

Philco Radio & Television Corp.

Model: 40-725 (121)

Chassis:

Year: Pre June 1940

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

[Riders Volume 11 - PHILCO 11-74](#)

[Riders Volume 11 - PHILCO 11-75](#)

[Riders Volume 11 - PHILCO 11-76](#)

MODEL 40-725(121)
MODEL 40-755(121)
Alignment

PHILCO RADIO & TELEV. CORP.

Philco-Tropic Models

40-725, code 121
40-755, code 121

SPECIFICATIONS

Model 40-725

TYPE CIRCUIT: Model 40-725, code 121, is a six (6) tube A. C. operated receiver employing a superheterodyne circuit with three tuning ranges for reception of Standard, Police and Shortwave Broadcast Stations. Connections are also provided for attaching a high impedance Electric Phonograph pick-up. In addition other features of design are: Automatic Volume Control; Continuously Variable Tone Control; Bass Compensation; and special compensation for reducing frequency drift to a minimum.

POWER SUPPLY: 100-130 or 200-260 volt, 50-60 cycle, 60 watts. The voltage ranges are selected by inserting the plug as indicated on top of the power transformer.

TUNING RANGES: 530 to 1720 K. C. 2.3 to 7.4 M. C. 7.3 to 22 M. C.

I. F. FREQUENCY: 455 K. C.

PHILCO TUBES: 78E, R. F. Amplifier; 6J8EG, Converter-Oscillator; 78E, I. F. Amplifier; 75, Second Detector, First Audio, and A. V. C.; 41E, Pentode Audio Output; 84, Rectifier.

AUDIO OUTPUT: 2.5 watts.

AERIAL AND GROUND: To obtain maximum performance from this receiver, the Philco Safety Aerial, Part No. 40-6370 should be used and a good ground connection to the nearest water pipe or any other good ground.

CABINET DIMENSIONS: Height, 14 1/4". Width, 18 1/2". Depth, 10 1/4".

Model 40-755

TYPE CIRCUIT: Model 40-755, code 121, is an eight (8) tube A. C. operated receiver employing a superheterodyne circuit with three tuning ranges for reception of Standard, Police and Shortwave Broadcast Stations. Connections are also provided for attaching a high impedance Electric Phonograph pick-up. Other features of design are: Automatic Volume Control; Continuously Variable Tone Control; Bass Compensation; Push-Pull Pentode Audio Output; Tuning Resonance Indicator, and special compensation for reducing frequency drift to a minimum.

POWER SUPPLY: 100-130 or 200-260 volt, 50 to 60 cycle, 83 watts. The voltage ranges are selected by inserting the plug as indicated on top of the power transformer.

TUNING RANGES: 530 to 1720 K. C. 2.3 to 7.4 M. C. 7.3 to 22 M. C.

I. F. FREQUENCY: 455 K. C.

PHILCO TUBES: 78E, R. F. Amplifier; 6J8EG, Converter-Oscillator; 78E, I. F. Amplifier; 75, Second Detector, First Audio, and A. V. C.; 76, Inverter; two 42E, Pentode Audio Output; 80, Rectifier.

AUDIO OUTPUT: 6 watts.

AERIAL AND GROUND: Same as Model 40-725.

CABINET DIMENSIONS: Height, 14 1/4". Width, 20". Depth, 10 1/4".

ALIGNING COMPENSATING CONDENSERS

EQUIPMENT REQUIRED

(1) **Signal Generator.** In order to properly adjust this receiver a calibrated signal generator such as Philco Model 077 A. C. or Model 177 battery operated are required. These signal generators cover a frequency range of 540 to 36,000 K. C.

(2) **Indicating Device.** To obtain maximum signal strength and accurate adjustment of the padders a vacuum tube volt-

meter and circuit tester such as Philco Models 027 and 028 is recommended. These testers also contain an audio output meter which may be used as an indicating device.

(3) **Aligning Tools.** Fiber handle screw driver, Philco Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

Vacuum Tube Voltmeter: To use the vacuum tube voltmeter as an aligning indicator it should be connected to the A. V. C. circuit as follows:

1. Connect the negative (—) terminal of the voltmeter through a 2 meg. resistor to the converter grid (6J8EG). The resistor must be connected directly to the grid of the tube and the voltmeter wire attached to the resistor.

