

HOW TO BUILD A TEST RECTIFIER – REVISED

Build a test a rectifier

To test a small DC items with an AC Transformer

ITEMS NEEDED

Caution: Solder and Soldering Irons are HOT

Wire Stripper

Lighter or Hair Dryer

Side Cutter (Nickname Dyke)

Heat Shrink

(Most common is 1/8, 3/16 and 1/4 inch)

Rosen Core Solder (1/16 inch or less in diameter)

Soldering Iron also known as Soldering Pencil

Solder

Liquid Tape

1 one foot piece of 16 to 20 gauge Red wire DC Positive

1 one foot piece of 16 to 20 gauge Black wire DC Negative

2 one foot pieces of #16 to 20 gauge any other color wire

AC Hot and Common I happened to use Orange

4 one inch pieces of 1/8 heat shrink tubing or liquid tape

2 inches of 3/16 heat shrink tubing or liquid tape

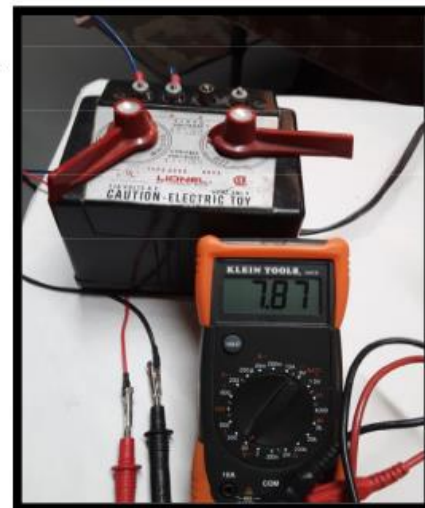
Small needle nose pliers

Heat Gun, or some form of heat to shrink the heat shrink tubing.

(If using a lighter be sure that the flame is always moving so not to burn the heat shrink tubing.)

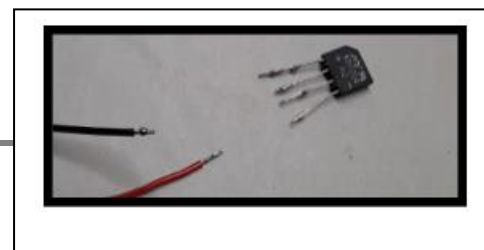
AC Transformer

Test Meter for current set to test DC current



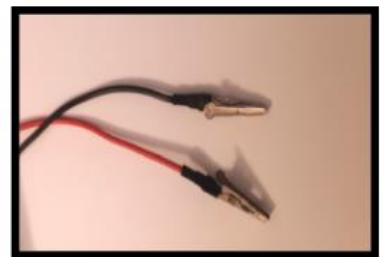
1. Strip about 1/2 inch of insulation off the ends of all 4 wires

2. Tin all 4 wires and the 4 leads off of the rectifier.



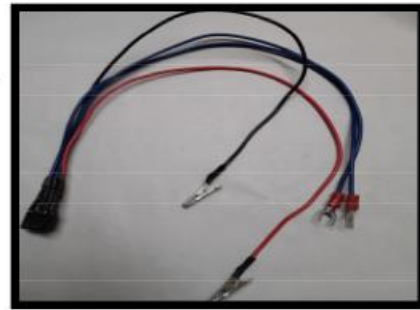
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3. Solder the red wire to the positive lead of the rectifier.
4. Solder the black wire to the negative lead of the rectifier.
5. Solder the other two wires to the center or the AC leads of the rectifier.
6. Slide the 4 pieces of 1/8 inch heat shrink tubing over the 4 wires all the way up to the rectifier to cover the bare leads.
7. When in place, use a heat source (lighter or hair dryer) to shrink the heat shrink tubing around the wires and the leads. Keep the source of heat moving so as not to burn the heat shrink tubing.
8. Strip 1/2 inch of insulation off of the other ends of the 4 wires attached to the rectifier
9.
 1. Insert the AC wire leads into the terminal (spade terminal, ring terminal, etc.) and crimp the terminals around the wire. Use the wire cutter or a terminal crimp tool to crush the terminal sleeve to the wire. (Use caution that you do not cut the sleeve in half.).
10. Solder the wire sticking through the sleeve to the terminal end.
11. Take two 3/16 diameter pieces of heat shrink 1 inch long and slide them onto the red and black wires away from the joint to be soldered.
12. Take the red and black wires and solder them to the alligator clips.
13. Let the solder cool off then slide the heat shrink up and cover the Soldered joint.
14. When in place use a heat source to shrink the heat shrink tubing around the wires and the leads. Keep the heat moving so as not to burn the heat shrink tubing.



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15. 1. If the heat shrink is forgot in any of the steps above and heat shrink can't be added over the solder joint, use Liquid Tape.
 - a. Cover the entire bare section of the wire with Liquid Tape.
 - b. Be careful because Liquid Tape is rubber-based, is runny and will drip. Liquid Tape is hard to get out of cloth.
 - c. Allow the Liquid Tape to dry for about 5 minutes or so.



16. The test rectifier and leads are completed and ready for hook up to your AC transformer and the leads to test the DC item

17. Hook the two terminals soldered to the AC wires of the rectifier to AC to an AC transformer.



18. Use your variable control or speed control hookup to control the power level to the rectifier.

19. Hook up the alligator clip connected to the red wire to the positive side of your test lead of a multimeter.

20. Hook up the alligator clip connected to black wire to the negative side of your test lead of a multimeter

21. Plug in the transformer to the wall and turn up the power handle.

22. You should get a positive reading on the Multimeter in DC mode (See photo on Page 1).

23. Reverse the connection to the multimeter's test leads and you will get a negative reading on the Multimeter, as shown here.



24. Set the power level on the AC transformer to level that is needed and you are ready to test/run any DC motor or other DC device. Adjust the AC transformer power level as needed for different DC equipment.