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1 Soldering

Soldering is a fine art. One can make solder connections which look like finger painting, or one can make solder connections which look like the Venus Di Milo. To make the more beautiful kind, read on...

The first point to good soldering is having a clean soldering iron. This is important in that a clean iron tip heats metal much more quickly, and much hotter. To clean your iron tip, heat the iron, then gently and quickly wipe it off on a wet sponge or cloth. Then, melt solder onto the tip until the entire tip is a silvery color, and you have a large glob of solder on it. Finally, tap off the excess solder by tapping the iron handle, hard, with your finger. The tip should now conduct heat well. Do this procedure periodically during your circuit construction, whenever the solder joins seem to be not working well.

The second point to good soldering is in knowing what should melt the solder. The iron is there to heat the parts to be soldered together. It is the parts themselves which should be melting the solder, _NOT_ the iron.

For example, soldering down a component, put the tip of the iron on the component lead, leave it there for a second, then touch the solder to the lead on the side opposite the iron. The solder will ”flow” around the hot wire, and the pad on the component board, making a very nice connection.

With these two principles in mind, your circuit should come out looking like a million bucks!

2 Reading Capacitor and Resistor Values

Capacitor markings vary by manufacturer. The ones supplied with this kit are marked as follows...

Capacitor values consist of three parts... two significant digits, and two exponents. The first two digits on both capacitors should be the same, namely, ”10”. These are the two significant digits. The next numbers, ”2” and ”3” are the first exponents. These specify the number of zeros to be written after the significant digits. Finally, the number constructed from the first three digits is multiplied by 10E-12, which is the second exponent. Therefore, the two capacitors you have should be a 10 nanoFarad, and a 100 nanoFarad capacitor.

Resistors use the same scheme, except they only have one exponent, and the numbers are represented by colors. The colors can be decoded by using the following mnemonic:

Better (0) = Black
Be (1) = Brown
Right (2) = Red
Or (3) = Orange
Youe (4) = Yellow
Great (5) = Green
Big (6) = Blue
Venture (7) = Purple
Goes (8) = Gray
West (9) = White

Finally, there is a band at one end which specifies the resistor tolerance. Silver is 10%, Gold is 5%, and Brown is 1%. The first significant digit starts at the end opposite the one specifying tolerance.

For example, a 3.3 K Ohm 5%resistor will be labeled: Orange, Orange, Red, gold (3,3,00).

Good Luck!!!!