



A SUBSIDIARY OF AEROTRON, INC.

INSTRUCTIONS

FOR

ASSEMBLY OF CODE PRACTICE OSCILLATOR AND MONITOR KIT - MODEL OMK



The first thing to do is to check the parts in the kit against the Parts List below. Should inspection reveal a missing part, notify the factory in writing. There should be no shortage of parts since all kits leaving the factory are thoroughly inspected and double-checked. A slight difference in value between the Parts List and the actual part does not mean that you have the wrong part. For instance, the kit may have a .005 condenser while the Parts List calls for a .0047 condenser. Both parts will work equally well. Similarly, disc and tubular ceramic condensers may be substituted for each other without change.

PART LIST

Ameco No.	Parts per kit	Description	Ameco No.	Parts per kit	Description
71-00-06	1	Plastic Case	92-00-21	1	4 lug terminal strip (TSB)
71-46-01	1	Front Panel			(Second lug grounded)
71-00-12	1	Speaker Grill	92-00-22	1	4 lug terminal strip (TSC)
72-00-02	1	3" Speaker			(Third lug grounded)
81-00-10	1	22 pF disc capacitor	92-46-01	1	5 lug terminal strip (TSP)
81-00-14	1	.01 uF disc capacitor			(Fifth lug grounded)
81-00-25	1	.22 uF paper capacitor	93-00-01	1	Small knob
83-00-03	1	15,000 ohm. tone control (T.C) -a 25,000 ohm pot with a resistor may be substituted for this	96-00-02	10	4-40X1/4" Phillips Screws
84-00-04	1	220 ohm Resistor (Red, Red, Brown)	96-00-08	4	6-32X1/4" Phillips Screws
84-00-09	1	27 ohm Resistor (Red, Violet, Black)	96-00-20	8	4-40 nuts
84-00-06	1	470 ohm Resistor (Yellow, Violet, Brown)	96-00-27	2	3/8" nuts
84-00-11	2	4,700 ohm Resistors (Yellow, Violet, Red)	96-00-21	2	Small 4-40 nuts
84-00-18	1	22,000 ohm Resistor (Red, Red, Orange)	96-00-34	1	3/8" lockwasher
87-00-05	1	Double Pole, Double Throw Slide Switch (SS)	97-00-15	3	100 PIV Silicon Diodes (painted brown)
89-00-10	1	Double cell battery holder (B H)	97-00-17	2	1N34 Germanium Diodes (painted Red)
89-00-08	1	Closed Circuit phone jack with hardware (P J)		1	PNP Transistor (Red)
91-00-04	1	29" Hook up Wire		1	NPN Transistor (Brown)
91-00-05	1	13" Bare Wire			
91-00-07	1	2" Sleeving			
92-00-01	1	3 screw terminal strip (TSA)			

GENERAL INSTRUCTIONS

Follow the step-by-step instructions carefully. Check off each step as you complete it. Double check frequently and do not attempt short cuts. The instructions have been written so as to complete the kit in the shortest time and with the least effort.

Use a rosin core solder to solder all connections. All guarantees are void unless a rosin core solder is used. Make sure that the soldering iron is properly tinned, clean and hot before soldering any connections. While working on the panel, protect the finish on the front with tissue paper or other soft material. DO NOT place any adhesive directly on the lettering. In general, handle the unit carefully so as to protect its finish.

STEP-BY-STEP ASSEMBLY

NOTE: All screws are installed into their holes from the front of the panel. All parts, except the 3 Screw Terminal Strip (TSA), are installed from the rear of the panel.

