INSTRUCTION MANUAL

for the

WRL

Code Oscillator Kit

MODEL CPO-3

Manufactured by WRL ELECTRONICS, INC.

Council Bluffs, Iowa

For

WORLD RADIO LABORATORIES, INC.
COUNCIL BLUFFS, IOWA

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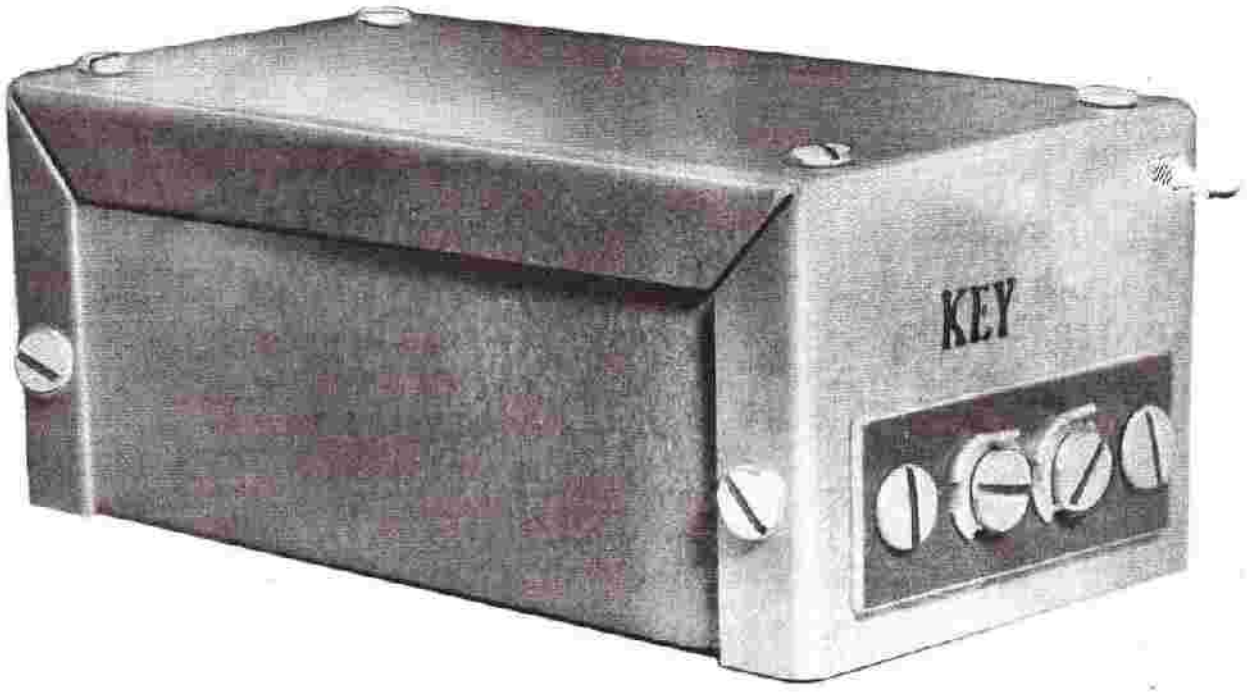


SECTION I

GENERAL DESCRIPTION

1-1. GENERAL.

1-2. The WRL Code Practice Oscillator, Model CPO-3, is made by WRL Electronics, Inc. of Council Bluffs, Iowa. The oscillator is of new design and employs a transistor rather than a tube. Printed circuitry is used for simplicity of wiring and assembly. Power requirements are so small that two penlite batteries supply the necessary voltage. Current requirement is so slight that shelf life may be expected of the batteries.

1-3. DESCRIPTION.

1-4. The complete code oscillator is housed in a grey hammertone cabinet only 1-5/8"x2-1/8"x4". Due to battery operation, light weight and small physical size, the unit may be easily transported for practice in any location.

1-5. THEORY OF OPERATION.

1-6. The oscillating circuit is of the RC type with the transistor acting as a conventional tube would in the same type of circuit. Condensers C1 and C2 with resistor R3 form the frequency determining network. The headphones used must be of the magnetic type as current for the transistor flows through them. The headphones must have an impedance of at least 2000 ohms to present the proper load to the collector circuit of the transistor. The impedance of the headphones will affect the frequency of oscillation to some extent. The unit has been designed to provide an audio tone of 1000 cycles, this frequency has proved to be the most popular with CW operators and is pleasing to the ear.

SECTION II

MOUNTING AND WIRING PROCEDURE

2-1. GENERAL.

2-2. A printed circuit board is used in the Model CPO-3 Code Practice Oscillator, which makes it extremely easy to wire the unit neatly and correctly. However, it is necessary to observe a few simple precautions:

a. USE ONLY ROSIN CORE OR "RADIO" SOLDER. NEVER USE ACID CORE SOLDER FOR ANY ELECTRONIC WORK.

b. It is best to use a small pencil-type 25 watt soldering iron. If a larger iron is used, be careful not to apply heat to the printed circuit board for more than a couple of seconds when soldering in a component, as excessive heat may damage the printed circuit board.

c. In handling the printed circuit board, be careful not to forcibly bend the board, as this may crack the conductive copper coating and cause an intermittent circuit.

d. Do not cut the transistor leads to less than one-half inch from its case. When soldering the transistor to the board, hold the lead being soldered with long nose pliers or with flat nib tweezers. The long nose pliers, or tweezers, will dissapate the heat from the soldering iron and prevent damage to the transistor.

e. Do not insert, or remove, the transistor on the printed circuit board while the batteries are mounted in the battery holder.

