Philco Radio & Television Corp.

	Model: 39-30	Chassis:	Year: Pre August 1939
	Power:	Circuit:	IF:
	Tubes:		
	Bands:		

Resources
Riders Volume 10 - PHILCO 10-13
Riders Volume 10 - PHILCO 10-14
Riders Volume 10 - PHILCO 10-15
Riders Volume 10 - PHILCO 10-16

PHILCO RADIO & TELEVISION CORP.

MODELS 39-30, 39-35
Code 121
Schematic

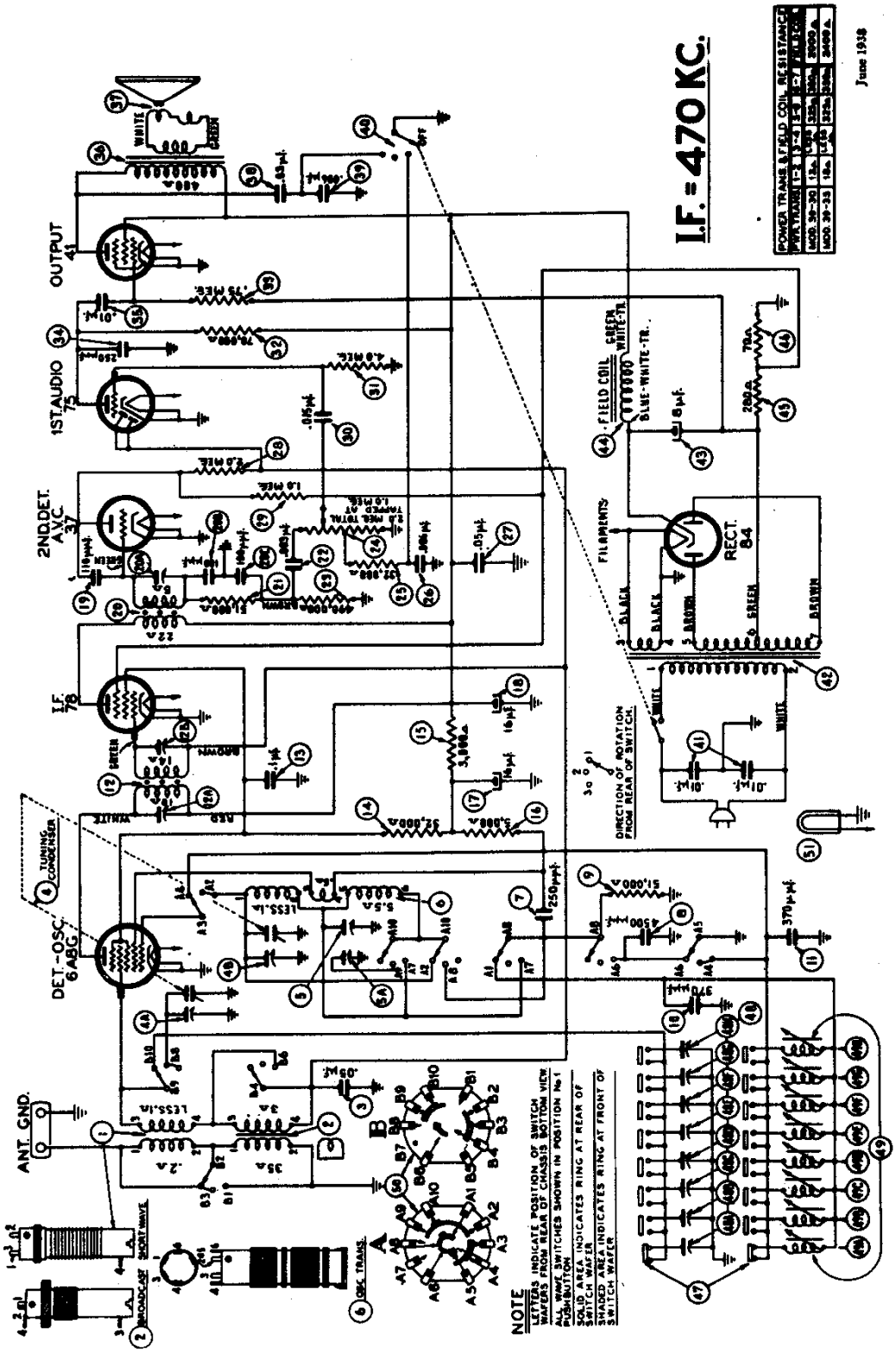
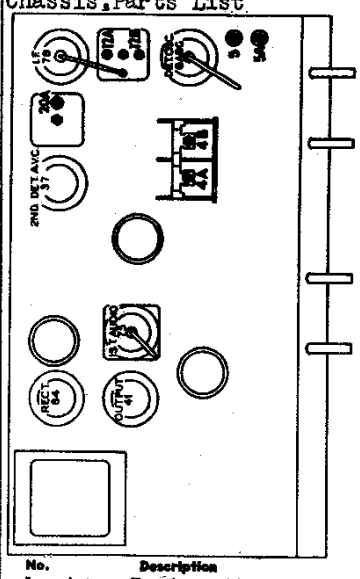


