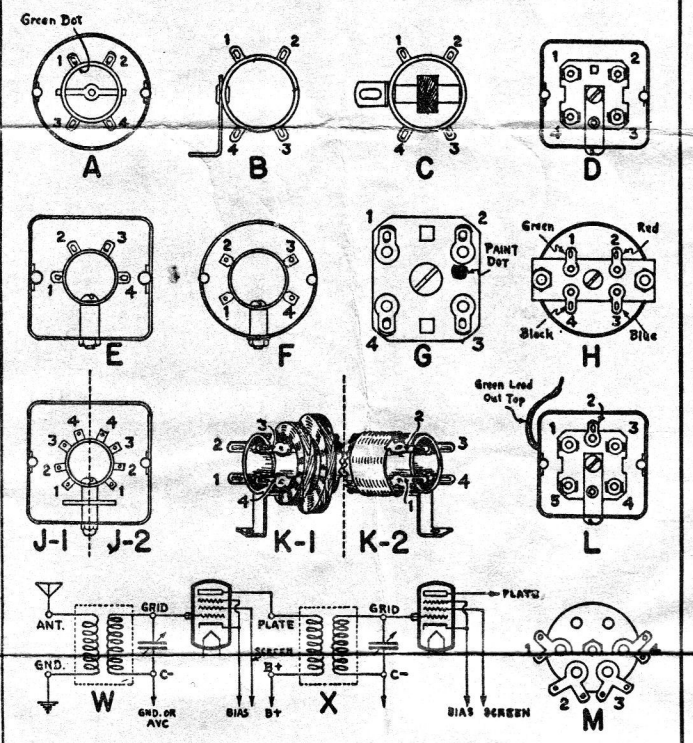
Meissner

ANTENNA-RF-OSCILLATOR COILS

Coil Listing in Numerical Order

Part No.	Circuit Position	Lug Dia.	Circuit Dia.	Lug 1	Lug 2	Lug 3	Lug 4
14-1004	Antenna	F	W	Grid	Gnd.	Ant.	C−
14-1005	RF	F	X	Grid	B+	Plate	C−
14-1010	Antenna	B	W	C−	Grid	Ant.	Gnd.
14-1011	RF	C	X	Plate	B+	C−	Grid
14-1022	Antenna	C	W	C−	Grid	Ant.	Gnd.
14-1023	RF	B	X	C−	Grid	Plate	B+
14-1024	Antenna	E	W	Ant.	Grid	C−	Gnd.
14-1025	RF	E	X	Plate	Grid	C−	B+
14-1496	Antenna	D	W	Grid	Ant.	Gnd.	C−
14-1497	RF	D	X	Grid	Plate	B+	C−
14-2436	Antenna	E	W	Ant.	Grid	C−	Gnd.
14-2437	RF	E	X	Plate	Grid	C−	B+
14-3732	Oscillator	G	Y-Z	Pad	Grid	Plate	B+
14-4034	Oscillator	G	Y-Z	Pad	Grid	Plate	B+
14-4242	Oscillator	H	Y-Z	Grid	B+	Plate	Pad
14-4243	Oscillator	H	Y-Z	Grid	B+	Plate	Pad
14-6590	Oscillator	G	Y-Z	Pad	Grid	Plate	B+
14-6592	Oscillator	G	Y-Z	Pad	Grid	Plate	B+
14-6797	Preselector	L	P	Ant.	Cond.	Gnd.	C−
14-7413	Antenna	D	W	Grid	Ant.	Gnd.	C−
14-7467	BC Ant.	J 1	Q	Grid	C−	Ant.	Gnd.
	Pol. Ant.	J 2	Q	Grid	C−	Ant.	Gnd.
14-7471	BC RF	J 1	R	Grid	C−	Plate	B+
	Pol. RF	J 2	R	Grid	C−	Plate	B+
14-7475	BC Osc.	J 1	S	Grid	Pad	Plate	B+
	Pol. Osc.	J 2	S	Grid	Pad	Plate	B+
14-7476	BC Ant.	J 1	Q	Grid	C−	Ant.	Gnd.
	SW Ant.	J 2	Q	Grid	C−	Ant.	Gnd.
14-7477	BC Ant.	K 1	Q	C−	Grid	Ant.	Gnd.
	SW Ant.	K 2	Q	C−	Grid	Ant.	Gnd.
14-7478	BC RF	J 1	R	Grid	C−	Plate	B+
	SW RF	J 2	R	Grid	C−	Plate	B+
14-7479	BC RF	K 1	R	Grid	C−	B+	Plate
	SW RF	K 2	R	C−	Grid	Plate	B+
14-7480	BC Osc.	J 1	S	Grid	Pad	Plate	B+
	SW Osc.	J 2	S	Grid	Pad	Plate	B+
14-7481	BC Osc.	K 1	S	B+	Plate	Grid	Pad
	SW Osc.	K 2	S	Pad	Grid	Plate	B+
14-7482	BC Ant.	K 1	Q	Gnd.	Ant.	Grid	C−
	Pol. Ant.	K 2	Q	C−	Grid	Ant.	Gnd.
14-7483	BC RF	K 1	R	Grid	C−	B+	Plate
	Pol. RF	K 2	R	C−	Grid	Plate	B+
14-7484	BC Osc.	K 1	S	Grid	Pad	B+	Plate
	Pol. Osc.	K 2	S	Pad	Grid	Plate	B+
14-7558	RF	D	X	Grid	Plate	B+	C−
14-7560	Oscillator	D	Y-Z	Grid	Plate	B+	Pad
14-7832	Quench Osc.	M	T	Grid	Plate	B+	Gnd
14-7860	RF	D	X	Grid	Plate	B+	C−

