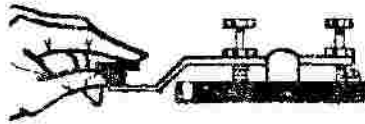


ASSEMBLY
AND
OPERATION
OF
YOUR

TEK-KIT

CODE PRACTICE OSCILLATOR
MODEL CO-5



TEK-KIT COMPANY
Palo Alto, Calif.

INTRODUCTION

The TEK-KIT MODEL CO-5 Code Practice Oscillator was designed to provide an economical speaker operated code practice unit. It will also operate practically any type of headphones whether they be low or high impedance, crystal or magnetic. It is ideal for group code practice using either the built in speaker or external phones. With the addition of a few low cost parts, it may be wired for use as a dynamic microphone complete with self contained transistor pre-amplifier. The built in speaker and 3 volt battery are connected to external screw type terminals so that both may be used for testing and experimental purposes.

GENERAL INSTRUCTIONS

Satisfactory operation of this unit will depend upon the quality of your workmanship in making a properly soldered connection. Be sure to use a good grade of 60/40 ROSIN CORE solder. NOTE: WE WILL NOT GUARANTEE OR REPAIR ANY UNIT WHICH HAS BEEN SOLDERED WITH ACID CORE SOLDER OR ANY TYPE OF SOLDERING PASTE. We recommend the use of a small pencil type soldering iron. Keep the tip of your iron clean and bright at all times. Before soldering any connection, make certain the wire and the solder lug is clean. Place a very small amount of fresh solder on the clean tip of your iron, and apply the tip of the iron to the solder lug for the purpose of heating the connection after which the piece of solder is touched to the tip of the iron AND the solder lug at the point of the wire connection. By doing this, the solder will FLOW into the connection and provide a secure joint. Do not move the wire in the solder lug until the joint has cooled completely. A properly soldered joint will have a shiny appearance. If the soldered joint has a dull grainy appearance it may not be a good connection, and indicates the wire moved during cooling. Check the parts in your kit against the parts list so that you will be able to identify each part during the assembly process. Carefully read this instruction book COMPLETELY THROUGH before commencing assembly. Before you can test your unit, it will be necessary to purchase two Size C flashlight batteries which are not supplied with this kit. This assures your having fresh batteries.

ASSEMBLY

The printed side of the mounting panel is the OUTSIDE. Fig. 3 shows the location of all holes in the mounting panel as seen from the INSIDE. Each hole is numbered and these numbers will be referred to in mounting the parts. All parts are mounted on the INSIDE of the panel excepting the 6 contact terminal strip. All mounting screws are inserted from the OUTSIDE of the panel and are secured by means of the lockwashers and nuts. Place a lockwasher under each nut, and tighten each screw SECURELY with a screwdriver. Fig. 4 shows the correct position of each part.

1. Mount the four battery contacts and solder lugs in holes 11, 12, 13 and 14. See Fig. 4 for the position of these parts. The solder lugs are placed between the panel and the battery contacts. Use the machine screws, lockwashers and nuts.
2. Mount the 6 contact terminal strip on the OUTSIDE of the panel so that the lugs pass through holes 1 to 6 inclusive. Note that the lugs point toward the top of the panel. Use machine screws, lockwashers and nuts in holes 7 and 8.
3. Place the large lockwasher on the threaded shaft of the tone control and insert the shaft in hole 15. Use the large nut on the OUTSIDE of the panel.

4. Insert the mounting tabs of the transformer in holes 9 and 10. Note that the side of the transformer having two leads faces the top of the panel. See Fig. 4. Bend the mounting tabs outward on the outside of the panel.
5. Cut two 5 inch lengths of hookup wire. Remove 1/4 inch of insulation from each end. Solder one end of each wire to the solder lugs located on the speaker. Mount the speaker and grill on the inside of the metal cabinet using machine screws, washers and nuts. The grill is positioned between the speaker and the inside of the cabinet and is mounted with the polished side outward. Handle the speaker very carefully to avoid damage to the paper cone.

