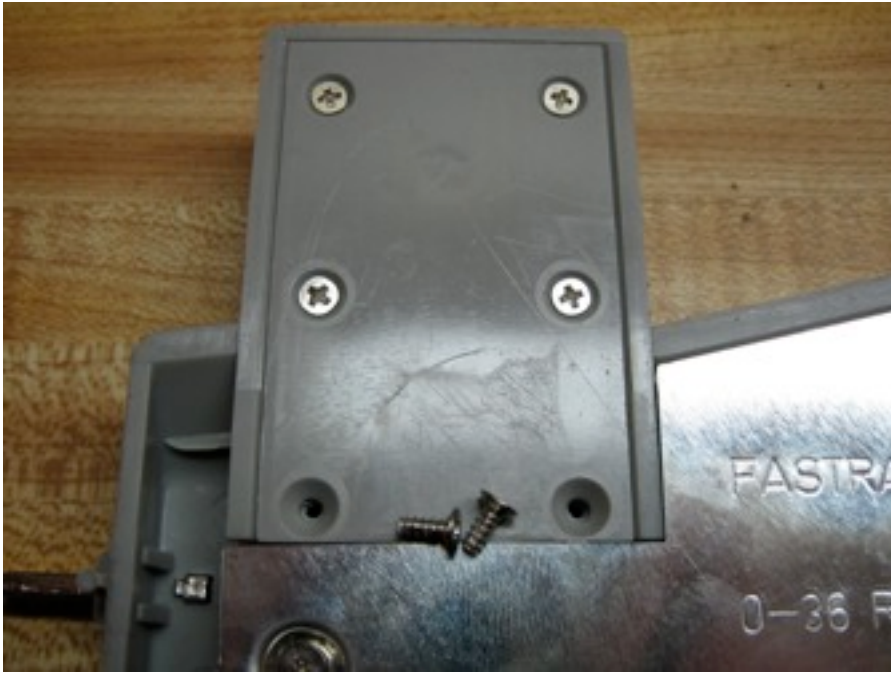




Step 1
With the track jumper in place, apply transformer power to the center rail and outside rail.

Check for LED illumination.





If the LED does not illuminate, remove the switch stand as follows.

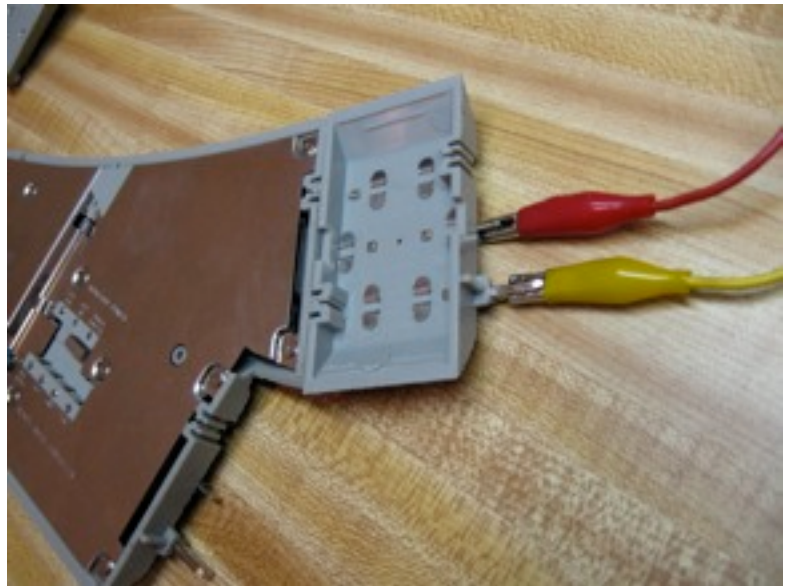
- Place the switch in the straight through configuration.
- Remove the two innermost screws on the switch stand.
- Carefully pull the switch stand straight up from the switch... You may need to wiggle it a bit.
- You should now see the copper contacts on the switch.



Reapply transformer power to the switch by attaching to the center rail and an outside rail.