Terminal Arrangement and Circuit Diagrams



MEISSNER MANUFACTURING CO. . . . MT. CARMEL, ILLINOIS

Printed in U. S. A.

Meissner

"UNIVERSAL" ADJUSTABLE COILS

In order to permit replacement coils to be tracked rapidly and to eliminate the possibility of having removed too much inductance and thereby ruined the replacement coil, to say nothing of the hours of labor installing, checking, removing and altering the coil, etc., Meissner has developed "Universal Adjustable" replacement Antenna, R F and Oscillator coils which are provided with a screw-driver adjustment of inductance by means of a movable core of finest quality powdered iron. By means of this adjustment, it is as easy to add inductance as to remove it, and to quickly obtain the optimum value of inductance.

ANTENNA & R F COILS

When a replacement Antenna or R F coil is installed in a TRF receiver, the process of aligning is very simple. The dial is set to 600 K C, a dummy Antenna of 200 Mmfd. connected between the high side of the service oscillator and the antenna connection of the receiver, an output indicator of some type is connected to the output of the receiver, the service oscillator tuned to the receiver and the screw adjustor in the top of the can rotated until maximum sensitivity is obtained. The receiver and signal generator are next tuned to 1400 KC and the circuits aligned in the usual manner by adjusting the trimmers on the gang condenser. The process should then be repeated in order to obtain the best possible alignment at both checking points. It is best to seal the inductance adjustment on the coil by the application of a satisfactory cement, such as Duco Household Cement or equivalent.

When replacing an antenna or R F coil on a superheterodyne, essentially the same practice is followed as above with the exception that, since the oscillator determines the dial calibration, if the adjustments thereon have been disturbed, it is necessary to readjust the oscillator circuit to agree with the dial calibration at the checking points before adjusting the inductance of the new coil or aligning it.

OSCILLATOR COILS

If a new Oscillator coil is being installed, the greatest aid to rapid adjustment of the new coil to proper inductance is an **undisturbed padding condenser adjustment.** There are innumerable combinations of oscillator inductance, padding capacity, and trimmer capacity that will track an oscillator circuit at two places in the broadcast band, but these various combinations give varying degrees of mis-tracking throughout the remainder of the band. If the padding condenser has not been disturbed, one of these variables is eliminated, and, with only inductance to adjust for proper alignment at the low-frequency end of the band, and capacity to adjust at the high-frequency end of the band, the adjustment is practically as easy and rapid as installing and adjusting an antenna or RF coil.

