

## MODELS K-60, K-62, K-70, K-72

K-80, K-82, K-90, K-92

## Condenser &amp; Resistor Data

## KOLSTER RADIO, INC.

## MODELS K-60—K-62

Condenser, Electrolytic, 475 volts, 8 mfd. (C6-C7) .....
Condenser, Electrolytic, 430 volts, 8 mfd. (C8) .....
Condenser, fixed, Mica, .000725 mfd. (Yellow) (C2) .....
Condenser, fixed, Mica, .0002 mfd. (Gray) (BC-4) .....
Condenser, fixed, Mica, .001 mfd. (Orange) (C1) .....
Condenser, fixed, Mica, .0015 mfd. (Blue) (SC-1) .....
Condenser, fixed, Mica, .003 mfd. (Pink) (SC-2) .....
Condenser, fixed, paper, .025 mfd. (200 volts) (C4) .....
Condenser, fixed, paper, .1 mfd. (200 volts) (BC-6) .....
Condenser, fixed, paper, .1 mfd. (400 volts) (C-5) .....
Condenser, variable, 3 gang, comp. (VC-1, VC-2, VC-3) .....
Condenser block (4 sections) (BC-1, BC-2, BC-3, C3) .....
Resistor, fixed, carbon, 200 ohms (Body red, tip black, dot brown) (R5) .....
Resistor, fixed, carbon, 10000 ohms (Body brown, tip black, dot orange) (R2) .....
Resistor, fixed, carbon, 25000 ohms (Body red, tip green, dot orange) (R6) .....
Resistor, fixed, carbon, 100000 ohms (Body brown, tip black, dot yellow) (R3) .....
Resistor, fixed, carbon, .25 megohms (Body red, tip green, dot yellow) (R4, R7, R8, R9, R10) .....
Resistor, fixed, carbon, 1 megohm (Body brown, tip black, dot green) (R1) .....
Resistor, vitreous, tapped (R11, R12, R13, R14) .....

## MODELS K-70—K-72

Condenser, Electrolytic, 475 volts, 8 mfd. (C6-C7) .....
Condenser, Electrolytic, 430 volts, 8 mfd. (C8) .....
Condenser, fixed, Mica, .000725 mfd. (Yellow) (C2) .....
Condenser, fixed, Mica, .0002 mfd. (Gray) (BC-5) .....
Condenser, fixed, Mica, .0005 mfd. (Red) (C4) .....
Condenser, fixed, Mica, .001 mfd. (Orange) (C1) .....
Condenser, fixed, Mica, .0015 mfd. (Blue) (SC-1) .....
Condenser, fixed, Mica, .003 mfd. (Pink) (SC-2) .....
Condenser, fixed, paper, .025 mfd. (200 volts) (C-10) .....
Condenser, fixed, paper, .01 mfd. (200 volts) (C3, C-9, BC-1, BC-4, BC-7, BC-8) .....
Condenser, fixed, paper, .01 mfd. (400 volts) (C5), BC-11 .....
Condenser, fixed, paper, 1.0 mfd. (K-72) (C11) .....
Condenser, variable, 3 gang, comp. (VC-1, VC-2, VC-3) .....
Condenser block (5 sections) (BC-2, BC-3, BC-6, BC-9, BC-10) .....
Resistor, fixed, carbon, 200 ohms (Body red, tip black, dot brown) (R2) .....
Resistor, fixed, carbon, 5000 ohms (Body green, tip black, dot red) (R9, R21) .....
Resistor, fixed, carbon, 10000 ohms (Body brown, tip black, dot orange) (R3) .....
Resistor, fixed, carbon, 20000 ohms (Body red, tip black, dot orange) (R11) .....
Resistor, fixed, carbon, 25000 ohms (Body red, tip green, dot orange) (R8, R16) .....
Resistor, fixed, carbon, 100000 ohms (Body brown, tip black, dot yellow) (R4) .....
Resistor, fixed, carbon, .25 megohms (Body red, tip green, dot yellow) (R1, R5, R17, R18, R19, R20) .....
Resistor, fixed, carbon, 2 megohms (Body red, tip black, dot green) (R6, R7) .....
Resistor, vitreous, tapped (R12, R13, R14, R15) .....