2. Connect the positive (+) terminal to the chassis ground terminal.

Audio Output Meter: If this type of meter is used as an aligning indicator, it should be connected to the plate and screen terminals of the 41 tube. Adjust the meter for the 0 to 30 volt A. C. scale.

After connecting the aligning meter, adjust the compensators in the order as shown in the tabulation below. Locations of the compensators are shown in Fig. 1. If the output 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	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators			
						Model 40-725	Model 40-755		
1	6J8G Grid and Ground	.1 mfd.	455 K. C.	580 K. C.	Vol. Max. Tone Treble	38B, 38A, 32B, 32A	39B, 39A, 33B, 33A		
2	Ant. & Grnd.	200 mmfd.	1500 K. C.	1500 K. C.	Vol. Max. Range Switch "Brdcat"	27, 22B, 22A	27, 32B, 32A	Note B	
3	Ant. & Grnd.	200 mmfd.	580 K. C.	580 K. C.	Vol. Max.	23	23	Roll Gang	
4	Ant. & Grnd.	200 mmfd.	1500 K. C.	1500 K. C.	Vol. Max.	27, 22B, 22A	27, 32B, 32A		
5	Ant. & Grnd.	400 ohms	6.0 M. C.	6.0 M. C.	Vol. Max. Tone Treble Range Switch "S.W.1"	27A	27A	Roll Gang	
6	Ant. & Grnd.	400 ohms	20 M. C.	20 M. C.	Vol. Max. Tone Treble Range Switch "S.W.2"	29, 15, 5	29, 16, 5	Note C	

NOTE A—The "Dummy Antenna" consists of a condenser or resistance connected in series with the signal generator output lead (high side). Use the capacity or resistance as specified in each step of the above procedure.

NOTE B—**DIAL CALIBRATION:** In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning

condenser closed (maximum capacity), set the dial pointer on the first mark on the left edge (low frequency end) of the broadcast scale.