If the oscillator padding condenser has been disturbed, it will be necessary to track the oscillator with the remainder of the receiver in the same experimental manner as used in the determination of the original design values. To arrive at a satisfactory alignment, the following experiment should be conducted systematically, writing down the answers obtained, so that the data does not become confused in your mind.

1—Align the IF amplifier at the frequency specified by the manufacturer.

2—Adjust the padding condenser to some value known to be much lower in capacity than its normal adjustment.

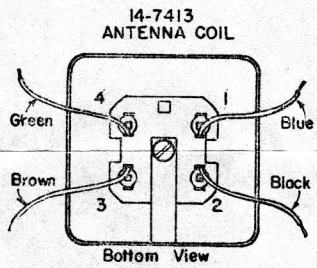
3—Set the dial and signal generator (of known accuracy) to 600 KC and adjust the oscillator inductance by means of the screw in the top of the can until a signal is heard. If no signal is heard within the range of the oscillator inductance adjustment, screw the adjustment as far in as possible and increase the padding capacity until a signal is heard.

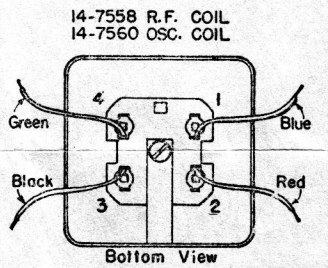
4—Attempt to align the oscillator trimmer condenser to agree with the dial at 1400 KC. If the adjustment cannot be made, again increase the capacity of the padding condenser and reduce the inductance (by turning the screw out) of the oscillator coil to obtain a new setting at 600 KC. This process should continue until both 600 and 1400 KC are correctly indicated.

5—When both 600 and 1400 KC are correctly indicated, tune the receiver to the generator set at 1000 KC and make a sensitivity measurement which should be recorded.

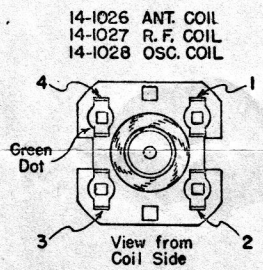
6—Now increase the padding condenser capacity slightly, decrease the inductance to give a 600 KC signal, align at 1400 KC and again measure sensitivity at 1000 KC. If the sensitivity at that point is better than it was before, repeat this operation until the sensitivity measurements show greatest sensitivity and then start falling off again. If the steps in the process have been written down, recording the number of revolutions and fractions thereof on the adjusting screw of the inductance, it should be easy to return to the adjustment giving maximum 1000 KC sensitivity. When this adjustment is set, seal it with some satisfactory cement such as Duco Household Cement or equivalent, and, then give the receiver a complete alignment.

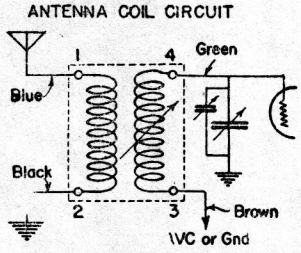
SHIELDED COILS

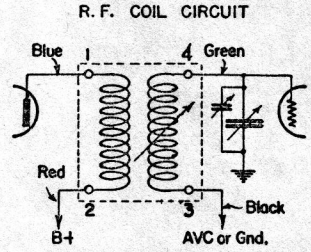


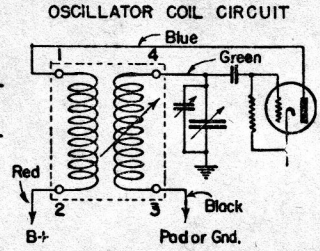


UNSHIELDED









MEISSNER MANUFACTURING CO. **MT. CARMEL, ILLINOIS**

Form J-74A
Printed in U. S. A.

Meissner

STANDARD I. F. TRANSFORMERS

GENERAL INSTRUCTIONS

This transformer has been designed as a replacement unit satisfactory for use in most radio sets having an intermediate frequency corresponding to that stamped on the box or within a reasonable range on either side. It has been carefully tested for gain and selectivity and is pretuned to the frequency marked. When properly installed in the radio set, it should require but little adjusting in order to obtain satisfactory operation.

1. Don't use long grid or plate leads; install the transformer in such a position that the grid and plate leads are as short and direct as possible.

