

RCA VICTOR MODELS 143, 242 AND 243

Eight-Tube, Four-Band, A. C., Superheterodyne Receivers

SERVICE NOTES

ELECTRICAL SPECIFICATIONS

Voltage and Frequency Ratings.....	{ 105-125 Volts, 50-60 Cycles 105-125 Volts, 25-60 Cycles 100-130/195-250 Volts, 50-60 Cycles
Power Consumption.....	Approximately 130 Watts
Number and Type of Radiotrons	2 RCA-6D6, 1 RCA-6A7, 1 RCA-75, 1 RCA-76, 2 RCA-42, 1 RCA-5Z3—Total, 8
Tuning Frequency Ranges.....	{ Band "X"—140 KC- 410 KC Band "A"—540 KC- 1720 KC Band "B"—1720 KC- 5400 KC Band "C"—5400 KC-18,000 KC
Alignment Frequencies.....	175 KC, 410 KC, 460 KC, 600 KC, 1720 KC, 5160 KC, 18,000 KC
Maximum Undistorted Output.....	Approximately 4 Watts
Maximum Output.....	Approximately 5 Watts

PHYSICAL SPECIFICATIONS

	<i>Model 143</i>	<i>Model 242</i>	<i>Model 243</i>
Height.....	20 $\frac{3}{16}$ Inches	41 $\frac{1}{2}$ Inches	41 Inches
Width.....	17 $\frac{7}{8}$ Inches	26 Inches	25 Inches
Depth.....	14 $\frac{1}{2}$ Inches	14 Inches	14 $\frac{1}{2}$ Inches

These eight-tube, four-band receivers which employ identical chassis assemblies, are designed for "all-wave reception," with a continuous tuning range between 140 KC. and 18,000 KC. A narrow interruption occurs in the region of 500 KC. This extensive range of tuning permits a listener to receive international broadcasting, police calls, amateur transmissions, aircraft communication, and various other radio-telephone and telegraph signals, as well as providing excellent reception of the standard broadcast stations.

The exceptional sensitivity, selectivity and tonal quality combine with the high output capacity (4 watts undistorted) to form a receiver of outstanding

ability. Cabinet design is based on the performance characteristics of the receiver chassis and speaker, so as to obtain a greater uniformity of over-all sound response.

Special design features incorporated to facilitate operation are the use of: an "airplane dial," a double-ratio vernier tuning drive, a visual band indicator, and a "second hand" dial pointer for accurate indication and logging of short-wave stations. Other important details of design include: automatic volume control, sensitivity control, a large loudspeaker unit, and external terminals for phonograph connection.

DESCRIPTION OF ELECTRICAL CIRCUIT

The general circuit arrangement consists of an r-f stage, a combined oscillator and first detector stage, an i-f stage, a second detector, audio amplifier and A.V.C. stage, a second audio amplifier stage, and a push-pull pentode power output stage. Rectification of voltages used for the plate and grid circuits is effected by an RCA-5Z3, which also supplies magnetization current for the loudspeaker field. The filtering system includes the inductance of the speaker field, and several electrolytic capacitors.

The operation of the receiver may be visualized by study of the schematic circuit of Figure 1. An r-f

signal from the antenna enters the input stage through a shielded lead and is applied to the control grid of the RCA-6D6 by the secondary of the antenna coupling transformer. Either of the four antenna transformers may be selected by the associated band switch contacts, depending on the frequency of the signal desired. From the selectivity afforded by the tuned coupling transformer and the magnification caused by the r-f amplifier stage, the signal attains a high value in respect to noise. Under this condition, it is introduced through another tuned transformer coupling system to the control grid of the RCA-6A7

first detector tube. At this juncture, the heterodyning between the signal and the local oscillator produces the i-f or beat frequency. The local oscillator frequency is derived from a circuit attached to several elements of the RCA-6A7 Radiotron, which are so constructed and interrelated as to mix the two input frequencies and detect their i-f beat. Tuning of the local oscillator is done by a third group of coils and the third unit of the gang condenser. The frequency generated by the oscillator is maintained 460 KC. above the incoming signal frequency by the inherent design of the circuit.

The i-f signal from the output of the first detector stage is admitted through the additional selectivity of the first intermediate transformer to the i-f amplifier tube, an RCA-6D6. Here it is boosted by the gain of the tube, and again tuned by the second i-f transformer of the plate circuit. The magnitude of the signal at this point has reached a value convenient for detection. It is therefore impressed upon the RCA-75 second detector diode plates, which perform the detection process. The d-c voltage across resistor R-32 is used for automatic volume control of the r-f stage. A lower resistance tap is taken off resistor R-32 for automatic control of the grid bias of the first detector

and i-f stages. Audio voltage developed across resistor R-32 as a result of the diode detection is conducted through the variable arm (volume control) of R-32 to the control grid of the RCA-75. After amplification by the RCA-75, the audio signal is transmitted by a resistance-capacitance coupling network to the audio amplifier stage, and thence by means of transformer coupling to the grids of the push-pull, power output stage. A high-frequency tone control consisting of a resistor and condenser in series is connected between these two grids to render possible reduction of noise and side-band interference. Maximum reduction of "highs" is obtained at the minimum resistance setting of the control, which corresponds to an extreme counter-clockwise position of the control knob. The RCA-42 output tubes are matched into the circuit for Class "A" operation. The high-quality output obtained is transferred to the loudspeaker by the step-down transformer.

In the power supply system, an RCA-5Z3 full-wave rectifier of the high-vacuum type furnishes d-c for the bias and plate voltages required. The loudspeaker field is connected into the filter stage of the rectifier output circuit to serve as a reactor. Two 10-mfd. electrolytic capacitors operate in conjunction with the field winding.

SERVICE DATA

(A) LINE-UP PROCEDURE

The method of aligning this receiver is somewhat involved. It is therefore important that the following instructions be observed when making the various adjustments if maximum performance is to be attained. When properly aligned, efficient operation results; otherwise a tendency toward distorted quality and low sensitivity may be expected.

(1) Equipment. A first-class alignment job can only be accomplished by use of the correct test and measuring apparatus. The manufacturer of this "All-Wave" receiver has developed and produced a number of instruments for such a purpose, which will enable a service technician to duplicate the original factory adjustments. A "Full-Range" or "All-Wave" i-f and r-f oscillator is available, and should be used as the source of standard signals at the several line-up frequencies. Visual indication of output is very desirable. It may be accurately obtained by use of the standard neon type "Output Indicator." Two tools are needed, namely: a "Tuning Wand" for preliminary checking of alignment, and a combination insulated screw-driver and insulated socket wrench for correcting alignment.

(2) Preliminary Tests. Before making any adjustments, it is wise to determine the correctness of the existing alignment. This may be done by supplying a signal to the circuit (r-f, oscillator or i-f) from the Full-Range Oscillator and inserting the Tuning Wand into the coils involved. The Tuning Wand consists of a bakelite rod having a brass cylinder attached to one end, and a small core of finely divided iron compacted into the opposite end. By inserting

the brass cylinder end into the center of a particular coil through the opening provided in the top of the shield, shown in Figure 2, the inductance of the coil is lowered and therefore the resonant frequency is increased. Placing the other end (iron filing core)

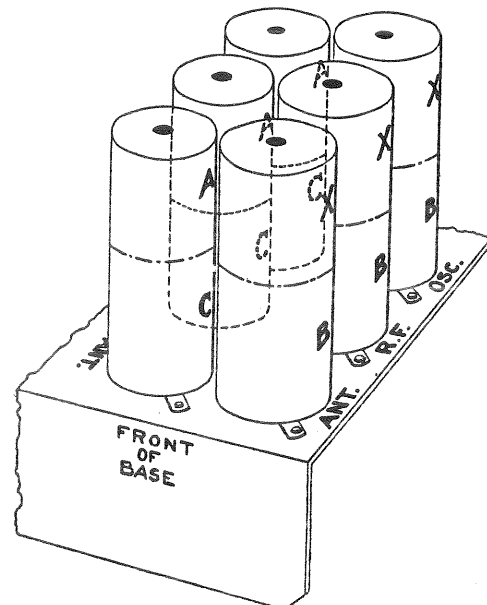


Figure 2—Location of Coils in Shields

into the coil raises the inductance and conversely decreases the resonant frequency. Thus it can be seen that if the circuits are precisely tuned to the standard signal of the Full-Range Oscillator, the insertion of