2-3. The following instructions are the parts mounting and wiring procedure for kit assembly. It is recommended that the procedure be followed, as outlined, for ease and accuracy of assembly. Pictoral diagrams should be referred to for exact placement of components and wires. Check off each step as it is completed. Check all components and parts against the Parts List, Section VII, for shortages before assembly is begun. Take your time and work carefully; you will be rewarded with a professional looking job and a properly operating unit. (S) means solder. (NS) means do not solder yet.

CAUTION

Use only Rosin Core Solder. Do not use Acid Core Solder. Do not use Soldering Paste or Flux. If the solder on hand is not plainly marked "Rosin Core" or "Radio" Solder, play safe and obtain a new roll. (See Section VI, 6-8).

2-4. STEP BY STEP MOUNTING AND WIRING INSTRUCTIONS.

☐ 1. Position the printed circuit board PC-1 as shown in Fig. 1.

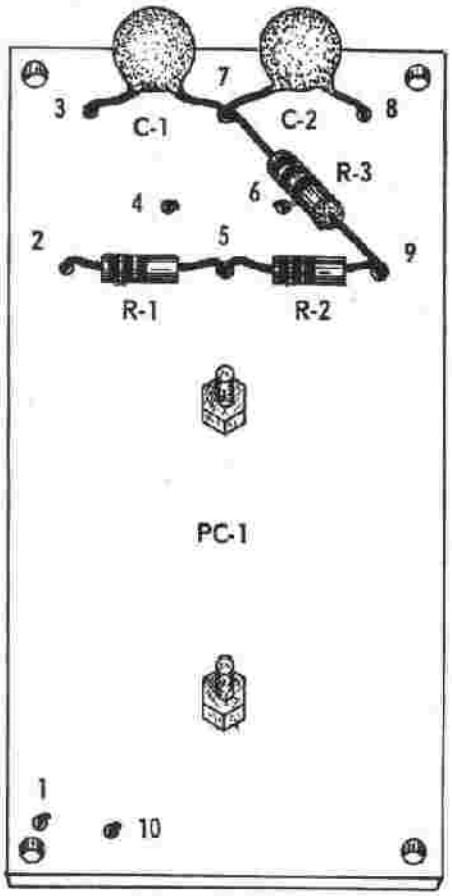
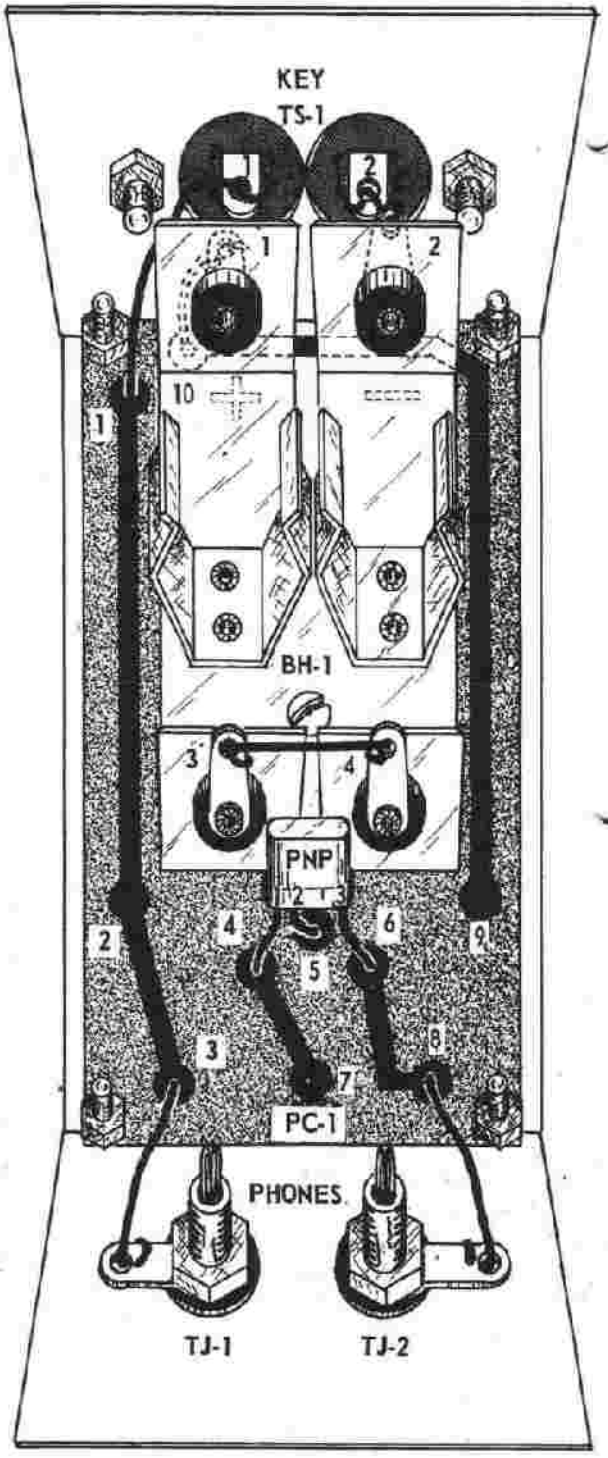


Figure 1. Bottom View of Printed Circuit Board.



