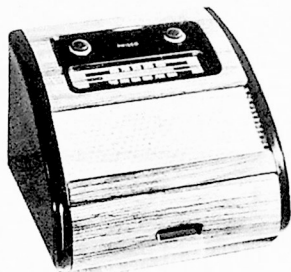




HOME RADIO



Model 46-1201

PHILCO RADIO

SPECIFICATIONS

CABINET	Model 46-1201 (Wood, Philcote finish)
CIRCUIT	Five-tube superheterodyne
FREQUENCY RANGE	540 to 1600 kc.
PHONOGRAPH	Philco automatic record player, Model M-7
POWER INPUT	105 to 120 volts—A.C. only
POWER CONSUMPTION	32 watts (exclusive of phono motor)
ANTENNA	Built-in loop or external
INTERMEDIATE FREQUENCY	455 kc.
PHILCO TUBES USED	7A8, 7B7, 7C6, 35L6GT/G, 50Y6GT/G
PILOT LAMP	110-volt, screw base, Part No. 34-2477

NOTE: The parts list and service procedure for adjusting the M-7 automatic record player on model 46-1201 will be found in Philco Service Manual PR-1154.

PHILCO TROUBLE-SHOOTING PROCEDURE

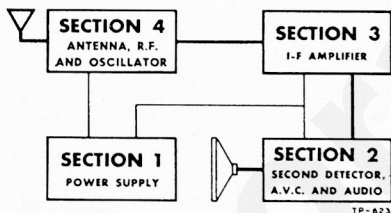


Figure 1. Block diagram (Heavy lines indicate signal path).

In this manual, the receiver circuit is divided into four sections, as shown in figure 1. One test point is designated for each section, as shown in figure 2. Normal indications, secured when checking at these test points, eliminate the section under test as a source of trouble. Isolation of the faulty part is accomplished by testing in the order shown in the sectional test charts. A high-quality signal generator and volt-ohmmeter are required. Voltage readings shown were taken with a 20,000-ohms-per-volt d-c meter.

NOTE: To open the cabinet, release the catch, which is accessible through the circular opening near the rear of the bottom cover. While holding the catch up, slide the top section of the cabinet $\frac{3}{4}$ " toward the rear. The top section can then be lifted away from the base board. When reassembling the cabinet, make sure that all leads are clear of the phono turntable and pickup.

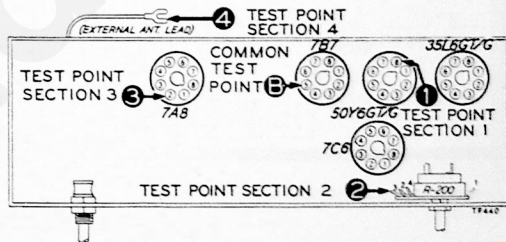


Figure 2. Bottom view, showing test points.

To localize trouble, connect the receiver to the power line; turn the receiver volume control to maximum; see that all tube filaments are lighted; then proceed in the order given in the following chart. When applying a signal, connect the signal-generator output lead through a condenser (.01 to .25 mf.) to the indicated test points; connect the generator ground lead through a .5 mf. condenser to B-. Remedy any defect encountered before proceeding to the next check.

TESTS TO LOCALIZE TROUBLE TO ONE SECTION

SECTION	TEST	NORMAL RESULTS
1	Measure voltage between point 1 and B-.	120v*
2	Apply audio signal through a condenser (.01 to .25 mf.) between point 2 and B-.	Loud, clear signal
3	Apply weak, modulated signal (455 kc.) through a condenser (.01 to .25 mf.) between point 3 and B-.	Loud, clear signal
4	Apply weak, modulated signal (1000 kc.) through a condenser (.01 to .25 mf.) between point 4 and B-. Rotate tuning condenser until signal is heard in speaker.	Loud, clear signal

* For 117-volt, a-c input

PHILCO SERVICE

RADIO MODEL 46-1201

TESTS TO ISOLATE TROUBLE WITHIN SECTION 1

Make all tests for this section with a volt-ohmmeter, using the applicable d-c range. See figures 3 and 4 for location of test points. If the 50Y6GT/G is found to be defective, check C101, C102, and C104 for shorts before inserting a new tube.

TEST POINTS	NORMAL READING	POSSIBLE CAUSE OF ABNORMAL READING
A to C	190v	Defective 50Y6, shorted or leaky C101, C102, C104, or C204 (see Section 2 for location).
A to B-	120v	Open L100.
D to B-	-7v	High voltage indicates open R102. No voltage indicates open R101.

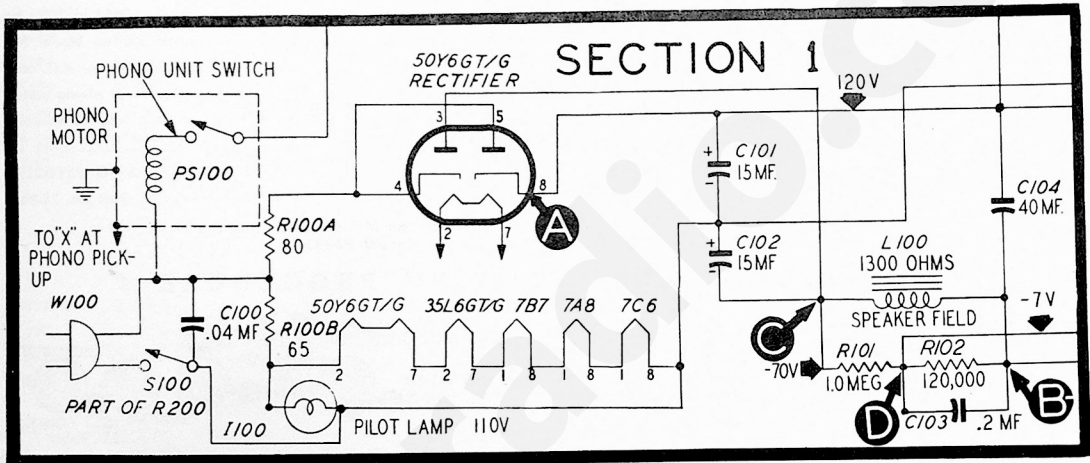


Figure 3. Section 1 schematic.