2. Don't use close-fitting shielding on grid, plate or diode leads. If the previous transformer used a shield on any of these leads, use a piece of ⅜ or ½ inch dia. shielded loom as is used shielding automobile antenna leads, or make up the equivalent from a piece of loom used for house wiring, covered by a piece of woven shielding, or even heavy lead foil or tin foil. There is one exception where flexible spring shielding has been used on grid leads, employ the same type of shielding on the replacement unit.

3. Don't connect the new unit according to the same code as the old one unless it corresponds to the following code: Use only Blue for Plate, Green for Grid or diode, Red for B-plus and Black for AVC or Ground as the case may require. Yellow is used for the Center-Tap when required. Transformers having terminal bases instead of color-coded leads are connected as shown in Fig. 1 below.

4. Don't neglect to align (adjust) the trimmers on the new unit slightly to obtain best performance (See "Method of Alignment").

5. If the set oscillates with the new units aligned, this is evidence that the new units are very high in sensitivity. Oscillation may be stopped by applying one or more of the remedies outlined in "Oscillation or Feedback."

Method of Alignment

A. With service oscillator and output meter:
Connect equipment in accordance with Fig. 2, set oscillator for proper intermediate frequency, turn up output of oscillator until there is a clearly audible but not loud note from the speaker; adjust the screws of each I.F. transformer, one at a time, until the maximum deflection on the output meter is obtained on each. As the sound output increases, reduce the signal fed from the oscillator.

B. Without Test Equipment:
Tune set to the weakest station you can hear. Adjust each I. F. trimmer screw in succession for maximum strength of signal, repeating the process at least once. If the signal becomes very loud as the aligning progresses, tune to a still weaker station or reduce the aerial to a short piece of wire to cut down the input.

Oscillation or Feedback

To reduce feedback and eliminate oscillation, the following remedies are recommended:

A. If this is a replacement transformer, use shielding of leads as described above in Section 2.

B. Use close-fitting tube shields on the 1st detector and I.F. tubes.

C. If the only by-pass from B-plus to chassis is an electrolytic condenser, shunt this with a ¼ or ½ MFD. "non-inductive" paper condenser.

D. Check to see that all "hot" leads (grid, plate and diode) are as short and direct as possible.

E. If the I.F. tube has its bias resistor common to some other tube, rearrange the circuits to have a separate bias resistor for the I.F. tube, giving proper bias (same as when bias resistor was common to two or more tubes; measure with 1000 ohm-per-volt meter) and by-pass it with a 0.1 MFD. by-pass condenser.

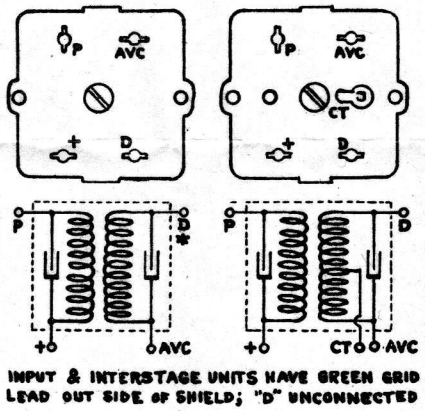


Figure 1

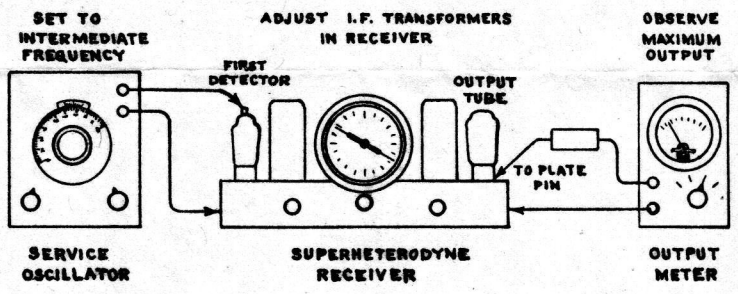


Figure 2

MEISSNER MANUFACTURING CO. . . . MT. CARMEL, ILLINOIS

INSTRUCTIONS FOR INSTALLING

Meissner

REPLACEMENT PRIMARY WINDINGS

1. Carefully examine the defective winding to be replaced in order to determine the winding direction and connection to proper terminals on the coil form. Exact location on the form, in relation to other windings must also be noted.

