



SERVICE BULLETIN No. 301C for members of RADIO MANUFACTURERS SERVICE

Electrical Specifications

TYPE OF CIRCUIT: Five tube, A. C. operated superheterodyne circuit with features such as two tuning ranges covering the frequencies shown under "Tuning Ranges"; Automatic Volume Control; and a Pentode Audio Output Stage

POWER SUPPLY	Voltage	Frequency Cycles	Power Consumption
	115	50 to 60	40 watts
	115	25 to 40	40 watts

Different transformers are required to operate the receiver on the voltage and frequency ratings listed above. The part numbers of these transformers are shown on the Parts List Page 2.

INTERMEDIATE FREQUENCY: 460 K. C.

TUNING RANGES: Two—Range 1, 540 to 1720 K. C.
Range 2, 5.5 to 19 M. C.

UNDISTORTED OUTPUT: 3 watts.

TUBES USED: Five—one 6A7E, Det. osc.; one 78E, I. F.; one 75, 2nd Det. 1st audio; one 41E, output, and one 84, Rectifier.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator, using a fundamental frequency range covering the tuning and intermediate frequencies of the receiver. Philco Model 177 Signal Generator which has a fundamental frequency range from 115 to 32,500 K. C. is the correct instrument for this purpose; (2) Output Meter, Philco Model 026 Circuit Tester incorporates a sensitive output meter and is recommended; (3) Philco Fibre Handle Screw Driver, part No. 27-7059, and Fibre Wrench, part No. 7696.

OUTPUT METER: The 026 Output Meter is connected to the plate and cathode terminals of the 41E tube. Adjust the meter to use the (0-30) volt scale and advance the attenuator control of the generator until a readable indication is noted on the output meter after signal is applied.

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:

1. Turn the tuning condenser to maximum capacity position (plate fully meshed).
2. Move pointer midway between the two index lines between 55 and 19.6

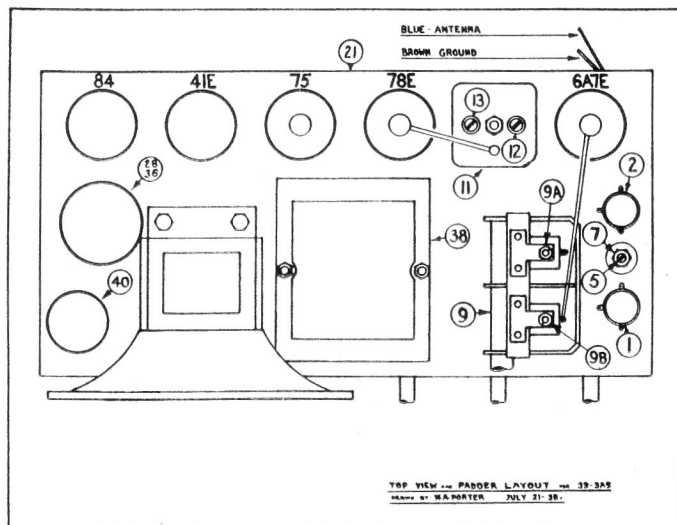


Fig. 2. Locations of Compensators—Top of Chassis

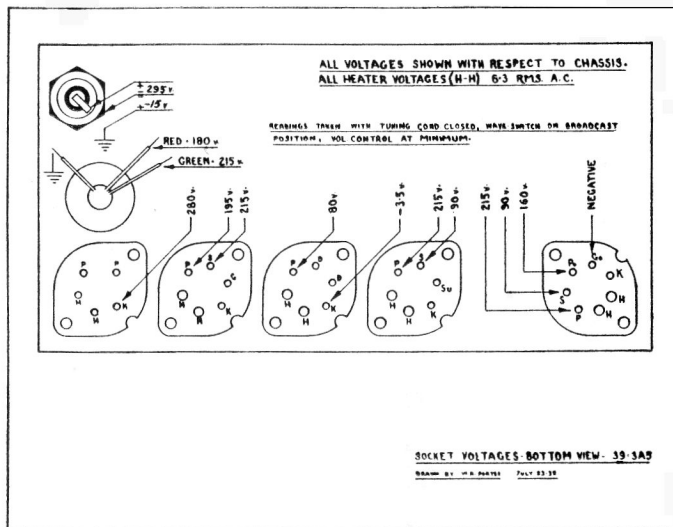


Fig. 1. Socket Voltages, Underside of Chassis

The voltages indicated by arrows were measured with a Philco 026 Circuit Tester which contains an accurate voltmeter. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