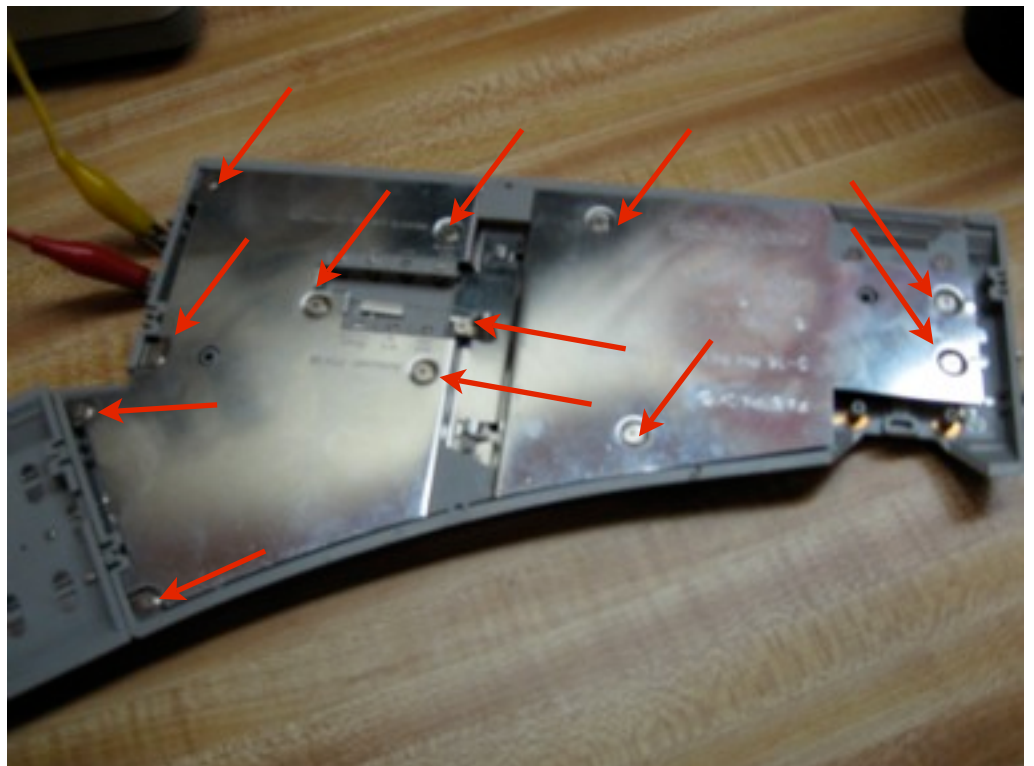
Next set your multimeter to DC Volts and check for approximately 4.5 VDC at the two copper contacts.

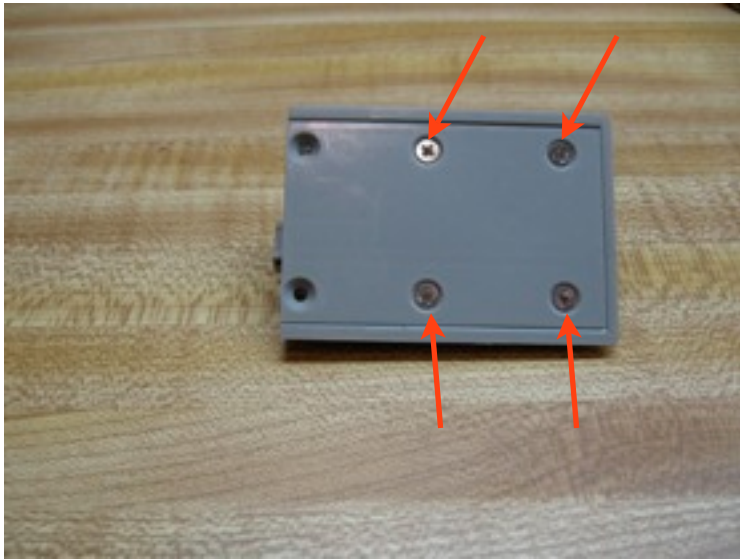
If 4.5 volts is present, you will need to change the LED.



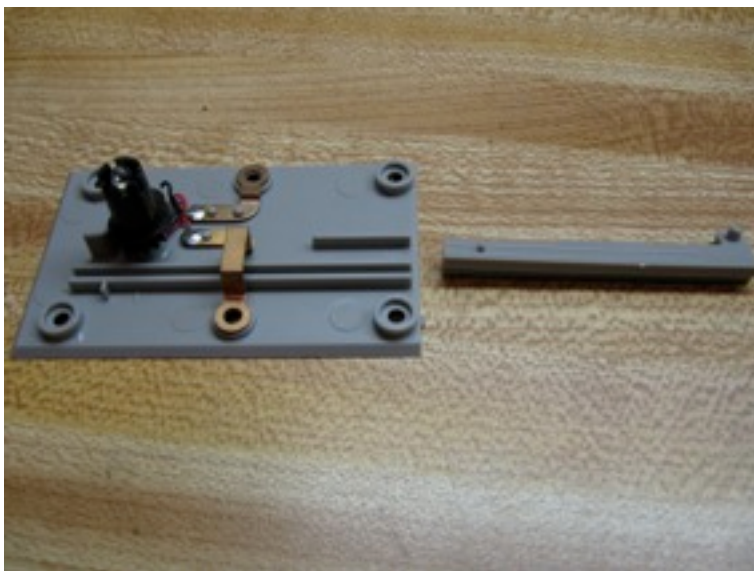
If 4.5 volts is not present, you will need to remove the back of the switch by removing 12 screws. Look inside for loose connections, pinched wires, or bad solder joints.

In my experience, the board has not been at fault. If the board is bad, generally the switch will not work.