Transistor DATA

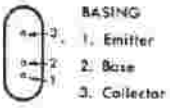


Figure 2. Transistor Data And Internal View of Code Oscillator.

☐ 2. Insert one lead of capacitor C1 (.01 mfd) into hole #3 on the printed circuit board. (NS).

☐ 3. Insert the other lead of capacitor C1 into hole #7 on the printed circuit board. (NS).

☐ 4. Insert one lead of capacitor C2 (.01 mfd) into hole #7 on the printed circuit board. (NS).

☐ 5. Insert the other lead of capacitor C2 into hole #8 on the printed circuit board. (NS).

☐ 6. Insert one lead of resistor R3- 22,000 ohms (red-red-orange) into hole #7 on the printed circuit board. (NS).

☐ 7. Insert the other lead of resistor R3 into hole #9 on the printed circuit board. (NS).

☐ 8. Insert one lead of resistor R1-2200 ohms (red-red-red) into hole #2 on the printed circuit board. (NS).

☐ 9. Insert the other lead of resistor R1 into hole #5 on the printed circuit board. (NS).

☐ 10. Insert one lead of resistor R2-1500 ohms (brown-green-red) into hole #5 on the printed circuit board. (NS).

☐ 11. Insert the other lead of resistor R2 into hole #9 on the printed circuit board. (NS).

☐ 12. Turn the board over and solder the three leads in hole #7 on the printed circuit board.

☐ 13. Cut off the leads protruding from hole #7.

☐ 14. Solder the lead in hole #2 on the printed circuit board.

☐ 15. Cut off the lead protruding from hole #2.

☐ 16. Solder the two leads in hole #9 on the printed circuit board.

☐ 17. Cut off the leads protruding from hole #9 on the printed circuit board.

☐ 18. Do not solder but cut off the leads protruding from hole #5.

☐ 19. Solder the lead in hole #3 of the printed circuit board. Do not cut off the protruding lead as it is to be used later.

☐ 20. Solder the lead in hole #8 on the printed circuit board. Do not cut off the protruding lead as it is to be used later.

☐ 21. Turn the board over and position as shown in Fig. 2.

☐ 22. Refer to Fig. 2, Transistor Data, and note how the transistor leads are marked.

☐ 23. Insert transistor lead #1 into hole #4 on the printed circuit board. (NS).

☐ 24. Insert transistor lead #2 into hole #5 on the printed circuit board. (NS).

☐ 25. Insert transistor lead #3 into hole #6 on the printed circuit board. (NS).

☐ 26. Gently push the transistor leads; Numbers 1, 2 and 3, through their respective holes until the base of the transistor is exactly 5/8" off of the printed circuit board.

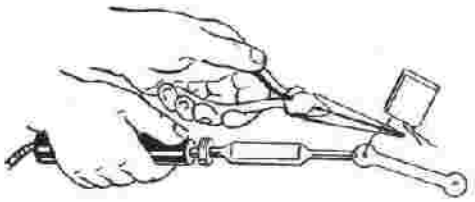


Figure 3. Correct Method of Soldering Transistor Leads.

☐ 27. Grasp transistor lead #1 midway between the printed circuit board and the transistor base with a pair of long nose pliers or tweezers. Quickly solder lead #1 into hole #4 on the printed circuit board. The pliers, or tweezers, will dissipate the heat of the soldering iron and prevent damage to the transistor.

☐ 28. Use the same technique as outlined in step 27 and solder transistor lead #2 into hole #5 on the printed circuit board.

☐ 29. Use the same technique as outlined in step 27 and solder transistor lead #3 into hole #6 on the printed circuit board.

☐ 30. Turn the printed circuit board over and trim off the excess transistor leads protruding from printed circuit board holes 4, 5 and 6.

SECTION II

MOUNTING AND WIRING PROCEDURE

☐ 31. Install the battery holder (BH1) using two 4-40x3/8" screws and two 4-40x¼" nuts. Install as shown in Fig. 2. Make certain the battery holder does not touch any of the printed circuit wiring.

☐ 32. Connect a length of #20 bus-bar wire from lug 3 to lug 4 of BH1. (S-both connections).

☐ 33. Connect a length of #20 bus-bar wire from lug 1 of BH1 to hole #10 on the printed circuit board. (S-both connections).

☐ 34. Prepare the printed circuit board for mounting by pressing C1 and C2 flat against the underside of the board.

☐ 35. Install the printed circuit board in the cabinet as follows: Insert the four 4-40x3/4" screws into the four holes on the corners of the cabinet. Lay the cabinet upside down on a flat surface so the screw heads are against the flat surface and the open side of the cabinet is up. Slip the four 3/8" bakelite insulating bushings over the four screws. Position the printed circuit board and the cabinet as per Fig. 2. Guide the printed circuit board into the cabinet so the four screws go into the four holes in the corners of the printed circuit board. The printed circuit board should now rest on the four bakelite insulating bushings and the four 4-40x3/16" nuts may be put on the four holding screws and tightened. When properly installed, the end of the printed circuit board with the battery holder will be at the end of the cabinet marked KEY.