TP-420-A

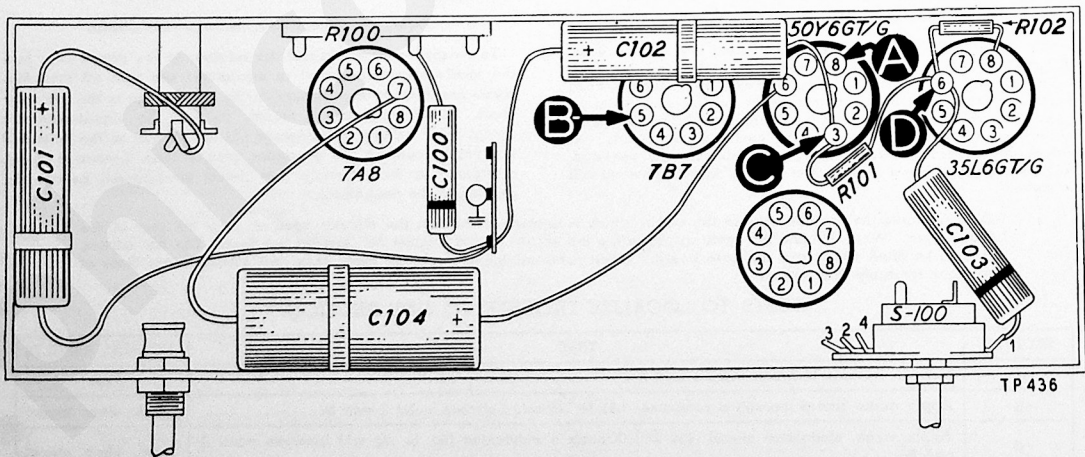


Figure 4. Bottom view, showing Section 1 test points.

TP 436

TESTS TO ISOLATE TROUBLE WITHIN SECTION 2

For all tests in this section, use an audio signal. Connect the generator output lead through a condenser (.01 to .25 mf.) to the points indicated; connect the generator ground lead through a .5mf. condenser to B-. Set the receiver volume control at maximum, and adjust the generator output for a loud, clear signal.

TEST POINTS	NORMAL INDICATION	POSSIBLE CAUSE OF ABNORMAL INDICATION
E to B-	Loud, clear signal from speaker.	Defective 35L6GT/G, T200, LS200, or C203.
F to B-	Loud, clear signal, same as preceding test.	Open C203.
G to B-	Clear signal, noticeably louder than preceding test.	Defective 7C6 or R203.
H to B- (volume control in maximum radio position)	Loud, clear signal, same as preceding test.	Open C201, or defective volume control. Rotate R200 through its entire radio range for complete check.
J to B- (volume control in maximum phono position)	Loud, clear signal, same as preceding test.	Defective volume control. Rotate R200 through its entire phono range for complete check.

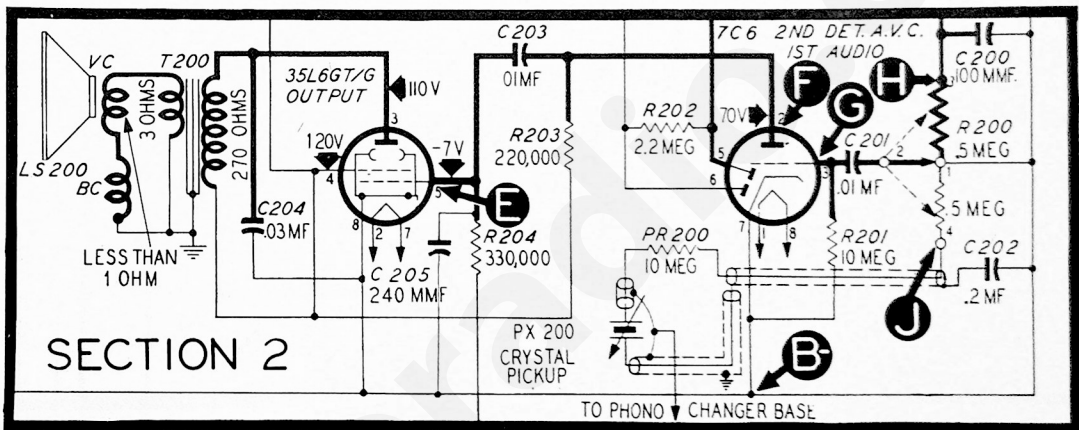


Figure 5. Section 2 schematic.

TP-420-B

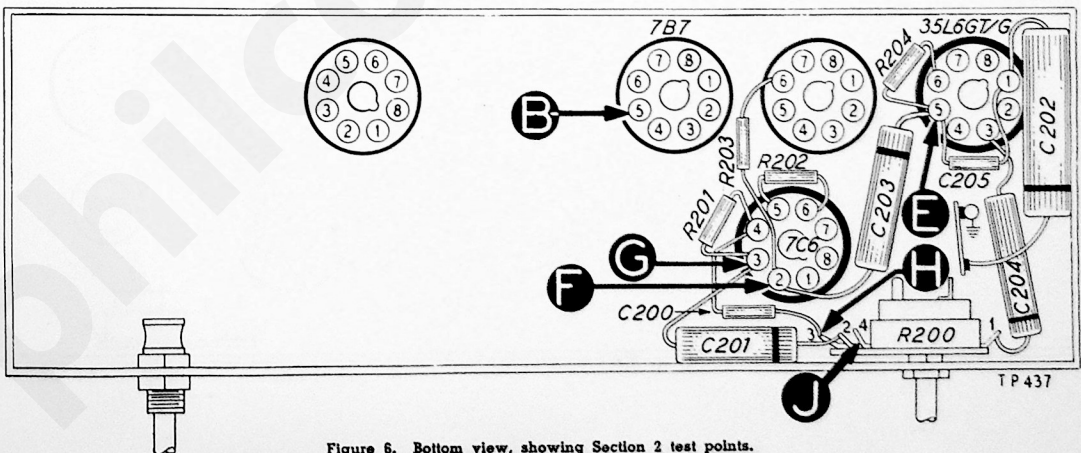


Figure 6. Bottom view, showing Section 2 test points.

PHILCO SERVICE

RADIO MODEL 46-1201

TESTS TO ISOLATE TROUBLE WITHIN SECTION 3

For all tests in this section, set the signal generator to 455 kc., with modulation on. Connect the generator output lead through a condenser (.01 to .25 mf.) to the points indicated; connect the ground lead through a .5 mf. condenser to B-. Set the receiver volume control at maximum, and adjust the generator output for a loud, clear signal.