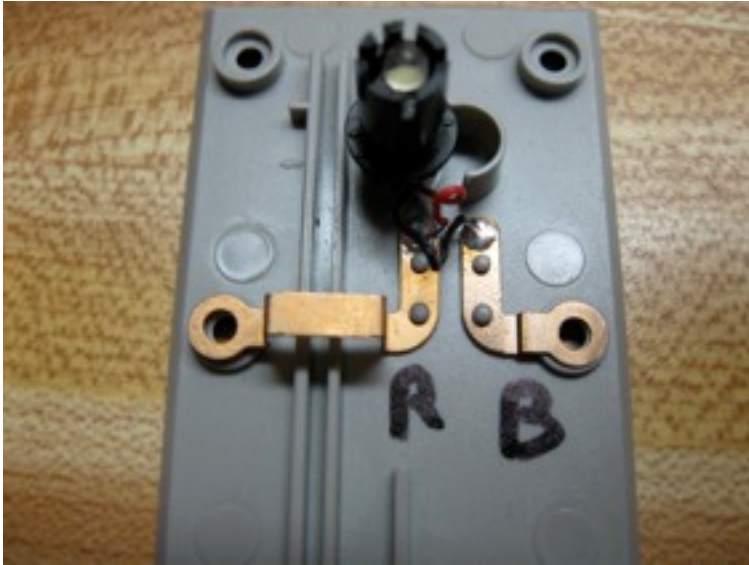




Remove the four remaining screws from the switch stand and separate the two halves.

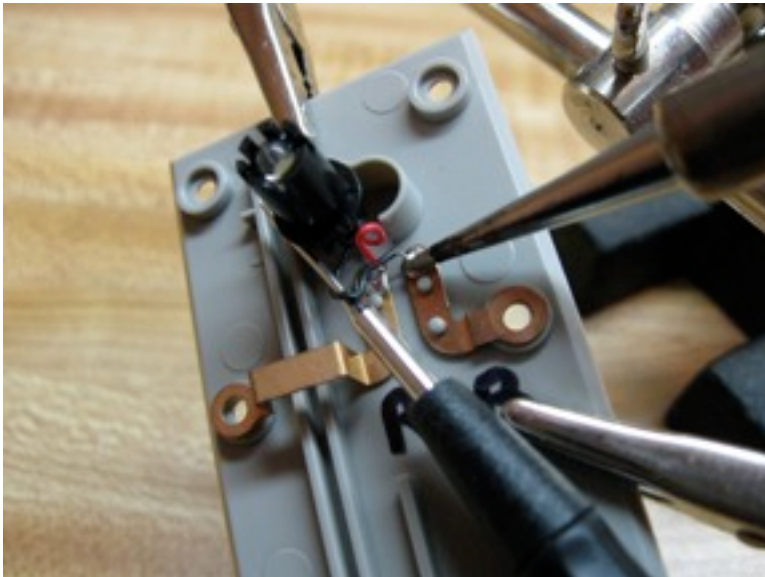


Remove the rack by sliding it forward



Note the position of the black and red wires on the switch stand base.

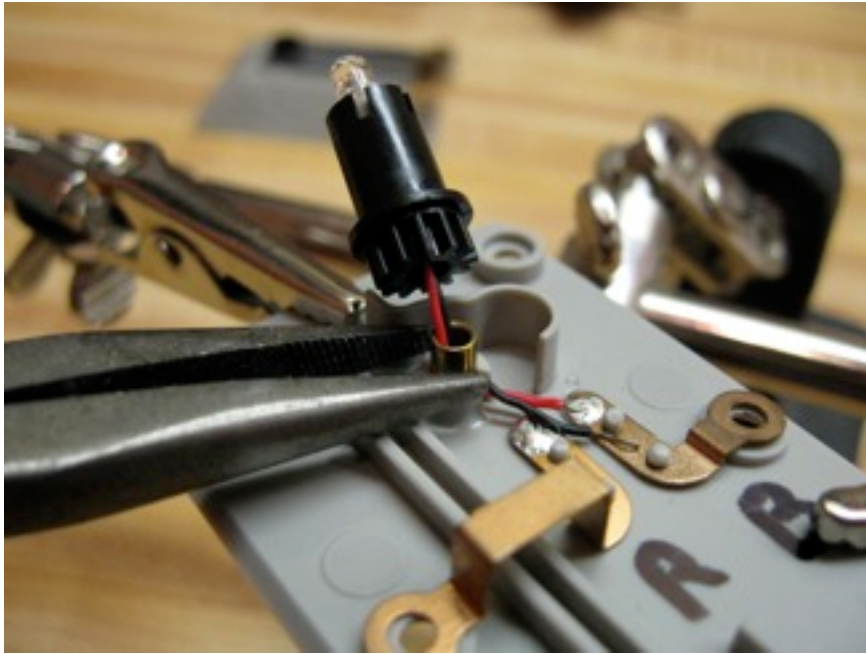
It might be helpful to label them for easier reassembly.



Now heat the two solder joints and pull the wires off of the solder pads.