☐ 36. Install the two-terminal strip TS1 as shown in Fig. 2. Use two 6-32x5/16" screws and two #6x¼" hex nuts for mounting. Tighten securely.

☐ 37. Make certain lug 1 of the battery holder BH1 clears lug 1 of terminal strip TS1 by at least 1/8". If necessary bend either or both lugs slightly to obtain proper clearance.

☐ 38. Connect a length of #20 bus-bar wire from lug 1 of TS1 to hole 1 on the printed circuit board. (S-both connections).

☐ 39. Connect a length of #20 bus-bar wi from lug 2 of TS1 to lug 2 of BH1. (S both connections.)

☐ 40. Install phone jack TJ1 on the cabinet as follows:

a. Remove the hex nut, fiber washer and solder lug from one of the jacks.

b. Insert the extruded shoulder of the fiber washer into one of the holes in the cabinet on the end marked PHONES. The large flat surface of the fiber washer should bear against the inside of the cabinet.

c. With the fiber washer properly centered in the hole, the jack may be inserted through the hole from the outside of the cabinet. The extruded shoulder of the fiber washer keeps the threaded barrel of the jack from shorting against the cabinet. The large flat surface of the fiber washer insulates the solder lug from shorting against the inside of the cabinet.

d. Slip the solder lug over the threaded barrel of the jack, then add the nut.

e. Mount jack TJ2 in a like manner.

f. Position the two phone jack solder lug as in Fig. 2 then tighten the nuts securely.

☐ 41. Connect the lead protruding from hole #3 on the printed circuit board to the solder lug of TJ1. (S). Cut off any excess lead length after soldering.

☐ 42. Connect the lead protruding from hole #8 on the printed circuit board to the solder lug of TJ2. (S). Cut off any excess lead length after soldering.

CAUTION

Incorrect battery polarity may result in damage to the transistor.

☐ 43. Insert the batteries into battery holder BH1. Be careful to observe the correct polarity as indicated on the printed circuit board.

2-5. This completes the internal assembly and wiring of the code oscillator kit. The unit should now be tested before the cabinet is completely assembled. Proceed to Section III, TEST PROCEDURE.

SECTION III

TEST PROCEDURE

3-1. GENERAL.

3-2. The following paragraphs outline the test procedure to be used for checking proper operation or malfunction of the WRL Code Oscillator after assembly and wiring have been completed.

3-3. Connect a key to the terminals marked KEY. Insert headphone tips (magnetic type headphones) into tip jacks marked PHONES. Close key. If the unit is functioning properly an audio tone of approximately 1000 cycles will be heard in the headphones. If the unit is operating properly the bottom portion of the cabinet may be installed. Fasten with the four #6 self-tapping screws supplied for this purpose.

3-4. If no audio tone is heard upon closing the key, check for:

a. Correct battery polarity. Incorrect battery polarity may damage the transistor.

b. Poor solder connections.

c. Correct assembly.

d. Correct wiring.

e. Proper battery voltage. Each penlite cell should deliver between 1 to 1.5 volts. Check with voltmeter.

f. Shorted or open capacitor.

g. Open resistor.

h. Open circuit in headphones.

i. Open in external key circuit.

j. Solder shorted across printed circuit wiring.

k. Cracked printed circuit board.

l. Transistor connected improperly.

m. Shorted battery holder. Check extruded washers in battery holder.

3-5. Should any defective components be found refer to SECTION VI, paragraphs 6-9 through 6-11.

3-6. If you are unable to make the unit operate after making all checks outlined above, refer to SECTION VI, paragraphs 6-5 through 6-8.

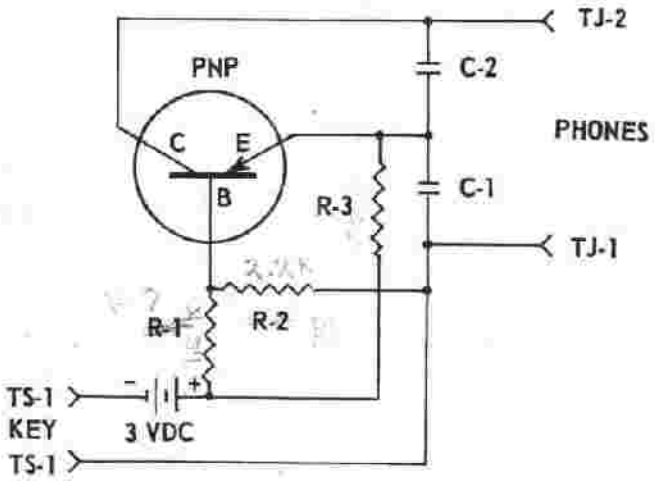


Figure 4. Circuit Diagram

SECTION IV

OPERATING PROCEDURES

4-1. GENERAL.

4-2. Operation of the code oscillator is very simple. Connect the key to the two terminals marked KEY. Insert the headphone tips into the two jacks marked PHONES. Upon closing the key a pleasant audio tone of approximately 1000 cycles should be heard in the headphones. The length of time the key is kept closed will determine the difference between a dit (dot) or dah (dash). An excellent source of material on how to learn the code is the ARRL Booklet "Learning the Radio-Telegraph Code" (WRL Catalog Number 51A144). For the convenience of the student the code is given below.

