

MODELS PT-30, PT-42, PT-44, PT-49, PT-87

SPECIFICATIONS

Models PT-30, PT-42, PT-44, PT-49

Models PT-30, PT-42, PT-44, and PT-49 are five (5) tube A. C. or D. C. operated Super-heterodyne compact radios employing a built-in loop aerial. These Models are similar with the exception of the cabinets, chassis and speaker size. In addition each Model includes a tuning band from 540 to 1600 K. C., Automatic Volume Control; beam power pentode audio output stage and Philco Lokalt tubes.

INTERMEDIATE FREQUENCY: 455 K. C.

POWER SUPPLY: 115 Volts, A. C. or D. C.

PHILCO TUBES: 7A8, converter; 7B7, I. F. Amplifier; 7C6, 2nd detector, A. V. C., 1st audio; 50L6GT, beam power audio output and a 35Z3, rectifier.

AERIAL AND GROUND: Under ordinary operating conditions an outside aerial or ground is not required. In some locations, however, such as steel reinforced buildings and other shielded areas, an outside aerial should be used for maximum performance. For this purpose an outside aerial connection is located on the rear lower left corner of the chassis. Simply remove the lug from under the screw and attach the aerial lead to the lug.

THE PHILCO UTILITY AERIAL, Part No. 40-6384, is especially designed for these radios, and can be obtained from your Philco Distributor.

Model PT-87

Model PT-87 is a five (5) tube portable battery or 115 volt A. C.-D. C. operated super-heterodyne radio with a built-in aerial.

Other features included in this model are: Tuning band from 510 to 1600 K. C.; Automatic Volume Control; beam power pentode audio output stage and a Permanent-Field Speaker.

POWER SUPPLY: This radio is designed to operate from a combination AB battery, Philco Part No. P-87, or from a 115 volts A. C.-D. C. current. To operate on Batteries insert the A. C.-D. C. power plug into the slots on the rear of the chassis. To operate on 115 volts A. C.-D. C. current remove the power plug from the socket and insert the plug into a power receptacle.

INTERMEDIATE FREQUENCY: 455 K. C.

PHILCO TUBES USED: 1A7G, converter; 1N56, I. F. amplifier; 1H5G, 2nd detector, 1st audio, A. V. C.; 35Q5GT, Audio Output and a 117Z6G, rectifier.

AERIAL AND GROUND: Under ordinary operating conditions an outside aerial or ground is not required. In some locations, however, such as camps, steel reinforced buildings and other shielded areas where signal strength is weak, an outside aerial should be used for maximum performance. Two leads are provided on the inside of the cabinet. Connect the aerial lead to the white wire and the ground lead to the black wire.

Pin jacks are also provided on the side of the cabinet for attaching the Philco Auxiliary Plug-in loop aerial. This aerial is especially designed for portable use in trains, hotels, and any shielded locations. Complete instructions for installation come with each aerial loop, Part No. 45-2807.

ALIGNING R. F. AND I. F. COMPENSATORS

The following procedure covers all models in this Bulletin.

EQUIPMENT REQUIRED

- SIGNAL GENERATOR:** Covering the frequency range of the receiver, such as Philco Models 077 or 177.
- ALIGNING INDICATOR:** Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Models 027 and 028 circuit testers contain both these meters.
- TOOLS:** Philco Fiber Screw Driver, Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

Audio Output Meter: If this type of aligning meter is used, connect it to the voice coil terminals of the speaker or from the plate of the 50L6GT tube to the chassis. Adjust the meter for the 0 to 10 volt scale.

Vacuum Tube Voltmeter: To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative (-) terminal of the voltmeter to any point in the circuit where the A. V. C. voltage can be obtained. Connect the positive (+) terminal of the vacuum tube voltmeter to the chassis.

Signal Generator: When adjusting the I. F. padders, the high side of the signal generator is connected through a .1 mfd. condenser to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R. F. padders a loop is made from a few turns of wire connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below.