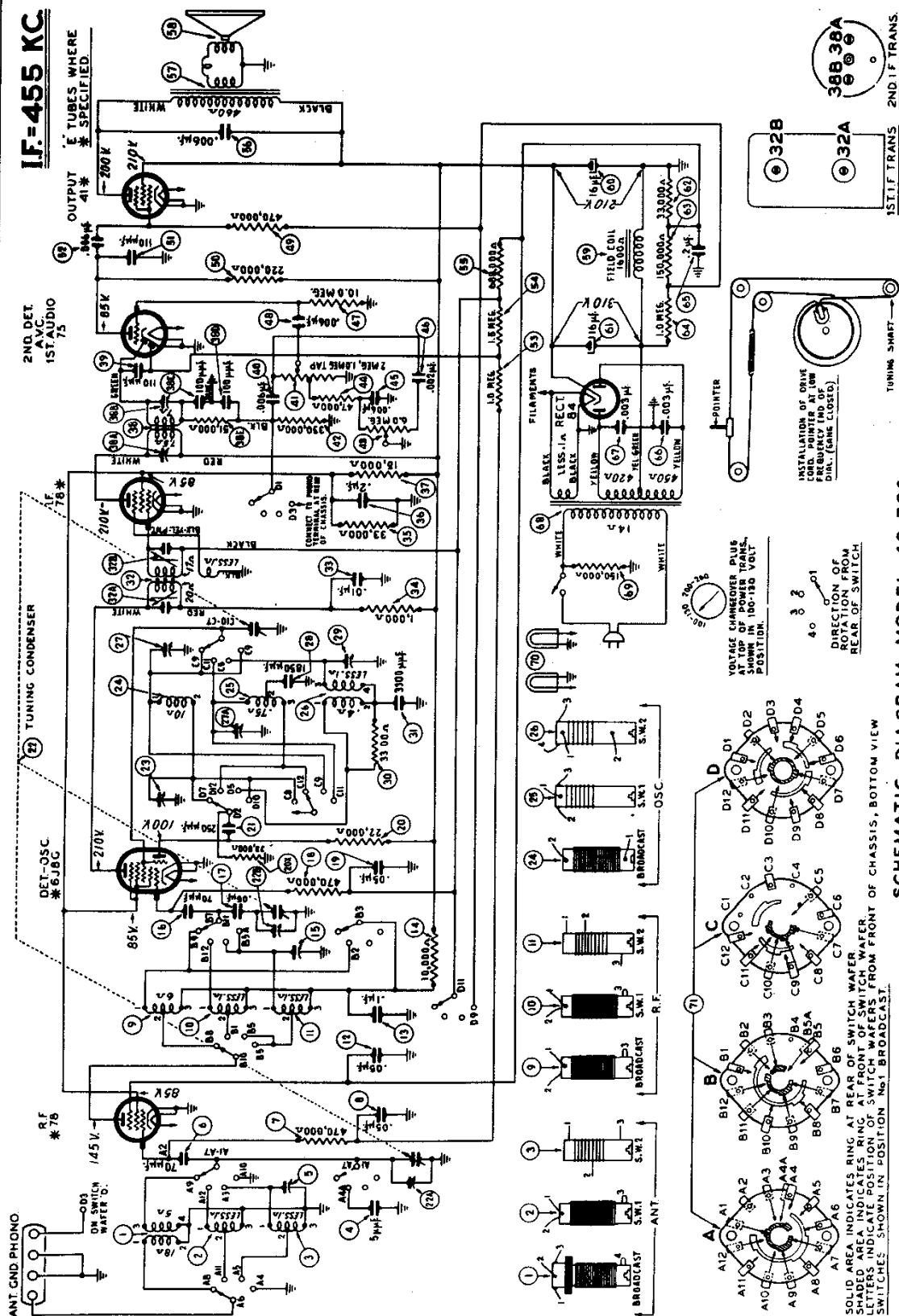
NOTE C—When adjusting compensator (29) be sure to tune in the fundamental signal (20 M. C.) instead of the image signal. If the compensator is correctly adjusted, the image signal will be 910 K. C. below the fundamental signal, which will be 19.090 M. C.

PHILCO RADIO & TELEV. CORP.

MODEL 40-725(121)
Schematic, Voltage

IF=455 KC

OUTPUT 41*
E TUBES WHERE
SPECIFIED



SCHEMATIC DIAGRAM MODEL 40-725

PHILCO RADIO & TELEV. CORP.