## MODELS K-80—K-82

Condenser, Electrolytic, 475 V. (C6-C7) .....
Condenser, Electrolytic, 430 V. (C8) .....
Condenser, fixed, Mica, .000725 Mfd. (Yellow) (C2) .....
Condenser, fixed, Mica, .0005 Mfd. (Red) (SC-1, C4) .....
Condenser, fixed, Mica, .001 Mfd. (Orange) (C1, BC-6) .....
Condenser, fixed, Mica, .002 Mfd. (Green) (SC-2, BC-9) .....
Condenser, fixed, paper, .025 Mfd. (200 volts) (C9) .....
Condenser, fixed, paper, .1 Mfd. (200 volts) (BC-1, BC-5, C3) .....
Condenser, fixed, paper, .1 Mfd. (400 volts) (C5) (BC-10) .....
Condenser, fixed, paper, 1 Mfd. (200 volts) (K-82) (C10) .....
Condenser, variable, 3 gang comp. (VC-1, VC-2, VC3) .....
Condenser block (5 sections) (BC-2, BC-3, BC-4, BC-7, BC-8) .....
Resistor, fixed, carbon, 200 ohms (Body red, tip black, dot brown) (R2) .....
Resistor, fixed, carbon, 5000 ohms (Body green, tip black, dot red) (R18) (K-82) .....
Resistor, fixed, carbon, 10000 ohms (Body brown, tip black, dot orange) (R3, R17) .....
Resistor, fixed, carbon, 20000 ohms (Body red, tip black, dot orange) (R9) .....
Resistor, fixed, carbon, 25000 ohms (Body red, tip green, dot orange) (R13, R14) .....
Resistor, fixed, carbon, 50000 ohms (Body green, tip black, dot orange) (R15, R16) .....
Resistor, fixed, carbon, 100000 ohms (Body brown, tip black, dot yellow) (R4) .....
Resistor, fixed, carbon, .25 megohms (Body red, tip green, dot yellow) (R1) .....
Resistor, fixed, carbon, 2 megohms (Body red, tip black, dot green) (R11, R12) .....
Resistor, vitreous, tapped (R5, R6, R7, R8) .....

## MODELS K-90—K-92

Condenser, Electrolytic, 475 V. (C6-C7) .....
Condenser, Electrolytic, 430 V. (C8) .....
Condenser, fixed, Mica, .000725 Mfd. (Yellow) (C2) .....
Condenser, fixed, Mica, .0005 Mfd. (Red) (SC-1, C4) .....
Condenser, fixed, Mica, .001 Mfd. (Orange) (BC-6, C1) .....
Condenser, fixed, Mica, .002 Mfd. (Green) (SC-2, BC-9) .....
Condenser, fixed, paper, .025 Mfd. (200 volts) (C9-C10) .....
Condenser, fixed, paper, .1 Mfd. (200 volts) (BC-1, BC-5, C3) .....
Condenser, fixed, paper, .1 Mfd. (400 volts) (C5) .....
Condenser, fixed, paper, 1 Mfd. (200 volts) K-92 (C11) .....
Condenser, variable, 4 gang, comp. (VC-1, VC-2, VC-3, VC-4) .....
Condenser block (5 sections) (BC-2, BC-3, BC-4, BC-7, BC-8) .....
Resistor, fixed, carbon, 200 ohms (Body red, tip black, dot brown) (R2) .....
Resistor, fixed, carbon, 5000 ohms (Body green, tip black, dot red) (R19) .....
Resistor, fixed, carbon, 8000 ohms (Body gray, tip black, dot red) (R11) .....
Resistor, fixed, carbon, 10000 ohms (Body brown, tip black, dot orange) (R3-R20) .....
Resistor, fixed, carbon, 12000 ohms (Body brown, tip red, dot orange) (R-10) .....
Resistor, fixed, carbon, 25000 ohms (Body red, tip green, dot orange) (R13-R14) .....
Resistor, fixed, carbon, 50000 ohms (Body green, tip black, dot orange) (R15-R16-R19) .....
Resistor, fixed, carbon, 100000 ohms (Body brown, tip black, dot yellow) (R4) .....
Resistor, fixed, carbon, .25 megohms (Body red, tip green, dot yellow) (R1-R5) .....
Resistor, fixed, carbon, 1 megohm (Body brown, tip black, dot green) (R17-R18) .....
Resistor, vitreous, tapped (R6-R7-R8-R9) .....

Model K 80-82 sets as originally manufactured employed 15,000 ohm volume control unit, (Stamped No. 62018). To improve volume control action, this unit has been replaced with 15,000 ohm potentiometer, (Stamped No. 62025).