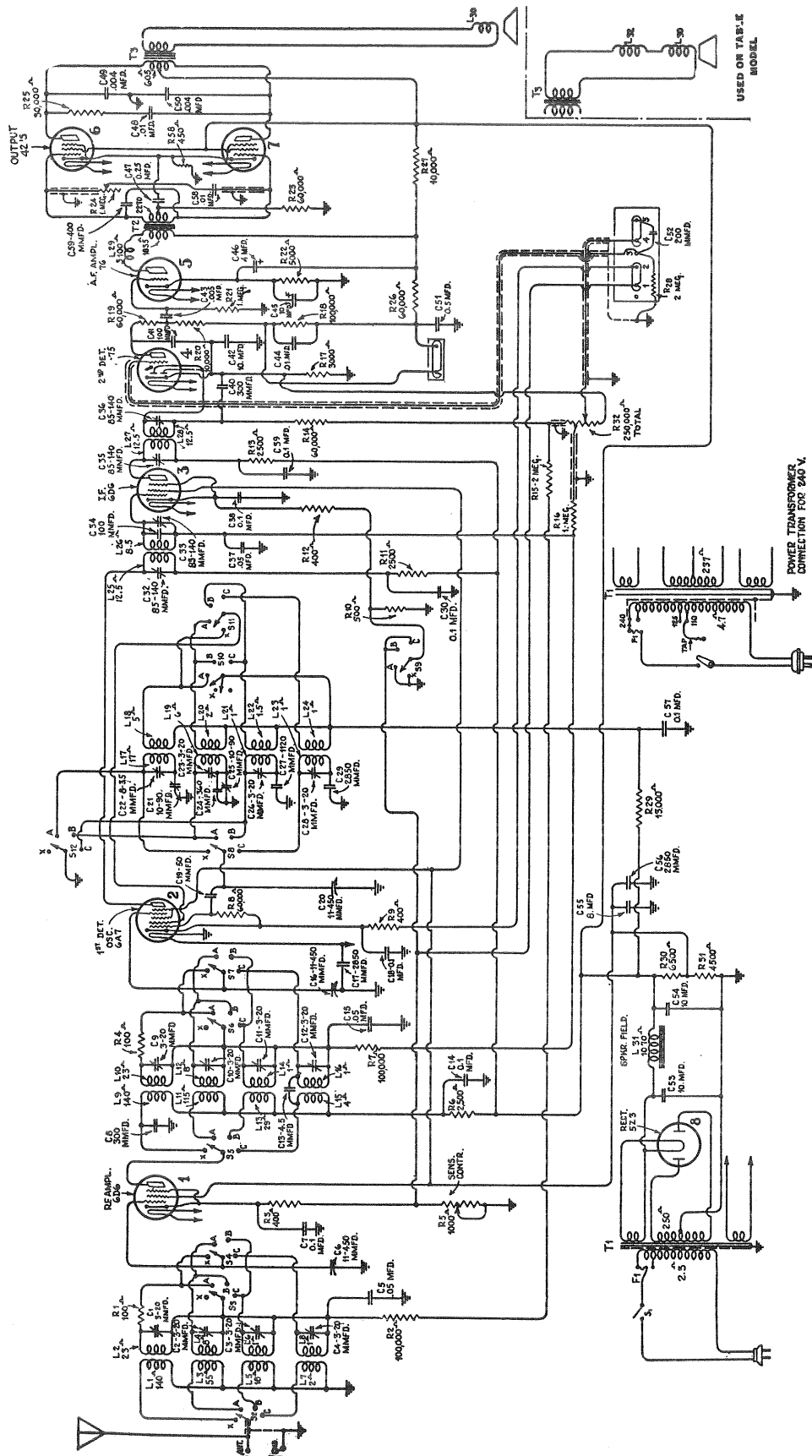


Figure 1—Schematic Circuit Diagram—Sensitivity Control Change with Band Position Models 143 and 242 (1934 Production)

either end of the wand will cause a reduction of the receiver output; whereas, if the circuits are not in tune or resonance with the incoming signal, one end will bring about an increase of the signal and the other end will cause a decrease. When an increase in signal is obtained with the iron-filled end of the wand, an increase of the inductance and decrease in frequency of resonance is indicated. The trimmer condenser associated with the tuned circuit under test will therefore require adjustment so as to increase its capacitance. The reverse occurs when a gain in signal is obtained when using the brass cylinder end of the wand.

(3) I. F. Tuning Capacitor Adjustments. In this receiver there is a single i-f stage, including two coupling transformers. Trimmer condensers are used across both the primary windings and secondary windings, making a total of four adjustments. Each trimmer is designed for aligning its coil to 460 KC., the established i-f for this receiver. Adjustment of the i-f circuits should be performed in the following manner:

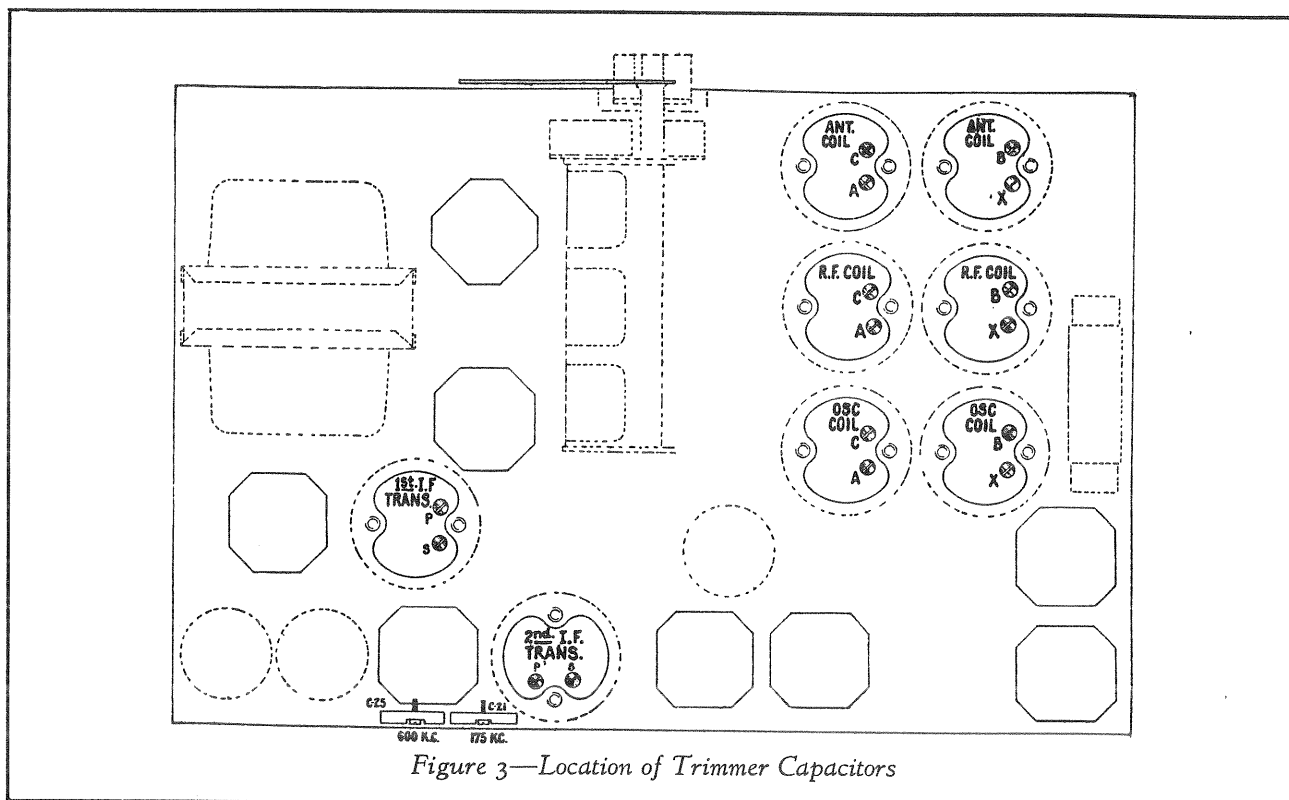
- (a) Connect the output of the Full-Range Oscillator, which is tuned to deliver a signal of 460 KC., to the first detector grid and chassis-ground. Attach the output indicator across the voice coil circuit of the loudspeaker.
- (b) With the receiver in operation, set the station selector to a point in band "A" where no signals are heard, and advance the volume control to its maximum position. Adjust the external oscillator to produce a level convenient for indication at the receiver output.

- (c) Adjust each i-f trimmer, shown in Figure 3, with an Alignment Tool until maximum receiver output is obtained.

(4) R-F, Oscillator and First Detector Tuned Circuit Alignment. Whenever the i-f line-up is corrected, it will be necessary to re-align r-f circuits preceding the first detector tube, as the correct operation of the receiver depends on the interlocking of the two.