INTERMEDIATE FREQUENCY CIRCUIT

Insert the signal generator shielded output lead into the "Med" jack on the panel of the generator. Connect the other end of the output lead through a .1 mfd. condenser to the grid of the 6A7E, det. osc. tube and the ground connection of the signal generator to the chassis. Set the Signal Generator and receiver controls, and adjust the I. F. Compensators as follows:

1. Set Signal Generator at 460 K. C. Turn the "Attenuator" for maximum output.
 2. Turn the receiver dial to 580 K. C.
 3. Receiver volume control maximum.
 4. Range Switch Broadcast Position
 5. Short oscillator or rear section of gang condenser.
 6. Adjust compensators (21), (13), (12) for maximum output.
- If the output meter goes off scale when adjusting the compensators retard signal generator attenuator

RADIO FREQUENCY CIRCUIT

Tuning Range: 5.5 to 19 M. C.

1. With one end of the shielded lead of the signal generator output lead in the "Med" jack, connect the other end through a 400 ohm resistor to the blue antenna lead. The output lead ground must be connected to the brown ground lead on the receiver.

Volume Control	Range Switch	Signal Generator and Receiver Dial	Compensators in Order
Max.	2	18 M. C	9A

Tuning Range: 540 to 1720 K. C

Range Switch	Signal Generator and Receiver Dial	Compensators in Order
1	1500 K. C.	5, 9B
1	580 K. C.	(7)
1	1500 K. C.	5, 9B

NOTE A—To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator to the maximum capacity position (clockwise). From this position slowly turn the compensator counterclockwise until a second maximum peak is obtained on the output meter. Adjust the compensator for maximum output using this second peak. The first peak from maximum capacity position of the compensator is the image signal, and must not be used in adjusting this compensator.

If the above procedure is correctly performed, the image signal will be found (weaker) by turning the receiver dial 920 K. C. below the frequency being used on the high frequency range.

Parts List for Model 39-3A5

1. Antenna transformer S.W.	32-3073
2. Antenna transformer B.C.	32-3070
3. Condenser (.05 mfd.)	30-4444
4. Wave-switch	42-1366
5. Padder condenser	31-6100
6. Padder condenser (3500 mmfd.) ..	30-1094
7. Padder condenser	Part of 5
8. Tuning condenser	30-1032
9. Mica condenser (250 mmfd.)....	31-2286
10. Resistor (51,000 ohms)	33-351344
11. 1st I.F. transformer	32-3018
12. Padder condenser	Part of 11
13. Padder condenser	Part of 11
14. Condenser (.25 mfd.)	30-4446
15. Resistor (25,000 ohms)	33-550344
16. Resistor (25,000 ohms)	33-325344
17. Resistor (51,000 ohms)	33-351344
18. Oscillator transformer	32-3066
19. Resistor (5000 ohms)	33-250344
20. 2nd I.F. transformer	32-2944
21. Padder condenser	Part of 20
22. Condenser (110-110 mmfd.)	Part of 21
23. Condenser (.01 mfd.)	30-4479
24. Resistor (4.0 megohms)	33-540344
25. Resistor (250 ohms)	33-15431
26. Resistor (70 ohms)	33-070344
27. Resistor (10,000 ohms)	33-310444
28. Electrolytic condenser	30-2243
29. Pilot lamp	34-2064
30. Condenser (.05 mfd. 110 mmfd.)	30-4575
31. Resistor (190,000 ohms)	33-419344
32. Resistor (490,000 ohms)	33-449344
33. Condenser (.01 mfd.)	30-4572
34. Output transformer	32-7904
35. Cone and voice coil ass'y	X
36. Electrolytic condenser	Part of 28
37. Condenser (.01 .01 mfd.)	33023G
38. Power transformer, 60 cycle	32-7987
39. Speaker field coil	25 cycle 32-8004
40. Electrolytic condenser	X
41. Volume control and switch	30-2519
Bezel and glass ass'y (wood cabi- net only)	33-5230
Dial and frame ass'y	40-6158
Dial and frame ass'y	31-2137
Knobs, Brown,	27-4604
For Ivory Cabinet	27-4737
Dial pointer	28-5201
Socket, 5 prong	27-6035
Socket, 6 prong	27-6036
Socket, 7 prong	27-6037
Complete speaker	36-1443
Baffle and silk ass'y—	
For wood cabinet	40-6579
For bakelite cabinet	40-6311

X—Parts not supplied. Replace speaker.