Fig. 2. Schematic Diagram—Models 39-30; 39-35, Code 121

MODELS 39-30,39-35,Code 121
Voltage,Socket,Trimmers
Chassis,Parts List

PHILCO RADIO & TELEVISION CORP.



MODELS 39-35, 39-50, CODE 121.
Fig. 4. Locations of Compensators—Top of Chassis

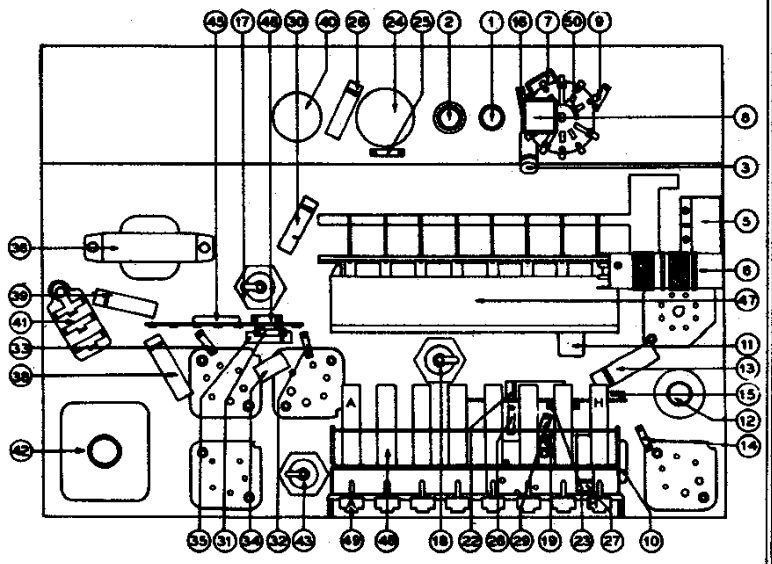


Fig. 3. Parts Locations—Underside of Chassis

No.	Description	Part No.
1	Antenna Transformer (short wave)	32-3027
2	Antenna Transformer (broadcast)	32-3026
3	Condenser (.05 mf., tubular)	30-4519
4	Tuning Condenser Assembly	31-2267
5	Dual Padder Unit	31-6255
6	Oscillator Transformer	32-3028
7	Condenser (250 mmf., mica)	30-1032
8	Condenser (4500 mmf., mica)	30-1109
9	Resistor (51,000 ohms, ½ watt)	33-351339
10	Condenser (370 mmf., silver plated mica)	30-1110
11	Condenser (370 mmf., silver plated mica)	30-1110
12	1st I. F. Transformer Assembly	32-3018
13	Condenser (.1 mf., tubular)	30-4455
14	Resistor (32,000 ohms, ½ watt)	33-332339
15	Resistor (3000 ohms, ½ watt)	33-230339
16	Resistor (5000 ohms, ½ watt)	33-250339
17	Electrolytic Condenser (16 mf., 250 V.)	30-2331
18	Electrolytic Condenser (16 mf., 250 V.)	30-2331
19	Condenser (110 mmf., mica)	30-1031
20	2nd I. F. Transformer Assembly	32-3030
21	Resistor (51,000 ohms, ½ watt)	33-351339
22	Condenser (.003 mf., tubular)	30-4469
23	Resistor (490,000 ohms, ½ watt)	33-449339
24	Volume Control (2.0 megs)	33-5275
25	Resistor (32,000 ohms, ½ watt)	33-332339
26	Condenser (.006 mf., tubular)	30-4467
27	Condenser (.05 mf., tubular)	30-4518
28	Resistor (2.0 meg., ½ watt)	33-520339
29	Resistor (1.0 meg., ½ watt)	33-510339
30	Condenser (.015 mf., tubular)	30-4515
31	Resistor (4.0 megs., ½ watt)	33-540339
32	Resistor (70,000 ohms, ½ watt)	33-370339
33	Resistor (750,000 ohms, ½ watt)	33-475339
34	Condenser (250 mf., mica)	30-1032
35	Condenser (.01 mf., tubular)	30-4572