If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR		RECEIVER				SPECIAL INSTRUCTIONS	
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order			
					PT-30, 49	PT-42, 44		PT-87
1	Ant. Section of tuning	455 K. C.	540 K. C. Tuning Cond. Closed	Vol. Max. Range Switch Brdcast.	11B, 11A 13A, 13B	12A, 12B 14A	8A, 8B 16A	Note B
2	Loop see above instructions	1600 K. C.	1600 K. C.	Vol. Max. Range Switch Brdcast.	4B	4A	1B	Note A
3	Loop see above instructions	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Brdcast.	4A	5	1A	

NOTE A:—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the small dot below 550 K. C.

NOTE B:—When adjusting the I. F. compensators of Models PT-30 and PT-49, turn compensator (11B) clockwise to the tight position and pad compensators 11A, 13A and 13B to maximum output, then pad 11B to maximum.

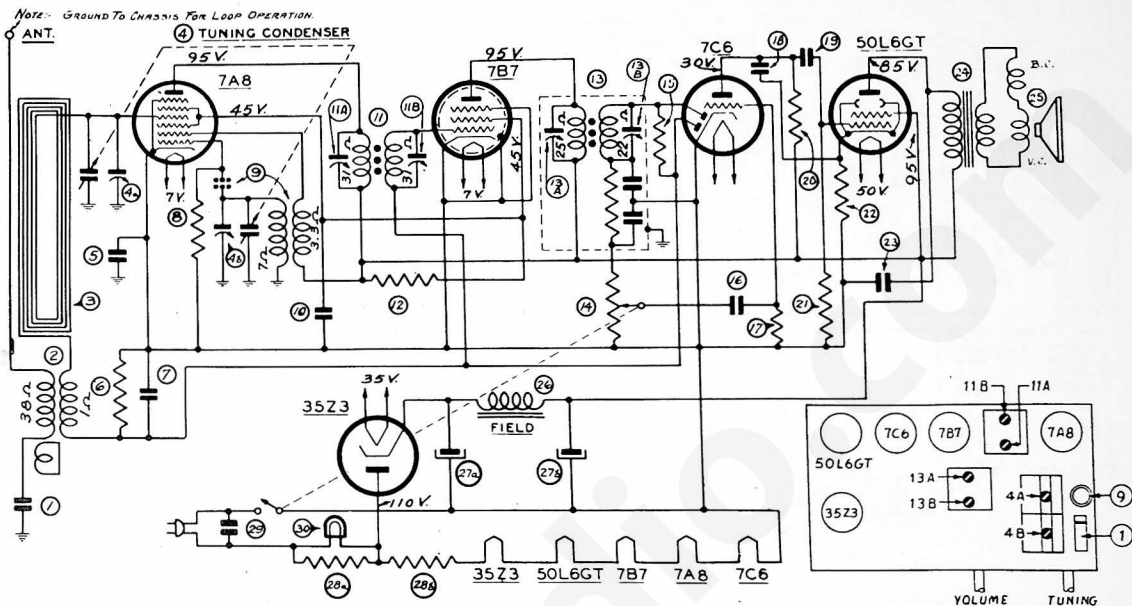
PRODUCTION CHANGES

MODELS PT-30, PT-49

To prevent oscillation at the low frequency end of the tuning scale 550 K. C., condenser (5) on diagram was changed

from a .2 mfd. condenser Part No. 30-4594 to a condenser and choke assembly Part No. 76-1227.

MODELS PT-30 AND PT-49 (CONTINUED)