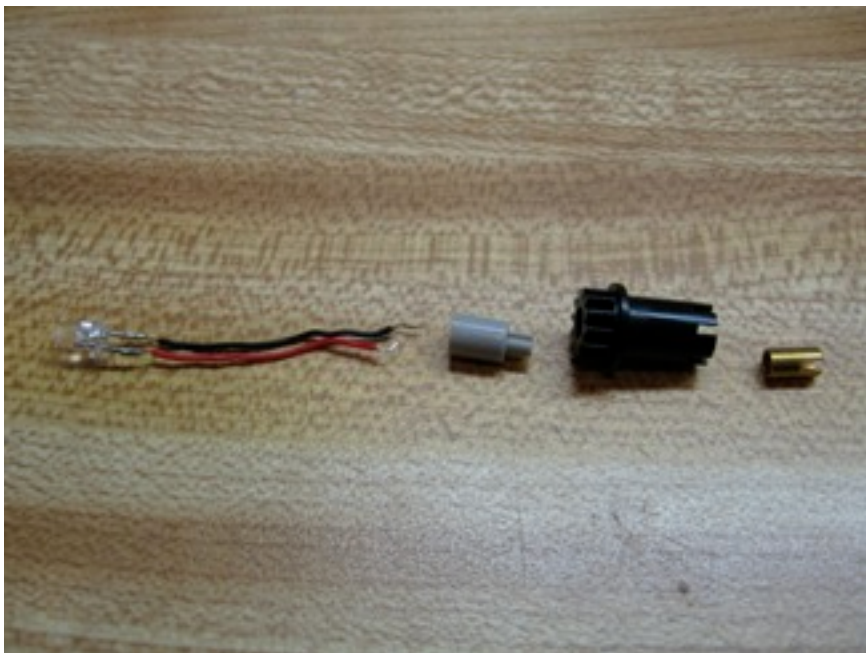


Be careful not to overheat. you will want to use the smallest soldering tip you have for this.



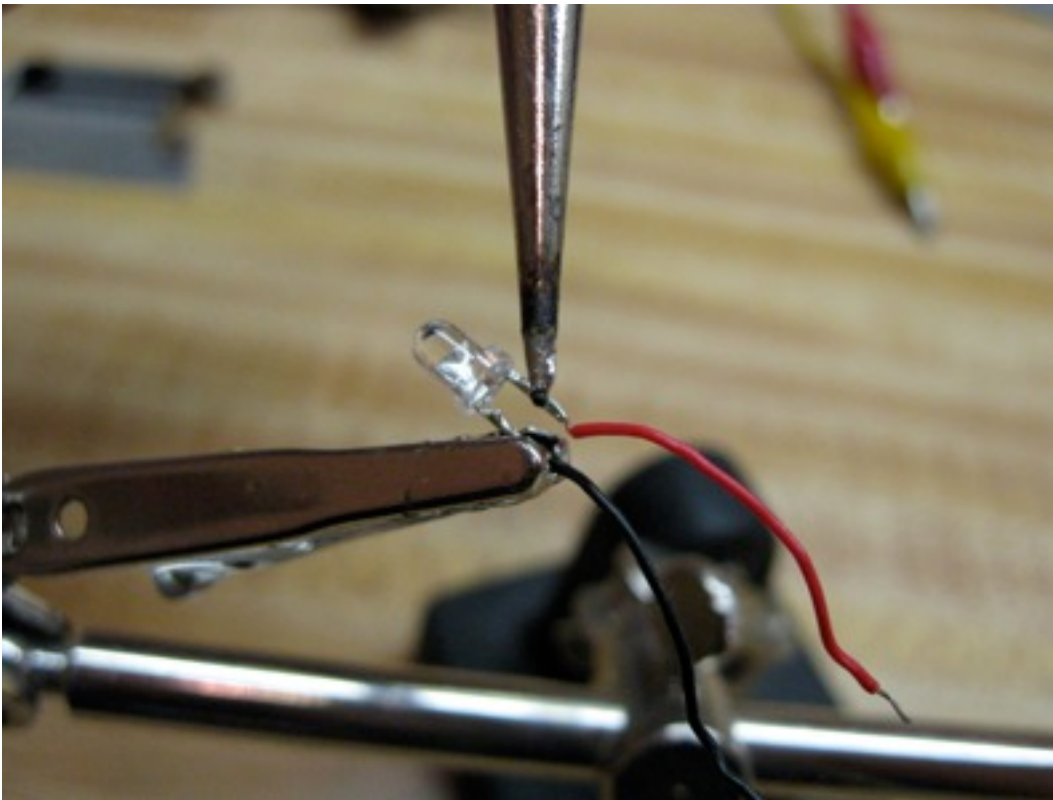
Gently pull the black plastic gear/housing up from the base.

If the brass LED base tube doesn't come up at this time, you will need to gently remove it with small needle-nose pliers.



Separate the brass tube, black gear, grey LED base, and LED with wires.

Picture shows proper order for disassembly and reassembly.



Remove the wires from the LED by heating with a soldering pen and pulling the wires away.

