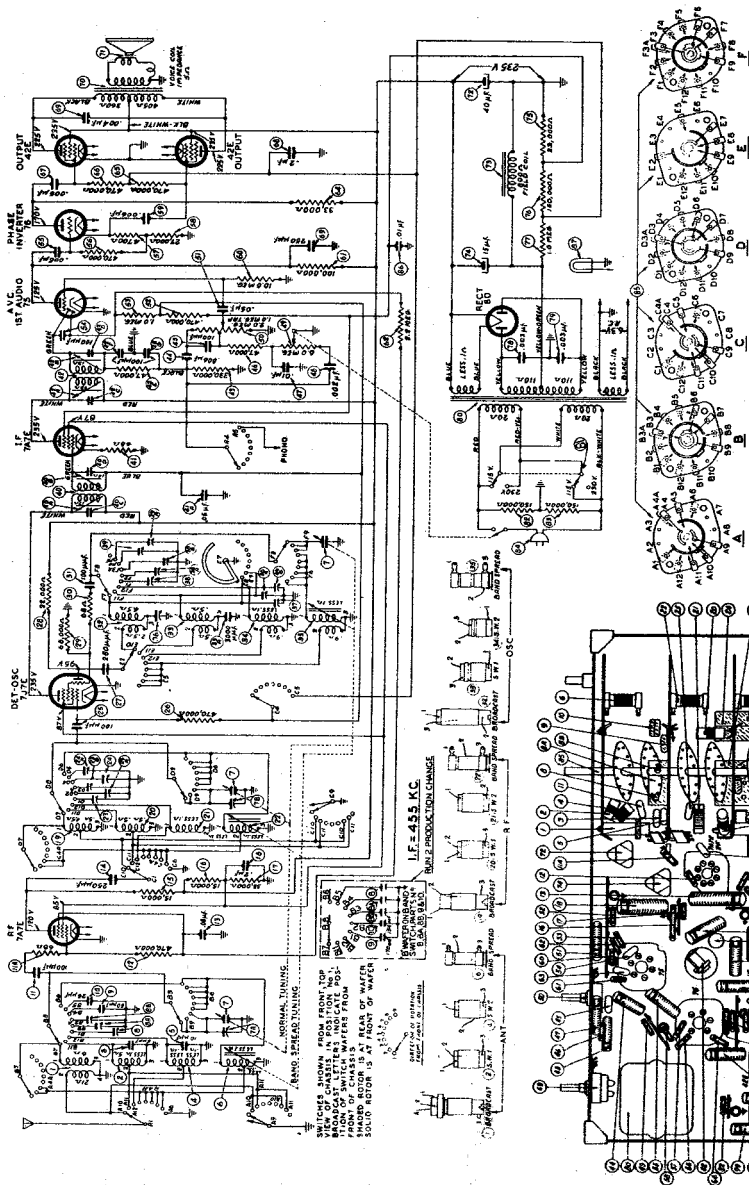




Philco Radio & Television Corp.

	Model: 42-760	Chassis:	Year: Pre 1945
	Power:	Circuit:	IF:
	Tubes:		
	Bands:		
Resources			
Riders 14 (XIV) PHILCO 14-66			
Riders 14 (XIV) PHILCO 14-67			
Riders 14 (XIV) PHILCO 14-70			
Riders 14 (XIV) PHILCO 14-71			
Riders 14 (XIV) PHILCO 14-142			



Tuning Band Ranges:
 Standard Tuning—540 to 1720 KC; 23 to 73 MC; 7.2 to 22 MC.
 Spread Band Tuning—9.4 to 9.9 MC; 11.4 to 12 MC; 14.8 to 15.6 MC;
 17.3 to 18.2 MC; and 20.9 to 21.9 MC.
 Power Supply: 115 and 230 volts, 50 to 60 cycles A. C.
 Power Consumption: 90 watts.
 Audio Output: 6 watts.

FOR OTHER DATA, SEE INDEX

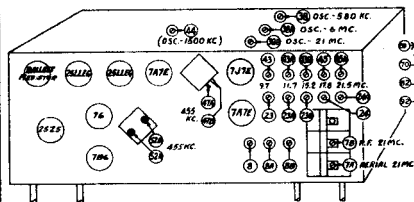
FIG. 3—PART LOCATIONS—UNDER CHASSIS, Model 42-760

PHILCO RADIO & TELEVISION CORP.

