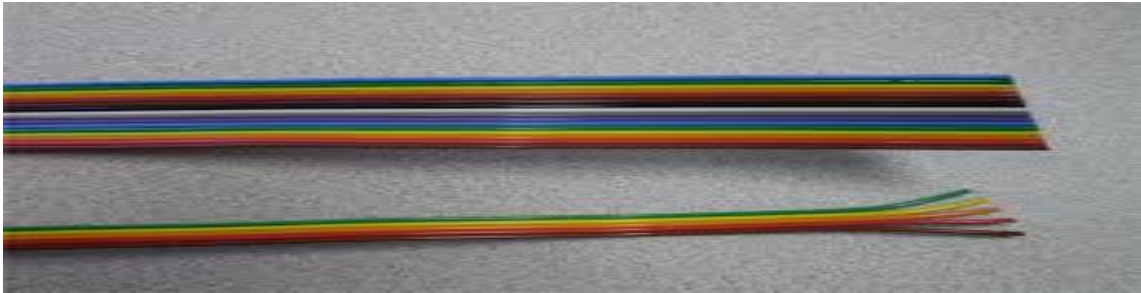


HANDOUT FOR EMT1130

RIBBON CABLE: (RAINBOW WIRES) A LONG 16 WIRE CABLE THAT SHOULD BE CUT INTO 3 EQUAL PIECES, ONE FOR EACH OF THE 2 DIP CONNECTORS AND THE THIRD IS EXTRA. ONE END OF EACH RIBBON CABLE SHOULD BE CRIMPED ONTO THE DIP CONNECTOR. ****STRIP AWAY 2 WIRES FROM THE RIBBON CABLE TO FIT ONTO THE 14 PIN DIP CONNECTOR****

ONCE CRIMPED, EACH WIRE SHOULD BE SEPARATED HALFWAY DOWN THE RIBBON CABLE AND THEN STRIPPED, TINNED AND LABELED. ****USE WIRE CHART ON OTHER PAGE TO LABEL WIRES****



DIP CONNECTORS: (WIRE CLAMPS) THERE ARE 2 DIP CONNECTORS IN THE LAB KIT TO CRIMP WITH THE RIBBON CABLE, 1X 14PIN AND 1X 16PIN CONNECTORS. THEY ARE USED TO CLAMP ONTO ONE END OF THE RIBBON CABLES AND PLACED IN THE IC CHIP HOLDERS THAT ARE ON THE PC BOARD ****DO NOT SOLDER**DO NOT CLOSE OR FORCE OPEN****



TRANSFORMER: BRINGS DOWN THE VOLTAGE OF 115V (AC) ~ 13V (AC) THE TWO RED WIRES ARE SOLDERED TO THE BLACK AND WHITE WIRES FROM THE LINE CORD (PLUG) ****MAKE SURE 3-PRONG LINE CORD IS SET IN THE BOTTOM SHEET METAL AND SHRINK TUBES ARE PLACED ON RED WIRES BEFORE SOLDERING**** THE OTHER THREE WIRES ARE SOLDERED ONTO THE PC BOARD ****BLUE=GROUND****