MODEL 40-725(121)
MODEL 40-755(121)
Chassis, Parts

Model 40-725, Code 121 Replacement Parts

SCHE. No.	DESCRIPTION	PART No.
1	Antenna Transformer (Broadcast)	32-2588
2	Antenna Transformer (S. W. 1)	32-3181
3	Antenna Transformer (S. W. 2)	32-3186
4	Tubular Condenser (.5 mfd.)	30-1120
5	Mica Condenser (.70 mfd.)	31-6286
6	Compensator (Antenna S. W. 2)	30-1117
7	Resistor (470,000 ohms, 1/2 watt)	32-447339
8	Tubular Condenser (.05 mfd.)	30-4800
9	R. F. Transformer (Broadcast)	32-3189
10	R. F. Transformer (S. W. 1)	32-3190
11	R. F. Transformer (S. W. 2)	32-3197
12	Tubular Condenser (.05 mfd.)	30-4819
13	Tubular Condenser (.1 mfd.)	30-4611
14	Resistor (10,000 ohms, 1 watt)	32-310439
15	Compensator (R. F. S. W. 2)	31-6288
16	Mica Condenser (.70 mfd.)	30-1117
17	Tubular Condenser (.05 mfd.)	30-4819
18	Resistor (470,000 ohms, 1/2 watt)	32-447339
19	Tubular Condenser (.05 mfd.)	31-622339
20	Resistor (22,000 ohms, 1/2 watt)	32-322339
21	Resistor (33,000 ohms, 1/2 watt)	30-1119
22	Mica Condenser 250 mfd.)	31-6287
23	Tuning Condenser Assembly	31-2386
24	Compensator (Broadcast series)	32-3254
25	Oscillator Transformer (Broadcast)	32-3094
26	Oscillator Transformer (S. W. 2)	32-3102
27	Compensator (Broadcast shunt)	31-2687
27A	Compensator (S. W. 2)	31-6210
28	Tracking Condenser (.850 mfd.)	31-6210
29	Compensator (S. W. 2)	31-6288
30	Resistor (3300 ohms, 1/2 watt)	32-233339
31	Tubular Condenser (.01 mfd.)	32-3113
32	1st I. F. Transformer Assembly	32-3187
33	Tubular Condenser (.01 mfd.)	32-310339
34	Resistor (1,000 ohms, 1/2 watt)	32-310339
35	Resistor (33,000 ohms, 1/2 watt)	32-333339
36	Tubular Condenser (.2 mfd.)	30-4887
37	Resistor (15,000 ohms, 1 watt)	32-325439
38	2nd I. F. Transformer Assembly	32-3188
39	Mica Condenser (.110 mfd.)	30-1118
40	Tubular Condenser (.008 mfd.)	32-3133
41	Volume Control (2 meg.)	32-3208
42	Resistor (330,000 ohms, 1/2 watt)	32-433339
43	Zone Control and On-Off Switch	32-3299
44	Resistor (47,000 ohms, 1/2 watt)	32-347339
45	Tubular Condenser (.006 mfd.)	32-323339
46	Tubular Condenser (.002 mfd.)	30-4879
47	Resistor (10.0 meg., 1/2 watt)	30-4583
48	Tubular Condenser (.002 mfd.)	32-447339
49	Resistor (470,000 ohms, 1/2 watt)	32-447339
50	Resistor (220,000 ohms, 1/2 watt)	30-1118
51	Mica Condenser (.110 mfd.)	32-310339
52	Resistor (1.0 meg., 1/2 watt)	32-310339
53	Resistor (33,000 ohms, 1/2 watt)	32-310339
54	Tubular Condenser (.006 mfd.)	32-310339
55	Output Transformer	30-4891
56	Cone and Voice Coil Assembly (Speaker Part No. 38-1453)	30-4103
59	Field Coil (Replace Spkr. Part No. 38-1453)	30-2319
60	Electrolytic Condenser (16 mfd., 300 V.)	30-2364
61	Resistor (33,000 ohms, 1/2 watt)	32-323339
62	Resistor (150,000 ohms, 1/2 watt)	32-323339
63	Resistor (1.0 meg., 1/2 watt)	32-310339
64	Resistor (1.0 meg., 1/2 watt)	32-310339
65	Tubular Condenser (.003 mfd.)	30-4806
66	Tubular Condenser (.003 mfd.)	30-4806

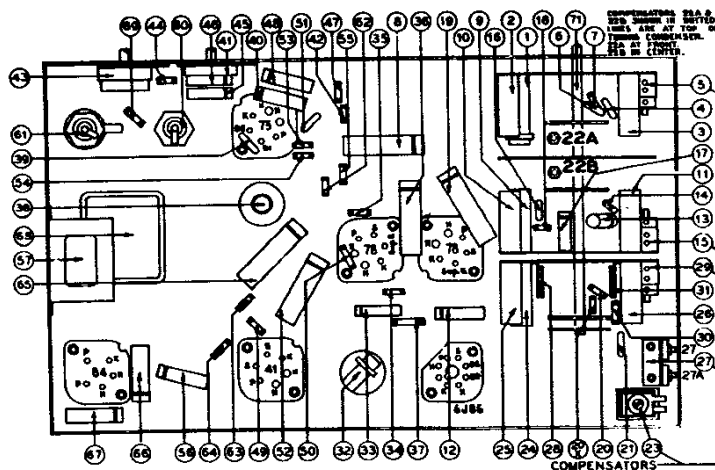


FIG. 1. MODEL 40-725 PART LOCATIONS, UNDERSIDE OF CHASSIS.