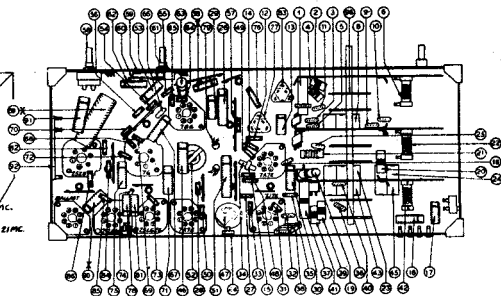
MODEL 42-760

MODEL 42-761

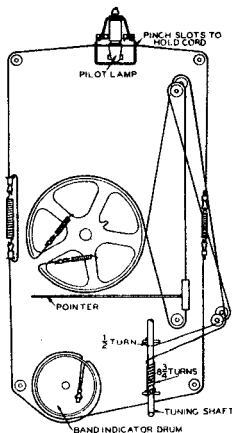
MODEL 42-762



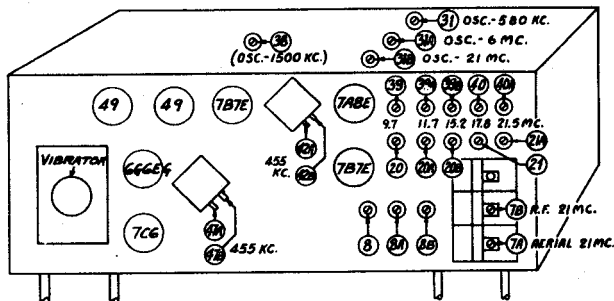
LOCATIONS OF COMPENSATORS—TOP CHASSIS
Model 42-761



PART LOCATIONS—UNDER CHASSIS, Model 42-761



INSTALLING TUNING
DRIVE CORD



MODEL 42-760

MODEL 42-761

PHILCO RADIO & TELEVISION CORP.

MODEL 42-762

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 terminal of the output tube. Adjust the meter for the 30 to 300 A. C. scale.

After connecting the aligning meter, adjust the compensators in the order for each model as shown in the tabulation below. Locations of the compensators are shown in Figures 6, 7, 10.

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

ADJUSTING NORMAL TUNING RANGES

Opera- tion Order	SIGNAL GENERATOR				RECEIVER				
	Output Con- nect- ions to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators for Maxi- mum Signal Models 42-760 761 762	Special Instruc- tions		
1	Grid 747B	1 mfd	455 KC	580 KC	Range Switch "Brk- down" Volume "Max"	42A 42B 42C 42D 42E 42F 42G 42H 42I 42J 42K 42L 42M 42N 42O 42P 42Q 42R 42S 42T 42U 42V 42W 42X 42Y 42Z	Notes R C		
2	Aerial Lead	400 ohms	21 MC	21 MC	Range Switch "B. W. 3"	36B 36C 36D 36E 36F 36G 36H 36I 36J 36K 36L 36M 36N 36O 36P 36Q 36R 36S 36T 36U 36V 36W 36X 36Y 36Z	Roll Gang		
3	Aerial Lead	400 ohms	6.0 MC	6.0 MC	Range Switch "B. W. 1"	37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Roll Gang		
4	Aerial Lead	200 mmfd	1500 KC	1500 KC	Range Switch "Broad- cast"	37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Roll Gang		
5	Aerial Lead	200 mmfd	580 KC	580 KC	Range Switch "Broad- cast"	37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Roll Gang		

ADJUSTING BAND SPREAD TUNING RANGES

Mechanical Adjustments: Before the padders of the band spread tuning ranges are adjusted, the iron cores of the antenna, R. F. and oscillator transformers must be mechanically set as follows:

1. Turn the band spread tuning control to the extreme counterclockwise position (lowest frequency).
2. Adjust location of "OSC" iron cores so that the end of the iron core is flush with the end of the transformer. With the "OSC" iron core in this position the antenna R. F. cores will be correctly located.
3. When installing a new oscillator transformer or core, make sure that the iron core slides freely in the transformer. It is important to do this to eliminate backlash in the tuning mechanism. If adjustment is necessary slightly move transformer in the direction required.

After mechanically setting the transformers and iron cores, adjust the padders as given in the following tabulation:

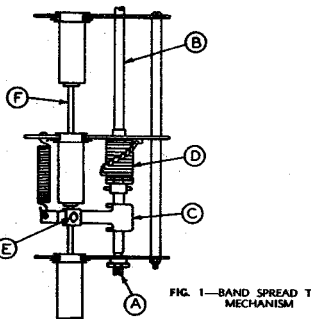


FIG. 1—BAND SPREAD TUNING MECHANISM

MECHANICAL ADJUSTMENTS—BAND SPREAD TUNING MECHANISM

1. ADJUSTMENT OF TUNING SHAFT

End play can be removed by adjusting the rear bearing No. (A), Fig. (1). Care should be taken when adjusting the screw so that