36	Output Transformer	32-7978
37	†Cone and Voice Coil Assembly	
	for 39-30 T, speaker pt. No. 36-1439-3	36-4091
	for 39-30 T, speaker pt. No. 36-1439-2	36-4087
	for 39-35 XX, speaker pt. No. 36-1438-2	36-4089
38	Condenser (.03 mf., tubular)	30-4449
39	Condenser (.006 mf., tubular)	30-4445
40	Tone Control and On-Off Switch	42-1444
41	Condenser (.01 mf. - .01 mf., bakelite)	3903 DG
42	Power Transformer: 115 V., 60 cycle:	
	for 39-30	32-7976
	for 39-35	32-7977
43	Electrolytic Condenser (8 mf., 400 V.)	30-2330
44	*Field Coil for Speaker, part No. 36-1439	
	*Field Coil for Speaker, part No. 36-1438	
45	Resistor (280 ohms, wire wound)	33-128431
46	Resistor (70 ohms, ½ watt)	33-070339
47	Push-Button Switch	42-1446
48	Padder Strip Assembly	31-6256
48A	Compensator, No. 1, 540 — 1030 KC.	31-6274
48B	Compensator, No. 2, 540 — 1030 KC.	31-6274
48C	Compensator, No. 3, 670 — 1160 KC.	31-6276
48D	Compensator, No. 4, 670 — 1160 KC.	31-6276
48E	Compensator, No. 5, 900 — 1470 KC.	31-6278
48F	Compensator, No. 6, 900 — 1470 KC.	31-6278
48G	Compensator, No. 7, 1120 — 1600 KC.	31-6280
48H	Compensator, No. 8, 1170 — 1600 KC.	31-6280
49	Electric Push-Button Coil Assembly	32-3031
49A	Osc. Coil, No. 1, 540 — 1030 KC.	32-3042
49B	Osc. Coil, No. 2, 540 — 1030 KC.	32-3042
49C	Osc. Coil, No. 3, 670 — 1160 KC.	32-3042
49D	Osc. Coil, No. 4, 670 — 1160 KC.	32-3042
49E	Osc. Coil, No. 5, 900 — 1470 KC.	32-3041
49F	Osc. Coil, No. 6, 900 — 1470 KC.	32-3041
49G	Osc. Coil, No. 7, 1170 — 1600 KC.	32-3041
49H	Osc. Coil, No. 8, 1170 — 1600 KC.	32-3041
50	Wave Switch	42-1445
51	Pilot Lamp	34-2210
	Pilot Lamp Socket Assembly	38-9607
	Push-Button	27-4759
	Speaker (T Cabinet 39-30) optional	36-1439-3 / 36-1439-2
	Speaker (XX Cabinet 39-35)	36-1438
	Socket (5 Prong)	27-6035
	Socket (6 Prong)	27-6036
	Socket (7 Prong)	27-6099
	Tab Kit	40-6392