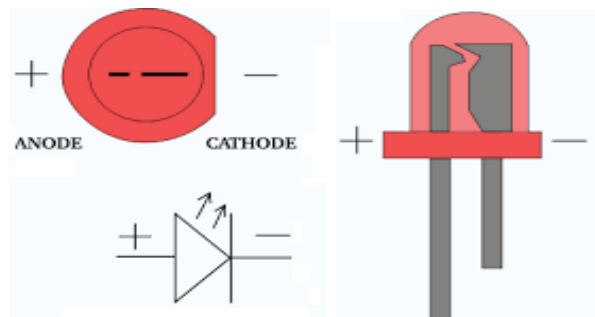
LINE CORD: (3-PRONG PLUG) INSERT ABOUT 3 INCHES OF THE LINE CORD INTO THE BOTTOM SHEET METAL (HOLE 'Z') AND MAKE A KNOT. CONNECT THE STRAIN RELIEF ON THE LINE CORD FROM THE OUTSIDE OF THE BOTTOM SHEET METAL, IT SHOULD "POP" IN PLACE. GET A SPADE TERMINAL FROM THE TECHNICIAN AND CRIMP IT ON THE GREEN WIRE OF THE LINE CORD. AFTER CRIMPED THE SPADE SHOULD BE BETWEEN THE NUT AND SCREW OF THE TRANSFORMER. CUT 2 PIECES OF SHRINK TUBE AND PUT ON PRIMARY WIRES OF THE TRANSFORM (RED WIRES) THEN, SOLDER THE OTHER TWO WIRES OF THE LINE CORD FLAT WITH THE PRIMARY WIRES DO NOT TWIST WIRES TOGETHER ****PLACE SHRINK TUBES AT ENDS OF THE WIRES BEFORE SOLDERING**** ADJUST TUBES OVER THE EXPOSED WIRES AND USE HEAT GUN TO "SHRINK" TUBES ONTO WIRES.



POTENTIOMETER: (VARIABLE RESISTOR) USE A WIRE FROM YOUR KIT TO CONNECT TERMINALS 2 AND 3 TOGETHER. ****MIDDLE PIN NEEDS TO BE SOLDERED TO EITHER THE TOP OR BOTTOM PIN BUT NOT BOTH****



L.E.D.'S AND HOLDERS: (LIGHT EMITTING DIODE) AFTER ALL THE HOLDERS ARE PLACED ON THE TOP SHEET METAL, SET 5 RED L.E.D.'S WITH THE MARKED STOPPERS (POSITIVE TO POSITIVE, NEGATIVE TO NEGATIVE) AND PLACE IN THE HOLDER FROM THE BOTTOM. ALL THE POSITIVE LEGS OF THE L.E.D.'S SHOULD BE FACING THE SCREW HOLES AND THE NEGATIVE LEGS FACING THE TERMINAL STRIP BELOW. BEND ALL POSITIVE LEGS LIKE AN 'L' TOWARD THE POTENTIOMETER AND SOLDER EACH CONTACT POINT OF THE L.E.D. LEGS TOGETHER. THE LAST L.E.D SHOULD HAVE A 'RED' WIRE SOLDERED FROM ITS LEG TO THE 5V TERMINAL STRIP **(DO NOT SOLDER THE TERMINAL STRIP END JUST YET)** THE OTHER 2 L.E.D.'S AND L.E.D. LEGS WILL GET THEIR OWN WIRES FROM THE DIP CONNECTORS.



WIRE CHART

<u>14 PIN WIRING</u>		<u>16 PIN WIRING</u>	
<u>WIRE</u>	<u>CONNECTOR</u>	<u>WIRE</u>	<u>CONNECTOR</u>
1	L.E.D. 1 [-]	1	NC 2
2	T1	2	Q1
3	L.E.D. 2 [-]	3	NO 1
4	T2	4	Q2 [NOT]
5	L.E.D. 3 [-]	5	NC 1
6	T3	6	NO 2
7	L.E.D. 4 [-]	7	Q1 [NOT]
8	T4	8	RED-L.E.D.-ANODE [+]
9	L.E.D. 5 [-]	9	Q2
10	T5	10	RED-L.E.D.-CATHODE [-]
11	+V1 [A]	11	T7
12	+V4 [D]	12	GREEN-L.E.D.-ANODE [+]
13	+V2 [B]	13	POT 1
14	+V3 [C]	14	GREEN-L.E.D.-CATHODE [-]
		15	POT 2&3
		16	T8

****REMEMBER THAT ANODE = POSITIVE [+] AND CATHODE = NEGATIVE [-] AND FOR EACH WIRE THAT IS SOLDERED TO AN L.E.D. MUST HAVE SHRINK TUBE TO INSULATE THE LEGS. 'A', 'B', 'C', 'D' REFER TO THE POSITIVE WIRE FROM THE TOGGLE SWITCHES. DON'T FORGET TO TIN WIRES BEFORE SOLDERING****