In addition to replacing the volume control unit as just described, a 1,000 ohm fixed resistor, Part No. 6569-15, is installed in the Cathode circuit of the automatic volume control tube. This should be connected between the end of the volume control unit (R-10) and the 20,000 ohm resistor (R-9).

MODELS K-60, K-62, K-70, K-72-  
K-80, K-82, K-90, K-92

**KOLSTER RADIO, INC.**

**Condenser Adjustments, Data**

Models K-60—K-62—K-70—K-72—K-80—K-82—K-90—K-92

**R.F. TUNING AND OSCILLATOR TRIMMING CONDENSER  
ADJUSTMENTS**

Located on the front of the gang condenser are three trimmer condensers (TC-1-2-3) which are provided for aligning the R.F. circuits. The 600 K.C. trimmer condenser (OC-1) for the OSCILLATOR will be found on the right hand top of the chassis base directly in front of the '30 socket and opposite the coil shield. Poor tone, lack of sensitivity and selectivity, or complete inoperation of the receiver may be caused by these condensers being out of adjustment.

(a) Place the oscillator in operation at exactly 1400 K.C. and couple it to the antenna. Connect the output device in accordance with the type used. Tune in the oscillator signal and adjust the coupling between the oscillator and the antenna lead of the set, or increase the volume control setting until a deflection is obtained in the output meter.

(b) With an insulated screw driver adjust each of the trimmer condensers mounted on the gang condenser frame until a maximum deflection is obtained in the output meter. If the pointer goes off scale reduce the coupling or the volume control.

(c) Set the oscillator now at 600 K.C. Tune in this signal with the receiver and adjust coupling or volume control for a deflection in the output meter. Now adjust the oscillator 600 K.C. trimmer condenser (OC-1) until a maximum deflection is obtained. In making this adjustment it is advisable to rock the tuning condenser back and forth a few degrees each side of the normal position.

(d) Change the setting of the oscillator back to 1400 K.C. and readjust the three trimmer condensers.

If attention is given to the adjustments the R.F. and oscillator circuits will be properly aligned and satisfactory results should be obtained. If not the next step is to adjust the I.F. circuits.

**I.F. CIRCUIT ADJUSTMENTS**

A single intermediate frequency stage with two transformers is used in band-pass arrangement. Each transformer has both the primary and secondary windings tuned accurately for 175 K.C.

To adjust these circuits proceed as follows:

(a) Set the previously mentioned oscillator at 175 K.C.

(b) Connect the output device.

(c) Remove the oscillator tube, which is the type '27 adjacent to the type '30, and make a good ground connection to the chassis.

(d) Connect the output of the oscillator to the Control Grid cap of the first detector, which is the type '24 tube.

(e) Adjust the oscillator output or the receivers volume control until a deflection is obtained in the output device.

(f) Place the chassis on end and the adjusting screws for the I.F. transformer condensers (IC-1-2-3-4) will be found through holes in the under side of the base after the bottom shield has been removed.

(g) Adjust the secondary and primary of the second and first I.F. transformers in the order just mentioned until a maximum deflection is obtained in the output meter. Make these adjustments the second time to insure proper aligning. It is now advisable to recheck the R.F. and oscillator condensers again.

**LINE VOLTAGE VARIATIONS** Models K-60—K-62 and Models K-70, K-72

These models were tested on 115 volts, and are therefore suitable for operation on line voltages ranging from 110 to 120 volts. Should lower line voltages be encountered it will be necessary to remove the chassis from the cabinet and unsolder the BLUE lead, which comes from the under side of the power transformer and is connected to one side of the line switch mounted on the rear of the volume control. In its place solder the GREEN lead, taping the end of the Blue lead just removed so that it will not short against other leads in the chassis. In locations where the line voltages exceed 120 volts, a suitable resistor will be necessary to reduce the voltage applied to the correct value.

**CAUTION**

**NEVER TURN ON THE POWER TO THE SET WHEN THE  
SPEAKER IS DISCONNECTED**

KOLSTER RADIO, INC.