The four tuning bands of the receiver entail a multiplicity of adjustments. Each band must be aligned individually. The output indicator should be retained across the receiver voice coil circuit, and the Full-Range Oscillator connected to the antenna-ground terminals. Volume and sensitivity controls should both be advanced to their maximum positions, and the external oscillator output regulated so as to be as low as possible consistent with obtaining a good indication at the receiver output indicator. In the higher-frequency bands, it may become necessary to disconnect the oscillator from the antenna-ground terminals and move it a short distance away from the receiver in order to reduce the signal level to a convenient value.

It is essential to set the dial pointer of the tuning mechanism in relation to the dial scale before any electrical adjustments are made. This is done by turning the station selector until the tuning condenser plates are in full mesh, and setting one end of the pointer exactly opposite the horizontal line at the low frequency end of the scale for band "A." The other end of the pointer should fall within 1/64 inch of the horizontal line at the high-frequency end of the same scale.



The trimmer locations for each band are shown by Figure 3. They should be adjusted in the following manner:

Band "X"

- (a) Set the receiver band switch to "X" and turn the station selector so that the pointer is at the 410 KC. marking.
- (b) Tune the Full-Range Oscillator to produce a signal of 410 KC.

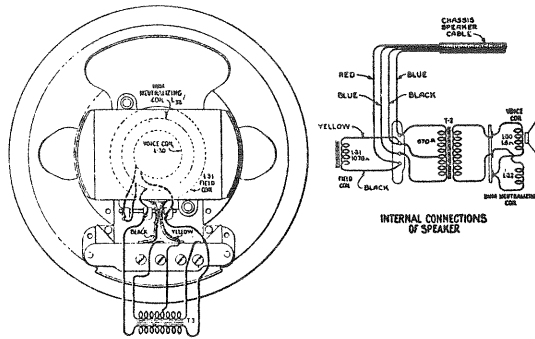


Figure 4—Table Loudspeaker Wiring

- (c) Adjust the r-f, first detector and oscillator trimmers of band "X" coils for maximum receiver output.
- (d) Shift the input signal frequency to 175 KC. and tune the station selector so that this signal is received in the vicinity of the 175 KC. marking on the dial scale. Adjust the 175 KC. oscillator trimmer, found on the rear apron of the chassis, simultaneously rocking the tuning condenser through the signal, until maximum receiver output is obtained. The dial calibration should fall within reasonable limits of accuracy at the 175 KC. point.

Band "A"

- (a) Set the receiver band switch to "A" and turn the station selector so that the pointer is at the 1720 KC. marking.
- (b) Tune the Full-Range Oscillator to produce a signal of 1720 KC.
- (c) Adjust the r-f, detector and oscillator trimmers of band "A" coils for maximum receiver output.
- (d) Change the external oscillator frequency to 600 KC. and turn the station selector so that this signal is received in the vicinity of 600 KC. marking on the dial scale. Then adjust the 600 KC. oscillator trimmer, found on the rear apron of the chassis, simultaneously rocking the tuning condenser through the signal, until maximum receiver output is obtained. The dial calibration should fall within reasonable limits of accuracy at the 600 KC. point. The adjustment at 1720 KC. should be rechecked and corrected as in (a), (b) and (c) above.

Band "B"

- (a) Set the receiver band switch to "B" and turn the station selector so that the pointer is at the 5160 KC. marking.
- (b) Tune the Full-Range Oscillator to produce a signal of 5160 KC.
- (c) Adjust the oscillator trimmer of band "B" coil for maximum receiver output. This trimmer should be left at the first peak obtained when increasing it from minimum to maximum capacitance.
- (d) Check for image signal which will be received at 4240 KC. if the oscillator trimmer is correctly set in accordance with (c).
- (e) Return the station selector to 5160 KC., and adjust the detector and r-f trimmers of band "B" coils for maximum receiver output.

Band "C"

- (a) Set the receiver band switch to "C" and turn the station selector so that the dial pointer is at the 18 megacycle marking.
- (b) Tune the Full-Range Oscillator to produce a signal of 18,000 KC.
- (c) Adjust the oscillator trimmer of band "C" coil for maximum receiver output. This trimmer should be left at the first peak obtained when increasing it from minimum to maximum capacitance.

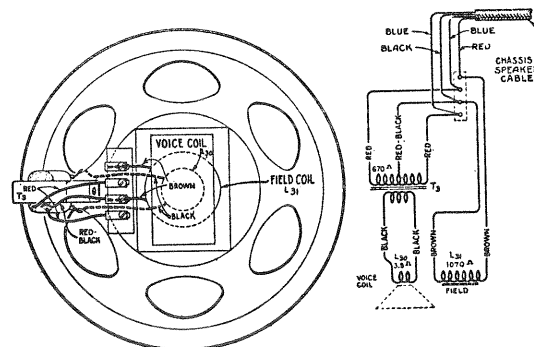


Figure 5—Console Loudspeaker Wiring

- (d) Check for image signal by turning the station selector to the 17,080 KC. dial marking.
- (e) Return the station selector to 18,000 KC. and reduce the capacity of the detector trimmer, while rocking the tuning condenser, until a point is reached where the signal disappears. The first detector tuning is then at the oscillator frequency, causing the RCA-6A7 tube to block. The trimmer should then be increased in capacity, while rocking the tuning condenser, until the point of maximum receiver output is reached.
- (f) Leaving the station selector at the point determined by the adjustment of (e), adjust the antenna transformer trimmer of band "C" for maximum receiver output.

(B) POWER TRANSFORMER INPUT CONNECTIONS

A Universal type of power transformer is used on some models of this receiver to permit operation from 220-volt, 50-60 cycle power supply, as well as being arranged to take supply from 110 volts, 50-60 cycles.

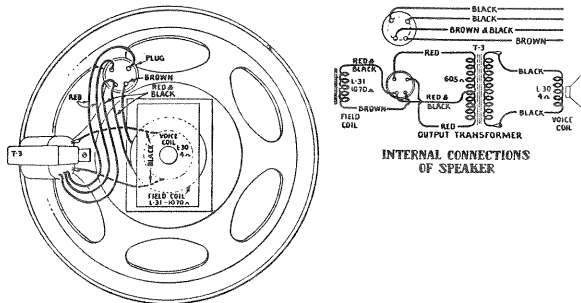


Figure 6—Console Loudspeaker Wiring—
With Cable Plug

Figure 13 shows the schematic connections and wiring layout. Accessibility of the various taps is provided by a terminal strip mounted on the rear of the chassis.

(C) MAGNETIC PICKUP CONNECTIONS

A terminal board is mounted at the rear of the chassis as a provision for phonograph input. Several schemes of attaching a pickup to the receiver are shown in Figure 12. These diagrams are self-explanatory. Care should be observed to keep wiring completely shielded and away from the the a-c wiring and transformers to prevent hum induction.

(D) FIDELITY LINK

It will be noted that a small link is mounted on the rear apron of the chassis, which is normally closed on table models and open on the console models. The low-frequency output of the receiver is increased when the link is opened.

(E) SOCKET VOLTAGES

The table shown below gives the operating voltages of the receiver as they appear at the socket contacts. They are referred to the chassis-ground. The values specified are the actual operating constants and do not take into account any inaccuracies that may be caused by currents drawn by the voltmeter

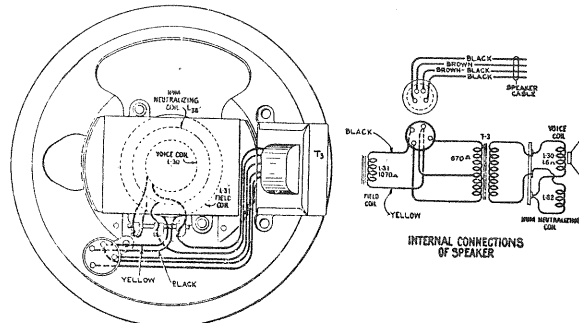


Figure 7—Table Loudspeaker Wiring—
With Cable Plug

used for the measurements. In checking the voltages, a voltmeter having as high resistance multiplier as available should be used. The tubes must be in their respective sockets and the power-supply voltage adjusted to 120 volts. The volume control and sensitivity controls should be at their maximum positions, and the station selector tuned to a point where no signal is received.