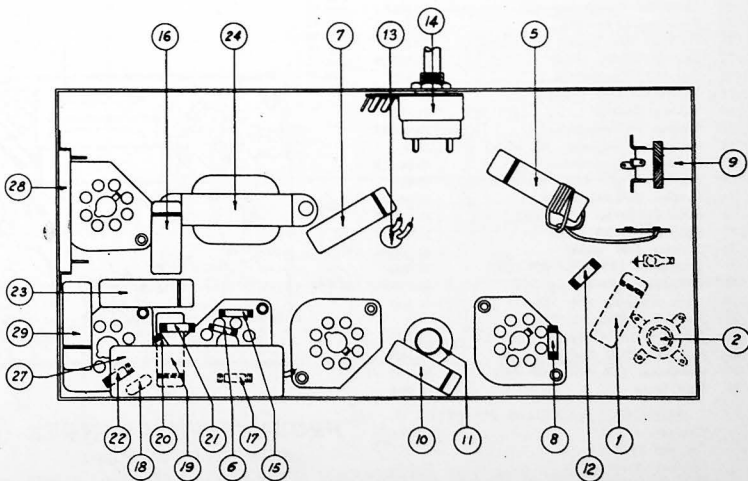


SCHEMATIC DIAGRAM — PT-30, PT-49

Replacement Parts — PT-30, PT-49

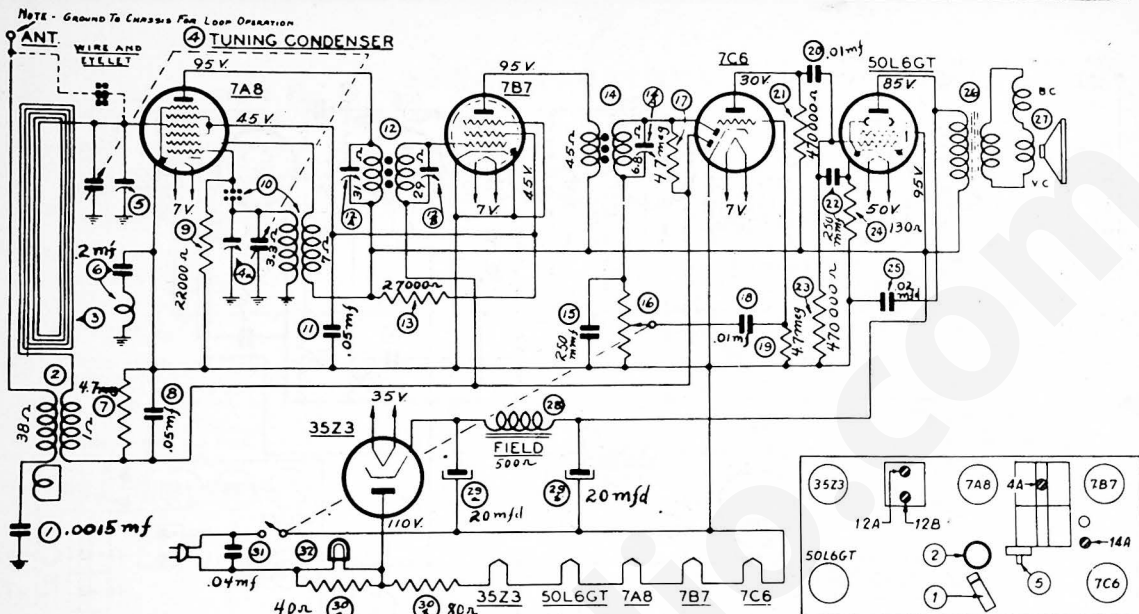
SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.
1	Condenser (.0015 mfd.)	30-4555		Cabinet Back (PT-49)	27-9784		Screw (Back Mtg.) (PT-30)	W-881
2	Aerial Transformer	32-3394		Clip (Coil Mtg. R. F.)	28-5002		Screw (Chassis Mtg.) (PT-30)	W-1921
3	Loop Aerial (PT-30)	32-3567		Cord (Power)	L-3199		Screw (Chassis Mtg.) (PT-49)	W-2030
4	Loop Aerial (PT-49)	32-3576		Dial	27-5642		Socket (Loktal)	55-0575
	Tuning Condenser	31-2497		Pointer	27-4868		Socket (50L6GT)	27-4163-2
	Spring (Drive Cord)	28-8954		Knob (PT-30)	27-4632		Socket Assembly	76-1179
	Drive Cord	31-2501		Knob (PT-49)	27-4820		Washer (Back Mtg.)	W-151
	Drive Shaft	31-2498		Speaker	36-1525		Washer (Chassis)	W-410
5	Condenser (.2 mfd., 400 volts)	30-4594		Screw (Back Mtg.) (PT-49)	W-2023			
6	Resistor (4.7 megohms)	33-547339						
7	Condenser (.05 mfd., 200 volts)	30-4519						
8	Resistor (47,000 ohms)	33-347339						
9	Oscillator Transformer	32-3562						
10	Condenser (.05 mfd., 200 volts)	30-4519						
11	1st I. F. Transformer	32-3560						
12	Resistor (27,000 ohms)	33-327339						
13	2nd I. F. Transformer	32-3561						
14	Volume Control	33-5415						
15	Resistor (4.7 megohms)	33-547339						
16	Condenser (.01 mfd., 400 volts)	30-4572						
17	Resistor (3.3 megohms)	33-533339						
18	Condenser (250 mmfd.)	60-125157						
19	Condenser (.01 mfd., 400 volts)	30-4572						
20	Resistor (470,000 ohms)	33-447339						
21	Resistor (470,000 ohms)	33-447339						
22	Resistor (130 ohms)	33-113336						
23	Condenser (.02 mfd., 400 volts)	30-4516						
24	Output Transformer	32-8136						
25	Cone Assembly (For speaker 36-1525-19)	36-4182						
26	Field Coil (Replace Speaker)							
27	Electrolytic Condenser (20-20 mfd.)	30-2382						
28	Resistor (40-80 ohms)	33-3401						
29	Condenser (.04 mfd., 400 volts)	30-4119						
30	Pilot lamp	34-2068						