MODEL K-60, K-62  
Voltage, Test Data

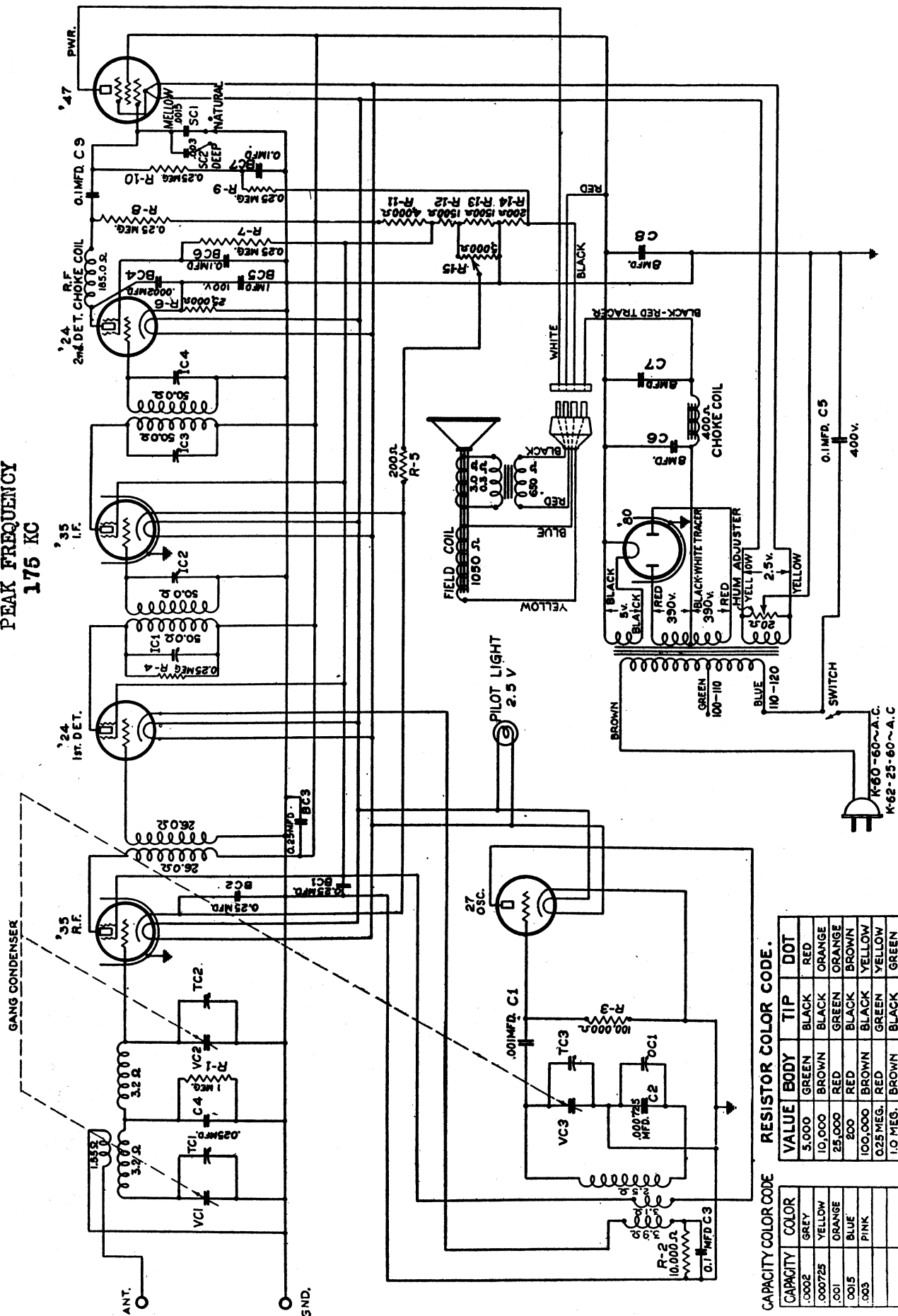
From Chassis To	Correct	Incorrect	From Chassis To	Correct	Incorrect
All tubes removed from sockets and AC plug removed from power supply. Speaker connected. Volume control maximum unless otherwise stated.					
From Chassis To	Correct	Incorrect	From Chassis To	Correct	Incorrect
Aerial	1.55 ohms		'90 Anode to '80 Anode	186 ohms	
RF Control Grid	1,000,000 ohms		'80 Filament to Chassis	6,653 ohms	PC
			'80 Filament to '80 Anode	8,369 ohms	PC
RF Control Grid and first tuning condenser stator	5.4 ohms		Output Transformer Secondary Only	0.3 ohm	
RF Cathode (V.O.Max)	200 ohms		Voice Coil only	3 ohms	
RF Screen Grid	2,653 ohms		Voice Coil and Secondary	0.273 ohm	
RF Plate	6,679 ohms		Across AC Plug (110-120 V)	1.9 ohm	
RF Plate to 80 Fil	25 ohms		Across AC Plug (100-110 V)	1.7 ohm	
			AC plug to chassis	0 ohm	BC- between power transformer primary and chassis (.1 mfd)
1 Detector Control Grid	25 ohms		Notes** Oscillator coil is isolated from oscillator control grid by means of blocking condenser. Oscillator coil only has a resistance of 2.6 ohms.		
1 Detector Cathode	10,000.9 ohms		KOLSTER K 60-K 62 **		
1 Detector Screen Grid	2,653 ohms		Tube	Heater Voltage	Control Grid Voltage
1 Detector Plate	6,705 ohms		1 Det	80	80
			IF	74	230
IF Control Grid	50 ohms		2 Det	80	225
IF Cathode	200 ohms		5e	22.5*	225
IF Screen Grid	2,653 ohms		Power	-	125.*
IF Plate	6,703 ohms		Rect.	.2*	86
				245.	24.
2 Detector Control Grid	50 ohms				48. per anode
2 Detector Cathode	25,000 ohms		* Indicates incorrect reading due to high resistance in circuit.		
2 Detector Screen	282,653 ohms		** Volume control at maximum and tone control in natural position.		
2 Detector Plate	266,836 ohms				
Oscillator Control Grid	100,000 ohms		RF		
Oscillator Cathode	0 ohm		1 Det		
Oscillator Plate	2,656 ohms		IF		
			2 Det		
'47 Control Grid	800,200 ohms		5e		
			Power		
RF Plate to '47 Screen	26 ohms		Rect.		
1 Detector Plate to '47 Screen	50 ohms				
IF Plate to '47 Screen	50 ohms				
'47 Screen Grid to '80 Fil	0 ohm				
'47 Plate to Chassis	850 ohms				
'47 Plate to '80 Filament	850 ohms				
'80 Anode to Chassis	1,735 ohms				