RADIOTRON SOCKET VOLTAGES

120-Volt A. C. Line—Maximum Volume and Sensitivity—No Signal

Radiotron No.	Cathode to Ground Volts, D. C.	Screen Grid to Ground Volts, D. C.	Plate to Ground Volts, D. C.	Cathode Current, M. A.	Heater Volts, A. C.
RCA-6D6 R. F.	4.2	110	272	10.5	6.3
RCA-6A7	Oscillator	—	225	11.4	6.3
	1st Detector	4.6	110		
RCA-6D6 I. F.	4.2	110	272	10.5	6.3
RCA-75 2nd Det.	1.2	—	170*	0.4	6.3
RCA-76 A. F.	14.0	—	252	2.8	6.3
RCA-42 Power	22.0	295	290	24.5	6.3
RCA-42 Power	22.0	295	290	24.5	6.3
RCA-5Z3 Rectifier	—	—	768/384 R. M. S.	110.0	5.0

*Cannot be measured with ordinary voltmeter.

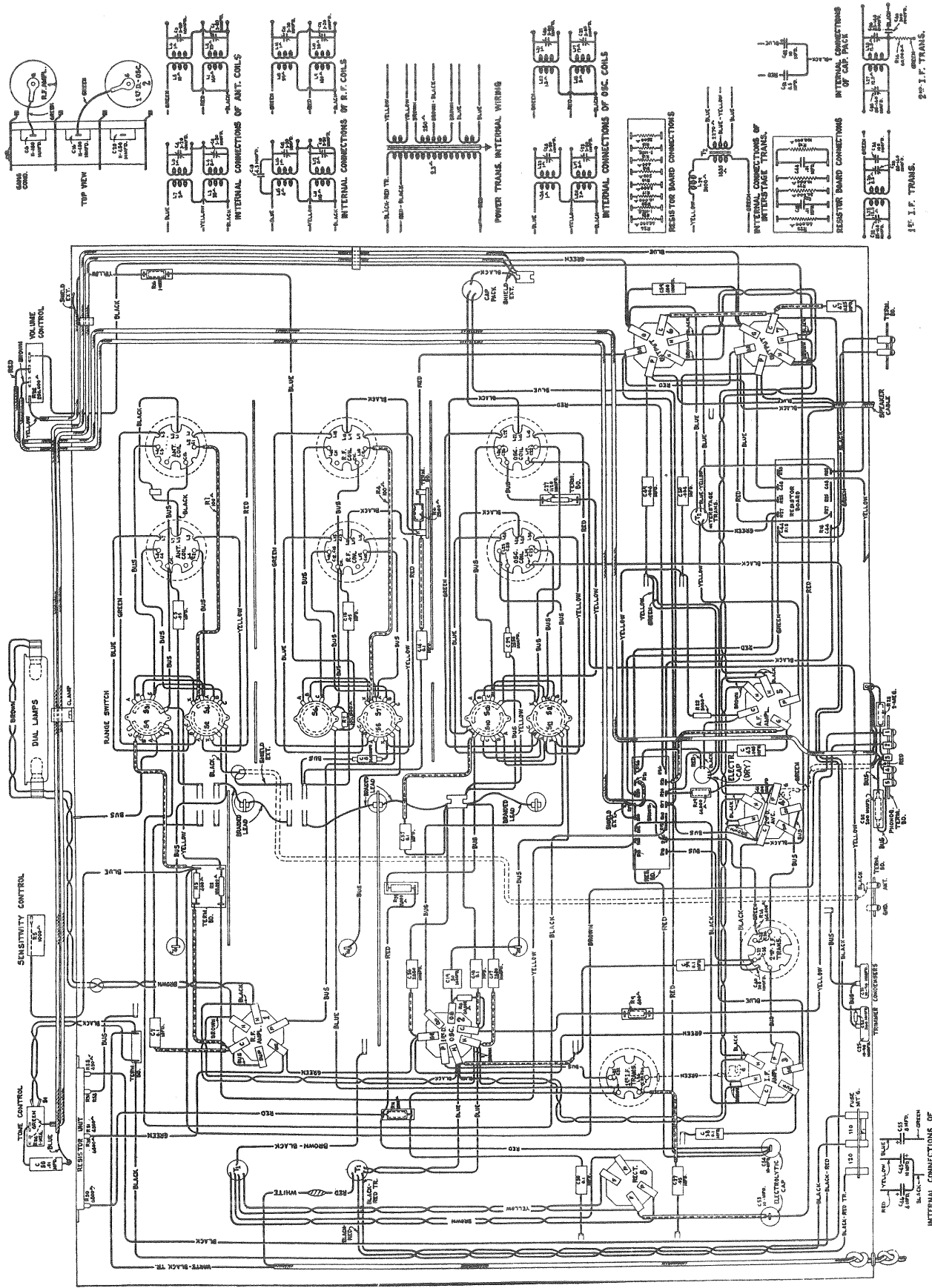


Figure 8—Wiring Diagram—Sensitivity Control Change with Band Position—Models 143 and 242 (1934 Production)

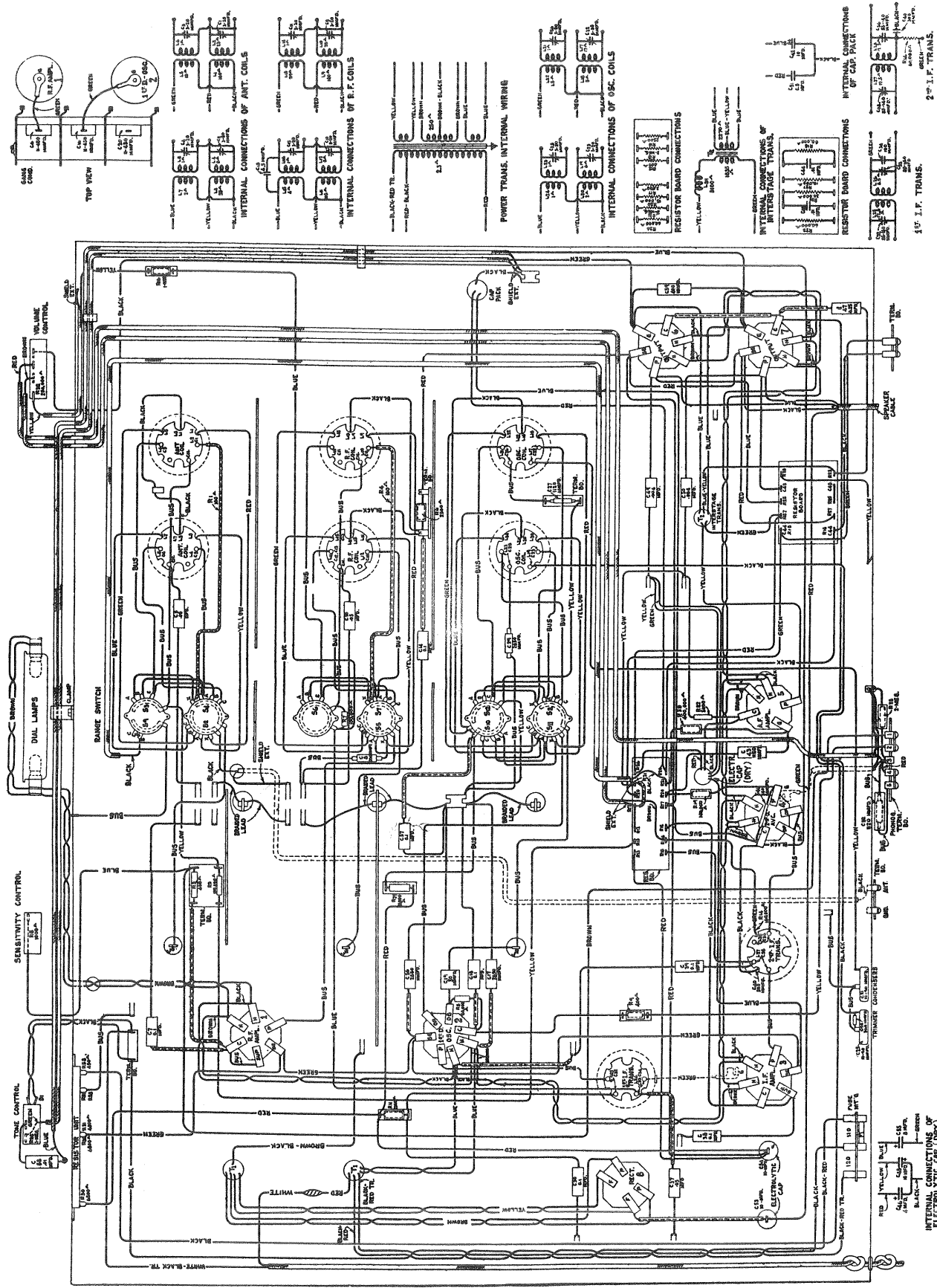


Figure 9—Wiring Diagram—Fidelity Change with Band Position—Models 143 and 242 (1934 Production)