Baffle and Cloth Assembly	40-6614
Cabinet (PT-30)	10313-L
Cabinet Back	27-9515
Cabinet (PT-49)	10522A



PART LOCATIONS — UNDERSIDE OF CHASSIS PT-30, PT-49

MODELS PT-42 AND PT-44 (CONTINUED)



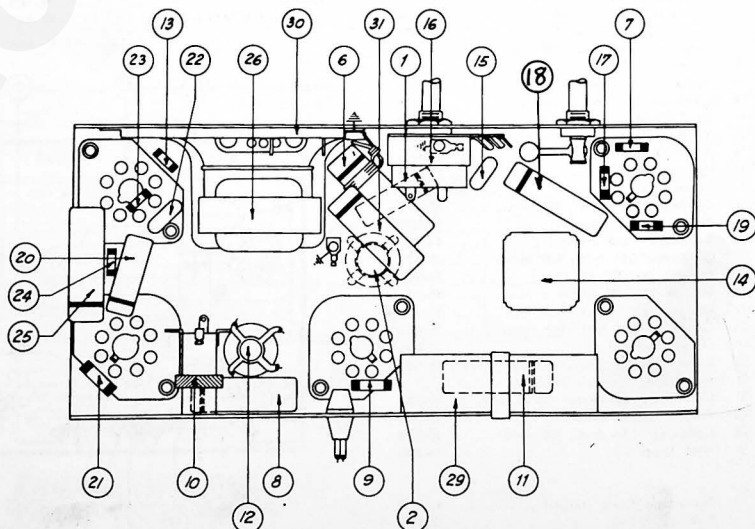
SCHEMATIC DIAGRAM — PT-42, PT-44

Replacement Parts — PT-42, PT-44

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
1	Condenser (.0015 mfd., 200 volts)	30-4555		Dial Scale	27-5668		Socket (Octal)	27-6137
2	Aerial Transformer	32-3394		Dial Pointer	54-4043		Socket Assembly (Pilot lamp)	76-1177
3	Loop Aerial (PT-42)	32-3574		Knob (PT-42)	27-4809		Screw (Chassis Mtg.)	W-2030
	Loop Aerial (PT-44)	32-3575		Knob (PT-44)	27-4820		Screw (Back Mtg.) (PT-44)	W-2076
4	Tuning Condenser	31-2439		Rubber Grommet (Tuning Cond.)	27-4610		Screw (Back Mtg.) (PT-42)	W-2023
	Drive Cord	31-2358		Speaker	36-1512		Washer (Chassis Mtg.)	W-410
	Drive Shaft	31-2370		Socket (Loktal tubes)	27-6157-2		Washer (Chassis Mtg.)	W-152
	Spring Drive Cord	28-8954						
5	Compensator (Aerial)	31-6344						
6	Condenser and Choke Assembly	76-1019						
7	Resistor (4.7 megohms)	33-547339						
8	Condenser (.1 mfd., 200 volts)	30-4499						
9	Resistor (22,000 ohms) ²	33-322339						
10	Oscillator Transformer	32-3562						