TEST POINTS	NORMAL INDICATION	POSSIBLE CAUSE OF ABNORMAL INDICATION
K to B-	Loud, clear signal from speaker.	Defective 7B7 or 7C6, defective or misaligned Z301, shorted C302, or open R401 (see Section 4 for location).
L to B-	Loud, clear signal, same as preceding test.	Defective or misaligned Z300.

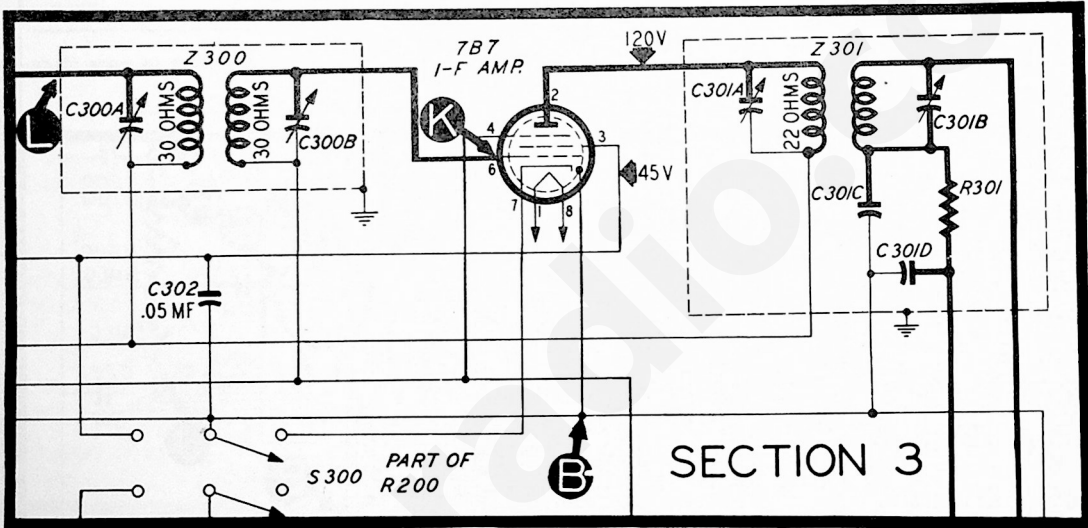


Figure 7. Section 3 schematic.

TP-420-C

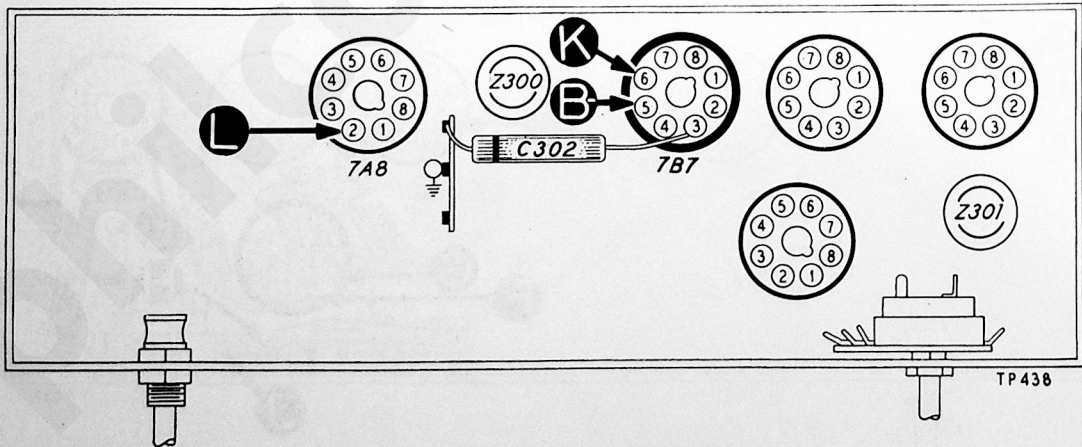


Figure 8. Bottom view, showing Section 3 test points.

TESTS TO ISOLATE TROUBLE WITHIN SECTION 4

1. Set the volume control at maximum. Rotate the tuning condenser through its entire range. Any scraping noise from the speaker indicates bent plates, or dirt between plates or on wiper contacts. Remedy such conditions before proceeding further.
2. Attach the positive lead of a 20,000-ohms-per-volt meter to B- and the prod end of the negative lead through a 50,000-ohm

- resistor to point P. Set the meter on a 10-volt or similar range, and rotate the tuning condenser through its entire range. Absence of voltage at any point indicates that the oscillator is not functioning. If so, check the components listed in the first test below.
3. Connect the signal generator as for previous tests, tune the generator to 1000 kc., and proceed as below.

TEST POINTS	NORMAL INDICATION	POSSIBLE CAUSE OF ABNORMAL INDICATION
M to B- (Rotate tuning condenser until signal is heard).	Loud, clear signal from speaker.	Defective 7A8, T401, R400, or C401B.
N to B-.	Clear signal, louder than preceding test.	Defective T400 or open C400.

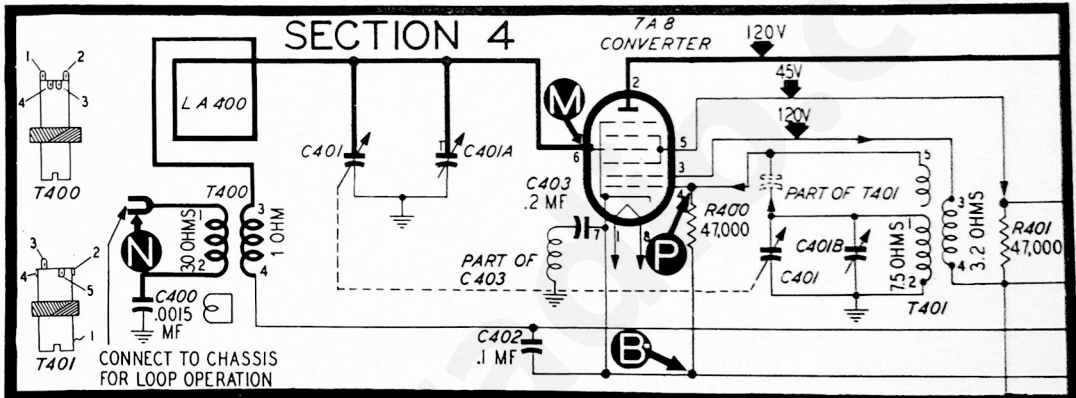


Figure 9. Section 4 schematic.