Put a new LED (**Lionel part # 610-2045-300**) in a holding fixture and prepare to solder the black wire.

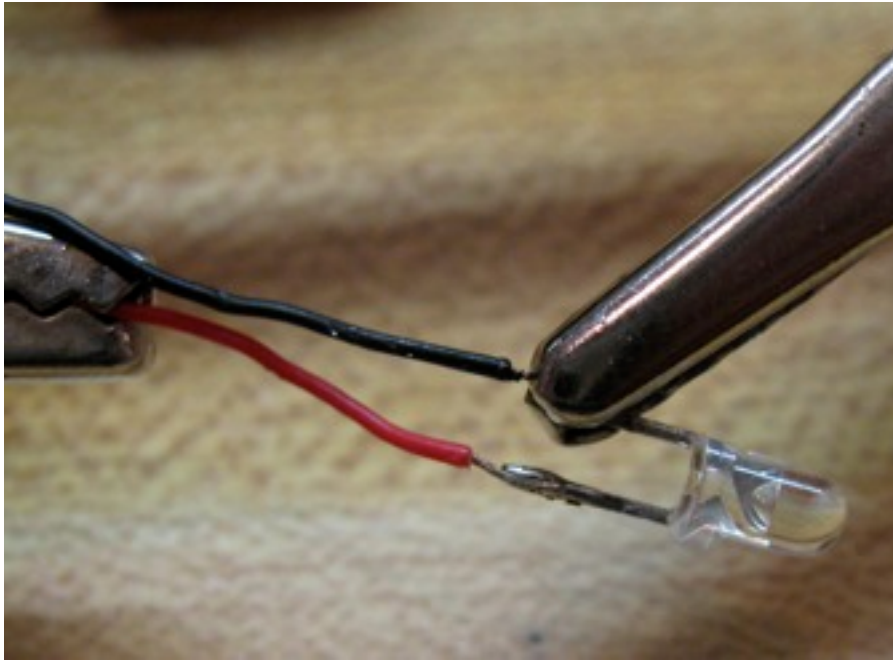
When looking at the LED base, you will notice there is a flat spot by one of the leads.

The black wire will be soldered to the lead by the flat spot.

When soldering these connections, **USE AS LITTLE SOLDER AS POSSIBLE.** Also, position the wire on the flat side of the LED lead. If too much solder is used, the bulb will not go back into the holder.

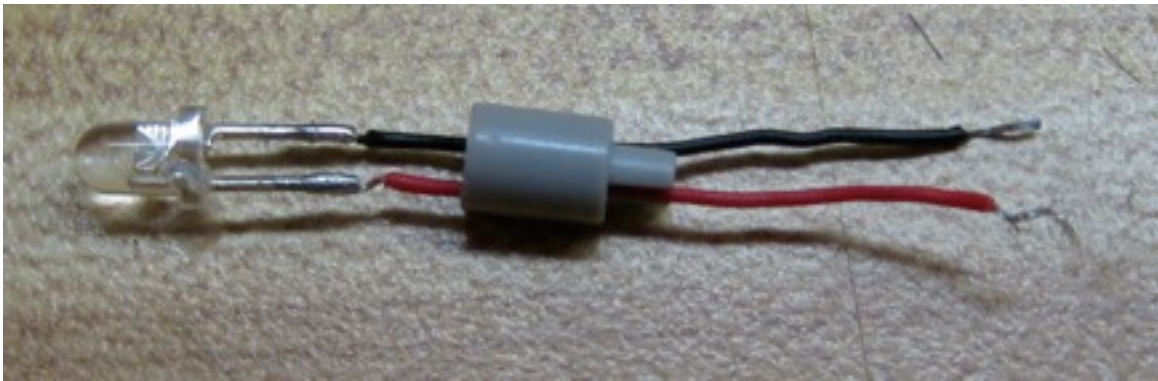
One technique for soldering is to put a “dab” of solder on the LED lead. Then put the wire in position and heat the lead and wire so they “stick” together.

Remember, this is not a structural connection. We just want the wire attached to the lead.



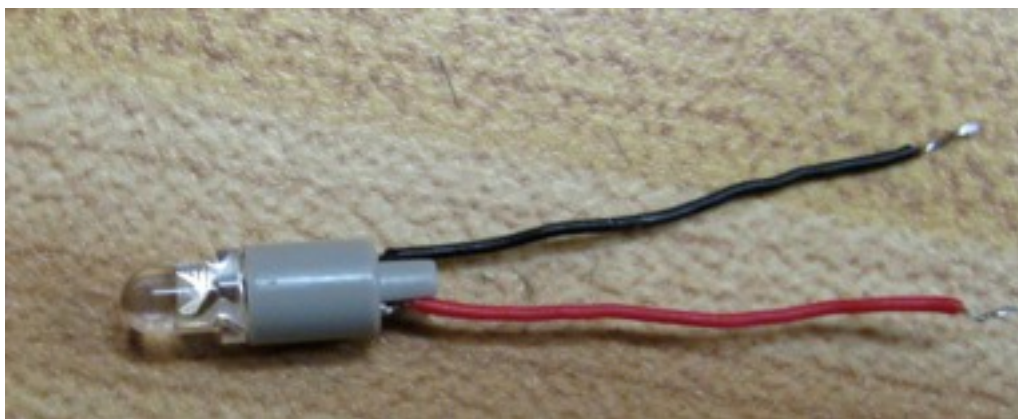
Almost too much solder on this connection

But it fit.