2. Remove the defective winding carefully in order not to damage other windings or connections.

3. Place the new primary winding in position so that the winding itself occupies the same relative position to other windings as the old one and so that the winding direction is the same. Connect the inside and outside ends of the new winding to the same terminals from which the corresponding ends of the old winding were removed.

4. In case the old primary winding is so badly damaged that it is impossible to determine the winding direction, it should still be possible to determine location on the form and the terminals to which the winding was connected.

It will then be necessary to inspect the winding direction of the secondary winding before placing the new primary. Find the grid end of the secondary and note in which direction the wire is going around the form as it leaves the winding at the grid end.

The new primary winding is then to be placed so that its antenna or plate end is travelling in the opposite direction as it leaves the winding. This may be the inside or outside end of the winding although the inside connection is more generally used.

On many coils will be found a capacity coupling device which may be a turn or two of wire, a wire-wound "gimmick" or a small mica condenser. This capacity is connected across the "hot" ends of the windings (plate and grid or antenna and grid) in order to improve the gain of the coil at the higher frequencies. Care must be used to see that the connection of this capacity is maintained the same as before in order to be sure of proper operation.

5. After locating the coil and fixing it in place temporarily it should be aligned as a final check on its performance. After alignment, it should be permanently fixed by using coil cement or wax to hold it in place.

ALIGNMENT

Using a suitable dummy antenna the alignment should first be made at 1400 kc in the conventional manner. As the coil is tuned toward the low-frequency end, a tendency to require more capacity indicates that the coupling is too close and the primary should be moved away from the secondary slightly and alignment repeated. On the other hand, if it appears that less capacity is required, the coupling is too loose, and the winding may be moved closer to the secondary for improved performance.

If care is taken in the first place to see that the new winding is placed in exactly the same location as the old coil, however, and proper attention is given to the winding direction and method of connection, there will be no difficulty whatsoever in duplicating the original performance of the coil by this simple repair.

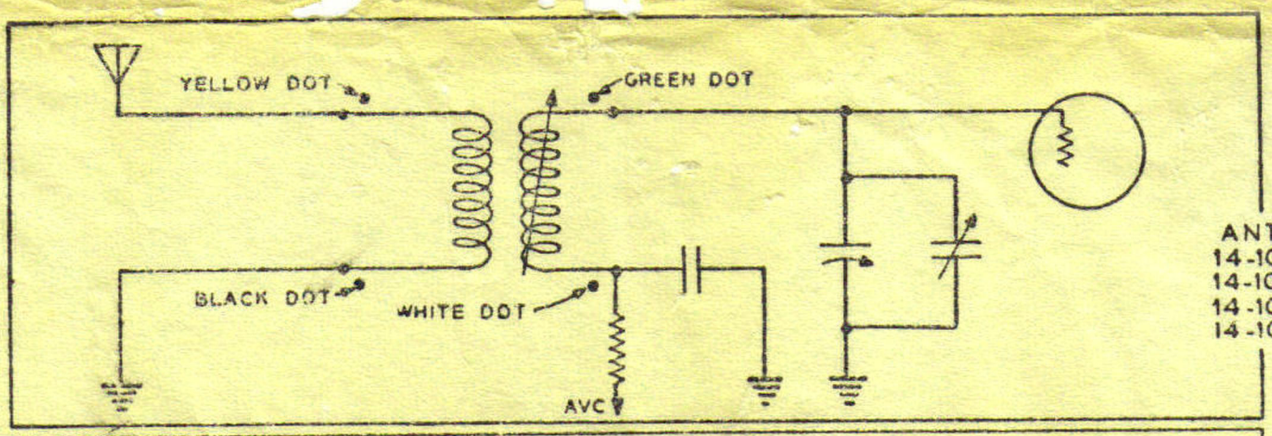
MEISSNER MANUFACTURING CO., Mt. Carmel, Illinois

J-100 Printed in U. S. A.