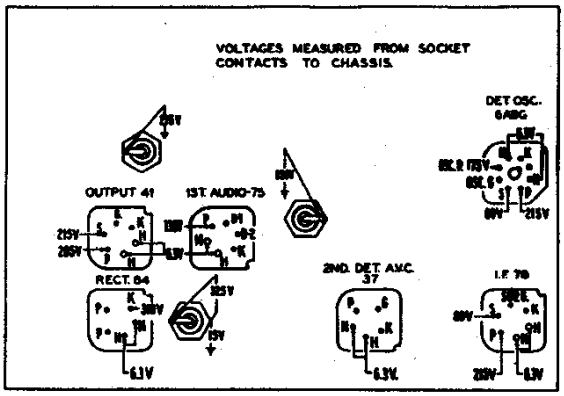


Fig. 1. Socket Voltages—Underside of Chassis

The voltages indicated by arrows were measured with a Philco 027 Circuit Tester which contains an accurate voltmeter. Volume control at minimum, range switch in broadcast position, line voltage 115 A. C.

TYPE OF CIRCUIT: A. C. operated; superheterodyne circuit with two tuning ranges, covering standard broadcast (540 K. C. to 1720 K. C.) and short-wave (4.9 M. C. to 18.0 M. C.) frequencies; Automatic Volume Control; and pentode output.

The receiver is designed to operate from a "Philco Safety Aerial," Part No. 40-6371. This aerial system should be used to obtain maximum performance from the receiver.

POWER SUPPLY: Voltage, 115 volts. Frequency, 50-60 cycles. Power consumption 45 watts.

INTERMEDIATE FREQUENCY: 470 K. C.

TUNING RANGES: 540 K. C. to 1720 K. C.; 4.9 M. C. to 18.0 M. C.

PHILCO TUBES USED: 1-6A8G, 1st detector and oscillator; 1-78, I. F.; 1-37, 2nd detector, Automatic Volume Control; 1-75, first audio; 1-41, output; and 1-84, Rectifier.

TUNING MECHANISM: Pulley and cable drive for Manual tuning. Electric Push-Button for Automatic tuning.

CABINETS: Types: "T" for 39-30 and "XX" for 39-35.

* Replace Speaker
† Model T Cabinet uses two optional speakers. The part numbers of the speakers are the same with the exception of a dash number (-2 or -3) following the part number. When ordering a Cone and Voice Coil Assembly, the part number as indicated must be specified.

MODEL S-1622
Alignment, Socket, Trimmers

PHILCO RADIO & TELEVISION CORP.

MODELS 39-30, 39-35
Code 121
Alignment

ALIGNMENT
MODELS 39-30, 39-35 (CODE 121); S1622.

Equipment — Fully charged heavy duty storage battery or 6-volt power pack, 077 or 177 Philco Set Tester, 27-7159 Padding screw driver.

General — The output meter must be connected by means of an adapter to the plate of the type 41 output tube and to the Radio chassis.

With the Radio and signal generator set up for operation at the prescribed frequency, turn the Radio volume control on full and set the signal generator attenuator so that a half scale reading is obtained on the output meter. The signal in the speaker should be audible but not loud.

The shielding on the generator output lead must be connected to the Radio housing.

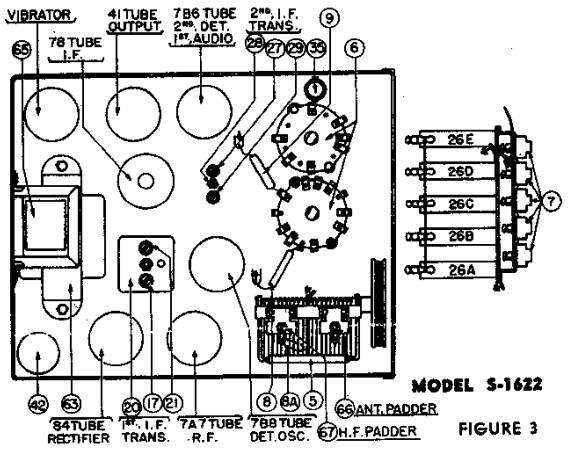


FIGURE 3

MODELS 39-30, 39-35, CODE 121.