TP-420-D

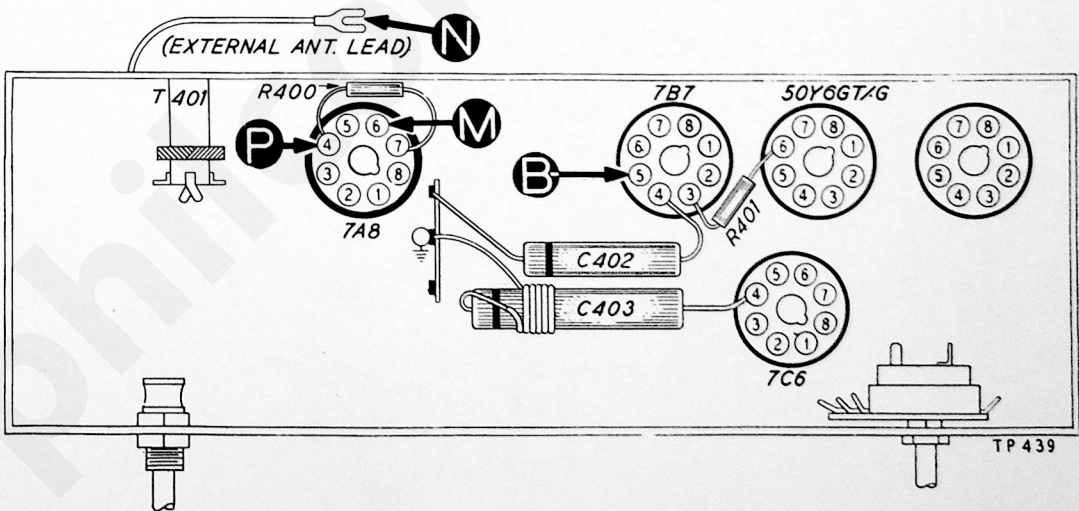


Figure 10. Bottom view, showing Section 4 test points.

ALIGNMENT PROCEDURE

THIS RECEIVER SHOULD BE ALIGNED with the chassis installed in the cabinet. If the chassis has been removed for servicing, re-install it and connect the loop before starting the alignment procedure.

CONNECT THE OUTPUT METER between the voice coil lug on the speaker and ground.

CONNECT THE SIGNAL-GENERATOR output lead as indicated in the chart below. Connect the generator ground lead as indicated in figure 11.

SET THE RECEIVER VOLUME CONTROL at maximum. Adjust the signal-generator output, as alignment progresses, to keep the meter needle near center scale.

ADJUST IN ORDER	SIGNAL GENERATOR TO RECEIVER	DIAL SETTINGS SIG. GEN. RECEIVER
C300B . Fully tight C301B . Max. C301A . Max. C300A . Max. C300B . Max.	Through .05 mf. to external antenna lead, after disconnecting same from grounded point on chassis.	455 K.C. Gang fully meshed
C401B . Max.	Through .05 mf. to external antenna lead.	1600 K.C. 1600 K.C.
C401A . Max.	Through .05 mf. to external antenna lead.	1500 K.C. 1500 K.C.

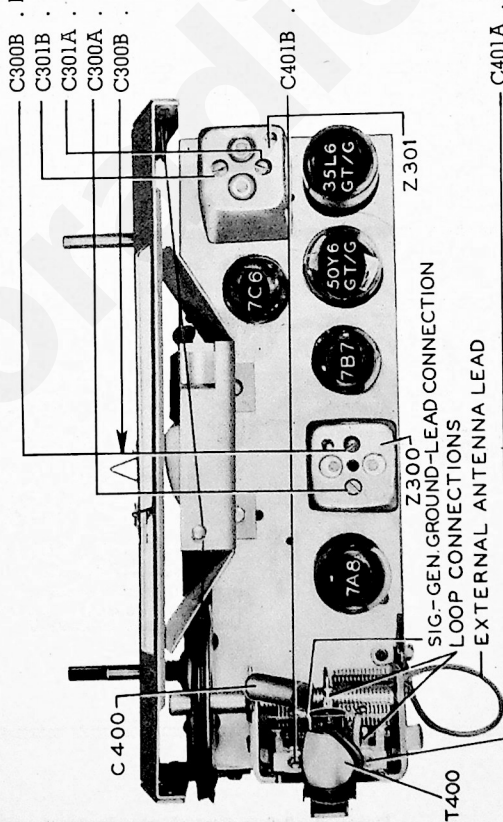
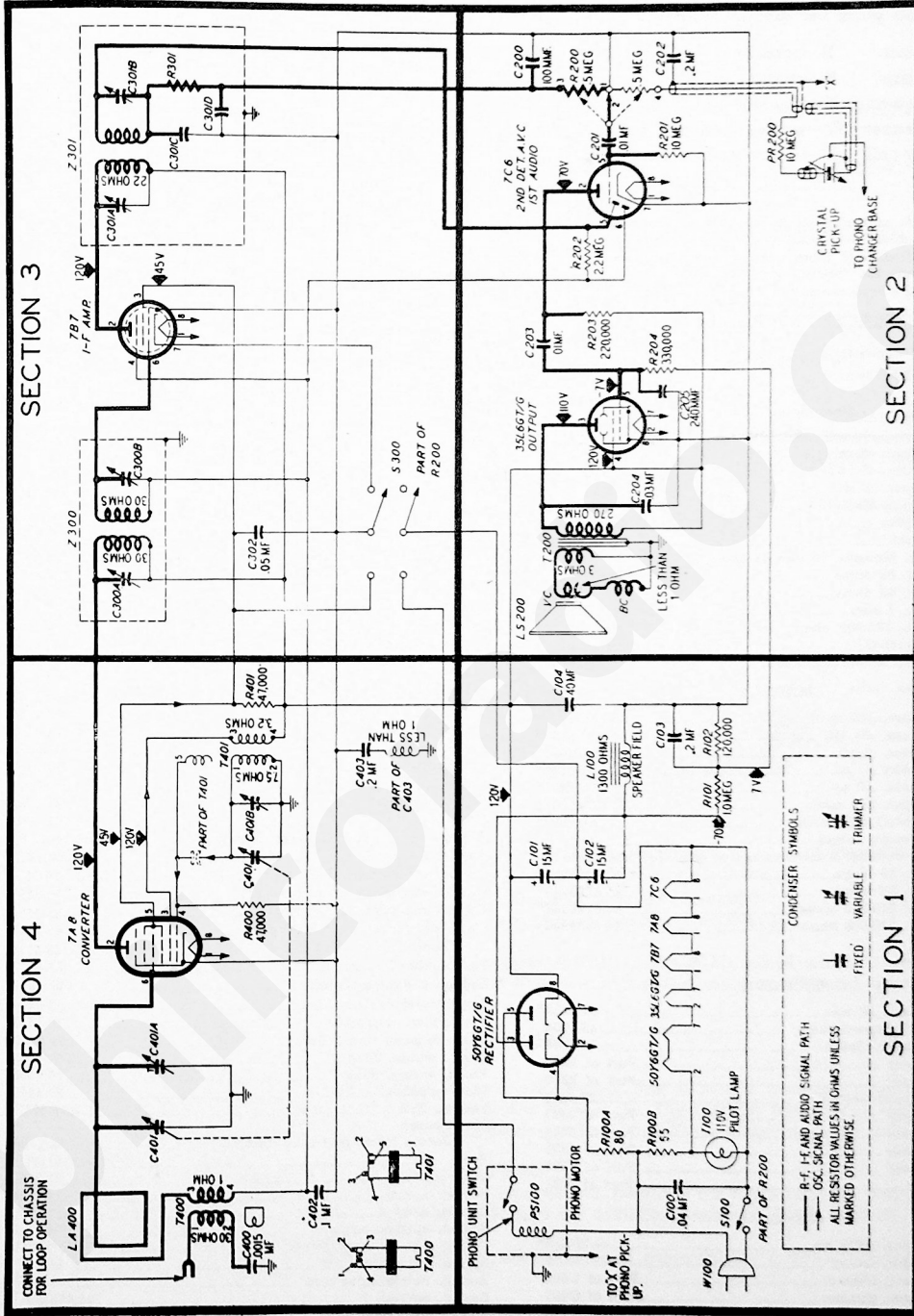