- (✓) 1. Install the DPDT slide switch into rectangular hole M, using two 4-40X 1/4" Phillips screws through holes C and D. (See figure 1.) If there are no threads in the switch holes install 4 - 40 nuts on the screws.
- (✓) 2. Install one 4-40 x 1/4" Phillips screw in hole F. (See figure 1.) Install the speaker grill at the back of the panel over the large round hole so that one of the corner holes goes over the screw. Mount the speaker over the grill so that the terminals on the speaker are positioned as shown in figure 1 and the corner hole in the speaker fits over the screw. Install one 4-40 nut over the Phillips screw in hole F. (Hand tighten.)
- (✓) 3. Install one 4-40 x 1/4" Phillips screw in hole G. Install one 4-40 nut. (Hand tighten.)
- (✓) 4. Install one 4-40 x 1/4" Phillips screw into hole H. Mount the 4 lug terminal strip, TSC (third lug grounded) over the screw. (See figure 1.) Install one 4-40 nut over the screw (Hand tighten.)
- (✓) 5. Install one 4-40 x 1/4" Phillips screw into hole E. Mount the 4 lug terminal strip, TSB (second lug grounded) over the screw. (See figure 1.) Install one 4-40 nut over the screw. (Tighten all four screws holding the speaker.)
- (✓) 6. Mount the 3 screw terminal strip (TSA) by putting it on the front of the panel over hole M. The solder lugs on the inside of the terminal strip should face down. (See figure 1.) Install one 4-40 x 1/4" Phillips screw through hole A. Install one 4-40 nut onto the screw and hand tighten.
- (✓) 7. Install one 4-40 x 1/4" Phillips screw, through hole B and mount the 5 lug terminal strip (TSD) over the screw, as shown in figure 1. Install one 4-40 nut. Tighten both screws on the 3 screw terminal strip.
- (✓) 8. ~~Install one 4-40 x 1/4" Phillips screw in hole K. Install a 4-40 nut and tighten. Install one 4-40 x 1/4"~~ Phillips screw in hole L. Install a 4-40 nut and tighten. Mount the battery holder (BH) over both screws (See figure 1.) Install two small 4-40 nuts, one on each screw and tighten.
- (✓) 9. Install the tone control (TC) into hole I and position it as shown in figure 1. Use a 3/8" lockwasher on the inside of the panel and a 3/8" nut on the outside.
- (✓) 10. Install the small knob over the tone control shaft.
- (✓) 11. Remove the nut and washer from the closed circuit phone jack (PJ). Install one 3/8" nut onto the jack and turn it all the way down. Install the jack into hole J and position it as shown in figure 1. Install the flat washer and nut (which were originally removed from the jack) over the jack from the outside of the panel.

WIRING INSTRUCTIONS

For best results, refer frequently to figures 3 and 4 for placement of parts and leads. In some cases, more than one wire or part will go to the same terminal. This situation will be indicated in the instructions by the abbreviation "NS". This will mean that the connection should NOT be soldered until all the other leads have been connected to the terminal. Whenever only one lead is connected to a terminal or where the last lead has been connected, the joint should be soldered, and this will be indicated by the abbreviation "S". In this case, solder all leads on this terminal. The leads on most of the parts are longer than necessary. When wiring these parts, cut the leads to their proper lengths. The leads should be as short as possible. When preparing insulated hookup wire for soldering to terminals, strip the insulation for 1/4 inch.

- (X) 1. Connect a 3" length of bare wire from pin 1 of PJ (S) to pin 3 of TSC (NS) keeping the wire close to the panel.
- (X) 2. Connect one end of a 4 1/2" length of bare wire from pin 3 of TSC (NS) through pin 1 of SP (S) to pin 2 of TSB (NS). Position the wire so that it is centered and close to the panel.
- (X) 3. Connect a 2 1/2" length of bare wire from pin 2 of TSB (NS) to pin 5 of SS (NS), keeping the wire close to the panel.
- (X) 4. Connect one end of a 2 1/2" length of bare wire from pin 1 of TSA (S) through pin 5 of TSD (NS) to pin 5 of SS (S). Position the wire so that it is centered and close to the panel.
- (X) 5. Connect a 1 1/2" length of bare wire from pin 2 of BH (S) to pin 1 of BH (S).
- (X) 6. Connect a 2" length of hookup wire from pin 2 of PJ (S) to pin 2 of SP (S).
- (X) 7. Connect a 4" length of hookup wire from pin 2 of TSA (NS) to pin 1 of TSC (NS).
- (X) 8. Connect a 5" length of hookup wire from pin 2 of TSC (NS) to pin 2 of SS (S).
- (X) 9. Connect a 2" length of hookup wire from pin 3 of TSD (NS) to pin 1 of SS (S).
- (X) 10. Connect a 3 1/2" length of hookup wire from pin 2 of TSA (S) to pin 6 of SS (S).
- (X) 11. Cut a 1 1/2" length of hookup wire. Strip one end back 3/4" and strip the other end normally. Slide the longer stripped end through pin 1 of TC (S) and connect it to pin 2 of TC (S). Connect the other end to pin 2 of TSD (NS).
- (X) 12. Connect a 4 1/2" length of hookup wire from pin 3 of BH (S) to pin 2 of TSC (NS).
- (X) 13. Connect one end of a 4 1/2" length of hookup wire from pin 4 of TSC (NS) to pin 4 of TSB (NS).
- (X) 14. Cut two pieces of insulated sleeving, each 3/4" long. Put one piece over each end of the 4,700 ohm (yellow, violet, red) resistor.
- (X) 15. Connect the 4,700 ohm resistor from pin 3 of TC (S) to pin 3 of TSB (NS). (USE SLEEVING OVER WIRE LEADS).
- (X) 16. Connect the 470 ohm (yellow, violet, brown) resistor from pin 1 of TSD (NS) to pin 3 of TSB (NS).
- (X) 17. Connect the 22,000 ohm (Red, red, orange) resistor from pin 3 of TSB (NS) to pin 2 of TSB (NS).
- (X) 18. Connect a 4,700 ohm (yellow, violet, red) resistor from pin 2 of TSD (NS) to pin 3 of TSD (NS).
- (X) 19. Connect a 27 ohm (red, violet, black) resistor from pin 3 of TSC (S) to pin 3 of PJ (NS).
- (X) 20. Connect a 220 ohm (red, red, brown) resistor from pin 2 of TSC (NS) to pin 4 of TSC (NS).
- (X) 21. Connect a .01 uF disc capacitor from pin 3 of TSD (NS) to pin 5 of TSD (NS).
- (X) 22. Connect a 22 pF disc capacitor from pin 4 of TSD (NS) to pin 3 of TSA (S).
- (X) 23. Connect a .22 uF capacitor from pin 1 of TSD (S) to pin 3 of PJ (NS). Keep the leads from touching other parts.

