

MODELS 41-745 AND 41-759

SPECIFICATIONS

MODEL 41-745

TYPE OF CIRCUIT: Seven (7) tube superheterodyne circuit with three tuning ranges and designed for operation entirely from a six volt storage battery. The high voltage D. C. supply is obtained from a synchronous vibrator. Other features incorporated in the model are: preselector tuned R. F. stage; Provision for connecting a phonograph pickup; bass compensation; continuously variable tone control, automatic volume control; and a push-pull audio output stage.

TUNING RANGES:

540 to 1720 K. C. 2.3 to 7.1 M. C. 7.0 to 22.2 M. C.

INTERMEDIATE FREQUENCY: 455 K. C.

AUDIO OUTPUT: 2 watts.

POWER SUPPLY: 6 Volt storage battery.

PHILCO TUBES USED: 7B7E, R. F. Amplifier; 7A8E, Converter; 7B7E, I. F. Amplifier; 7C6, Second Detector, First Audio, A. V. C.; 6G6EG, Audio Driver; two 49, Push-Pull Audio Output.

CABINET DIMENSIONS:

Height, 14". Width, 20". Depth, 10 3/4".

MODEL 41-759

TYPE OF CIRCUIT: Eight (8) tube superheterodyne circuit

AERIAL AND GROUND:

To obtain maximum sensitivity on all tuning ranges, the Philco Aerial, Part No. 40-6383, is recommended. In addition the ground connections of the receiver should be connected to a cold water pipe or any other metal object that is in moist earth.

with three tuning ranges and designed for operation from a 110 or 220 volts A. C. or D. C. power supply. Other features included in the model are: Tuned R. F. stage; provisions for connecting a phonograph pickup; bass compensation; continuously variable tone control; automatic volume control; and a push-pull audio output stage.

TUNING RANGES:

540 to 1720 K. C. 2.3 to 7.1 M. C. 7.0 to 22 M. C.

INTERMEDIATE FREQUENCY: 455 K. C.

AUDIO OUTPUT: 3.0 watts at 115 V. 4.5 watts at 230 V.

POWER SUPPLY: To operate the receiver on either 110 or 220 volt A. C. or D. C. power circuits, insert the ballast resistor (on rear of chassis) in the position desired. The ballast resistor is marked to indicate the proper socket position for either power circuit.

PHILCO TUBES USED: 7A7E, R. F. Amplifier; 7J7E, Converter; 78E, I. F. Amplifier; 7B6, Second Detector, First Audio, A. V. C.; 76, Audio Inverter; two 25L6EG, Push-Pull Audio Output; and a 25Z5, Rectifier.

CABINET DIMENSIONS:

Height, 14". Width, 20". Depth, 10 3/4".

ALIGNING R. F. AND I. F. COMPENSATORS

EQUIPMENT REQUIRED

1. Signal Generator, such as Philco Model 070 A. C. operated or Model 177 battery operated. These signal generators cover a frequency range from 115 to 36000 K. C.
2. Indicating Device: To obtain maximum signal strength and accurate adjustment of the padders a vacuum tube voltmeter similar to Philco Models 027 and 028 is recommended.

These instruments also contain an audio output meter which may be used as an indicating device. The method of connecting either of these instruments is listed below.

3. Aligning Tools: Fiber handle screwdriver, 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 vacuum tube voltmeter through a 2 megohm resistor to any point in the circuit where the A. V. C. voltage can be measured.
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 6K6EG 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 the schematic diagrams.

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
	Leads to Receiver	Dummy Aerial Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators for Maximum Signal		
						Model 41-745	Model 41-759	
1	Grid 6J8EG	.1 mfd.	455 K. C.	580 K. C.	Range Sw. Brdcast. Volume "Max."	34A, 34B, 32A, 32B	42A, 42B, 37A, 37B	
2	Aerial Lead	400 ohms	21 M. C.	21 M. C.	Range Switch "S. W. 2"	29, 77B, 77A	36, 81B, 81A	Note B, C
3	Aerial Lead	400 ohms	6.0 M. C.	6.0 M. C.	Range Switch "S. W. 1"	26A	32A	Roll Gang
4	Aerial Lead	200 mmfd.	1500 K. C.	1500 K. C.	Range Switch "Broadcast"	26	32	Roll Gang
5	Aerial Lead	200 mmfd.	580 K. C.	580 K. C.	Range Switch "Broadcast"	25	31	Roll Gang

