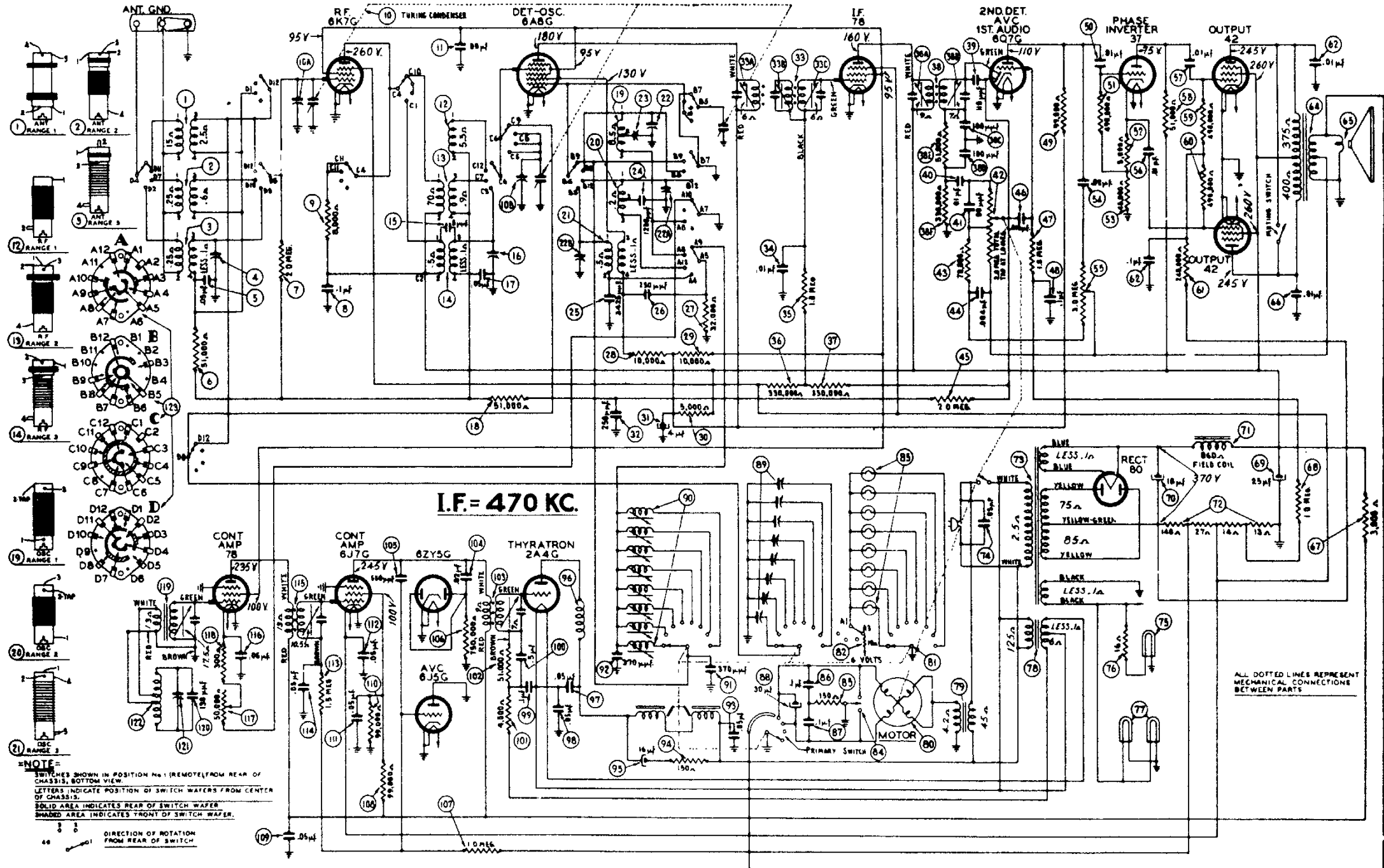


PHILCO Model 39-116

Socket Voltage Measured for Socket Contacts to Chassis, Line Voltage 115 VAC, Volume Minimum, Range Selector (Broadcast)



PHILCO Models 39-55, 39-116

ADJUSTING MYSTERY CONTROL FREQUENCY AMPLIFIER

The Mystery Control receivers are shipped with five (5) different control frequencies which range from 350 to 400 K.C. These are identified by code numbers appearing on the serial number ticket and on the rear of the chassis. These code numbers and frequencies are as follows:

Code 5—355 K.C.
Code 6—367 K.C.
Code 7—375 K.C.
Code 8—383 K.C.
Code 9—395 K.C.