LETTERS		
A •—	J •———	S •••
B —•••	K —•—	T —
C —•—•	L •—••	U ••—
D —••	M ——	V •••—
E •	N —•	W •——
F ••—•	O ———	X —••—
G ——•	P •——•	Y —•——
H ••••	Q ——•—	Z ——••
I ••	R •—•	

NUMBERS	
1 •————	6 —••••
2 ••———	7 ——•••
3 •••——	8 ———••
4 ••••—	9 ————•
5 •••••	Ø —————

PUNCTUATION
Period •—•—•—
Comma ——••——
Question Mark ••——••
Break —•••—

SECTION V

HELPFUL KIT BUILDING INFORMATION

5-1. GENERAL.

5-2. This section contains information useful in building or testing any radio or electronic equipment. The information included will enable identification of capacitors, resistors, transformer leads, the new schematic symbols, etc.

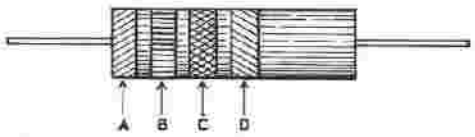
5-3. Standard color codes are used to mark values on such items as resistors and capacitors, and to identify the leads on transformers. The resistor-capacitor color code is given in Table 1.

TABLE I. RESISTOR-CAPACITOR COLOR CODE.

Color	Significant Figure	Decimal Multiplier	Tolerance %	Voltage Rating*
Black	0	1	—	—
Brown	1	10	1*	100
Red	2	100	2*	200
Orange	3	1000	3*	300
Yellow	4	10,000	4*	400
Green	5	100,000	5*	500
Blue	6	1,000,000	6*	600
Violet	7	10,000,000	7*	700
Gray	8	100,000,000	8*	800
White	9	1,000,000,000	9*	900
Gold	—	0.1	5	1000
Silver	—	0.01	10	2000
No color	—	—	20	500

*Capacitors only.

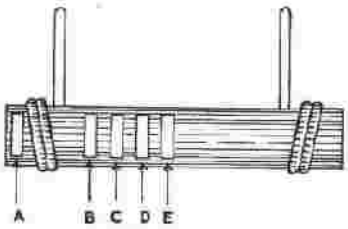
5-4. Composition resistors are color coded as shown in Figure 5. These bands of color refer to the resistor-capacitor color code, Table I. If the first band is of double width, it means the resistor is a wire-wound unit. Here is an example: First band, green. Second band, blue. Third band, orange. Fourth band, silver. This would be a 56,000 ohm 10% resistor; the first band, green, means the first figure is a 5; the second band, blue, means the second figure is a 6; the third band, orange, means "multiply by 1000". 56 multiplied by 1000 is 56,000. The fourth band, silver, means the actual resistance is within 10% of the marked value. If there were no fourth band, it would indicate that the resistor was within 20% of the marked value.



A – FIRST SIGNIFICANT FIGURE OF RESISTANCE IN OHMS.
B – SECOND SIGNIFICANT FIGURE.
C – DECIMAL MULTIPLIER.
D – RESISTANCE TOLERANCE IN PER CENT. IF NO COLOR IS SHOWN, THE TOLERANCE IS ±20%.

Figure 5. Fixed Composition Resistor Code.

5-5. Ceramic capacitors of the general purpose type use the same color code with regard to significant figures and multipliers as do resistors. See Figure 6. The fourth band indicates tolerance.



A – DIELECTRIC CHARACTERISTIC.
B – FIRST SIGNIFICANT FIGURE.
C – SECOND SIGNIFICANT FIGURE.
D – MULTIPLIER.
E – TOLERANCE.

Figure 6. Tubular Ceramic Capacitor Code.

5-6. Mica capacitors have been marked with many different color codes in the past. Shown here are the three codes most likely to be encountered. Most of the mica capacitors used in WRL kits have the acutal numerical value stamped on the capacitor, making the use of a color code unnecessary in such cases.

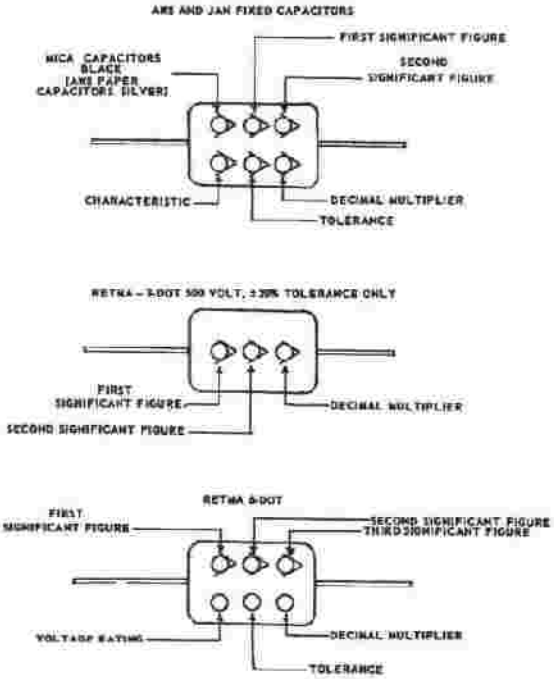


Figure 7. Mica Capacitor Color Code.