WIRING

Refer to Fig. 4 and note that each solder lug is numbered. These numbers will be referred to in the wiring instructions. Note that some of the solder lugs will have more than one wire, therefore do not solder any connection until the instructions call for it. Fig. 1 shows a schematic diagram of the unit for those who prefer to work from a schematic. Three pieces of hookup wire are used and 1/4 inch of insulation is to be removed from each end before connecting to the solder lug.

1. Connect a 2 inch length of wire between lugs 10 and 11. Solder.
2. Connect a 1½ inch length of wire between lugs 1 and 12. Solder.
3. Connect a 1½ inch length of wire between lugs 6 and 9. Do NOT solder.
4. The side of the transformer having two leads will be referred to as the TOP, and the side having three leads will be referred to as the bottom. Connect the TOP WHITE lead to lug 9. Solder. Connect the TOP GREEN lead to lug 4. Connect the BOTTOM WHITE lead to lug 7. Solder. Connect the BOTTOM RED lead to lug 6. Solder. Connect the BOTTOM GREEN lead to lug 3.
5. Note that the transistor leads are lettered B (Base), C (Collector) and E (Emitter). Fig. 1A shows a BOTTOM view of the transistor with identification of each lead. The transistor may be permanently damaged during the soldering operation unless the instructions are VERY CAREFULLY followed. NOTE: ALL TRANSISTORS HAVE BEEN TESTED AT THE FACTORY AND WE WILL POSITIVELY NOT REPLACE ANY TRANSISTOR WHICH HAS BEEN DAMAGED BY IMPROPER INSTALLATION. IF THESE INSTRUCTIONS ARE CAREFULLY FOLLOWED, NO DAMAGE WILL OCCUR TO THE TRANSISTOR. Cut each transistor lead to a length of 1 inch. Connect the B lead to lug 8, the C lead to lug 3 and the E lead to lug 2. Using pliers, hold the E lead midway between the lug and the base of the transistor. By holding this lead with the pliers during the soldering operation, the pliers will act as a heat sink and will prevent heat from traveling up the wire lead and damaging the transistor. It is important to hold the lead with the pliers until the solder connection has thoroughly cooled off. It would seem that you need a third hand to perform this operation, however it can be accomplished by laying a piece of solder against the lug, holding the pliers in one hand and applying the soldering iron with the other hand so that the tip of the iron touches both the solder and the lug. Using the exact foregoing procedure, solder the B lead to lug 8 and the C lead to lug 3.
6. Connect one wire from the speaker to lug 5. Solder. Connect the other wire from the speaker to lug 4. Solder. This completes the wiring of your unit.

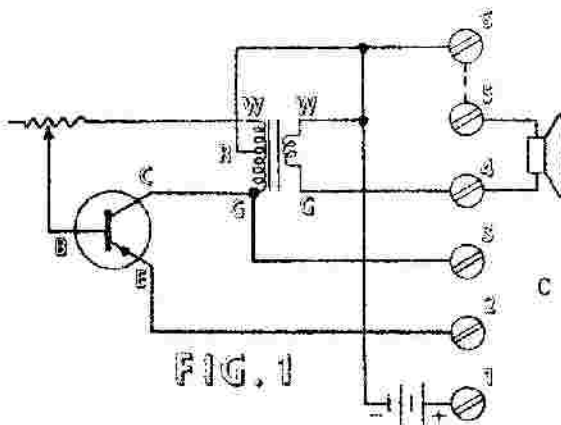


FIG. 1

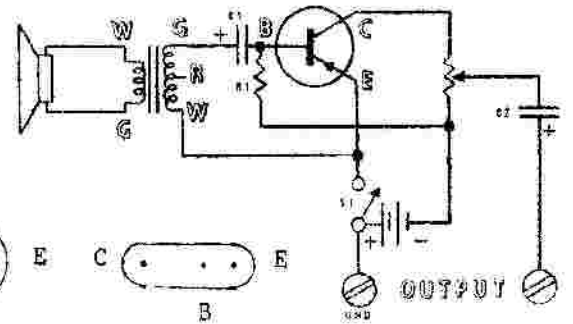
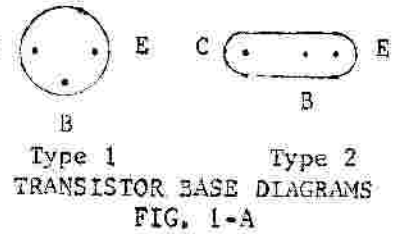