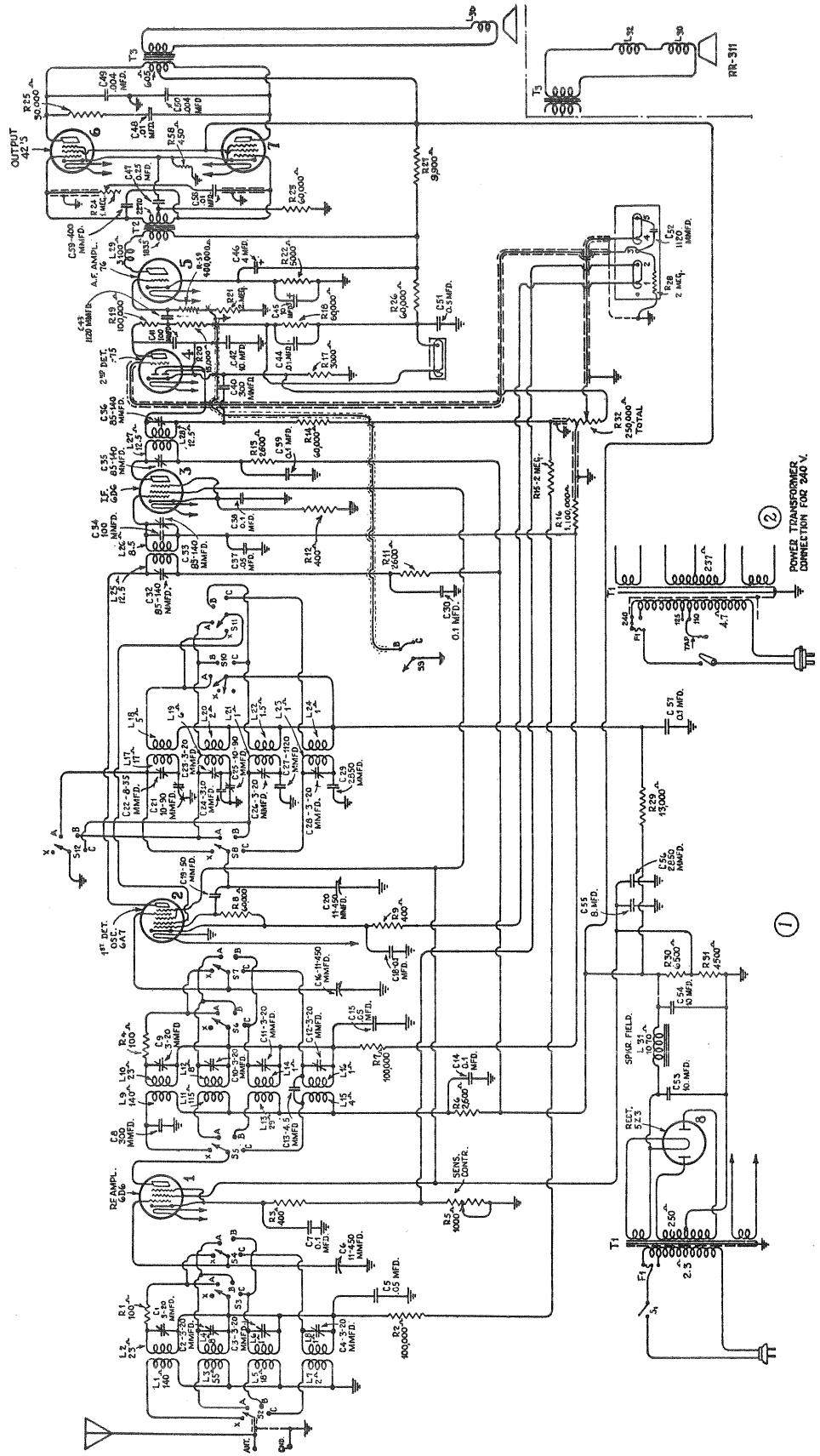
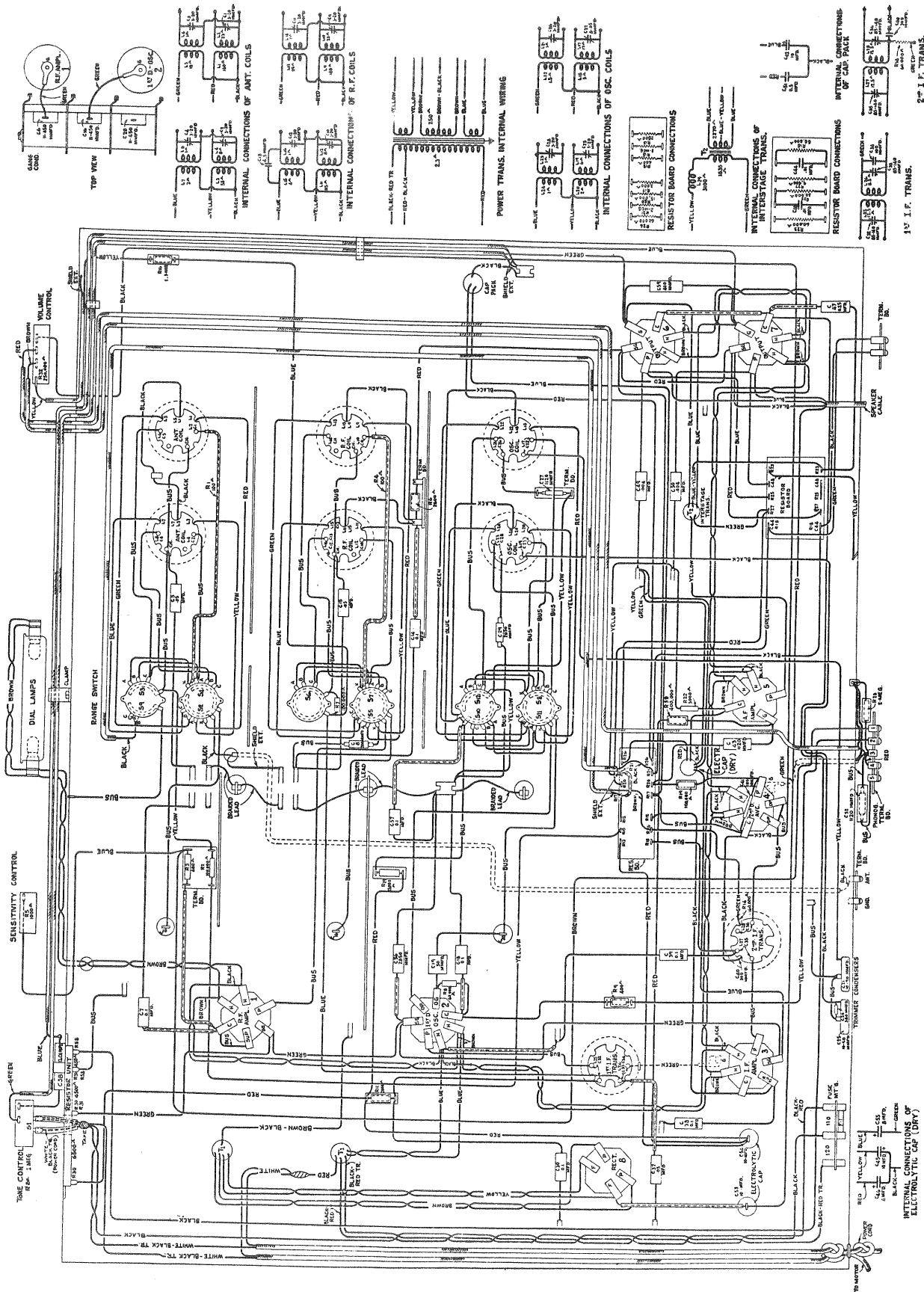


Figure 10—Schematic Circuit Diagram—Models 143, 242 and 243 (1935 Production)



FOR PLUG TYPE SPEAKER CABLE
BROWN REPLACES RED
BLACK REPLACES BLUE
BR-BL REPLACES BLACK

Figure 11—Chassis Wiring Diagram
Models 143, 242 and 243 (1935 Production)