SECTION V

HELPFUL KIT BUILDING INFORMATION

5-7. With the increasing use of variable frequency oscillators in amateur transmitters, temperature compensating (TC) capacitors are being used with increasing frequency. The color code for temperature compensating capacitors is the same as for resistors in regards significant figures and multipliers, but differs in the tolerance reading and in the showing of temperature coefficient. See Figure 8.

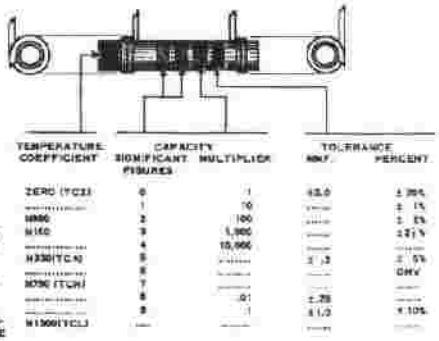


Figure 8. Color Coding For TC Type Ceramic Capacitors.

5-8. The leads of a power transformer are of different colors of wire. The wire color indicates to which winding the lead is connected, as follows:

TABLE II. POWER TRANSFORMER CODING.

Winding	Color Code
Primary Leads	Black
if tapped:	
Common	Black
Tap	Black/Yellow
Finish	Black/Red
High Voltage	Red
Center Tap	Red/Yellow
Rectifier Filament	Yellow
Center Tap	Yellow/Blue
Filament No. 1	Green
Center Tap	Green/Yellow
Filament No. 2	Brown
Center Tap	Brown/Yellow
Filament No. 3	Slate
Center Tap	Slate/Yellow

5-9. In the past, the electronic and electric portions of the industry used different, and sometime mutually confusing, symbols. Recently, a single set of symbols have been adopted. Those most applicable to electronics and radio are shown in Figure 10.

5-10. KIT ASSEMBLY. WRL kits come with all holes prepunched, so that a minimum number of tools will be needed for assembly of the kit. The following are recommended as suitable:

1-small knife for scraping off enamel insulation.

1-small screwdriver.

1-medium screwdriver.

1-long nose pliers.

1-diagonal or side-cutting pliers ("dikes").

1-small-tip soldering iron, such as the Ungar soldering pencil.

1-soldering gun, at least 100 watts.

Rosin core solder, the amount depending on the kit. DO NOT USE ACID CORE SOLDER. USE ONLY ROSIN CORE OR "RADIO" SOLDER.

Additional tools which are helpful, but not absolutely necessary.

1set-"Spintite" or socket wrenches.

1-6 inch crescent wrench.

1-Wire stripper.

In mounting the components of the kit, follow the instructions closely and consult the pictorial diagrams for positioning. You will find in many cases a glance at the diagram will explain far better than several paragraphs of words. Route wires as shown in the pictures, as wire placement may be important. Be sure that socket keyways are positioned as in the pictures, so that the proper pin numbers will be in the proper location.

5-11. SOLDERING. A poor solder joint may cause faulty operation of the equipment. The importance of a good soldering job cannot be overstated. The secret of a good solder joint is simple: GET THE JOINT ITSELF HOT ENOUGH TO MELT THE SOLDER. It is not sufficient to melt the solder with the soldering iron and let it drip upon the joint; the joint itself must be hot enough to melt solder. Only in this way will the solder flow onto the joint and make a secure bond. Also, make a secure mechanical connection before applying solder, as the solder should be depended on only for an electrical connection and not for mechanical strength, i.e., twist the wire around a terminal so that the twist will hold even before solder is applied. Again, USE ONLY ROSIN CORE OR "RADIO" SOLDER. ACID CORE SOLDER WILL EAT AWAY THE WIRING AND IN TIME CAUSE FAILURE OF THE EQUIPMENT. DO NOT USE SOLDERING PASTE

OR FLUX, AS IT WILL TEND TO BREAK DOWN INSULATION. Be sure that the surfaces to be soldered are clean and bright. Scrape any tarnish or enamel insulation off any wires or terminals which are to be soldered. Keep the tip of the soldering iron clean and bright and well-tinned with solder. A piece of steel wool is an excellent item with which to clean a soldering iron tip, even when the iron is on and hot.