11	Condenser (.05 mfd.)	30-4519						
12	1st I. F. Transformer	32-3390						
13	Resistor (27,000 ohms)	33-327339						
14	2nd I. F. Transformer	32-3391						
15	Condenser (250 mmfd.)	60-125157						
16	Volume Control	33-5306						
17	Resistor (4.7 megohms)	33-547339						
18	Condenser (.01 mfd., 400 volts)	30-4572						
19	Resistor (4.7 megohms)	35-547339						
20	Condenser (.01 mfd., 400 volts)	30-4572						
21	Resistor (470,000 ohms)	33-447339						
22	Mica Condenser (250 mmfd.)	60-125157						
23	Resistor (470,000 ohms)	33-447339						
24	Resistor (130 ohms)	33-113336						
25	Condenser (.02 mfd., 400 volts)	30-4516						
26	Output Transformer	32-8144						
27	Cone Assembly (For Speaker 36-1512-9)	36-4167						
28	Field Coil (Replace Speaker 36-1512-9)	30-2282						
29A	B Electrolytic Condenser (20-20 mfd.)	30-3401						
30	Resistor (40-80 ohms)	33-3401						
31	Condenser (.04 mfd., 400 volts)	30-4119						
32	Pilot lamp	34-2068						

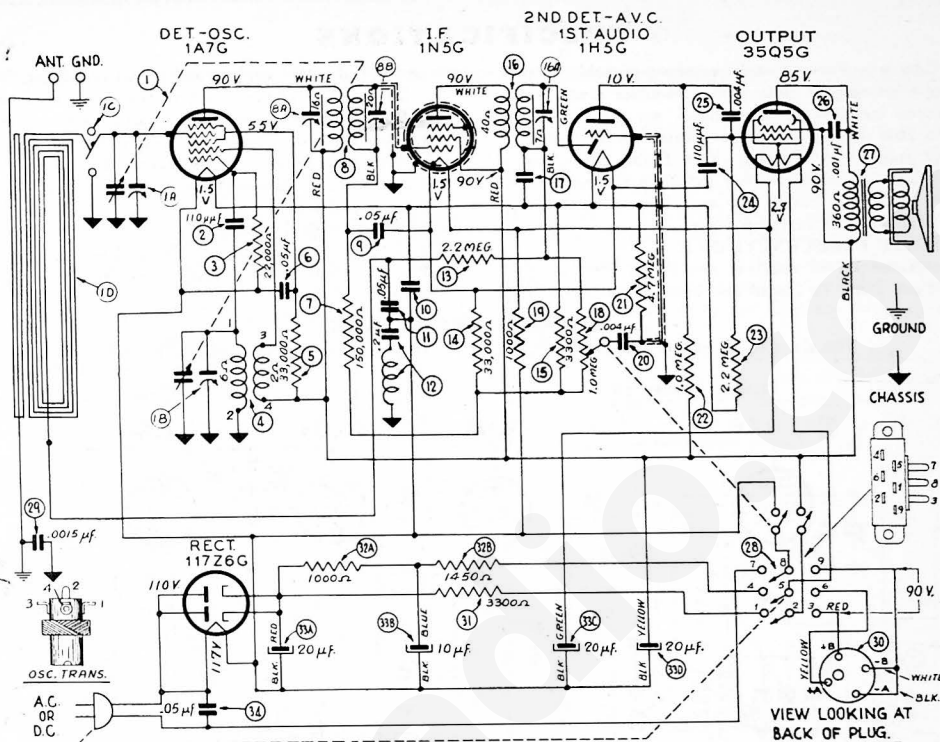
MISCELLANEOUS PARTS

Cabinet (PT-42)	10520A
Cabinet (PT-44)	10521A
Cabinet Backs	27-9776
Clip (Coil Mtg.)	28-5002
Cord (Power)	L-3199



PART LOCATIONS — UNDERSIDE OF CHASSIS PT-42, PT-44

MODEL PT-87 (CONTINUED)



