

The Cheapskates Guide to Heated Handlebar Grips

Warning!!- Don't try this without proper adult supervision especially if you don't know one end of a soldering iron from the other. I don't want to hear about your burnt out bike from the electrical fire!

Needs:

- 1 off 4 metre packet of "Cuprothal" resistance wire from Dick Smith Electronics
Part number. W 3200 about \$2 (Note: the "Nichrome" wire is a bitch to solder)
- 1 off Double pole double throw centre off switch from Dick Smith Electronics
Part number P 7672 about \$5
- 1 off Weatherproof hood, Large for M12 switch from Dick Smith Electronics
Part number H 1915 about \$2-60
- 1 off High brightness LED bezel (green) from Dick Smith Electronics
Part number P 8107 about \$3-20
- 1 off 680 Ohm $\frac{1}{2}$ watt resistor from Dick Smith Electronics
- 1 off Right hand throttle grip for your bike.
- 1 offcut of 25mm plastic electrical conduit the same length as your grip.
- 1 roll of masking tape
- I assume you have a soldering iron, solder, wire, insulation tape, etc.....

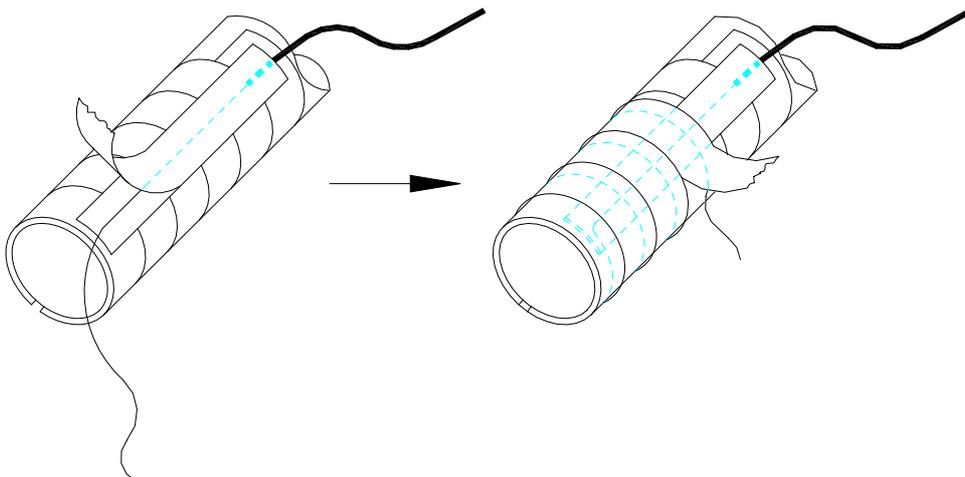
This is what you do:

On the left hand side first remove the old hand grip clean the bar and trial fit the plastic pipe. You will probably have to split the pipe along its length with a hacksaw to enable it to fit the bar. When you're happy you can araldite the pipe in place to stop it turning later.

The next step is to decide on the wattage you want from the elements. This will be the heat setting when on high heat. Shop bought ones are in the range of 10 to 16 watts per side. I used 18 watts as this is a resistance of 8 ohms and a current draw of 1.5 amps, (note this is all per side/grip). This gives a quick heat up! The formulas are: watts = volts squared / resistance & watts = volts x amps.

Now if you have a multimeter you can use it to measure out the length of element wire you need. The length of wire is dependent on the resistance. The wire is about 4.4 ohms per metre for the multimeter challenged. I left a little extra on the length as it's easier to cut it back than to extend it later.