MODEL K-60, K-62

KOLSTER RADIO, INC.

KOLSTER — INTERNATIONAL RADIO MODELS K-60—K-62 — 1931—

PEAK FREQUENCY  
175 KC



**CAPACITY COLOR CODE**

CAPACITY	COLOR
.0002	GREY
.00025	YELLOW
.001	ORANGE
.0015	BLUE
.003	PINK

**RESISTOR COLOR CODE**

VALUE	BODY	TIP	DOT
5,000	GREEN	BLACK	RED
10,000	BROWN	BLACK	ORANGE
25,000	RED	BLACK	BROWN
200	RED	BLACK	BROWN
100,000	BROWN	BLACK	YELLOW
0.25 MEG.	RED	GREEN	YELLOW
1.0 MEG.	BROWN	BLACK	GREEN

Power Consumption 95 Watt

**Silvertone 1590, 1592**

Several changes have been made in the chassis used in this model, the schematic of which appears on page 3-8 in *Rider's Volume III* and page 2094 of the *Rider-Combination Manual*.

The first detector has been changed from a 57 type to a 58, which improves the volume control action. The second i-f. transformer has been replaced with one whose secondary is tuned by a condenser mounted under the chassis. Some of the receivers have a hole in the chassis end plate to make this condenser accessible. In other sets, it is necessary to remove the end plate.

The cathode circuit of the 58 (first detector) has been changed. The cathode formerly went to ground through a 2000-ohm resistor. This resistor has been increased to 5000 ohms, and, in addition, a 0.1-mf. condenser has been inserted between the cathode and this resistor. Also a 5000-ohm resistor has been connected between the cathode and the junction of the 150-ohm and 50,000-ohm resistors. The 0.001-mf. condenser, which formerly was connected between the cathode of the oscillator tube and the oscillator coil, has its connections changed. One side still is connected to the 0.1-mf. condenser and the oscillator coil, but the other side goes directly to the junction of the cathode and suppressor of the 58 first detector tube.

The 20,000-ohm resistor connected between the screen of the first detector and the high-voltage supply (the filament of the 80 rectifier) has been changed to 30,000 ohms.