SCHEMATIC DIAGRAM — PT-87

SCHEM. No.	DESCRIPTION	PART No.
1	Tuning Condenser	31-2500
1C	Spring (Tuning Cond.)	28-8751
	Drive Cord	31-2411
	Drive Shaft	76-1036

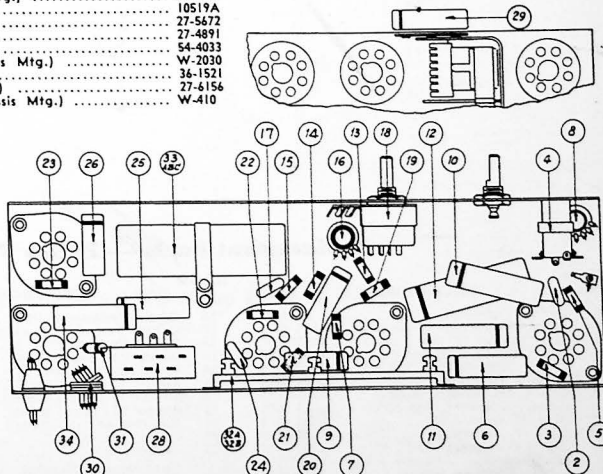
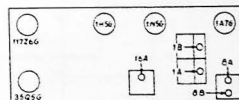
1A	Aerial Compensator, Part of Tuning Condenser	
1B	Oscillator Compensator, Part of Tuning Condenser	
1C	External Loop Aerial Panel	27-6141
1D	Loop Aerial, Part of Cabinet	
2	Condenser (110 mfd.)	60-110157
3	Resistor (220,000 ohms)	33-422339
4	Oscillator Transformer	32-3425
5	Resistor (33,000 ohms)	33-333339
6	Condenser (.05 mfd., 200 volts)	30-4519
7	Resistor (150,000 ohms)	33-415339
8	1st I. F. Transformer	32-3584
9	Condenser (.05 mfd., 200 volts)	30-4519
10	Condenser (.1 mfd., 400 volts)	30-4455
11	Condenser (.05 mfd., 200 volts)	30-4519
12	Condenser (.2 mfd.) and R. F. Choke	76-1161
13	Resistor (2.2 megohms)	33-522339
14	Resistor (3300 ohms)	33-233339
15	Resistor (3300 ohms)	33-233339
16	2nd I. F. Transformer	32-3473
17	Mica Condenser (250 mfd.)	60-125157
18	Volume Control	33-5389
	Palnut	W-2157
19	Resistor (1000 ohms)	33-210339
20	Condenser (.004 mfd., 400 volts)	30-4456
21	Resistor (4.7 megohms)	33-547339
22	Resistor (1 megohm)	33-510339
23	Resistor (2.2 megohms)	33-522339
24	Mica Condenser (100 mfd.)	60-110157
25	Condenser (.004 mfd., 400 volts)	30-4456
26	Condenser (.0015 mfd., 400 volts)	30-4555
27	Output Transformer	32-8159
28	Changeover Switch (Power Supply)	42-1553
29	Condenser (.0015 mfd., 400 volts)	30-4555
30	Battery Cable	41-3592
31	Resistor (3300 ohms)	33-233339
32	Resistor (1000-450 ohms)	33-3400
33A	Electrolytic Condenser (20 mfd., 150 volts)	30-2492
33B	Electrolytic Condenser (10 mfd., 150 volts) part of 33A	
33C	Electrolytic Condenser (20 mfd., 25 volts) part of 33A	
33D	Electrolytic Condenser (20 mfd., 150 volts) part of 33A	

Replacement Parts — PT-87

SCHE. No.	DESCRIPTION	PART No.
34	Condenser (.05 mfd., 400 volts)	30-4518
35	Cone Assembly (For Speaker 36-1521-3)	36-4175

MISCELLANEOUS PARTS

Cord (Power)	L-3199
Clip (Coil Mtg.)	28-5002
Cabinet	10519A
Dial	27-5672
Dial Pointer	27-4871
Knob	54-4033
Screw (Chassis Mtg.)	W-2030
Speaker	36-1521
Socket (Tube)	27-6156
Washer (Chassis Mtg.)	W-410



PART LOCATIONS — UNDERSIDE OF CHASSIS PT-87