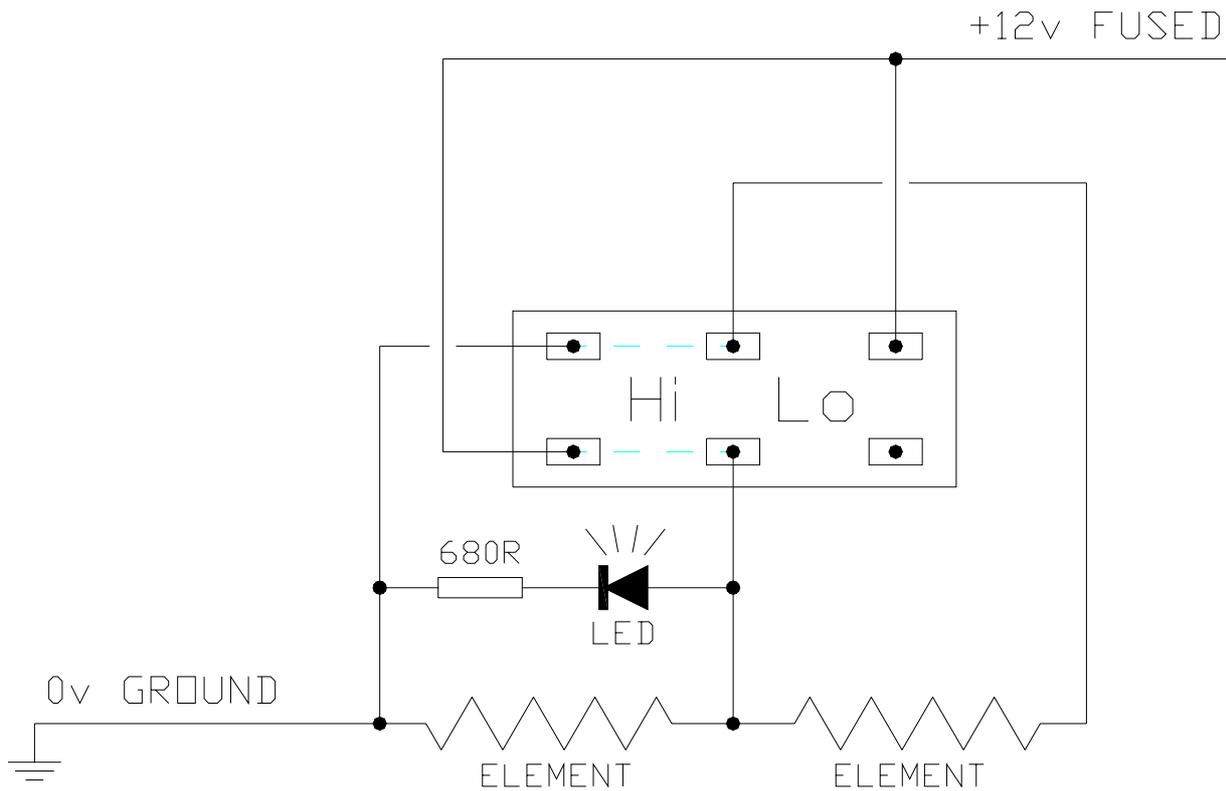
At one end of the wire solder on a length of insulated wire you will connect to the switch. Tape around the plastic tube with a spiral of masking tape then put a strip of masking tape along the pipe, run the element wire along the pipe to the end then cover that with another strip of masking tape. Wind the element wire evenly back up the grip covering with more masking tape as you go. Solder another length of insulated wire to the element and cover with more masking tape. Finally push on the handlebar grip.



Repeat this procedure on the throttle side but without the plastic pipe, you just wind the element straight onto the taped plastic throttle body. Take care to allow the wires enough slack to allow the throttle to turn and yet not get caught on anything.

Now find a place to mount the switch and LED. You will also need a source of ignition switched 12 volts. Please make sure it's fused with the correct rating fuse (work this out from your resistance calculations).

The wiring for the switch is shown below. Note this design does not use a nasty hot resistor (it uses the other handgrip instead to halve the power when on the low setting. I mounted the switch so the low heat setting was on the left. When the grips are on low the LED should be at half the brightness of the high setting.



One last point make sure all joints are solid and covered with insulation well. Bikes vibrate a lot and even with the fuse you don't want any shorts!

Happy Handgrips.....