Operations	Signal Generator			Receiver			Special Instructions
	Output Connections To Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Settings	Adjust Compensators In Order	
1	6A8G Grid	.1 mf.	470 K. C.	580 K. C.	Vol. Cont. Max.	(20A) (12B) (12A)	
2	Ant. Ter.	100 mmf.	18.0 M. C.	18.0 M. C.	Vol. Cont. Max.	(4B)	See Note B
3	Ant. Ter.	100 mmf.	1550 K. C.	1550 K. C.	Vol. Cont. Max.	(5) (4A)	
4	Ant. Ter.	100 mmf.	580 K. C.	580 K. C.	Vol. Cont. Max.	(5A)	
5	Ant. Ter.	100 mmf.	1550 K. C.	1550 K. C.	Vol. Cont. Max.	(5)	

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

NOTE B—DIAL CALIBRATION: In order to adjust the receiver correctly the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser closed, set the dial pointer on the extreme left index line at the low frequency end of the scale.

MODEL S-1622

OPERATION	SIGNAL GENERATOR		DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
	FREQUENCY	CONNECTION			
1	Press the Automatic Station Selector button until "DIAL" appears in the window and stations can be tuned in by Manual Tuning.				
2	470 K.C.	To Antenna Receptacle on Radio	35 Mmfd. See Note 1	Turn Tuning Condenser Plates Out of Mesh as Far as They Will Go.	(39) (37) (41) (47)
3	1580 K.C.	To Antenna Receptacle on Radio	35 Mmfd. See Note 1	Note 2	(37)
4	1500 K.C.	To Antenna Receptacle on Radio	35 Mmfd. See Note 1	Set Tuning Condenser at 1500 K.C.	(60) Note 3

Make all adjustments for maximum reading on the output meter.

NOTE 1 — Connect the antenna lead, Part No. L-2765, to the antenna receptacle in the radio. Connect a 35 Mmfd. Condenser in series between the signal generator and the antenna lead.

NOTE 2 — Turn the condenser rotor plates completely out of mesh as far as they will go.

NOTE 3 — When the antenna stage adjustment is made with the Radio installed in the car, the Radio antenna lead must be connected to the car antenna in the usual manner. Connect the signal generator output lead to a wire placed near the car antenna but not connected to it.

MODELS 39-30,39-35
MODELS 40-150,40-155
MODEL 40-160
MODELS 40-180,40-185,40-190
MODELS 40-195,40-200

PHILCO RADIO & TELEV. CORP.

MODEL 108
Tuner Data
MODELS 40-120,40-125
Alignment,Trimmers

EQUIPMENT REQUIRED: MODELS 40-120,40-125.

(1) Signal Generator; Philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 36,000 K. C. is the correct instrument for this purpose.

(2) Output Meter; Philco Models 027 or 028 Vacuum Tube Voltmeters and Circuit Testers incorporate a sensitive output meter and are recommended.

(3) Philco Fiber Handle Screw Driver, Part No. 45-2610. Aligning adapter Part No. 45-2767.

OUTPUT METER: The Philco 027 or 028 Output Meter is connected to the plate and screen terminals of the type 35A5 tube and adjusted for the 0 to 30 V. A. C. scales.

VACUUM TUBE VOLTMETER: To use the vacuum tube voltmeter as an alignment indicator make the following connections:

Remove the 7C6 tube from its socket and insert the aligning adapter, Part No. 45-2767, then replace the tube in the adapter. Connect the negative terminal of the vacuum tube voltmeter to the wire which protrudes from the side of the adapter. Attach the positive terminal of the voltmeter to the chassis. The positive terminal is connected to the chassis.

After connecting the output meter, adjust the compensators in the order as shown in the tabulation below. Locations of the compensators are shown on Fig. 2. 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 in Order	
1	7C7 See Note C	.1 mf.	455 K. C.	580 K. C.	Vol. Cont. Max.	14A, 14B, 15A	Push "IN" Manual Button Model 40-125
2	Ant. Ter.	10 mmf.	1600 K. C.	1600 K. C.	Vol. Cont. Max.	2B	See Note B See Note C
3	Ant. Ter.	10 mmf.	1400 K. C.	1400 K. C.	Vol. Cont. Max.	2A	

NOTE A — The "Dummy Antenna" consists of a condenser 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 do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, the tuning pointer is set horizontal at the low frequency end of the scale (540 K. C.).