Figure 11. Chassis view, showing trimmer locations.



1P-120

Figure 12. Complete schematic.

NOTE: All voltage, capacity, and resistance values shown are average. The voltages between B- and other points indicated were measured with a 20,000-ohms-per-volt meter, with the volume control at minimum and the tuning condenser plates fully meshed.

PHILCO SERVICE

RADIO MODEL 46-1201

Symbol designations used in the schematics and parts list are as follows:

- C—condenser R—resistor
 I—pilot lamp S—switch
 LA—loop antenna T—transformer
 LS—loudspeaker W—power cord and plug
 L—choke or coil Z—i-f transformer assembly

NOTE: Parts marked with an asterisk (*) are general replacement items, and the part numbers will not be identical with those used on factory assemblies. Use only the "Service Part No." shown below when ordering replacements.

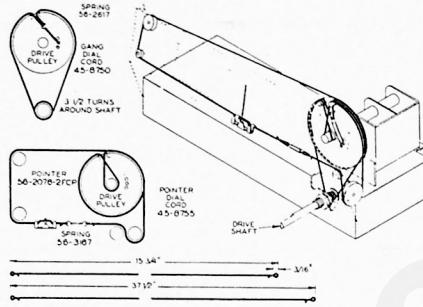


Figure 13. Drive cord installation details.

REPLACEMENT PARTS LIST

SECTION 1		
Reference Number	Description	Service Part No.
C100	Condenser, .04 mf.	45-3500-2*
C101	Condenser, electrolytic, 15 mf.	30-2559
C102	Condenser, electrolytic, 15 mf.	30-2559
C103	Condenser, .2 mf.	45-3500-3*
C104	Condenser, electrolytic, 40 mf.	30-2548
I100	Lamp, pilot	34-2477
L100	Coil, field	Part of LS200
R100	Resistor, filament, 80 and 65 ohms.	33-3436-1
R100A	Resistor, 80 ohms	Part of R100
R100B	Resistor, 65 ohms	Part of R100
R101	Resistor, 1 meg.	66-5103340*
R102	Resistor, 120,000 ohms	66-4123340*
S100	Switch, off-on	Part of R200
W100	Cord, a-c	L3199
SECTION 2		
C200	Condenser, 100 mmf.	60-10105407*
C201	Condenser, .01 mf.	61-0120*
C202	Condenser, .2 mf.	45-3500-3*
C203	Condenser, .01 mf.	61-0120*
C204	Condenser, .03 mf.	45-3500-1*
C205	Condenser, 240 mmf.	60-10245307*
LS200	Speaker	36-1587*
T200	Transformer, output	32-8172
R200	Control, volume, .5 meg., each side of center tap	33-5519
R201	Resistor, 10 megs.	66-6103340*
R202	Resistor, 2.2 megs.	66-5223340*
R203	Resistor, 220,000 ohms	66-4223340*
R204	Resistor, 330,000 ohms	66-4333340*
SECTION 3		
C302	Condenser, .05 mf.	61-0122*
S300	Switch, phono-changer	42-1736
Z300	Transformer, first i-f	32-3988
C300A	Condenser	Part of Z300
C300B	Condenser	Part of Z300
Z301	Transformer, second i-f	32-3674*
C301A	Condenser	Part of Z301
C301B	Condenser	Part of Z301
C301C	Condenser	Part of Z301
C301D	Condenser	Part of Z301
R301	Resistor	Part of Z301
SECTION 4		
C400	Condenser, .0015 mf.	45-3500-8*
C401	Condenser, tuning	31-2527-1
C401A	Condenser, trimmer	Part of C401
C401B	Condenser, trimmer	Part of C401
C402	Condenser, .1 mf.	61-0113*
C403	Condenser-and-choke assembly, .2 mf.	78-1181