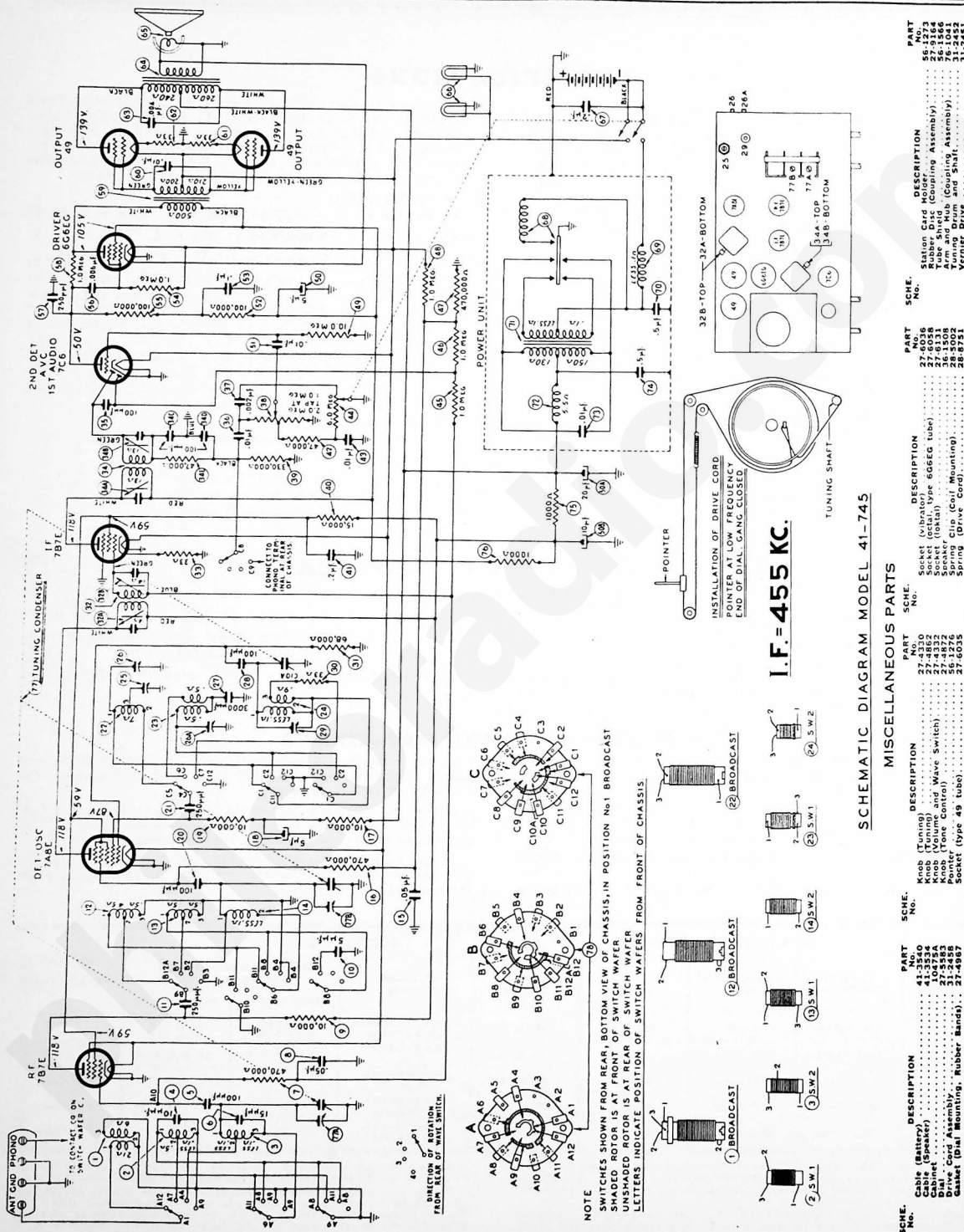
NOTE A—The "Dummy Antenna" consists of a condenser or resistance connected in series with the signal generator output lead (high side). Use the capacity or resistance as specified in each step of the above procedure.