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
67	Tubular Condenser (.003 mfd.)	30-4806	67	Felt Strip (Bezel Mounting)	27-8228
68	Power Transformer (100-130 V., 200-260 V., 50-60 cycles)	32-8067	68	Knob (Tuning)	27-8229
69	Resistor (150,000 ohms, 1/2 watt)	32-418339	69	Knob (Tone Control)	27-8230
70	Pilot Lamp	1-1367	70	Knob (Volume and Wave Switch)	27-8232
71	Wave Switch	42-1804	71	Knob (Volume and Wave Switch)	27-8232
MISCELLANEOUS PARTS					
	Bezel	58-1222		Pointer	W-2071
	Cable and Plug (Power Supply)	1-1367		Spring (Drive Cord)	28-8002
	Special Export Power Plug	1-1367		Spring Clip (Coil Mounting)	28-8002
	Cabinet	27-8244		Socket (5 prong, type 78, 41, 75 tubes)	27-8038
	Drive Cord Assembly	31-2330		Socket (6 prong, type 78, 41, 75 tubes)	27-8038
				Socket (Octal, type 6J8G tube)	27-8038
				Speaker	38-1453
				Tuning Drum and Coupling	31-2327
				Vernier Drive (Tuning)	31-2329

Model 40-755, Code 121 Replacement Parts

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1	Antenna Transformer (Broadcast)	32-2588
2	Antenna Transformer (S. W. 1)	32-3181
3	Antenna Transformer (S. W. 2)	32-3186
4	Tubular Condenser (.5 mfd.)	30-1120
5	Mica Condenser (.70 mfd.)	31-6286
6	Compensator (Antenna S. W. 2)	30-1117
7	Resistor (470,000 ohms, 1/2 watt)	32-447339
8	Tubular Condenser (.05 mfd.)	30-4800
9	R. F. Transformer (Broadcast)	32-3189
10	R. F. Transformer (S. W. 1)	32-3190
11	R. F. Transformer (S. W. 2)	32-3197
12	Tubular Condenser (.05 mfd.)	30-4819
13	Tubular Condenser (.1 mfd.)	30-4611
14	Resistor (10,000 ohms, 1 watt)	32-310439
15	Compensator (R. F. S. W. 2)	31-6288
16	Mica Condenser (.70 mfd.)	30-1117
17	Tubular Condenser (.05 mfd.)	30-4819
18	Resistor (470,000 ohms, 1/2 watt)	32-447339
19	Tubular Condenser (.05 mfd.)	31-622339
20	Resistor (22,000 ohms, 1/2 watt)	32-322339
21	Resistor (33,000 ohms, 1/2 watt)	30-1119
22	Mica Condenser 250 mfd.)	31-6287
23	Tuning Condenser Assembly	31-2386
24	Compensator (Broadcast series)	32-3254
25	Oscillator Transformer (Broadcast)	32-3094
26	Oscillator Transformer (S. W. 2)	32-3102
27	Compensator (Broadcast shunt)	31-2687
27A	Compensator (S. W. 2)	31-6210
28	Tracking Condenser (.850 mfd.)	32-323339
29	Compensator (S. W. 2)	32-323339
30	Resistor (3300 ohms, 1/2 watt)	32-233339
31	Tubular Condenser (.01 mfd.)	32-3113
32	1st I. F. Transformer Assembly	32-3187
33	Tubular Condenser (.01 mfd.)	32-310339
34	Resistor (1,000 ohms, 1/2 watt)	32-310339
35	Resistor (33,000 ohms, 1/2 watt)	32-333339
36	Tubular Condenser (.2 mfd.)	30-4887
37	Resistor (15,000 ohms, 1 watt)	32-325439
38	2nd I. F. Transformer Assembly	32-3188
39	Mica Condenser (.110 mfd.)	30-1118
40	Tubular Condenser (.008 mfd.)	32-3133
41	Volume Control (2 meg.)	32-3208
42	Resistor (330,000 ohms, 1/2 watt)	32-433339
43	Zone Control and On-Off Switch	32-3299
44	Resistor (47,000 ohms, 1/2 watt)	32-347339
45	Tubular Condenser (.006 mfd.)	32-323339
46	Tubular Condenser (.002 mfd.)	30-4879
47	Resistor (10.0 meg., 1/2 watt)	30-4583
48	Tubular Condenser (.002 mfd.)	32-447339
49	Resistor (470,000 ohms, 1/2 watt)	32-447339
50	Resistor (220,000 ohms, 1/2 watt)	30-1118
51	Mica Condenser (.110 mfd.)	32-310339
52	Resistor (1.0 meg., 1/2 watt)	32-310339
53	Resistor (33,000 ohms, 1/2 watt)	32-310339
54	Tubular Condenser (.006 mfd.)	32-310339
55	Output Transformer	30-4891
56	Cone and Voice Coil Assembly (Speaker Part No. 38-1453)	30-4103
59	Field Coil (Replace Spkr. Part No. 38-1453)	30-2319
60	Electrolytic Condenser (16 mfd., 300 V.)	30-2364
61	Resistor (33,000 ohms, 1/2 watt)	32-323339
62	Resistor (150,000 ohms, 1/2 watt)	32-323339
63	Resistor (1.0 meg., 1/2 watt)	32-310339
64	Resistor (1.0 meg., 1/2 watt)	32-310339
65	Tubular Condenser (.003 mfd.)	30-4806
66	Tubular Condenser (.003 mfd.)	30-4806