The purpose of the different control frequencies is to prevent interaction between two Mystery Control receivers which are on the same floor or are exceptionally close together. When several Mystery Control receivers are to be located close together, it will be necessary to use different control frequencies to avoid interaction between the receivers. In order to prevent interaction between receivers, there should be a difference of 20 K.C. between their control frequencies.

If three receivers are to be operated at the same time and are closely situated, it will be advisable to adjust the control frequency of the first set to 355 K.C., the second set to 375 K.C. and the third to 395 K.C.

When realigning or changing the control frequency of the Mystery Control circuit, a Philco Model 077 Signal Generator with a coil of wire (about 4 or 5 turns—12" in diameter) attached to the output terminals is required. The leads between the coil of wire and Signal Generator should be long enough so that the coil of wire can be placed near the large secondary inductor in the bottom of the receiver cabinet.

With this apparatus, the Control Frequency is adjusted as follows:

1. With the temporary coil of wire in the center of (or near) the secondary inductor, the control frequency to which the Mystery Control Amplifier is tuned can be determined by tuning the Signal Generator between 350 and 400 K.C. When the Signal Generator is tuned to the control frequency, the Thyatron (2A4G) tube will glow (blue haze). If this frequency is to be used, leave the Signal Generator indicator at this point or turn the indicator to any other frequency desired between 350 and 400 K.C.
2. When the control frequency is selected, turn the sensitivity control (117) in Model 116 and (89) Model 55,

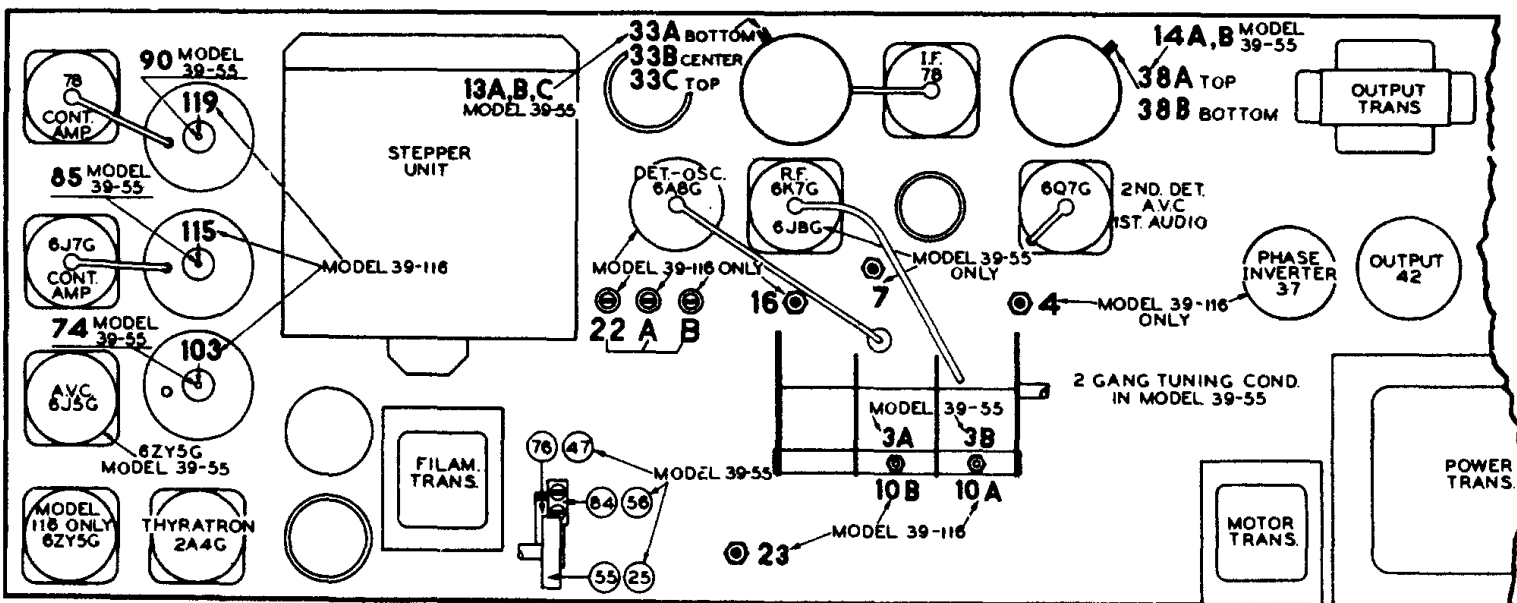
located on the left rear of the chassis—towards the position marked "extreme." Using the 2A4G Thyatron tube as a resonance indicator, adjust padders (103), (115), (119) in Model 116 and (74), (85), (90) in Model 55 for maximum signal. This will be indicated by the brilliance of the glow in the 2A4G Thyatron tube. As the padders are adjusted, gradually turn the sensitivity control to the "near" position or reduce the output from the Signal Generator. When the padders are correctly adjusted to maximum, the Thyatron will glow with the sensitivity control (117) at the "near" position and with a very weak signal from the Signal Generator.