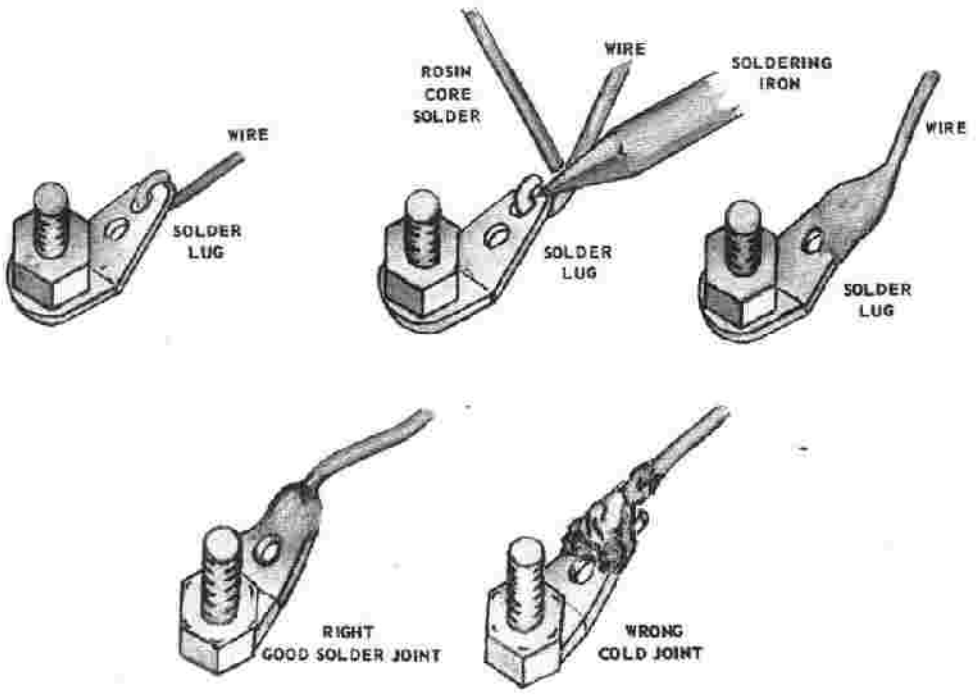


Figure 9. How To Make A Good Solder Joint.

SECTION V

HELPFUL KIT BUILDING INFORMATION

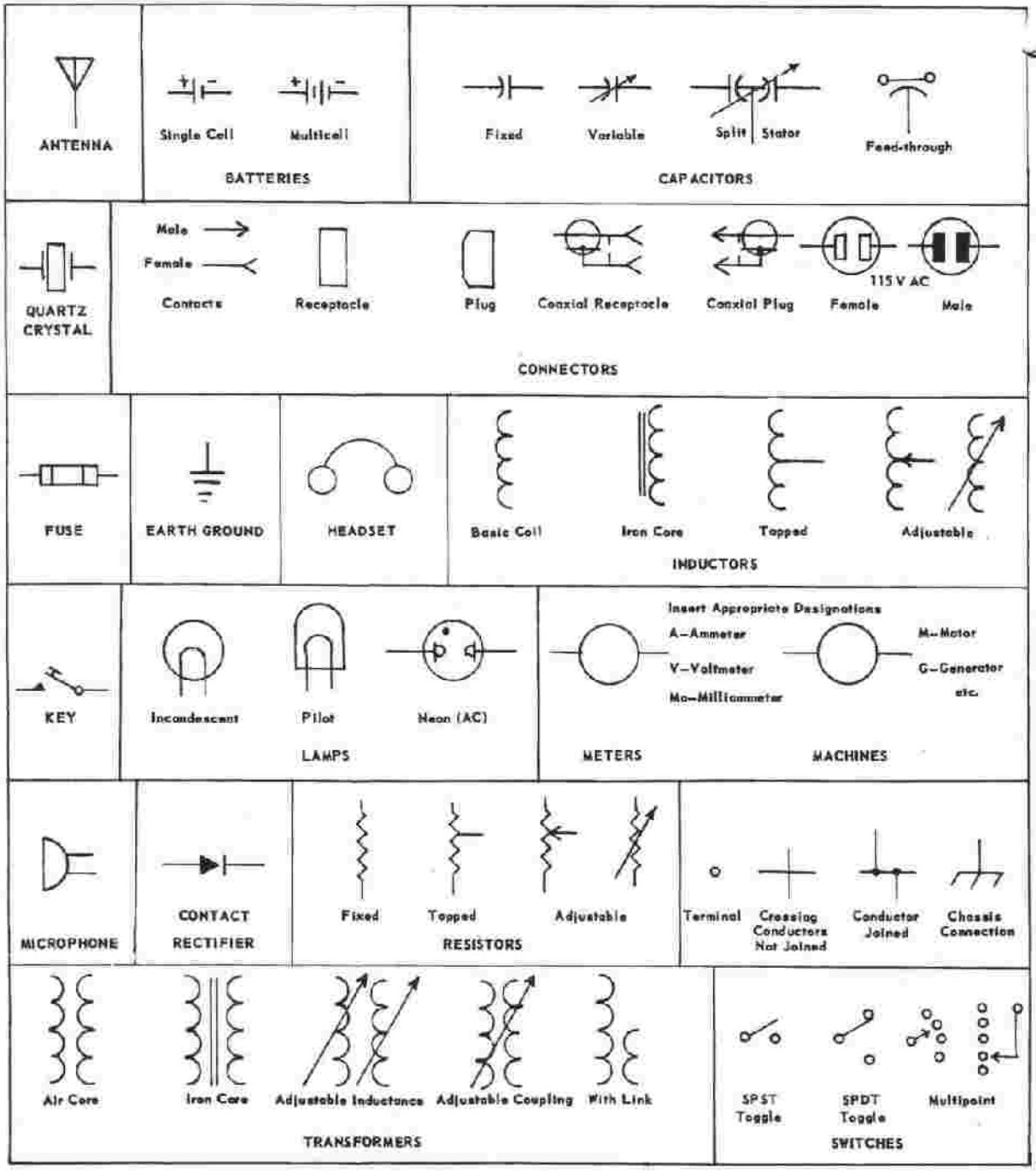


Figure 10. Electronic Symbols.

SECTION VI

GENERAL INFORMATION CONCERNING WARRANTY, SERVICE, REPLACEMENTS, ETC.

6-1. GENERAL.