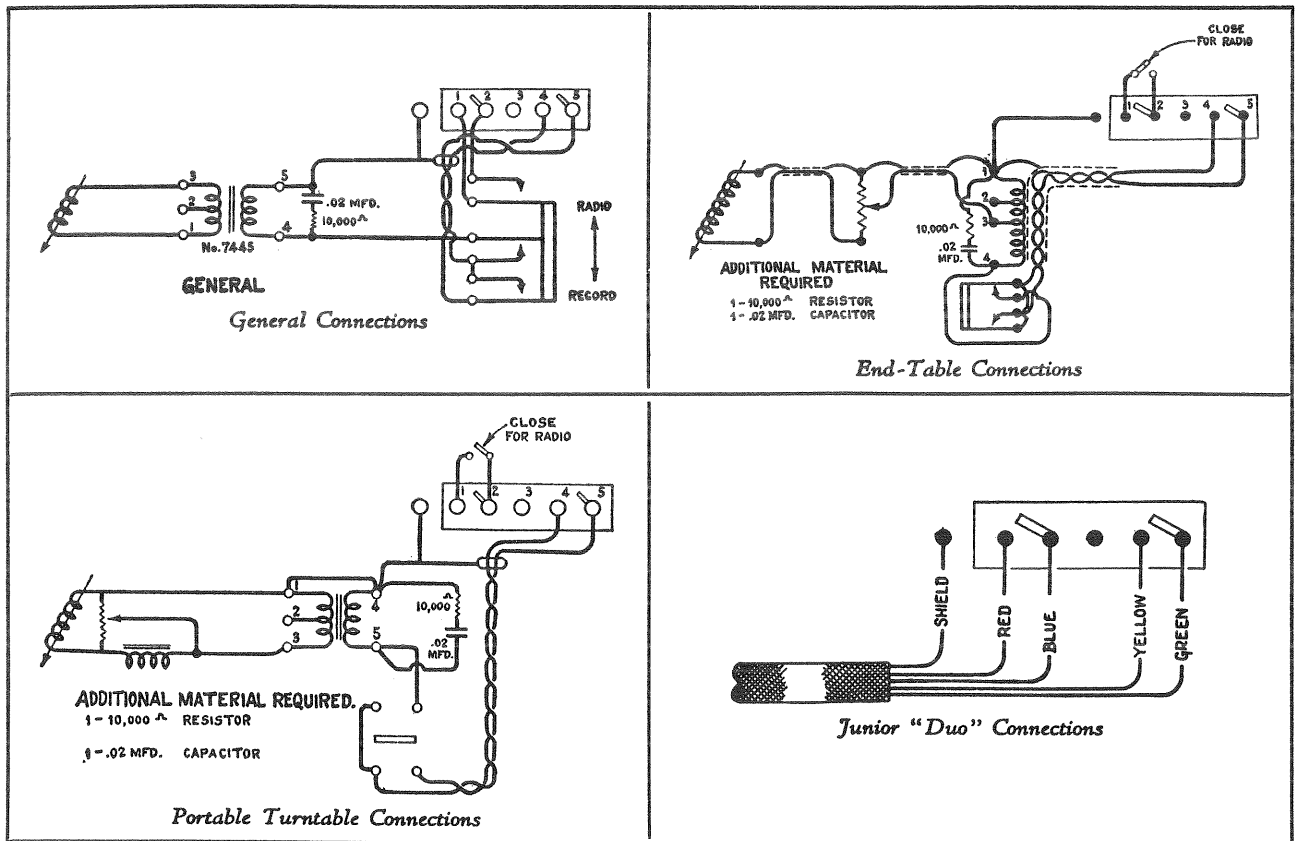


Figure 12—Magnetic Pickup Connections—Place Range Switch in A or X position during record reproduction for models with fidelity switching

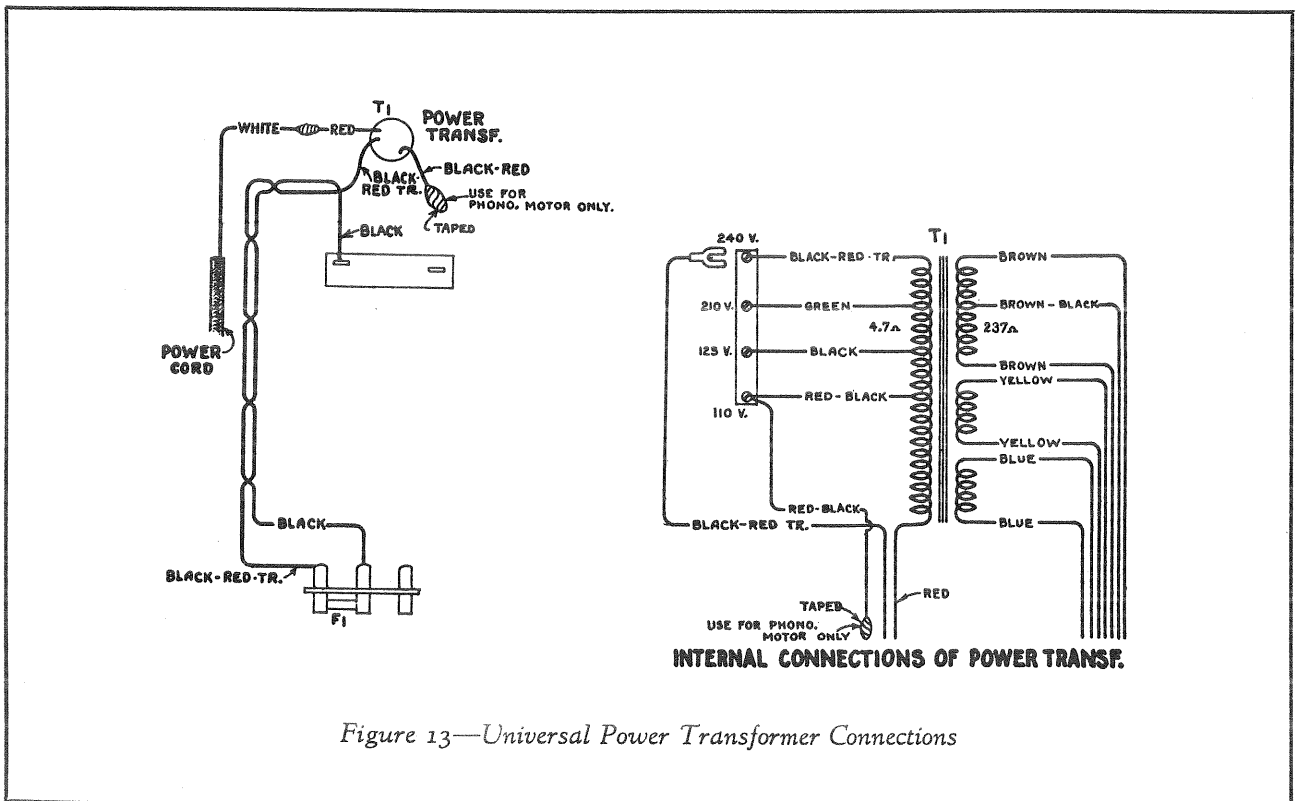


Figure 13—Universal Power Transformer Connections

REPLACEMENT PARTS—Models 143 and 242 (1934 Production)