NOTE C — Compensators 2A and 2B are at the top of the tuning condenser. Compensator 2A is on the front section and compensator 2B on the rear section. When padding the I. F. the signal generator can be attached to the 7C7 grid on the front section of the tuning condenser.

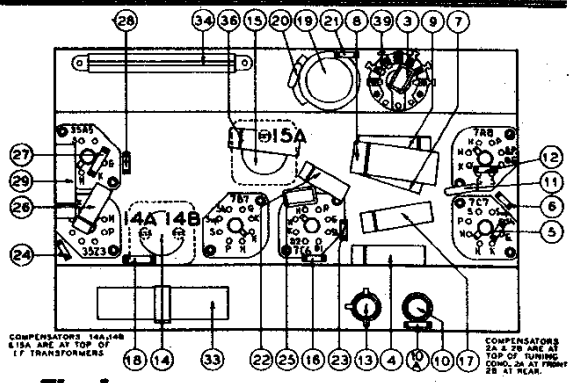


Fig. 1

Adjusting Push Button Tuning - MODELS 39-30,39-35,108 (CODE 121); 40-150,40-155; 40-160; 40-195,40-200;40-180,40-185,40-190.(FOR BUTTON ADJUSTMENT FREQUENCIES FOR MODELS 39-30,39-35, & 108 (CODE 121); SEE PARTS LISTS OF THESE MODELS).

In order to adjust the electric push buttons accurately for reception of broadcast stations, a vacuum tube voltmeter such as Philco Model 027 and 028 should be used. In addition, an insulated padding screw driver part No. 45-2610 and Loktal aligning adapter part No. 45-2767 are required. With this equipment at hand proceed as follows:

Insert the station call letters into the windows above the buttons. The station with the lowest frequency is placed in the first button on the left and the highest frequency is placed in the button on the extreme right. Each push button is adjusted by two set screws located on the rear of the push button unit. Each set of screws is numbered and covers a frequency range as follows:

MODEL 40-160

Push Button	Frequency Range
1	540-1000 K.C.
2	650-1100 K.C.
3	740-1300 K.C.
4	900-1500 K.C.
5	1100-1600 K.C.

MODELS 40-195, 40-200

Push-Button	Frequency Range
1, 2, 3	540-1030 K. C.
4, 5	670-1160 K. C.
6, 7, 8	900-1600 K. C.

MODELS 40-150,40-155,40-180,40-185,40-190.

Push-Button	Frequency Range
1, 2, 3	540-1060 K. C.
4, 5	650-1110 K. C.
6, 7	920-1600 K. C.

Looking at the front of the cabinet, the first button on the left is adjusted by set screw No. 1. The next push button by set screw No. 2 and the remaining push buttons in order.

1. Remove the 7C6 A. F. tube from its socket and insert the aligning adaptor, then replace the tube in the adaptor. Connect the negative terminal of the vacuum tube voltmeter to the wire which protrudes from the side of the adaptor. Attach the positive terminal of the voltmeter to the chassis.

2. Turn the receiver on and set the tuning range disc to "Broadcast" (Manual Tuning).

3. Set up the Model 077 Station Setter about 3 feet from the receiver and connect a loop constructed out of about 6 feet of wire to the high and ground output jacks of the signal generator. Turn the output controls to maximum and set the modulation control to "MOD. ON". Manually tune in the first station to be set up on push button No. 1. After doing this set the indicator of the 077 Signal Generator to the frequency of the station being received. As the indicator approaches the frequency of the station a whistle will be heard; leave the indicator at this point. Turn the receiver tuning range disc to "Push Button" and press in No. 1 button. Using the insulated screw driver turn the No. 1 "Osc." screw until the broadcast station identified by the signal generator is heard; at this point, turn the indicator of the signal generator away from the frequency of the station. Readjust No. 1 "Osc." and "Ant." screws for maximum deflection of the vacuum tube voltmeter pointer. Station No. 1 is now adjusted properly. After setting up the first station the same procedure as outlined above is used for the remaining stations.

When this model is to be set up to receive the sound of a television program tuned in by the special type Philco television sets or when it is to be used in conjunction with a Philco Record Player, push-button No. 1 should be used. To tune in these programs, the same procedure as given for ordinary broadcast stations as outlined above is used.