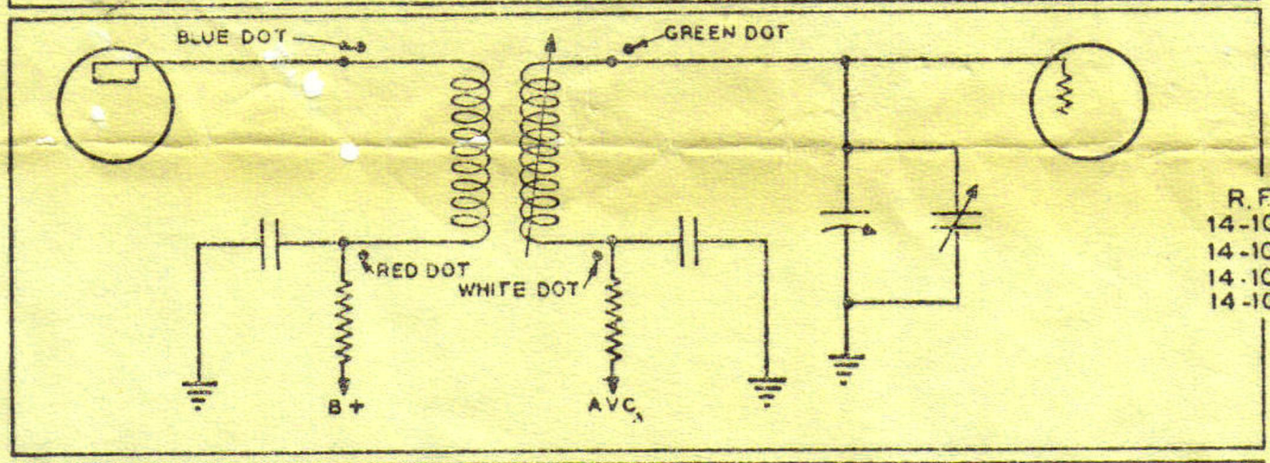
INSTRUCTIONS FOR INSTALLING MEISSNER ADJUSTABLE ANT, R.F, AND OSC COILS

IN THE USE OF THE REPLACEMENT ANT. AND R. F. COILS THE TRACKING CAN BE DUPLICATED BY ALTERNATE ADJUSTMENT OF THE SHUNT TRIMMER AND IRON CORE.

IN THE USE OF THE REPLACEMENT OSCILLATOR COILS THE CALIBRATION CAN BE DUPLICATED BY ALTERNATE ADJUSTMENT OF THE SHUNT TRIMMER, SERIES PADDER (IF USED), AND THE IRON CORE