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
RECEIVER ASSEMBLIES					
4632	Board—Terminal board—Two terminals and link—For changing fidelity.....	\$0.25	7808	Coil—Detector coil "P.B.-L.W." (L9, L10, L13, L14, C9, C11).....	\$2.05
4379	Board—Antenna terminal board.....	.20	7805	Coil—Detector coil "B.-S.W." (L11, L12, L15, L16, C10, C12, C13).....	2.15
4427	Bracket—Volume control, tone control or noise suppressor mounting bracket.....	.18	7807	Coil—Oscillator coil "B.-S.W." (L19, L20, L23, L24, C23, C28).....	1.62
4244	Cap—Contact cap—Package of 5.....	.20	7809	Coil—Oscillator coil "P.B.-L.W." (L17, L18, L21, L22, C22, C26).....	1.70
3861	Capacitor—Oscillator trimmer capacitor (C21, C25).....	.78	7801	Condenser—3-gang variable tuning condenser (C6, C16, C20).....	4.42
4633	Capacitor—50 mmfd. (C19).....	.25	4371	Cover—Fuse mount cover.....	.15
4635	Capacitor—100 mmfd. (C41).....	.25	4631	Cover—Terminal strip cover.....	.15
4697	Capacitor—200 mmfd. (C52).....	.35	10907	Fuse—3-ampere—Package of 5.....	.40
3937	Capacitor—300 mmfd. (C8).....	.34	3376	Mount—Fuse mount—105-125-volt instrument.....	.40
4413	Capacitor—360 mmfd. (C24).....	.22	4604	Mount—Fuse mount for 200-250-volt instrument.....	.35
4183	Capacitor—400 mmfd. (C59).....	.26	4625	Resistor—Wire wound resistor—Comprising one 6500-ohm-4500-ohm and 450 section (R30, R31, R58).....	.70
4412	Capacitor—1120 mmfd. (C27).....	.25	3704	Resistor—400 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R9, R3, R12).....	1.00
4409	Capacitor—1120 mmfd. (C43)*.....	.35	4622	Resistor—500 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R10).....	2.00
4634	Capacitor—1120 mmfd. (C52)*.....	.35	4338	Resistor—2500 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R6, R11, R13).....	2.00
4524	Capacitor—2850 mmfd. (C29).....	.35	4242	Resistor—3000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R17).....	1.00
4615	Capacitor—2850 mmfd. (C17, C56).....	.34	4436	Resistor—5000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R22).....	2.00
4628	Capacitor—0.004 mfd. (C49, C50).....	.28	3381	Resistor—10,000 ohms—Carbon type— $\frac{1}{4}$ watt (R20)—Package of 5.....	1.00
6512	Capacitor—0.005 mfd. (C43).....	.28	3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R20).....	1.00
3787	Capacitor—0.01 mfd. (C48).....	.30	3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R8, R18*, R19, R23, R26).....	1.00
4212	Capacitor—0.01 mfd. (C44).....	.30	3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R2, R7, R18, R19*).....	1.00
4624	Capacitor—0.01 mfd. (C58).....	.54	3619	Resistor—400,000 ohms—Carbon type— $\frac{1}{4}$ watt (R59)—Package of 5.....	1.00
3888	Capacitor—0.05 mfd. (C37).....	.25	3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R16, R21).....	1.00
4417	Capacitor—0.05 mfd. (C5, C15).....	.25	6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R15, R21, *R28).....	1.00
3877	Capacitor—0.1 mfd. (C38).....	.32	3078	Resistor—10,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5 (R27).....	1.00
4415	Capacitor—0.1 mfd. (C18).....	.30	4623	Resistor—13,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 10 (R29).....	2.00
4645	Capacitor—0.1 mfd. (C7, C14, C30, C39, C57).....	.25	2240	Resistor—30,000 ohms—Carbon type—1 watt (R25).....	.22
3750	Capacitor—0.25 mfd. (C47).....	.36	4418	Resistor—100 ohms—Flexible type—Package of 10 (R1, R4).....	1.50
7790	Capacitor—10 mfd. (C53, C54).....	1.05	4618	Rheostat—Sensitivity control (R5).....	1.25
4619	Capacitor pack—Comprising one 0.5 mfd., one 10 mfd. capacitor (C42, C51).....	1.44			
4626	Capacitor pack—Comprising one 4 mfd., one 10 mfd. and one 8 mfd. capacitor (C45, C46, C55).....	2.82			
4358	Clamp—Electrolytic capacitor clamp—For capacitor stock No. 7790.....	.15			
4693	Clamp—Electrolytic capacitor clamp—For capacitor stock No. 4626.....	.15			
7810	Coil—Antenna coil "PB-LW" (L1, L2, L5, L6, C1, C3).....	2.10			
7803	Coil—Antenna coil "B.S.W." (L3, L4, L7, L8, C2, C4).....	1.82			

* R18—60,000 ohms—Some models.
* R19—100,000 ohms—Some models.

* R20—15,000 ohms—Some models.
* R21—2 megohms—Some models.
* C52—1120 mmfd.—Some models.

REPLACEMENT PARTS—Models 143 and 242 (1934 Production) Continued

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
7800	Shield—Antenna, detector or oscillator coil shield.....	\$0.45	4364	Gear—Spring gear assembly complete with hub, pinion, gear, cover and spring.....	\$0.96
4627	Shield—First detector—Oscillator Radiotron shield.....	.36	4704	Indicator—Band indicator—Celluloid.....	.12
7488	Shield—First detector—Oscillator Radiotron shield top.....	.20	4367	Indicator—Station selector vernier pointer—Small.....	.15
4452	Shield—I. F. amplifier Radiotron shield.....	.35	4520	Indicator—Station selector main pointer—Large.....	.18
4629	Shield—I. F. amplifier Radiotron shield top..	.15	3943	Screen—Translucent screen for dial light—Package of 2.....	.18
4663	Shield—Oscillator coil wiring shield—Shields oscillator coil wiring from R. F. coil—Complete with terminal board, clamp and resistor.....	.32	3993	Screw—No. 6-32-5-32" square head set screw for band indicator operating arm or condenser drive—Package of 10.....	.25
4664	Shield—Oscillator wiring shield—Shields oscillator coil wiring from R. F. coil—Complete with terminal strip and resistor.....	.36	4377	Spring—Band indicator and arm tension spring—Package of 5.....	.25
4630	Shield—R. F. amplifier—Radiotron shield..	.36	4360	Stem—Station selector pointer stem.....	.35
4665	Shield—R. F. coil wiring shield with two resistors and terminal board.....	.50	4378	Stud—Band indicator operating arm stud—Package of 5.....	.25
3529	Socket—Dial lamp socket.....	.32	REPRODUCER ASSEMBLY (TABLE MODEL)		
3859	Socket—4-contact Radiotron socket.....	.30	9534	Coil—Field coil (L31).....	1.90
7484	Socket—5-contact Radiotron socket.....	.35	9533	Cone—Cone mounted and centered on housing (L30).....	3.50
7485	Socket—6-contact Radiotron socket.....	.40	9532	Reproducer complete.....	7.50
3572	Socket—7-contact Radiotron socket.....	.38	9535	Transformer—Output transformer (T3)....	1.50
4617	Switch—Range switch (S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12).....	3.32	REPRODUCER ASSEMBLY (CONSOLE MODEL)		
4616	Tone control (R24, S1).....	1.28	4636	Cable—4-conductor—Reproducer cable.....	.50
4431	Transformer—First intermediate frequency transformer (L25, L26, C32, C33, C34)....	2.28	9537	Coil—Field coil magnet and cone support (L31).....	3.85
9505	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	6.35	8969	Cone—Reproducer cone—Package of 5 (L30).	6.35
9506	Transformer—Power transformer—105-125 volts—25-40 cycles.....	8.90	9536	Reproducer complete.....	8.40
9507	Transformer—Power transformer—105-250 volts—40-60 cycles.....	6.40	4637	Transformer—Output transformer (T3)....	1.50
4433	Transformer—Second intermediate frequency transformer (L27, L28, C35, C36, C40, R14).....	2.15	MISCELLANEOUS PARTS		
4620	Transformer and reactor—Interstage transformer and reactor (T2, L29).....	2.98	4677	Bezel—Metal bezel (escutcheon) for station selector dial.....	.56
4519	Volume control (R32).....	1.25	4621	Dial—Station selector dial.....	.65
DRIVE ASSEMBLIES			6614	Glass—Station selector dial glass.....	.30
4362	Arm—Band indicator operating arm.....	.28	4449	Knob—Station selector, volume control, tone control, noise suppressor rheostat on range switch knob—Package of 5.....	.60
10194	Ball—Steel ball for variable condenser drive assembly—Package of 20.....	.25	4340	Lamp—Dial lamp—Package of 5.....	.60
4422	Clutch—Tuning condenser drive clutch assembly—Comprising drive shaft, balls, ring, spring and washers-assembled.....	1.00	4678	Ring—Retaining ring for dial glass—Package of 5.....	.35
7799	Drive—Variable tuning condenser drive complete.....	2.45	4446	Screw assembly—Chassis mounting screw assembly—Comprising four screws, four lockwashers, four washers, four spacers and eight cushions.....	.28
			4613	Screw—No. 8-32-7/16" headless set screw for knobs—Package of 10.....	.25

REPLACEMENT PARTS—Models 143, 242 and 243 (1935 Production)