SECTION 4 (Cont.)		
Reference Number	Description	Service Part No.
LA400	Loop assembly	78-2127
R400	Resistor, 47,000 ohms	66-3473340*
R401	Resistor, 47,000 ohms	66-3473340*
T400	Coil, antenna	32-3394
T401	Coil, oscillator	32-4095-2
MISCELLANEOUS		
	Backing plate, dial	76-1940
	Backing plate, dial-and-bracket assembly	76-2057
	Panel, diffusing	54-4256
	Backing plate, tuning-condenser	56-2105FA3
	Bracket, antenna-coil-mounting	56-2058-FA3
	Bracket, resistor-mounting assembly	56-3596
	Cabinet	10639
	Baffle, wood	219036
	Band, rubber, for scale mounting	54-4168
	Bolt, speaker-mounting	W2123
	Catch and keeper, for cabinet	45-6297
	Clip, bar, assembly	76-2111
	Cloth, grille, assembly	40-6769
	Hinge, left-hand	45-6298
	Hinge, right-hand	45-6296
	Scale, dial	27-5883
	Strap, scale-mounting	56-2068
	Cable, pick-up	41-3708
	Cable, speaker	41-3728
	Cam assembly	76-1638FA3
	Clamp, electrolytic-condenser-mounting	56-1466FA3
	Clip, coil-mounting	28-5002FE7
	Cover, cabinet-bottom	54-7135
	Cover, resistor-mounting assembly	56-3597
	Cord, gang-drive, 25-foot spool	45-8750*
	Cord, pointer-drive, 25-foot spool	45-8755*
	Door	45-6310
	Feet, rubber	27-4817
	Grommet, gang-mounting	27-4610
	Knob assembly	54-4255
	Lamp, pilot, assembly	76-1643
	Lamp reflector and bracket	76-2448
	Panel, wiring, 2-lug	12W45649
	Panel, wiring, 3-lug	76-2148
	Plug, speaker	27-4412
	Pointer, dial	56-2076-2FCP
	Metal bases	
	Record frame and base assembly	76-2499
	Rivet	1W36671FCP
	Shaft assembly	31-2680
	Socket, Loktal	27-6138*
	Socket, octal	27-6199*
	Socket, speaker-cable	27-4419-2*
	Spring clip, diffusing panel	56-3841
	Spring, gang-drive-cord	56-2817
	Spring, pointer-drive-cord	56-3167
	Spring, retainer	28-8658FA1
	Stud, switch-lever	56-2945FA3
	Switch-lever assembly	76-1642

PRODUCTION CHANGES FOR MODEL 46-1201

CODE 121

RUN 1

R100 may be located either externally or under the chassis. When replacing, use Part No. 33-3436-1, and mount externally.

RUNS 2 and 3

- a. C202, .2mf., Part No. 30-4587, was changed to Part No. 45-3500-3.
- b. A 120,000-ohm resistor, Part No. 66-4123340*, was added, between the B-bus and the chassis.

RUN 4

R400, 47,000 ohms, Part No. 66-3473340*, was changed to 120,000 ohms, Part No. 66-4123340*.

RUNS 5 and 6

- a. The tuning-condenser gang was mounted on rubber supports, to prevent microphonics. The backing plate, Part No. 56-2105FA3, was removed.
- b. A tube shield, Part No. 56-3358, was installed for the 7C6 tube.

CODE 125

1. This code is the same as Code 121 (shown in manual), except that it has a metal-base cabinet, Part No. 10664A for the oval speaker or 10664B for the round speaker. Round and oval speakers are used interchangeably in production.

2. In the new metal-base cabinet, bullet catches in the upper section engage the metal base. To open the cabinet: Open the record door and use the thumbs to depress the bullet catches, located at the outside edges of the opening, while lifting upward on the cabinet. Fold the cabinet back. Hinged fasteners permit separating the top and the base of the cabinet.

3. Code 125 bears the same run numbers as Code 121, because both codes use the same chassis. Code 125 started with Run 4.

CODE 126

RUN 1

This code is the same as Code 125 except for the following:

- a. The 50Y6GT rectifier tube was changed to a 50X6.
 - b. The octal socket for the rectifier tube was changed to a Loktal socket.
- Part No. 27-6138*.

RUN 2

- a. C201, .01 mf., 400v, Part No. 30-4572, was changed to 600v, Part No. 61-0120*.
- b. C203, .01 mf., 400v, Part No. 30-4572, was changed to 600v, Part No. 61-0120*.

RUN 3

The i-f transformers were replaced with permeability-tuned transformers, to correct frequency drift which was caused by leakage of wax on the trimmers. This change involves the following:

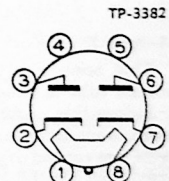
- a. The first i-f transformer, Part No. 32-3968, was changed to Part No. 32-4160-1.
- b. The second i-f transformer, Part No. 32-3674*, was changed to Part No. 32-4161-1.
- c. The necessary wiring changes were made.
- d. In replacing the transformers, R301 (47,000 ohms), C301C, and C301D, all of which were inside Z301, were eliminated; to provide the necessary i-f filter, a 47,000-ohm resistor and two 100-mmf. condensers were installed, outside the i-f can.

CODE 127

RUN 1

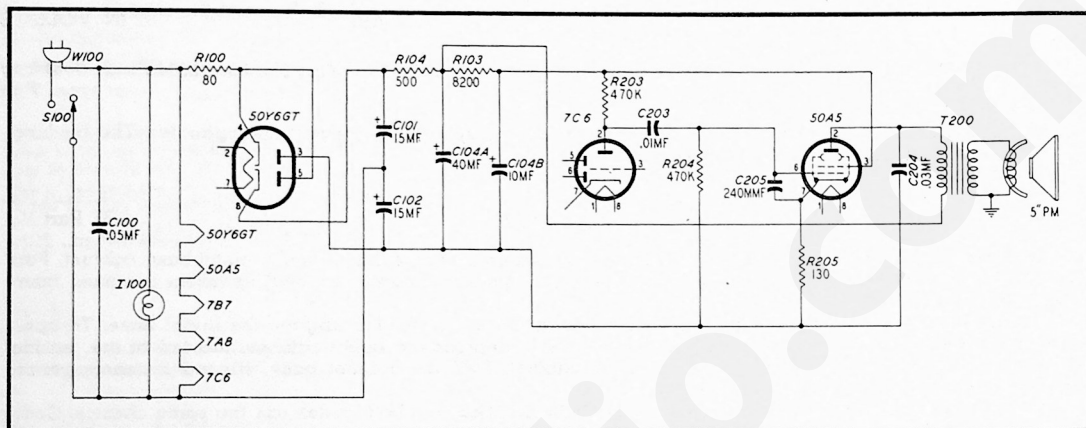
This code is similar to Code 121 (shown in manual), except that it has a permanent-magnet dynamic speaker and a Loktal type 50A5 output tube in place of a 35L6GT/G. The rectifier filter circuit was changed to use a resistor instead of a filter choke (see accompanying schematic). Parts changes applicable to Code 127 are as follows:

- a. The 35L6GT/G output tube was changed to a 50A5.
- b. A 130-ohm resistor, R205, Part No. 1123340*, was added, between the 50A5 cathode and the B-bus.
- c. A 500-ohm resistor, R104, Part No. 33-3435-3, and an 8200-ohm resistor, R103, Part No. 66-2824340*, were added to the power-supply filter circuit.
- d. The oval electrodynamic speaker, Part No. 36-1587*, was replaced by a round, 5-inch permanent-magnet speaker, Part No. 36-1617-2.



50X6 Pin Connections

- e. The metal-base cabinet for round speakers (Code 125), Part No. 10664B, was used.
- f. The dual resistor, R100, 80 ohms and 65 ohms, Part No. 33-3426, was replaced by a single 80-ohm resistor, Part No. 33-3425.
- g. Resistors R101 and R102 were removed from the power-supply circuit.
- h. Condenser C103 was removed.
- i. Condenser C104, 40 mf., electrolytic, single-section, was replaced by a dual-section 40-10 mf., 200v condenser, Part No. 30-2554.
- j. Condenser C100, .04 mf., a-c line filter, was replaced by a .05-mf. condenser, Part No. 61-0122*.
- k. Condenser C204, .03 mf., Part No. 45-3500-1*, was replaced by a .05-mf. condenser, Part No. 61-0122*.



Power Supply and Audio Section for Code 127

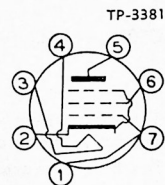
CODE 128

RUNS 1 and 2

- a. This code has a permanent-magnet speaker, and a filter system like that of Code 127 except that a 50X6 rectifier tube is used in place of the 50Y6GT.
- b. Before this code, it was possible for the tuning-condenser gang to have a high potential if the 7A8 and 50X6 tubes were accidentally interchanged. Beginning with this code, this condition was prevented by shunt-feeding the converter grid; a 100mmf. coupling condenser, Part No. 60-10105407, and a 1-megohm grid-return resistor, Part No. 66-5103340, are used.

CODE 130

This code is the same as Code 128 except that a 50B5 output tube is used in place of the 50A5.



50B5 Pin Connections

GENERAL INFORMATION ON MODEL 46-1201

It is good practice to keep the phono-compartment door open while handling Model 46-1201 in the shop; this keeps the tone arm raised, thus preventing the pickup and needle from being damaged.

Some early-production sets did not include a shield for the 7C6 tube. A shield, Part No. 56-2731, may be installed, to correct hum caused by an unshielded 7C6.

Some sets have an extra wire on the volume control; this wire is used only for production checks, and may be removed if desired.

In the later codes, both round and oval speakers are used. Cabinet Part No. 10639 is used with the oval speaker, Part No. 36-1587*; cabinet Part No. 10639A is used with the round speaker, Part No. 36-1617-1*.

HUM IN EITHER RADIO OR PHONOGRAPH OPERATION

Hum may be caused by a short circuit between the a-c line and the chassis. In some cases, there has been leakage between the mercury-switch leads and the chassis where the leads pass through the hollow shaft of the trip assembly, Part No. 76-2098.

To prevent recurrence of the short, vinylite tubing may be slipped over the leads for the length of the hollow shaft.

BURNING OF DIFFUSION PANEL

In certain codes, the diffusion panel, Part No. 54-4256, may become burned by excessive heat from the pilot lamp. To prevent the recurrence of this condition, move the lamp socket back as far as possible on the mounting strap. To prevent the socket from getting back to the original position by subsequent replacement of the pilot lamp, tack some solder on the mounting strap to form a bead so that the lamp socket cannot be pushed forward all the way.

VERY NOTICEABLE INTERMITTENT HUM, ACCOMPANIED BY AN APPRECIABLE CHANGE IN VOLUME OF BOTH RADIO AND PHONOGRAPH

In some cases, these symptoms have been traced to intermittent operation of either of the voltage-doubling condensers, C101 and C102, Part Nos. 30-2559 and 30-2546. Replace with the general-replacement type, Part No. 45-3018-8, 16 mf., 200v.

INTERMITTENT CHANGE IN VOLUME, ACCOMPANIED BY SLIGHT INCREASE IN HUM IN BOTH RADIO AND PHONOGRAPH

In a number of cases, this condition has been traced to an intermittent filter condenser, C104, Part No. 30-2548, in Codes 121, 125, and 126. Less frequently, the trouble has been caused by C104 (A or B), Part No. 30-2554, in Codes 127, 128, and 130. Replace Part No. 30-2554 with Part No. 30-2575-12, 40 and 10 mf., 250v. Replace Part No. 30-2548 with Part No. 45-3018-9, 40 mf., 250v.

INTERMITTENT OPERATION, ACCOMPANIED BY GREAT CHANGE IN VOLUME OF BOTH RADIO AND PHONOGRAPH

The end seals in the blocking condensers, C201 and C203, may melt under certain conditions, so that tension on the leads can cause an intermittent connection with the foil. Replace these condensers with the high-temperature type, Part No. 61-0120.

SLIGHT INCREASE IN HUM IN BOTH RADIO AND PHONOGRAPH

This condition may be caused by the loosening of the sealed ends of C103 under high-temperature operation, causing intermittent contact. This condenser is used as a bias filter in Codes 121 and 122. Replace it with the high-temperature type, Part No. 45-3500-3.

INTERMITTENT OPERATION AND INCREASE IN HUM LEVEL OF PHONOGRAPH ONLY

The end seals in the isolating condenser, C202, Part No. 30-4594, may melt out, resulting in an intermittent connection. Replace the condenser with the high-temperature type, Part No. 45-3500-3.