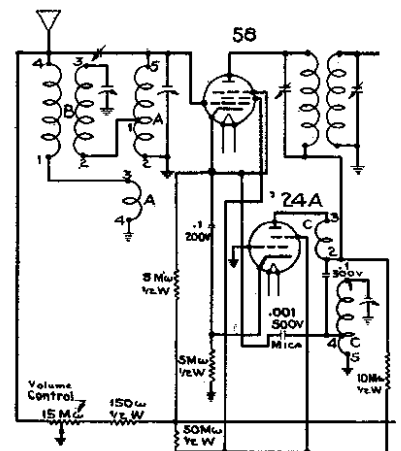


Fig. 1. The first detector and oscillator circuits of the revised Silvertone model 1590 and 1592.

In Fig. 1 is shown the first detector and oscillator circuits in which are located some of the changes mentioned above. Also note the numbering of the various coils, which correspond to the numbering on the schematics of the coils as shown in Fig. 2. In most cases

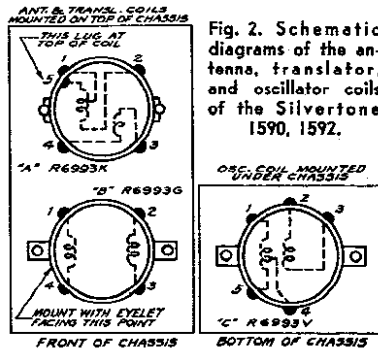


Fig. 2. Schematic diagrams of the antenna, translator, and oscillator coils of the Silvertone 1590, 1592.

it is clear in the schematic diagram (Fig. 1) where the various connections from the coils go, but where there is any doubt, the following notations may be of aid:

**Coil "A":**

Lug No. 2 is connected to the center terminal of the volume control.

Lug No. 5 is connected to the stator, middle variable tuning condenser unit, and the grid clip of the first detector.

**Coil "B":**

Lug No. 3 is connected to the stator, No. 1 (shaft end) of the variable tuning condenser unit.

**Coil "C":**

Lug No 5 is connected to the frame of the variable tuning condenser.

**Silvertone 1584 and 1640**

If any trouble is experienced with the 0.003-mf. condenser connected across the primary of the power transformer, breaking down, it has probably been due to a surge built across the transformer primary when the line switch is opened (set turned off).

To correct this difficulty, an 800-volt condenser is replacing the one of 600-volt rating used heretofore. This new condenser (Part No. R-6461, 800 V.) is connected between the line side of the on-off switch and the receiver chassis. Although these condensers may be marked 500 volts, they are really 800 volts and can be identified by the daub of yellow paint.

**Westinghouse WR-21**

Intermittent oscillator operation in this model may be due to a high resistance ground return in the oscillator coil. The coil is grounded through a spade terminal, this being one of the two spade terminals mounting the coil in its aluminum can. The can is riveted to a strap which in turn is screwed to the chassis. Apparently the oxide film on the aluminum causes the high resistance contact and the consequent intermittent operation. The repair can be made by drilling another hole in the can bringing out a ground wire. The schematic for this receiver will be found on page 5-2 in *Rider's Volume V*.

**Kolster K-60**

In the resistance test data appearing on page 2-4 of *Rider's Volume II* and on page 1455 of the *Rider-Combination Manual*, the resistance from the plate of the 47 tube to chassis is given as 850 ohms. This reading should be 7300 ohms. Please make this correction in your Manual. Thanks.

**G.E. A-70, A-75**

In the earlier models of the A-70 and A-75's it will be noted that the diode plate lead (green rubber covered) is soldered to one of the lugs of the second i-f. transformer. If for any reason it is necessary to remove or replace this transformer or wire, it is important that the wire be dressed as far as possible toward the front of the chassis to obtain full sensitivity. Sets carrying later serial numbers have this lead tied to the center tap of the coil inside the can. However, it is still necessary to keep it toward the front of the chassis to prevent a feed-back between the plate dropping resistor between the first and second i-f transformers, and the lead itself.

For schematic, see *G. E.*, page 6-19, *Rider's Volume VI*.

**Crosley 161 and 8B1**

We are advised by the manufacturer that only a comparatively few of this model were made and that it is practically the same as Crosley Model 160, the servicing data on which will be found on page 3-32 of *Rider's Volume III* and on page 756 of the *Rider-Combination Manual*.

Model 8B1 is practically the same as Model 143. See page 4-7 of *Rider's Volume IV* for servicing data.