6-2. The following paragraphs give complete information concerning Warranty, Service, Replacement, etc. Should it be necessary to write to World Radio Laboratories concerning any of these items the procedure outlined should be followed to assure you of complete satisfaction.

6-3. WARRANTY.

6-4. All parts furnished with kits guaranteed for 90 days. Parts in wired units (except tubes and meters) guaranteed against defects in workmanship or materials ONE FULL YEAR from date of purchase. Standard 90 day warranty on tubes and meters. (See paragraph 6-9 concerning replacement of defective parts). This warranty is not transferable and applies only to the original purchaser.

6-5. SERVICE.

6-6. In the event the kit does not operate properly after assembly, please write us giving full details. Include the model, serial number and date of purchase. We may be able to determine any wiring error, or faulty component, from the details you give us in your letter.

6-7. Your wired kit may be returned for service or inspection at any time within the one year warranty period for a special service charge of $1.50 Transportation charges should be prepaid by you. Parts within the warranty will be replaced without charge, however, a charge will be made for any component damaged due to a wiring error. After the one year warranty period, service charges, plus the cost of parts, are based on the length of time required to repair the unit. Should this kit be modified in any manner other than the modifications set forth in this manual please write us for an estimate of charges for any repairs before you ship the equipment to us. There is a minimum charge of $10.00 for service of modified kits. Any modifications other than those set forth in this manual will depreciate the trade-in value of your code practice oscillator.

6-8. Kits wired with acid core solder or solder paste or flux are not eligible for repair or service and shall be returned unrepaired or serviced, at your expense immediately.

6-9. REPLACEMENTS.

6-10. Replacement of defective parts will be made only when the defective part is postpaid to WRL after prior permission has been obtained from World Radio Laboratories. When writing concerning a faulty component please supply the following information:

(a) Identify the part by symbol number, description and WRL part number as found in Section VII, PARTS LIST.

(b) Give the equipment model and serial number.

(c) Give date of purchase.

(d) Advise the nature of the defect or reason for requesting replacement.

6-11. We will promptly supply any necessary replacement. Do not return any defective components unless we specifically request you to do so. Do not attempt to repair a defective component as this will void the guarantee. Tubes to be returned should be packed very carefully to avoid damage as broken tubes are not eligible for replacement. Insure your shipment. Any parts damaged or broken through carelessness on the part of the constructor will not be replaced free of charge. We do not authorize the purchase, from any other source, of any replacement for any faulty component that may be found in this unit. Under no circumstances will we re-imburse the purchaser of this unit for any such purchase. Any replacement should be obtained from World Radio Laboratories as outlined in paragraphs 6-10 and 6-11.

6-12. SHIPPING INSTRUCTIONS.

6-13. Should it be necessary to return the transmitter to us for service or inspection please use the original carton and packing; they have been designed to assure safe arrival. Attach a tag to the unit itself giving your name and address. If the original carton is not available consult your local Express Agent for proper packaging. He will be glad to assist you. Return shipment to you will be made via express collect.

6-14. POLICY.

6-15. All prices are subject to change without notice. World Radio Laboratories, Inc. and WRL Electronics, Inc. reserve the right to make circuit or component changes or incorporate new features at any time without incurring any obligation to owners of instruments previously sold.

SECTION VII

PARTS LIST

Quan.	Description	Designation	WRL Part No.
1	Battery holder	BH1	3300-001
1	Capacitor, .01 mfd, disc ceramic	C1	1101-024
1	Capacitor, .01 mfd, disc ceramic	C2	1101-024
1	Resistor, 2200 ohms, ½ watt	R1	1000-006
1	Resistor, 1500 ohms, ½ watt	R2	1000-007
1	Resistor, 22,000 ohms, ½ watt	R3	1000-008
1	Tip jack	TJ1	2004-003
1	Tip jack	TJ2	2004-003
1	Terminal strip, 2-terminal	TS1	2003-002
1	Transistor	PNP	3700-004

Quan.	Description	WRL Part No.
2	Batteries, Eveready Type 915	3300-002
4	Bushing, insulated, 3/8" long	2200-005
1	Cabinet	1700-005
4	Nut, hex., 4-40x 3/16"	2901-001
2	Nut, hex., 4-40x¼"	2901-002
2	Nut, hex., 6-32x¼"	2901-003
1	Printed circuit board	3300-035
2	Screw, machine; 4-40x 3/8"	2900-001
4	Screw, machine; 4-40x 3/4"	2900-020
2	Screw, machine; 6-32x 5/16"	2900-004
6"	Wire, #20 bus-bar	2700-005

SUGGESTED ACCESSORIES

Catalog No.	Item	Cash Price
50B025	Key, Johnson 114-300	1.96
50A003	Headphones, Trimm "Rex"	2.56
50A012	Headphone cushions, Trimm 654	.88pr.

TOOLS YOU MAY REQUIRE

Catalog Number	Item	Cash Price
88A061	Complete Soldering Kit, Ungar 507	4.05
6A252	Soldering Pencil, Ungar 776	1.10
6A253	Pyramid Tip, Ungar 536	.98
6A275	1 Pound Spool Printed Circuit Solder, Kester	1.48
6A266	3 oz. Spool Rosin Core Solder, Kester	.17
6A001	5" Long Nose Pliers, Krauter	2.34
6A096	4" Shockless Screwdriver, Xcelite	.35