3. Next, adjust the padding condenser (121) in Model 116 and (92) in Model 55 on the secondary inductor located in the bottom of the receiver. The padding condenser is located in one corner of the secondary inductor and is encased in a cardboard container. This padding condenser should be carefully adjusted for maximum glow in the 2A4G tube. Use the weakest signal possible from the Signal Generator that will cause the 2A4G to glow. Also, have the sensitivity control as close as possible to the "near" position. Extreme care should be used in adjusting the padder to the exact point of resonance, as the secondary inductor is a very sharply tuned circuit. After adjusting the circuit, remove the Signal Generator and loop from the receiver.

4. The Mystery Control unit is now adjusted as follows:

- A. Dial any one of the stations indicated on the remote unit by pulling the selector to the "Stop" position. Then, as the dial is released at the "Stop," press the "Stop" down and hold it in this position.
- B. Holding the "Stop" in this position, bring the Mystery Control unit close to the receiver. Using the padding wrench, tune the padding screw (126) located on the bottom of the unit until the 2A4G Thyatron in the receiver glows at full brilliance.

Now, turn the sensitivity control on the receiver towards the "near" position until a point is reached where the 2A4G tube almost stops glowing. Then, readjust the padder (126) of the unit again for maximum brilliance in the 2A4G tube. The Mystery Control unit should now be adjusted to the same frequency as the control frequency in the receiver.



Locations of Compensators—Model 39-55 and 39-116

RADIO RECEIVER CIRCUIT ADJUSTMENTS Model 39-116

Operation	SIGNAL GENERATOR			RECEIVER			Special Instructions
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1	78 Grid	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Range Switch Brdest.	38A, 38B	Turn Out 33B Full
2	6A8 Grid	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Range Switch Brdest.	33C, 33A, 33B, 38B	Note B
3	Antenna and Ground	150 mmfd.	1550 K.C.	1550 K.C.	Vol. Max. Range Switch Brdest.	22, 10B, 10A	
4	Antenna and Ground	150 mmfd.	580 K.C.	580 K.C.	Vol. Max. Range Switch Brdest.	23	Rollgang
5	Antenna and Ground	150 mmfd.	1550 K.C.	1550 K.C.	Vol. Max. Range Switch Brdest.	22	
6	Antenna and Ground	400 ohms	5.0 M.C.	5.0 M.C.	Vol. Max. Range Switch Police	22A	
7	Antenna and Ground	400 ohms	18.0 M.C.	18.0 M.C.	Vol. Max. Range Switch Short Wave	22B, 16, 4	Note C

RADIO RECEIVER CIRCUIT ADJUSTMENTS Model 39-55

Operation	SIGNAL GENERATOR			RECEIVER			Special Instructions
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1	78 Grid	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Range Switch Brdest.	14A, 14B	Turn Out 13B Full
2	6J8G Grid	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Range Switch Brdest.	13C, 13A 13B, 14B	Note B
3	Antenna and Ground	150 mmfd.	1550 K.C.	1550 K.C.	Vol. Max. Range Switch Brdest.	3B, 3A	
4	Antenna and Ground	150 mmfd.	580 K.C.	580 K.C.	Vol. Max. Range Switch Brdest.	7	Rollgang
5	Antenna and Ground	150 mmfd.	1550 K.C.	1550 K.C.	Vol. Max. Range Switch Brdest.	3B, 3A	Note C

Mystery Control Unit Diagram