PROCEDURE FOR PRODUCTION RUN No. 1 CHASSIS

Opera- tion Order	SIGNAL GENERATOR				RECEIVER				
	Output Con- nect- ions to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators Models 42-760 761 762	Special Instruc- tions		
1	Antenna and Ground	400 ohms	8.7 MC	8.7 MC	Band Selector Position "8.7" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		
2	Antenna and Ground	400 ohms	11.7 MC	11.7 MC	Band Selector Position "11.7" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		
3	Antenna and Ground	400 ohms	15.2 MC	15.2 MC	Band Selector Position "15.2" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		
4	Antenna and Ground	400 ohms	17.5 MC	17.5 MC	Band Selector Position "17.5" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		
5	Antenna and Ground	400 ohms	21.5 MC	21.5 MC	Band Selector Position "21.5" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		

PROCEDURE FOR PRODUCTION RUN No. 2 CHASSIS

Opera- tion Order	SIGNAL GENERATOR				RECEIVER				
	Output Con- nect- ions to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators Models 42-760 761 762	Special Instruc- tions		
1	Antenna and Ground	400 ohms	21.5 MC	21.5 MC	Band Selector Position "21.5" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		
2	Antenna and Ground	400 ohms	17.5 MC	17.5 MC	Band Selector Position "17.5" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		
3	Antenna and Ground	400 ohms	15.2 MC	15.2 MC	Band Selector Position "15.2" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		
4	Antenna and Ground	400 ohms	11.7 MC	11.7 MC	Band Selector Position "11.7" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		
5	Antenna and Ground	400 ohms	8.7 MC	8.7 MC	Band Selector Position "8.7" on Dial	38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Note D		

NOTE A—The "Dummy Antenna" consists of a condenser or resistance connected in series with the signal generator output lead (all 25 ohm). Use the capacity or resistance as specified in each step of the above procedure.

NOTE B—In order to adjust the receiver correctly the pointer must be aligned to track the dial properly. To adjust the dial proceed as follows: With the tuning condenser clamped (maximum capacity) set the dial pointer on the first mark at the low frequency end of the scale. Make sure that the stop mechanism in the band spread permeability tuner catches in counterclockwise end of rotation at the same time that the tuning condenser is completely closed.

NOTE C—When adjusting "OSC" compensator be sure to tune in the fundamental signal (21 MC) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning the signal generator dial 510 KC above the fundamental signal, which will be 21.5 MC.

NOTE D—To make sure that the dial reads properly after adjusting the compensators with the signal generator as outlined above, a known station on each band near the adjusting frequency should be tuned in with the band spread tuning control. If the dial reading is incorrect, adjust the compensator compensators on the band until the signal is heard at the correct points on the dial. After adjusting the oscillator compensators to the correct frequency of the known station, the antenna and R. F. compensators should be adjusted to maximum signal.

ALTERNATIVE METHOD—Locate a known station near the center of each spread band and "Zero Beat" the signal generator with it at the time of aligning the band. This makes alignment of the antenna and R. F. compensators easier and more accurate. This method will be found to be simpler when conditions make it use possible, because it is much easier to align a receiver to a strong signal.

NOTE E—The band spread compensator aligning procedure for Run 2 chassis differs from Run 1. The two procedures are listed above. Compensators 8, 1A, and 1B on chassis marked Run 2 is used to adjust the 21.5, 17.5 and 15.2 MC bands, whereas Run 1 chassis these compensators are used to adjust the 8.7, 11.7 and 15.2 MC bands. The locations of the padders remain the same as Run 1 chassis shown in Figures 6, 7, and 10.

shaft does not turn too tightly. In making this adjustment, the screw driver can be inserted in the chassis in line with shaft.

2. REMOVING TUNING SHAFT

- (a) Remove tuning knob shaft and coupling.
- (b) Loosen lock nut on rear bearing and remove adjusting screw and ball bearing.
- (c) Remove cotter pin from stop assembly.
- (d) Unscrew carriage as shaft is pulled out through front of R. F. tuner and chassis.
- (e) When installing new shaft (B) adjust positions of stop assembly and carriage, before inserting cotter pin, so that the carriage (C) is approximately 5 turns from the stop assembly (D) with shaft in extreme counterclockwise position from front. The stop assembly is rotated until all washers are in contact. The bottom washer should be located between the stops farthest apart.

3. ADJUSTING BAND SPREAD TUNING CORE ASSEMBLY

- (a) Cores are correctly located when the rear of the oscillator core (blue identification) is flush with the rear of oscillator transformer and the tuning shaft is in extreme counterclockwise position.
- (b) The carriage clamp(E) must not be tightened excessively as this will bend the tuning core rod(F) and cause backlash.

CONTINUED ON NEXT PAGE

MODEL 42-718, CODE 121

To operate on 115 volts, 25 cycle A.C. current power transformer Part No. 32-8149 is used.

For operation on a 115 or 220 volt, 60 cycle A.C. power supply, use transformer Part No. 32-8094.