FIG. 2



Type 1
Type 2
TRANSISTOR BASE DIAGRAMS
FIG. 1-A

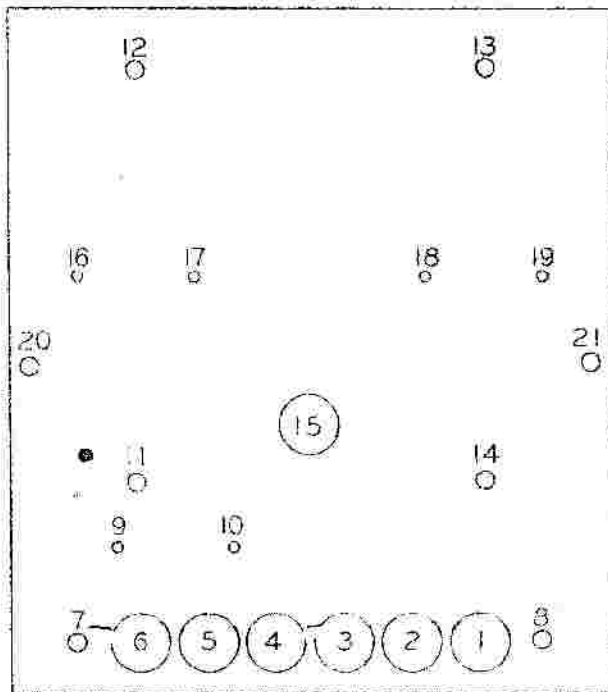


FIG. 3

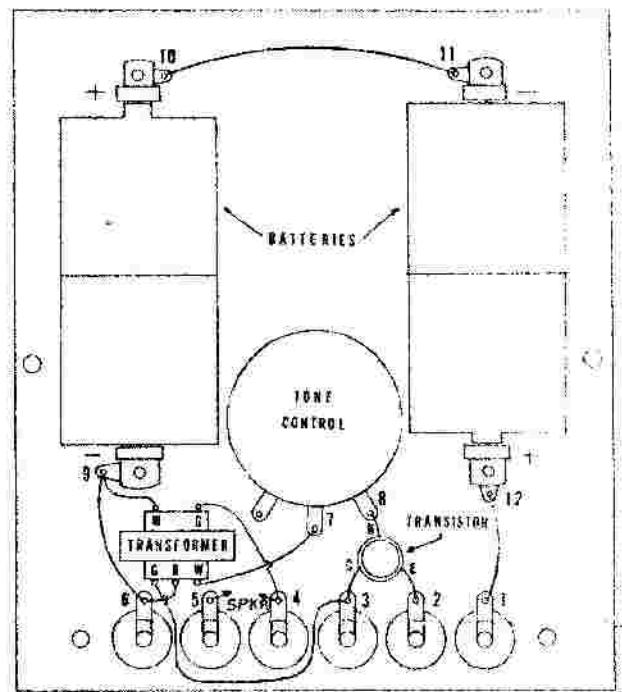


FIG. 4

PARTS LIST

- | | |
|---------------------------------------|-------------------------------------|
| 1 Metal cabinet | 1 Large lockwasher for tone control |
| 1 Mounting panel | 1 Large nut for tone control |
| 1 Speaker grill | 4 Battery contacts |
| 1 P. M. Dynamic speaker | 2 Battery retainer wire clips |
| 1 6 Contact screw type terminal strip | 4 Solder lugs |
| 1 Audio frequency transformer | 8 Machine screws |
| 1 PNP Audio type transistor | 8 Nuts |
| 1 Tone control potentiometer | 8 Lockwashers |
| 1 TEK-KIT nameplate | 2 Sheetmetal screws |
| 1 Instruction book | 1 Length hookup wire |

TEK-KIT COMPANY, P. O. BOX 111, STATION A, PALO ALTO, CALIFORNIA