Refer to figure 2 for the terminals of the transistors. Refer to figure 4 for the wiring of the transistors.

NOTE: When soldering the leads of a transistor, hold the lead between the transistor and the connection to be soldered with a pair of long nosed pliers. This will dissipate the heat and prevent damage to the transistor. Solder quickly to prevent excessive heat.

- (X) 24. Connect the red lead of a germanium diode to pin 3 of TSD (S) and its other lead to pin 4 of TSD (NS).
- (X) 25. Connect the red lead of the other germanium diode to pin 4 of TSD (S) and its other lead to pin 5 of TSD (S).
- (X) 26. Connect the brown lead of a silicon diode to pin 2 of TSB (NS) and its other end to pin 1 of TSB (NS).
- (X) 27. Connect the brown lead of another silicon diode to pin 1 of TSB (S) and its other end to pin 2 of TSD (S).
- (X) 28. Connect the brown lead of the remaining silicon diode to pin 4 of BH (S) and its other end to pin 1 of TSC (S).

Refer to figure 2 for the lead positions of the transistors.

- (X) 29. Connect the base (center lead) of the PNP transistor (red) to pin 4 of TSC (S).
- NOTE: Use extreme care when soldering transistor leads.
- (X) 30. Connect the emitter lead of the PNP transistor to pin 2 of TSC (S).
 - (X) 31. Connect the collector lead of the PNP transistor to pin 3 of PJ (S).
 - (X) 32. Connect the base (center lead) of the NPN transistor (brown) to pin 3 of TSB (S).
 - (X) 33. Connect the emitter lead of the NPN transistor to pin 2 of TSB (S).
 - (X) 34. Connect the collector lead of the NPN transistor to pin 4 of TSB (S).

This completes the wiring.

AMECO EQUIPMENT CORP.

A SUBSIDIARY OF AEROTRON, INC., RALEIGH, N.C.

178 HERRICKS ROAD

MINEOLA, L. I., N. Y. 11501



A SUBSIDIARY OF AEROTRON, INC.