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) Model 41-745 and (36) Model 41-759 be sure to tune in the fundamental signal (21 M. C.) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning dial 910 K. C. below the fundamental signal, which will be 20,090 M. C.

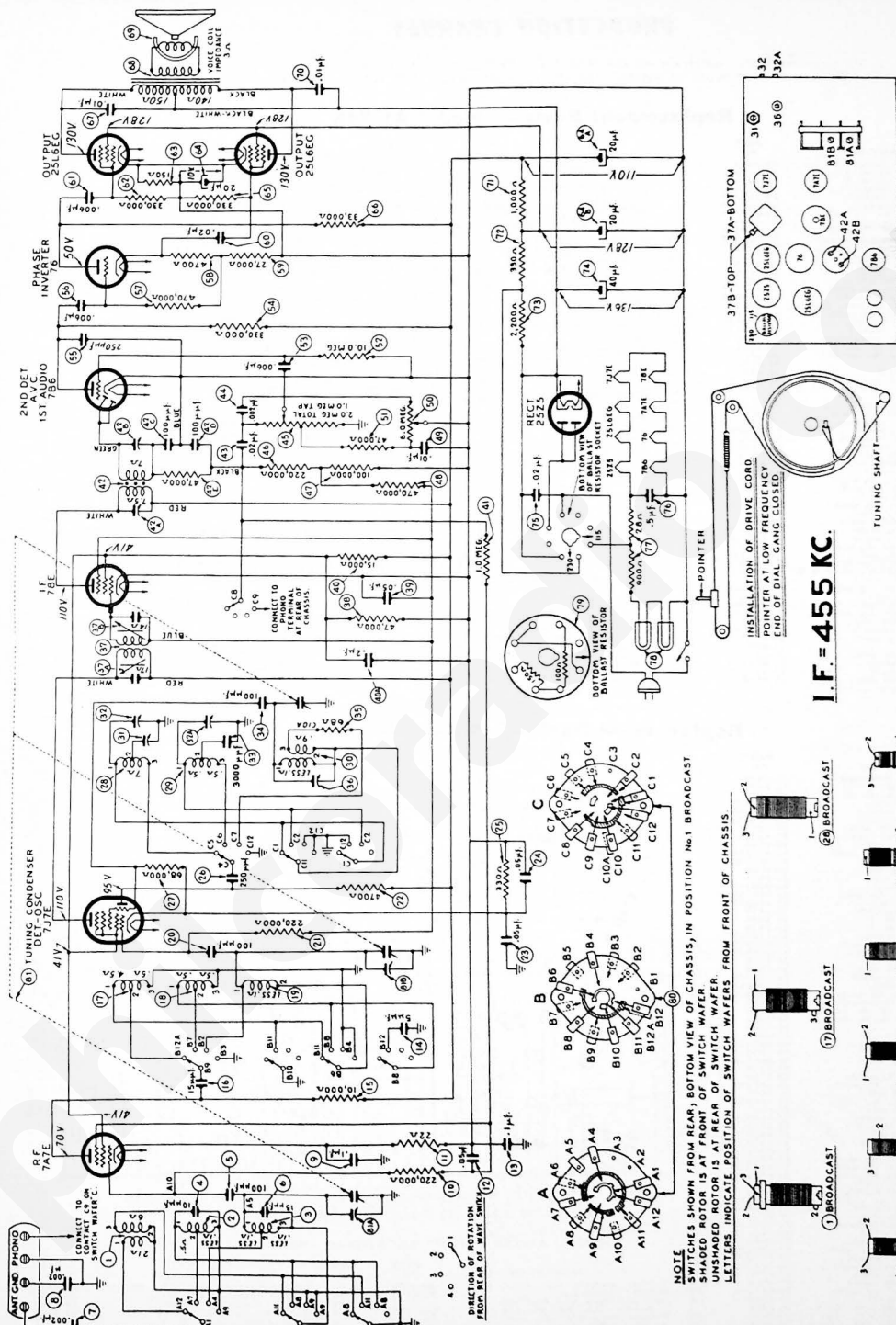
MODELS 41-745 AND 41-759 (CONTINUED)