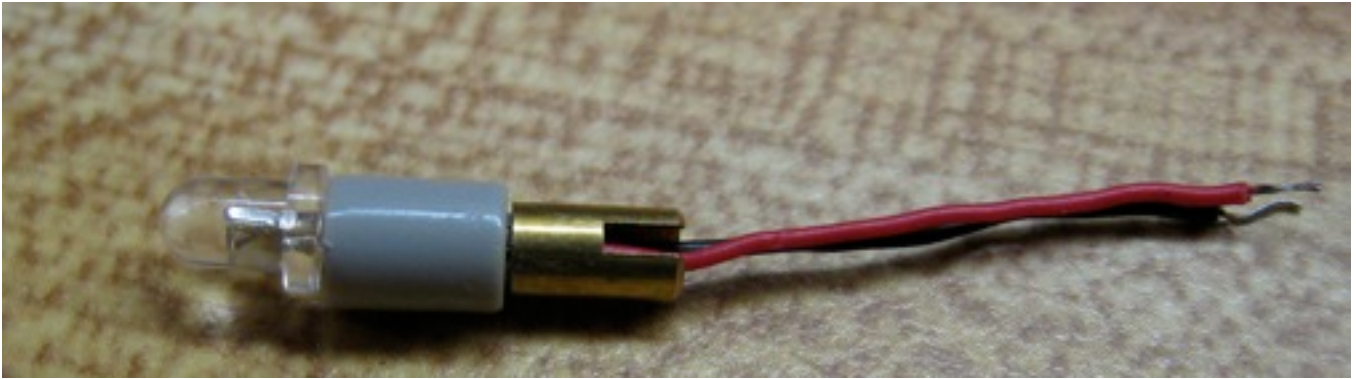


Straighten out the black and red leads and thread them through the 2 holes in the grey LED base.

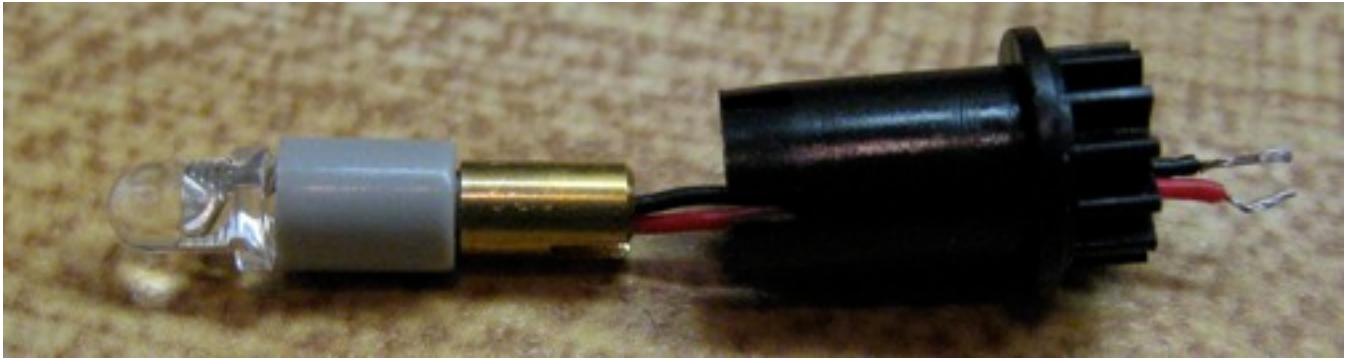
Push the LED all the way in. **If it doesn't go in all the way, you used too much solder.**