CODE PRACTICE OSCILLATOR AND MONITOR KIT - MODEL OMK

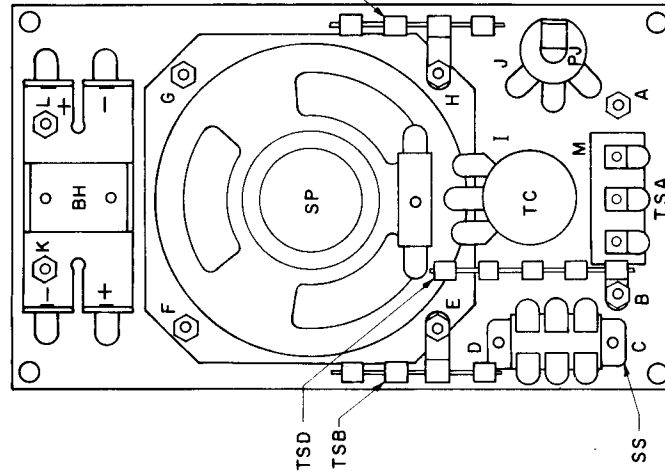


FIG. 1 - BACK VIEW OF PANEL

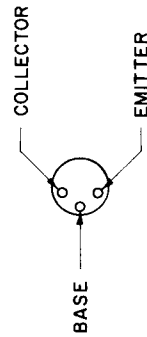


FIG. 2

BOTTOM VIEW OF TRANSISTOR

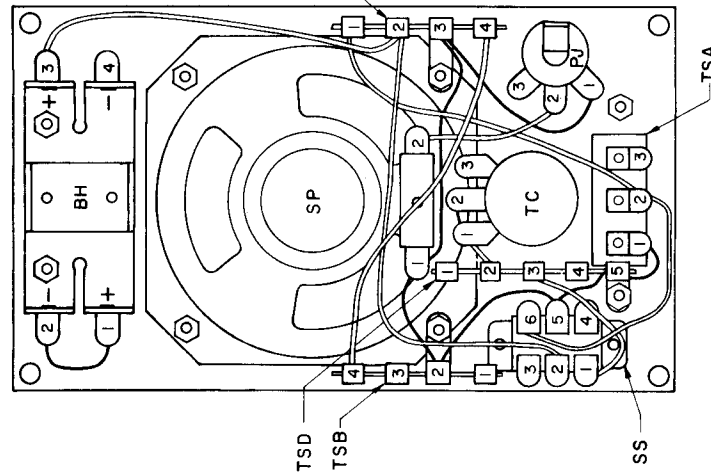


FIG. 3

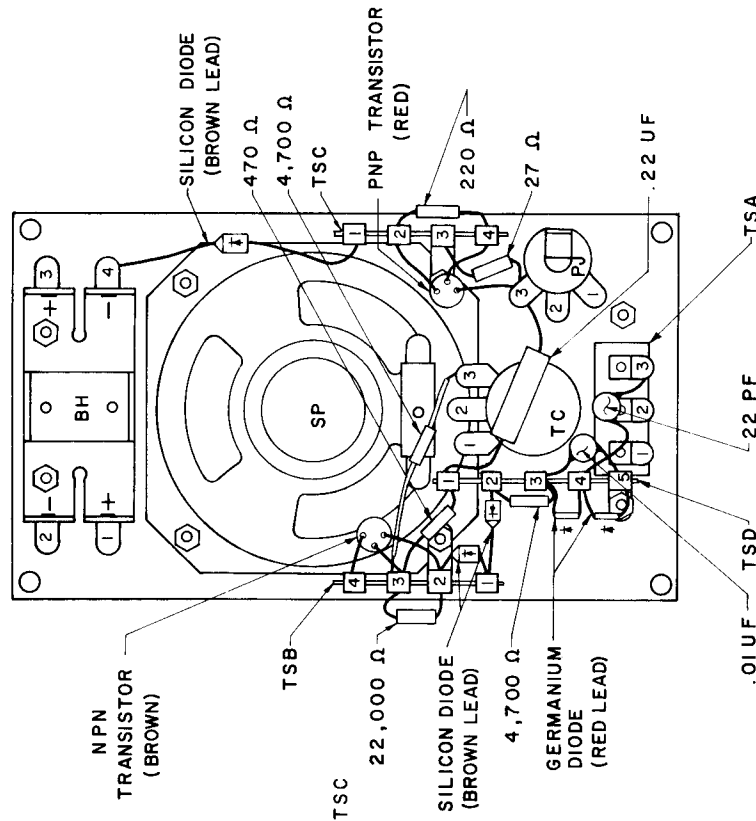


FIG. 4

ADDENDA FOR OM AND OCP KITS

The mounting for the battery holder has been changed from the panel to the grille. The two top holes in the panel (K & L) have been deleted. K and L are now in the small part of the grille.

The FIRST steps in assembly are as follows:

- A. Install one 4-40 x 1/4" Phillips screw thru each of the round holes at the end of the slots in the battery holder.
- B. Assemble the battery holder and speaker grille by passing the screws through the grille small section.
- C. Put one 4-40 hex nut on each screw and tighten securely.

Then continue assembly at Step 1.
Delete Step 8.

NOTES:

OM Schematic

Change 150 ohm resistor to 220 ohms

OCP Schematic

Change 25 k ohm potentiometer to 15 k.
PNP transistor is drawn with emitter and collector transposed.

The parts list and wiring instructions are correct.

Some units have a 25 k pot with a 33 k resistor across it instead of the 15 k pot.

ADDENDA FOR OM AND OCP OPERATING INSTRUCTIONS

Under Installation of Batteries, Step 3, change second sentence to read: Use AAA Size: Eveready 912, Burgess 7, Ray-O-Vac 400 or equivalent.

AMECO EQUIPMENT CORP.
A SUBSIDIARY OF AEROTRON, INC.

AEROTRON, INC. U.S. HIGHWAY 1, NORTH, P.O. BOX 6527
RALEIGH, NORTH CAROLINA 27608