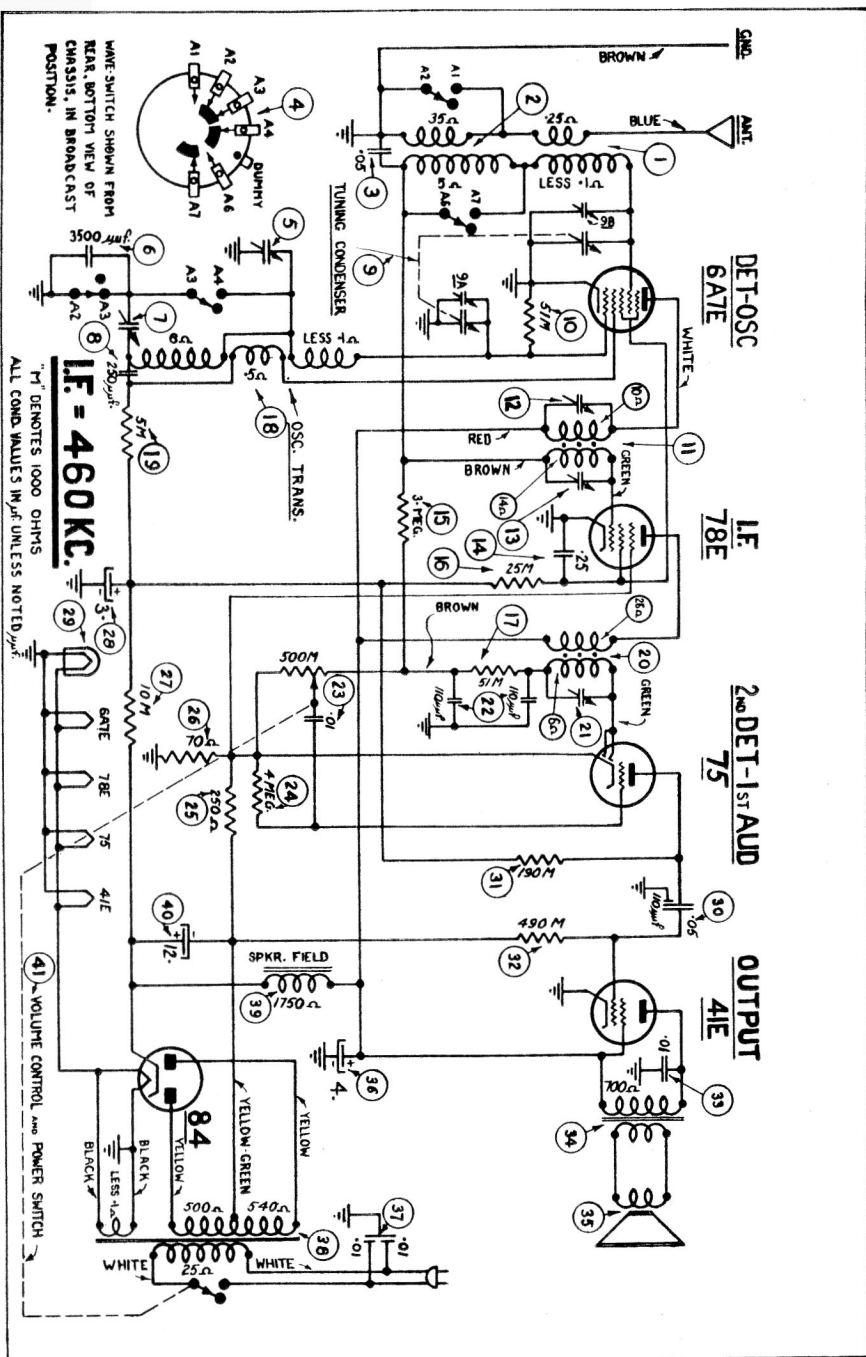


Fig. 3—SCHEMATIC DIAGRAM MODEL 39-3A5

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