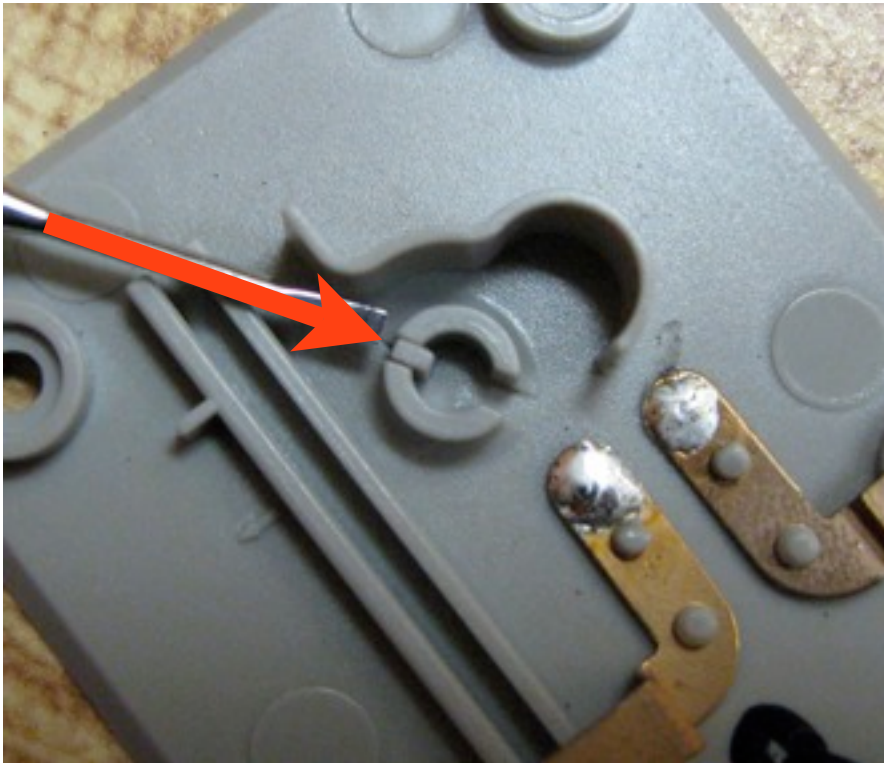
Slide the brass bushing onto the LED base with the slots in the bushing facing away from the LED.



Insert the LED assembly into the black gear



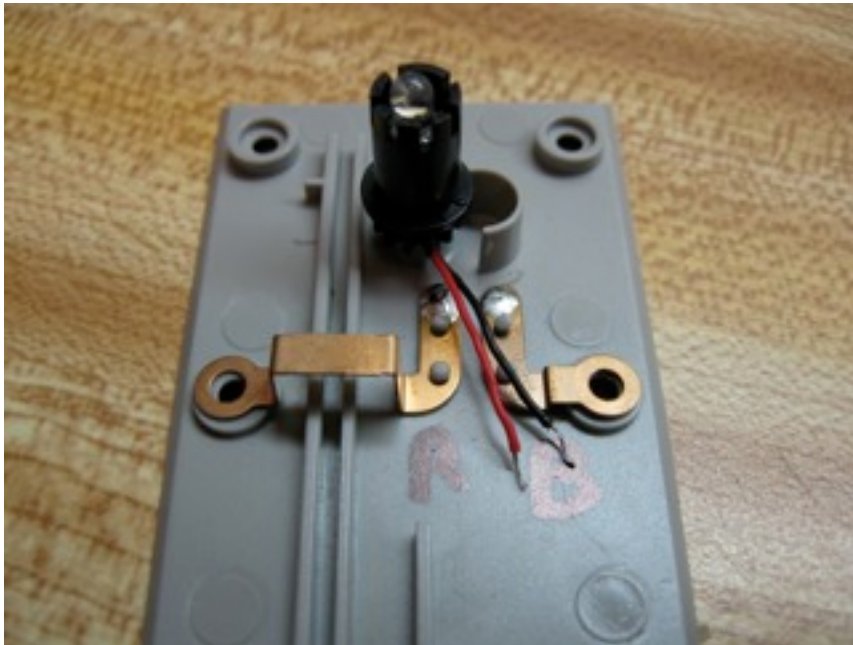
Bring both wires out through **ONE** slot in the brass bushing.



Align the other slot in the brass bushing with the notch in the switch stand (shown at the tip of the arrow).

Push down to seat the assembly.

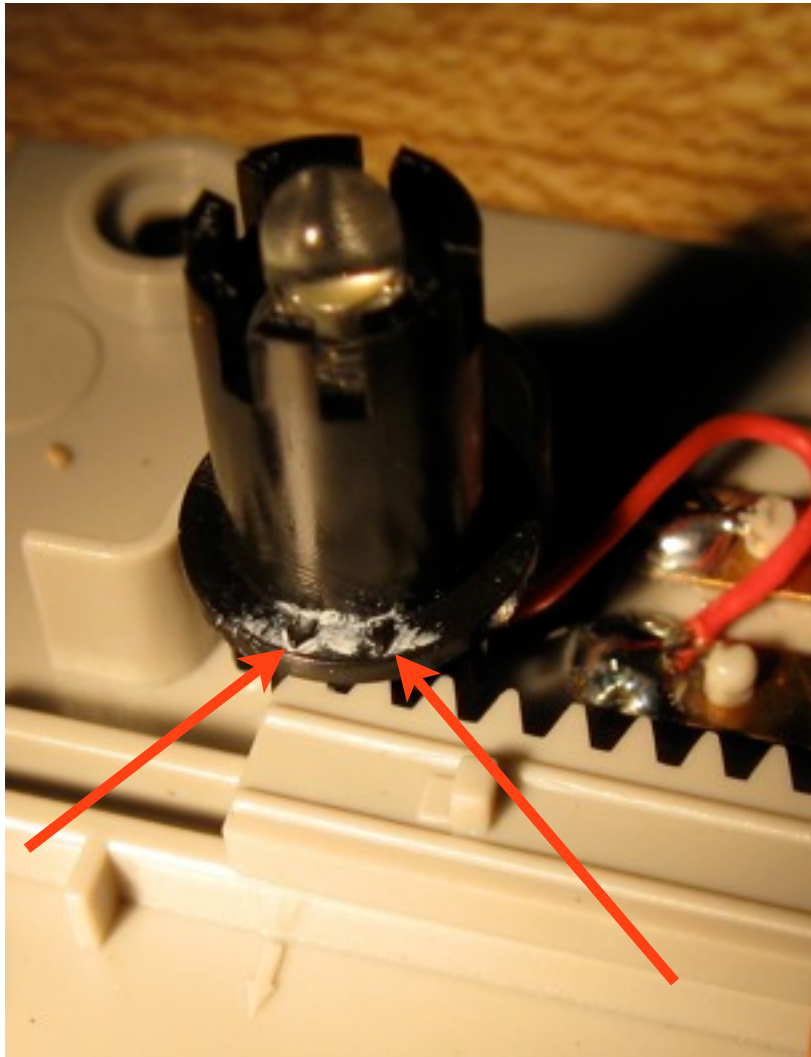
When properly seated, the black gear will turn and the LED will stay stationery.