I. F. = 455 KC.

MISCELLANEOUS PARTS

SCHE. No.	DESCRIPTION	PART No.	DESCRIPTION	PART No.
1	Cable (Battery)	41-3540	Socket (Whisper)	27-480
2	Cable (Speaker)	41-3534	Socket (Total, Type 6G6G tube)	27-6058
3	Dial Cord Assembly	27-5283	Spring (Dial Control)	28-2921
4	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Drive Motor)	28-2922
5	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
6	Gasket (Dial Mounting, Rubber Bands)	27-4989	Socket (Total)	28-1508
7	Gasket (Dial Mounting, Rubber Bands)	27-4989	Socket (Whisper)	27-480
8	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
9	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
10	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
11	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
12	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
13	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
14	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
15	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
16	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
17	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
18	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
19	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
20	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
21	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
22	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
23	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
24	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
25	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
26	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
27	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
28	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
29	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
30	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
31	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
32	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
33	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
34	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
35	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
36	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
37	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
38	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
39	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921
40	Gasket (Dial Mounting, Rubber Bands)	27-4989	Spring (Dial Control)	28-2921



NOTE
SWITCHES SHOWN FROM REAR, BOTTOM VIEW OF CHASSIS, IN POSITION No. 1 BROADCAST
UNSHARED ROTOR IS AT FRONT OF SWITCH WAFER.
SHARED ROTOR IS AT REAR OF SWITCH WAFER.
LETTERS INDICATE POSITION OF SWITCH WAFERS FROM FRONT OF CHASSIS.



I. F. = 455 KC.

SCHEMATIC DIAGRAM MODEL 41-759

MISCELLANEOUS PARTS

SCH. No.	PART No.	DESCRIPTION	SCH. No.	PART No.	DESCRIPTION
	1	Knob (Tone Control).....	27-2872		
	2	Knob (Volume Control).....	27-3154		
	3	Pointer Disc (Coupling Assembly).....	27-3154		
	4	Socket (Type 76 tube).....	27-3035		
	5	Socket (Type 251B tube).....	27-3035		
	6	Socket (Type 251B tube).....	27-3035		
	7	Socket (Type 251B tube).....	27-3035		
	8	Socket (Type 251B tube).....	27-3035		
	9	Socket (Type 251B tube).....	27-3035		
	10	Socket (Type 251B tube).....	27-3035		
	11	Socket (Type 251B tube).....	27-3035		
	12	Socket (Type 251B tube).....	27-3035		
	13				

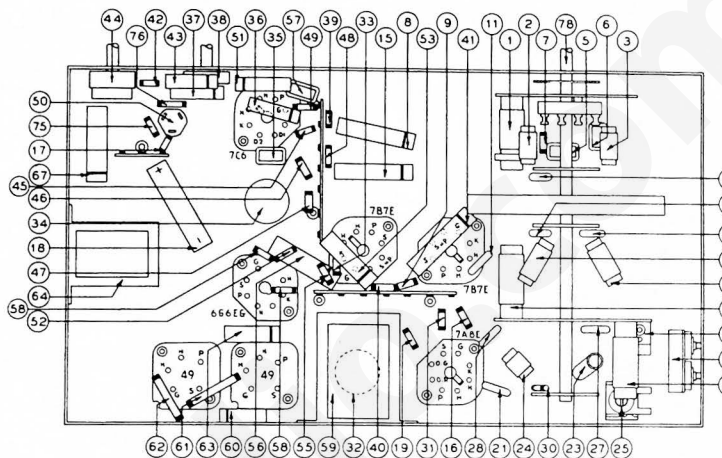
MODELS 41-745 AND 41-759 (CONTINUED)

PRODUCTION CHANGES

To improve the sensitivity of the Model 41-759 I. F. circuit, a 68 ohm resistor, Part No. 33-068336 was connected in series with the cathode of the 78E tube and B minus.