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
RECEIVER ASSEMBLIES			7809	Coil—Oscillator coil "Band X-B" (L17, L18, L21, L22, C22, C26).....	\$1.70
4632	Board—Terminal board—Two terminals and link—For changing fidelity.....	\$0.25	4806	Condenser—3-gang variable tuning condenser (C6, C16, C20).....	5.64
4379	Board—Antenna terminal board.....	.20	4371	Cover—Fuse mount cover.....	.15
4427	Bracket—Volume control, tone control or noise suppressor mounting bracket.....	.18	4631	Cover—Terminal strip cover.....	.15
4244	Cap—Contact cap—Package of 5.....	.20	10907	Fuse—3-ampere—Package of 5.....	.40
3861	Capacitor—Oscillator trimmer capacitor (C21, C25).....	.78	3376	Mount—Fuse mount—105-125-volt instrument.....	.40
4633	Capacitor—50 mmfd. (C19).....	.25	4604	Mount—Fuse mount for 200-250-volt instrument.....	.35
4635	Capacitor—100 mmfd. (C41).....	.25	4625	Resistor—Wire wound resistor—Comprising one 6500-ohm-4500-ohm and 450 section (R30, R31, R58).....	.70
4248	Capacitor—300 mmfd. (C8).....	.22	3704	Resistor—400 ohms—Carbon type— $\frac{1}{4}$ watt (R3, R9, R12)—Package of 5.....	1.00
4811	Capacitor—340 mmfd. (C24).....	.25	4812	Resistor—2600 ohms—Carbon type— $\frac{1}{4}$ watt (R6, R11, R13)—Package of 5.....	1.00
4183	Capacitor—400 mmfd. (C59).....	.26	4242	Resistor—3000 ohms—Carbon type— $\frac{1}{4}$ watt (R17)—Package of 5.....	1.00
4412	Capacitor—1120 mmfd. (C27).....	.25	2871	Resistor—5000 ohms—Carbon type— $\frac{1}{4}$ watt (R22)—Package of 5.....	1.00
4409	Capacitor—1120 mmfd. (C43).....	.35	3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt (R20)—Package of 5.....	1.00
4634	Capacitor—1120 mmfd. (C52).....	.35	3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R8, R18, R23, R26)—Package of 5.....	1.00
4524	Capacitor—2850 mmfd. (C29).....	.35	3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2, R7, R19)—Package of 5.....	1.00
4615	Capacitor—2850 mmfd. (C56).....	.34	3619	Resistor—400,000 ohms—Carbon type— $\frac{1}{4}$ watt (R59)—Package of 5.....	1.00
4628	Capacitor—0.004 mfd. (C49, C50).....	.28	4783	Resistor—1,100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R16)—Package of 5.....	1.00
3787	Capacitor—0.01 mfd. (C48).....	.30	6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R15, R21, R28)—Package of 5.....	1.00
4212	Capacitor—0.01 mfd. (C44).....	.30	3078	Resistor—10,000 ohms—Carbon type— $\frac{1}{2}$ watt (R27)—Package of 5.....	1.00
4624	Capacitor—0.01 mfd. (C58).....	.54	4623	Resistor—13,000 ohms—Carbon type— $\frac{1}{2}$ watt (R29)—Package of 10.....	2.00
4836	Capacitor—0.05 mfd. (C5, C15, C37).....	.30	2240	Resistor—30,000 ohms—Carbon type—1 watt (R25).....	.22
4791	Capacitor—0.1 mfd. (C7, C18, C38).....	.24	4418	Resistor—100 ohms—Flexible type (R1, R4)—Package of 10.....	1.50
4885	Capacitor—0.1 mfd. (C14, C30, C39, C57).....	.28	4618	Rheostat—Sensitivity control (R5).....	1.25
4840	Capacitor—0.25 mfd. (C47).....	.30	4742	Shield—Antenna, detector or oscillator coil shield.....	.40
7790	Capacitor—10 mfd. (C53, C54).....	1.05	4627	Shield—First detector—Oscillator Radiotron shield.....	.36
4619	Capacitor pack—Comprising one 0.5 mfd., one 10 mfd. capacitor (C42, C51).....	1.44	6956	Shield—First detector—Oscillator Radiotron shield top.....	.15
4626	Capacitor pack—Comprising one 4 mfd., one 10 mfd. and one 8 mfd. capacitor (C45, C46, C55).....	2.82	4452	Shield—Second detector—"A.V.C." Radiotron shield.....	.35
4358	Clamp—Electrolytic capacitor clamp—For capacitor Stock No. 7790.....	.15	4629	Shield—Second detector—"A.V.C." Radiotron shield top.....	.15
4693	Clamp—Electrolytic capacitor clamp—For capacitor Stock No. 4626.....	.15			
7810	Coil—Antenna coil "Band B-X" (L1, L2, L5, L6, C1, C3).....	2.10			
7803	Coil—Antenna coil "Band A-C" (L3, L4, L7, L8, C2, C4).....	1.82			
7808	Coil—Detector coil "Band X-B" (L9, L10, L13, L14, C9, C11).....	2.05			
7805	Coil—Detector coil "Band A-C" (L11, L12, L15, L16, C10, C12, C13).....	2.15			
7807	Coil—Oscillator coil "Band A-C" (L19, L20, L23, L24, C23, C28).....	1.62			

REPLACEMENT PARTS—Models 143, 242 and 243 (1935 Production) Continued

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
3950	Shield—I. F. amplifier Radiotron shield.....	\$0.26	4377	Spring—Band indicator and arm tension spring—Package of 5.....	\$0.25
4521	Shield—I. F. transformer shield.....	.42	4722	Pinion—Vernier pointer pinion—Station selector pointer stem.....	.18
4663	Shield—Oscillator coil wiring shield—Shields oscillator coil wiring from R. F. coil—Complete with terminal board, clamp and resistor.....	.32	4378	Stud—Band indicator operating arm stud—Package of 5.....	.25
4664	Shield—Oscillator wiring shield—Shields oscillator coil wiring from R. F. coil—Complete with terminal strip and resistor.....	.36	REPRODUCER ASSEMBLY (TABLE MODEL)		
4630	Shield—R. F. amplifier—Radiotron shield....	.36	5038	Cable—4-conductor—Reproducer cable with female connector plug.....	.60
4665	Shield—R. F. coil wiring shield with two resistors and terminal board.....	.50	9534	Coil—Field coil (L31).....	1.90
3529	Socket—Dial lamp socket.....	.32	9533	Cone—Cone mounted and centered on housing (L30).....	3.50
4784	Socket—4-contact Radiotron socket.....	.15	5039	Connector—4-prong male connector for reproducer cable.....	.25
4814	Socket—5-contact Radiotron socket.....	.15	5040	Connector—4-contact female connector for reproducer cable.....	.25
4786	Socket—6-contact Radiotron socket.....	.15	9593	Reproducer complete.....	7.50
4787	Socket—7-contact Radiotron socket.....	.15	9535	Transformer—Output transformer (T3)....	1.50
4617	Switch—Range switch (S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12).....	3.32	REPRODUCER ASSEMBLY (CONSOLE MODEL)		
4813	Tone control (R24, S1).....	1.42	5038	Cable—4-conductor—Reproducer cable with female connector plug.....	.60
4431	Transformer—First intermediate frequency transformer (L25, L26, C32, C33, C34)....	2.28	9591	Coil—Field coil magnet and cone support (L31).....	4.00
9505	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	6.35	8969	Cone—Reproducer cone (L30)—Package of 5.....	6.35
9506	Transformer—Power transformer—105-125 volts—25-40 cycles.....	8.90	5039	Connector—4-prong male connector for reproducer.....	.25
9507	Transformer—Power transformer—105-250 volts—40-60 cycles.....	6.40	5040	Connector—4-contact female connector for reproducer cable.....	.25
4433	Transformer—Second intermediate frequency transformer (L27, L28, C35, C36, C40, R14).....	2.15	9592	Reproducer complete.....	8.00
4620	Transformer and reactor—Interstage transformer and reactor (T2, L29).....	2.98	5041	Transformer—Output transformer (T3)....	1.40
4809	Volume control (R32).....	1.45	MISCELLANEOUS PARTS		
DRIVE ASSEMBLIES					
4362	Arm—Band indicator operating arm.....	.28	4677	Bezel—Metal bezel (escutcheon) for station selector dial.....	.56
10194	Ball—Steel ball for variable condenser drive assembly—Package of 20.....	.25	4621	Dial—Station selector dial.....	.65
4422	Clutch—Tuning condenser drive clutch assembly—Comprising drive shaft, balls, ring, spring and washers assembled.....	1.00	6614	Glass—Station selector dial glass.....	.30
7799	Drive—Variable tuning condenser drive complete.....	2.45	4449	Knob—Station selector, volume control, tone control, noise suppressor rheostat on range switch knob—Package of 5.....	.60
4827	Gear—Spring gear assembly complete with hub, pinion, gear, cover and spring.....	1.25	4340	Lamp—Dial lamp—Package of 5.....	.60
4704	Indicator—Band indicator—Celluloid.....	.12	4678	Ring—Retaining ring for dial glass—Package of 5.....	.35
4367	Indicator—Station selector vernier pointer—Small.....	.15	4446	Screw assembly—Chassis mounting screw assembly—Comprising four screws, four lockwashers, four washers, four spacers and eight cushions—For table model.....	.28
4520	Indicator—Station selector main pointer—Large.....	.18	4613	Screw—No. 8-32- $\frac{1}{16}$ " headless set screw for knobs—Package of 10.....	.25
3943	Screen—Translucent screen for dial light—Package of 2.....	.18			
3993	Screw—No. 6-32- $\frac{5}{32}$ " square head set screw for band indicator operating arm or condenser drive—Package of 10.....	.25			