Move the black wire out of the way and solder the red wire first. Next solder the black wire.

DO NOT OVERHEAT or you will melt the plastic pins that go through the copper strips.

When you are done soldering, push the wires down so they don't snag on the black gear.



Now, insert the rack.

Locate the two arrows on the base of the black gear.

These two arrows should point to the first two “valleys” in the rack.

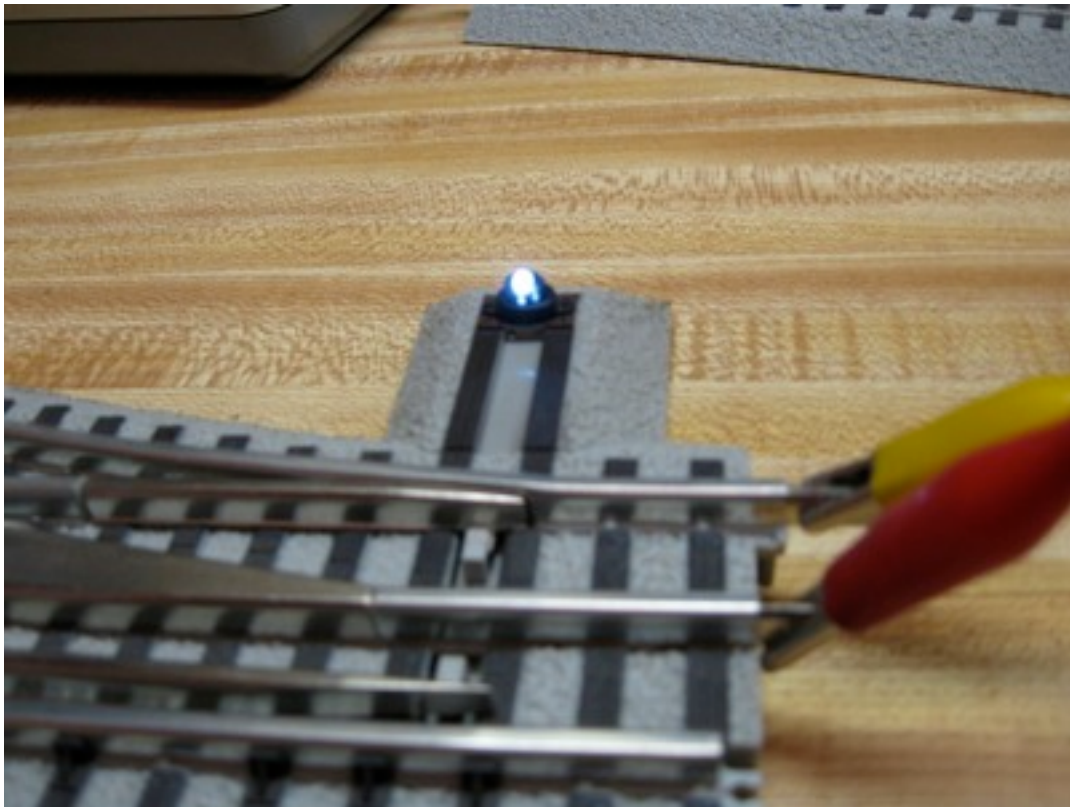
Failure to align the rack properly will result in the lamp not aligning with the track when the switch is fully assembled.

Almost Done!!!

Put the two halves of the switch stand back together by installing the four screws removed earlier.

Reattach the switch stand to the switch with the 2 remaining screws. Before tightening the screws, make sure the switch travels freely from straight to siding.

I've found it easiest to have the switch in the straight position when installing the switch stand.



Apply power to the switch
and enjoy your new LED!