Replacement Parts — Model 41-745

SCHE. No.	DESCRIPTION	PART No.
1	Antenna Transformer (Broadcast)	32-3422
2	Antenna Transformer (S. W. 1)	32-3419
3	Antenna Transformer (S. W. 2)	32-3418
4	Mica Condenser (10 mmfd.)	60-010337
5	Mica Condenser (100 mmfd.)	60-110457
6	Mica Condenser (15 mmfd.)	60-015337
7	Tubular Condenser (.002 mfd.)	30-4579
8	Tubular Condenser (.05 mfd.)	33-447339
9	Resistor (10,000 ohms, 1/2 watt)	33-310339
10	Mica Condenser (250 mmfd.)	60-000557
11	Mica Condenser (3000 mmfd.)	60-125457
12	R. F. Transformer (Broadcast)	32-3417
13	R. F. Transformer (S. W. 1)	32-3420
14	R. F. Transformer (S. W. 2)	32-3416
15	Tubular Condenser (.05 mfd.)	30-4609
16	Resistor (470,000 ohms, 1/2 watt)	33-447339
17	Resistor (10,000 ohms, 1/2 watt)	33-310339
18	Electrolytic Condenser (5 mfd., 150 V.)	30-2469
19	Resistor (10,000 ohms, 1/2 watt)	33-310339
20	Mica Condenser (100 mmfd.)	60-110437
21	Mica Condenser (250 mmfd.)	60-125457
22	Oscillator Transformer (Broadcast)	32-3417
23	Oscillator Transformer (S. W. 1)	32-3421
24	Oscillator Transformer (S. W. 2)	32-3415
25	Compensator (2 section)	31-6267
26	Mica Condenser (3000 mmfd.)	60-230124
27	Mica Condenser (100 mmfd.)	60-110457
28	Compensator (Broadcast)	31-6267
29	Resistor (33 ohms, 1/2 watt)	33-033339
30	Resistor (33 ohms, 1/2 watt)	33-068336
31	Resistor (33 ohms, 1/2 watt)	32-3442
32	1st I. F. Transformer Assembly	33-447339
33	Resistor (33 ohms, 1/2 watt)	32-3430
34	2nd I. F. Transformer Assembly	32-3430
35	Mica Condenser (100 mmfd.)	60-110457
36	Tubular Condenser (.01 mfd.)	30-4579
37	Tubular Condenser (.002 mfd.)	30-4579
38	Volume Control (2.0 meg.)	33-433339
39	Resistor (330,000 ohms, 1/2 watt)	33-433339
40	Resistor (15,000 ohms, 1/2 watt)	33-433339
41	Tubular Condenser (2 mfd.)	30-4587
42	Resistor (47,000 ohms, 1/2 watt)	33-347339
43	Tubular Condenser (.01 mfd.)	33-5394
44	Tone Control and On-Off Switch	30-4579
45	Resistor (1.0 meg., 1/2 watt)	33-103339
46	Resistor (1.0 meg., 1/2 watt)	33-103339
47	Resistor (1.0 meg., 1/2 watt)	33-103339
48	Resistor (1.0 meg., 1/2 watt)	33-103339
49	Resistor (1.0 meg., 1/2 watt)	33-103339
50	Resistor (1.0 meg., 1/2 watt)	33-103339
51	Resistor (1.0 meg., 1/2 watt)	33-103339
52	Resistor (1.0 meg., 1/2 watt)	33-103339
53	Resistor (1.0 meg., 1/2 watt)	33-103339
54	Resistor (1.0 meg., 1/2 watt)	33-103339
55	Resistor (1.0 meg., 1/2 watt)	33-103339
56	Resistor (1.0 meg., 1/2 watt)	33-103339
57	Resistor (1.0 meg., 1/2 watt)	33-103339
58	Resistor (1.0 meg., 1/2 watt)	33-103339
59	Resistor (1.0 meg., 1/2 watt)	33-103339
60	Resistor (1.0 meg., 1/2 watt)	33-103339
61	Resistor (1.0 meg., 1/2 watt)	33-103339
62	Resistor (1.0 meg., 1/2 watt)	33-103339
63	Resistor (1.0 meg., 1/2 watt)	33-103339
64	Resistor (1.0 meg., 1/2 watt)	33-103339
65	Resistor (1.0 meg., 1/2 watt)	33-103339
66	Resistor (1.0 meg., 1/2 watt)	33-103339
67	Resistor (1.0 meg., 1/2 watt)	33-103339
68	Resistor (1.0 meg., 1/2 watt)	33-103339
69	Resistor (1.0 meg., 1/2 watt)	33-103339
70	Resistor (1.0 meg., 1/2 watt)	33-103339