To improve performance aerial transformer (Brdcst Band) (5) is changed from Part No. 32-3726 to 32-3863. The lug arrangement for both coils is shown on the schematic diagram. In some later production chassis of Model 42-360 a 7Y4 rectifier tube is used in place of an 84 tube.

The pointer drive cord on later production chassis was changed from Part No. 31-2597 to 31-2608. The new cord is shorter than the original one.

To operate this model on 115 volts, 25 cycle A.C. current change power transformer (61) from Part No. 32-8117 to Part No. 32-8149.

For operation on 115 or 230 volt, 60 cycle A.C. power circuits use power transformer 32-8094.

Aerial transformer (9) changed from Part No. 32-3755 to 32-3864 to improve the operating performance of the receiver.

To operate this model on 115 volt, 25 cycle A.C. current replace power transformer (62) Part No. 32-8177 with Part No. 32-8195.

For operation on a 220 volt 60 cycle A.C. current power transformer Part No. 32-8212 is required.

In later production models the aerial transformer (3) Part No. 32-3746 was changed to Part No. 32-3869 to increase the sensitivity.

Tuning shaft changed from Part No. 56-6152FA3 to 56-6193CP.

To increase the sensitivity the aerial transformer (5) was changed from Part No. 32-3790 to Part No. 32-3870.

Push-button knobs changed from Part No. 54-4111 to 54-4144.

To operate this model on a 115 volt 25 cycle A.C. power supply change the power transformer from Part No. 32-8177 to 32-8195.

For operation on 220 volts, 60 cycle current, power transformer 32-8212 is required.

Tuning shaft changed from Part No. 56-6152FA3 to 56-6193CP.

Beginning with chassis marked run 2, the power transformer (90) Part No. 32-8177 is changed to Part No. 32-8222.

A few early production chassis of this model used speaker Part No. 36-1515-4 (cone assembly 36-4181) and speaker Part No. 36-1515-2 (cone assembly 36-4173).

All later production models use speaker Part No. 36-1530 (cone assembly 36-4181) as list in the Service Bulletin.

To operate on 115 volts, 25 cycle current change the power transformer from Part No. 32-8192 to Part No. 32-8209.

For operation on 220 volts, 60 cycle current, use power transformer Part No. 32-8213.

The broadcast aerial transformer (3) Part No. 32-3790 was changed to Part No. 32-3870 on later production chassis to increase the sensitivity.

Tuning shaft changed from Part No. 56-6164 to 56-6195CP

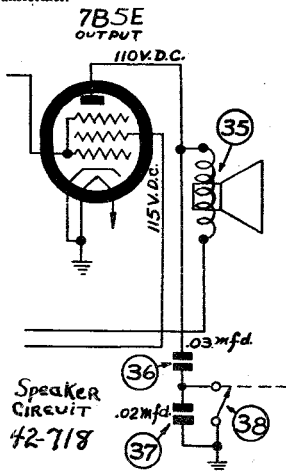
To improve the I.F. filtering of the plate voltage supply, condenser (47) was changed from .05 mfd. Part No. 30-4518 to .2 mfd. Part No. 30-4594.

Condenser (59D) which is mounted in the fourth I.F. transformer is Part No. 60-150227. This number is not shown in the parts list.

Beginning with run 2, the speaker (35) was changed from Part No. 36-1520-4 to Part No. 36-1576. The new speaker is a permanic type and the wiring is different from that shown on the diagram for speaker Part No. 36-1520-4. The wiring for the new speaker is shown below.

Output transformer (34) Part No. 32-8106 is also removed when the permanic speaker Part No. 36-1576 is installed.

The voice coil in the new speaker takes the place of the output transformer.



To prevent moisture from affecting circuits, condensers (44), (48) and (51) changed from Part No. 30-4591 to Part No. 30-4610. Values remain the same.

Beginning with chassis marked run 2, the band switch (85) was changed from 42-1660 to 42-1711.

Beginning with chassis marked run 4 condenser (13) Part No. 30-4586 .1 mfd., 200 volts changed to .1 mfd., 400 volts Part No. 30-4527.

Correction: Dial scale pointer Part No. should be 56-2134 instead of 56-1234 as shown in the parts list.

Beginning with chassis marked run 3, the speaker of this model was changed from permanent magnet type Part No. 36-1508-3 to electro-dynamic type Part No. 36-1568. Speaker cable for the new speaker is Part No. 41-3535.

The voice coil of the electro-dynamic speaker is connected as shown in the Service Bulletin. The field coil of the speaker is connected to the + positive and (—) negative wiring of the 6 volt storage battery.

To improve operating conditions in humid climates the part numbers of the following condensers were changed. Values remain the same:

Schematic No.	Description	Original Part No.	New Part No.
54	CONDENSER (.01 mfd.)	30-4572	30-4598
		400 volts	(1000 volts)

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