REDUCTION OF VOLUME, AND OSCILLATION, IN RADIO ONLY

The end seals in the screen by-pass condenser, C302, may melt under certain operating conditions, allowing intermittent contact. Replace the condenser with the high-temperature type, Part No. 61-0122.

The same symptoms may indicate the same condition in C402, the a-v-c by-pass. Replace this condenser with the high-temperature type, Part No. 61-0113.

UNSTABLE OPERATION, AND OSCILLATION, IN RADIO ONLY

The end seals of the condenser-and-choke assembly, C403, may become loose under certain operating conditions, causing intermittent contact. Replace this assembly with a high-temperature condenser, Part No. 45-3500-3, and wind the choke (7 turns) around it.

LOSS OF SENSITIVITY, DRIFT OF TUNING, OR INCREASE OF CODE INTERFERENCE

The majority of these cases have been traced to a change in tuning of the second i-f transformer, Z301, Part No. 32-4005. This transformer, because of its location close to the output tube, becomes overheated under certain operating conditions, causing wax to flow from the coil or coil form into the trimmer-condenser plates. Therefore, detuning of the stage and loss of sensitivity and selectivity result.

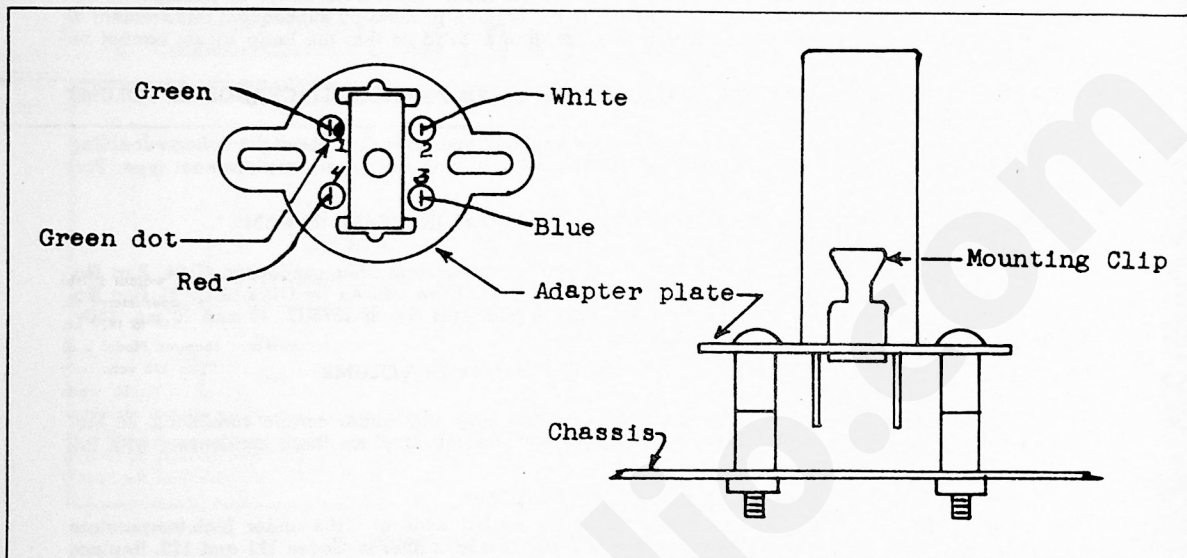
Since the trimmer plates become stuck together, retuning of the stage is often difficult, and even if accomplished, subsequent heating and cooling may again result in detuning. A permanent repair may be made by replacing the faulty transformer with one of the permeability-tuned type. A kit, Part No. AD-1024, includes this transformer and mounting hardware.

INSTRUCTIONS FOR INSTALLING I-F TRANSFORMER PART NO. AD-1024 AS REPLACEMENT FOR PART NO. 32-4005

1. Remove the two nuts used to mount the original coil, 32-4005.
2. Force one end of the brass coil-retaining clip upward and inward, to permit the coil shield can to be removed.
3. Cut the red, blue, white, and green leads, leaving one inch in length above the chassis, and strip one-half inch. Cut the black lead off close to its terminal under the chassis, as this lead is not used.

4. Drill a 3/16-inch hole halfway between, and in line with, the two holes in which the transformer was mounted; this provides an access hole for the transformer primary adjustment. Some codes have a hole that may be used for this purpose by mounting the replacement transformer at a suitable angle to use holes available.

5. Set the new transformer in place, with terminals 1 and 2 adjacent to the rectifier tube, and make the connections as shown in the bottom-view drawing.



6. Install the transformer in the mounting holes for the original transformer, by means of the adapter plate and hardware provided, as shown in the side-view drawing.

7. Follow the alignment instructions given in the service manual, with the exception that, for this transformer, which is inductively tuned, the secondary adjustment is made through a hole in the top of the shield can, and the primary adjustment is made through a hole in the bottom.

8. When tuning this transformer, use a fibre tuning stick, as the iron core is not at ground potential; also, the core may be damaged by using a metal screwdriver. The fibre screwdriver should be 1/8" in diameter, with the point ground down to a 1/16" wedge.

9. If any tendency toward oscillation is noticed, connect a 100 mmf. condenser, Part No. 60-10105407, between terminals 2 and 4 of the transformer, and realign.

This information supersedes all previous recommendations of transformers, such as Part No. 32-4005 (blue dot), and Part No. 32-3674, for use as replacement second i-f transformers in Model 46-1201.

Where repeated trouble has been experienced, and where sets are used continuously under high operating temperatures, it is recommended that the transformer and condensers mentioned above be replaced, in order to avoid repeated service calls.

CRITICAL LEAD DRESS AND PARTS PLACEMENT FOR MODEL 46-1201

1. Electrolytic condenser C102 should be mounted away from the volume control as far as possible. The 7C6 grid blocking condenser, C201, should be dressed downward into the corner of the chassis, toward the volume control, R200, to minimize coupling between C201 and C102.

2. The lead from C101 to pin 8 of the 50Y6GT tube should be dressed under the a-c cord, with excess length placed around the 50Y6GT socket, for mechanical support.

3. A-c cords, including motor leads, should be dressed toward the rear of the chassis, and away from the 7C6 socket and C201.

4. The rear lead of loop LA400 should be connected to the antenna section of the tuning condenser, C401; the front loop lead should be connected to the No. 3 lug of the antenna coil, T400.