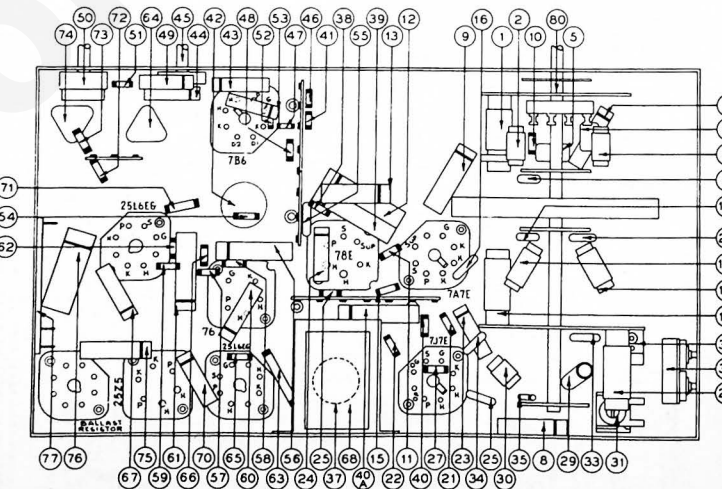


MODEL 41-745 — PART LOCATIONS, UNDERSIDE OF CHASSIS

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
64	Output Transformer	32-8113	71	Power Transformer	32-7682
65	Cone and Voice Coil Assembly (Speaker Part No. 36-1508)	36-4161	72	'B' Filter Choke	32-2925
66	Pilot Lamps	34-2068E	73	Tubular Condenser (.01 mfd.)	30-4598
67	Tubular Condenser (.2 mfd.)	30-4587	74	Tubular Condenser (.5 mfd.)	30-4298
68	'A' Filter Choke	32-1954	75	Resistor (1000 ohms, 1/2 watt)	33-210339
69	'A' Filter Choke	32-1954	76	Resistor (1000 ohms, 1/2 watt)	33-210339
70	Tubular Condenser (.5 mfd.)	30-4296	77	Tuning Condenser Assembly	31-2444
			78	Wave Switch	42-1564