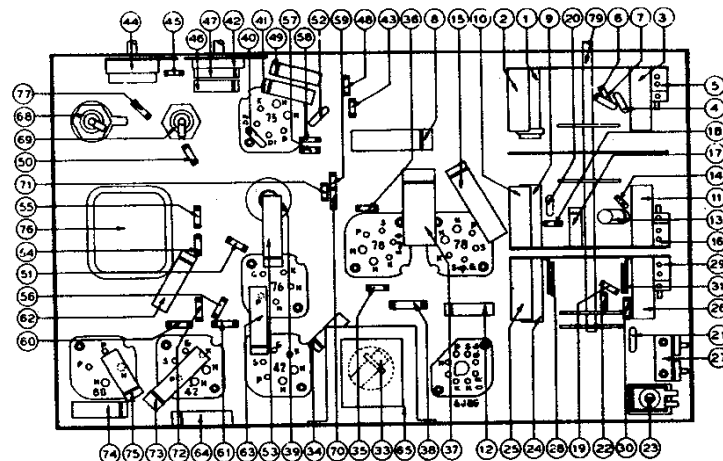


FIG. 2. MODEL 40-755 PART LOCATIONS, UNDERSIDE OF CHASSIS

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
67	Electrolytic Condenser (40 mfd., 300 V.)	30-2366	67	Dial	27-8544
68	Resistor (30,000 ohms, 1/2 watt)	32-233339	68	Drive Cord	27-8229
69	Resistor (150,000 ohms, 1/2 watt)	32-418339	69	Felt Strip (Bezel Mounting)	27-8228
70	Resistor (1.0 meg., 1/2 watt)	32-310339	70	Knob (Tuning)	27-8229
71	Resistor (150,000 ohms, 1/2 watt)	32-418339	71	Knob (Tone Control)	27-8230
72	Tubular Condenser (.003 mfd.)	30-4806	72	Knob (Volume and Wave Switch)	27-8232
73	Tubular Condenser (.003 mfd.)	30-4806	73	Knob (Volume and Wave Switch)	27-8232
74	Power Transformer (100-130 V., 200-260 V., 50-60 cycles)	32-8067	74	Pointer	W-2071
75	Resistor (150,000 ohms, 1/2 watt)	32-418339	75	Spring (Drive Cord)	28-8002
76	Resistor (150,000 ohms, 1/2 watt)	32-418339	76	Spring Clip (Coil Mounting)	28-8002
77	Pilot Lamp	1-1367	77	Socket (5 prong, type 78, 41, 75 tubes)	27-8038
78	Wave Switch	42-1804	78	Socket (6 prong, type 78, 41, 75 tubes)	27-8038
	Bezel	58-1222		Socket (Octal, type 6J8G tube)	27-8038
	Cable and Plug (Power Supply)	1-1367		Speaker	38-1453
	Special A. C. Export Plug	1-1367		Tuning Drum and Coupling Assembly	31-2327
	Cabinet (40-755T)	1-1489		Vernier Drive (Tuning)	31-2329
	Cabinet (40-755XX)	10420A			