ANT
14-1056
14-1061
14-1064
14-1071



R.F
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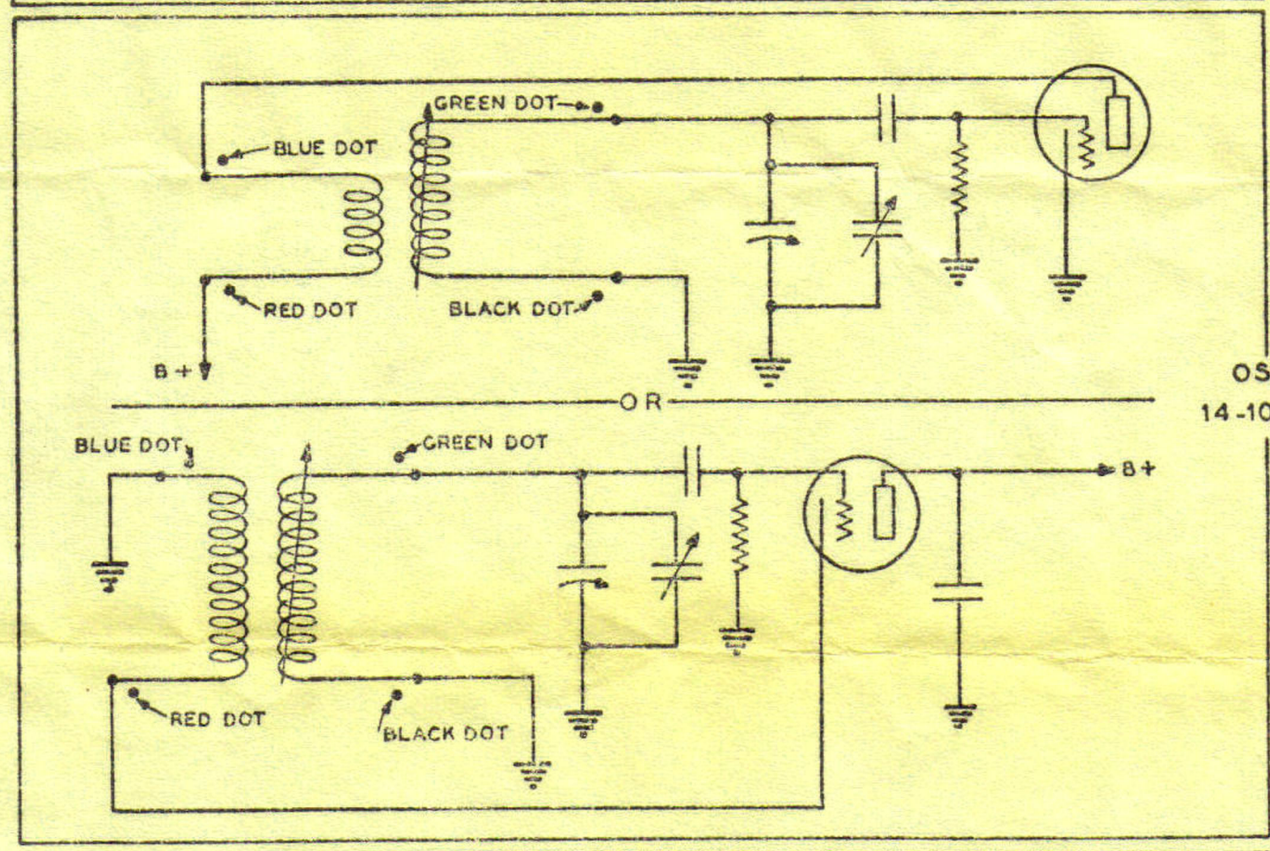
14-1072



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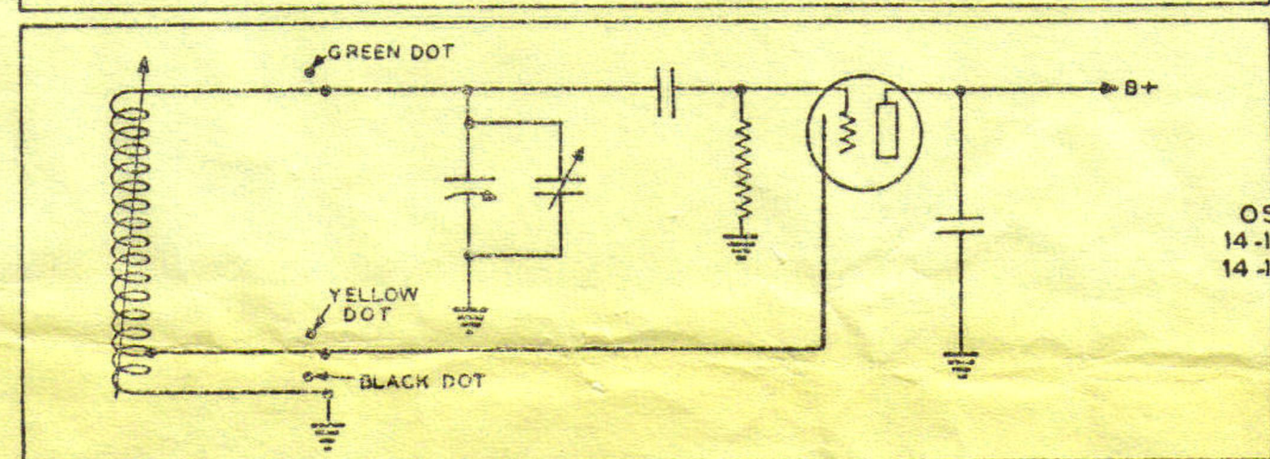
14-1058



OSC
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14-1066

J-277-A