Replacement Parts — Model 41-759

SCHE. No.	DESCRIPTION	PART No.
1	Antenna Transformer (Broadcast)	32-3422
2	Antenna Transformer (S. W. 1)	32-3419
3	Antenna Transformer (S. W. 2)	32-3418
4	Mica Condenser (10 mmfd.)	60-010337
5	Mica Condenser (100 mmfd.)	60-110457
6	Mica Condenser (15 mmfd.)	60-015337
7	Tubular Condenser (.002 mfd.)	30-4579
8	Tubular Condenser (.05 mfd.)	33-447339
9	Resistor (10,000 ohms, 1/2 watt)	33-310339
10	Mica Condenser (250 mmfd.)	60-000557
11	Mica Condenser (3000 mmfd.)	60-125457
12	R. F. Transformer (Broadcast)	32-3417
13	R. F. Transformer (S. W. 1)	32-3420
14	R. F. Transformer (S. W. 2)	32-3416
15	Tubular Condenser (.05 mfd.)	30-4609
16	Resistor (470,000 ohms, 1/2 watt)	33-447339
17	Resistor (10,000 ohms, 1/2 watt)	33-310339
18	Electrolytic Condenser (5 mfd., 150 V.)	30-2469
19	Resistor (10,000 ohms, 1/2 watt)	33-310339
20	Mica Condenser (100 mmfd.)	60-110437
21	Mica Condenser (250 mmfd.)	60-125457
22	Oscillator Transformer (Broadcast)	32-3417
23	Oscillator Transformer (S. W. 1)	32-3421
24	Oscillator Transformer (S. W. 2)	32-3415
25	Compensator (2 section)	31-6267
26	Mica Condenser (3000 mmfd.)	60-230124
27	Mica Condenser (100 mmfd.)	60-110457
28	Compensator (Broadcast)	31-6267
29	Resistor (33 ohms, 1/2 watt)	33-033339
30	Resistor (33 ohms, 1/2 watt)	33-068336
31	Resistor (33 ohms, 1/2 watt)	32-3442
32	1st I. F. Transformer Assembly	33-447339
33	Resistor (33 ohms, 1/2 watt)	32-3430
34	2nd I. F. Transformer Assembly	32-3430
35	Mica Condenser (100 mmfd.)	60-110457
36	Tubular Condenser (.01 mfd.)	30-4579
37	Tubular Condenser (.002 mfd.)	30-4579
38	Volume Control (2.0 meg.)	33-433339
39	Resistor (330,000 ohms, 1/2 watt)	33-433339
40	Resistor (15,000 ohms, 1/2 watt)	33-433339
41	Tubular Condenser (2 mfd.)	30-4587
42	Resistor (47,000 ohms, 1/2 watt)	33-347339
43	Tubular Condenser (.01 mfd.)	33-5394
44	Tone Control and On-Off Switch	30-4579
45	Resistor (1.0 meg., 1/2 watt)	33-103339
46	Resistor (1.0 meg., 1/2 watt)	33-103339
47	Resistor (1.0 meg., 1/2 watt)	33-103339
48	Resistor (1.0 meg., 1/2 watt)	33-103339
49	Resistor (1.0 meg., 1/2 watt)	33-103339
50	Resistor (1.0 meg., 1/2 watt)	33-103339
51	Resistor (1.0 meg., 1/2 watt)	33-103339
52	Resistor (1.0 meg., 1/2 watt)	33-103339
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55	Resistor (1.0 meg., 1/2 watt)	33-103339
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57	Resistor (1.0 meg., 1/2 watt)	33-103339
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59	Resistor (1.0 meg., 1/2 watt)	33-103339
60	Resistor (1.0 meg., 1/2 watt)	33-103339
61	Resistor (1.0 meg., 1/2 watt)	33-103339
62	Resistor (1.0 meg., 1/2 watt)	33-103339
63	Resistor (1.0 meg., 1/2 watt)	33-103339
64	Resistor (1.0 meg., 1/2 watt)	33-103339
65	Resistor (1.0 meg., 1/2 watt)	33-103339
66	Resistor (1.0 meg., 1/2 watt)	33-103339
67	Resistor (1.0 meg., 1/2 watt)	33-103339
68	Resistor (1.0 meg., 1/2 watt)	33-103339
69	Resistor (1.0 meg., 1/2 watt)	33-103339
70	Resistor (1.0 meg., 1/2 watt)	33-103339



MODEL 41-759 — PART LOCATIONS, UNDERSIDE OF CHASSIS

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
67	Tubular Condenser (.01 mfd.)	30-4572	74	Electrolytic Condenser (40 mfd., 350 V.)	30-2466
68	Output Transformer	32-8113	75	Tubular Condenser (.02 mfd.)	30-4899
69	Cone and Voice Coil Assembly (Speaker Part No. 36-1508-3)	36-4161	76	Tubular Condenser (.5 mfd.)	30-4890
70	Tubular Condenser (.01 mfd.)	30-4572	77	B. C. Resistor (Wirewound)	33-3390
71	Resistor (1000 ohms, 1 watt)	33-210439	78	Pilot Lamps	34-2997
72	Resistor (330 ohms, 1/2 watt)	33-133339	79	Ballast Resistor	33-3381
73	Resistor (330 ohms, 1/2 watt)	33-22439	80	Wave Switch	42-1564
			81	Tuning Condenser Assembly	31-2444