



SERVICE BULLETIN No. 299C for members of RADIO MANUFACTURERS SERVICE

A PHILCO Service Plan

Specifications

TYPE OF CIRCUIT: A.C. operated, superheterodyne with automatic volume control, Pentode audio output, and covers the standard broadcast and some police frequencies.

POWER SUPPLY:		Frequency	Power
Voltage	Cycles	Consumption	
115	50 to 60	36 watts	
115	25 to 40	36 watts	

INTERMEDIATE FREQUENCY: 460 K.C.

R.F. TUNING RANGE: 540 to 1720 K.C.

AUDIO OUTPUT: 39-3A1—1.2 watts; 39-3A2—2 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.

TUNING MECHANISM: 8 to 1 Ratio using Pulley and Cord.

CABINET: Types 39-3A1—CB; 39-3A2—T.

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:

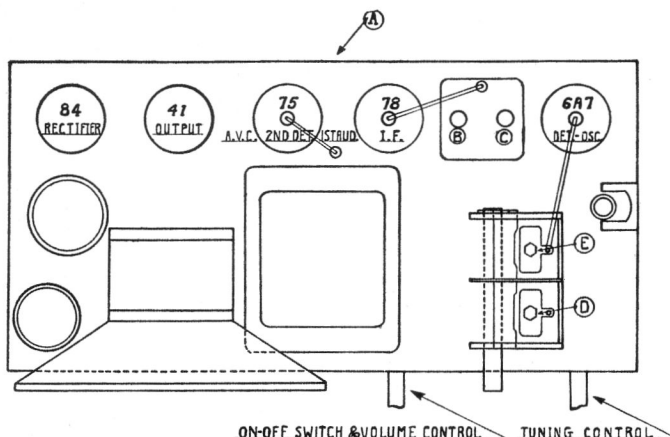


FIG. 2.—Socket Voltages—Underside of Chassis View.
Model 39-3A2

The Voltages indicated by arrows were measured with a Philco 026 Circuit Tester which contains a sensitive voltmeter. Volume Control at minimum—Tuning condenser set for no signal—line voltage 115 A.C.

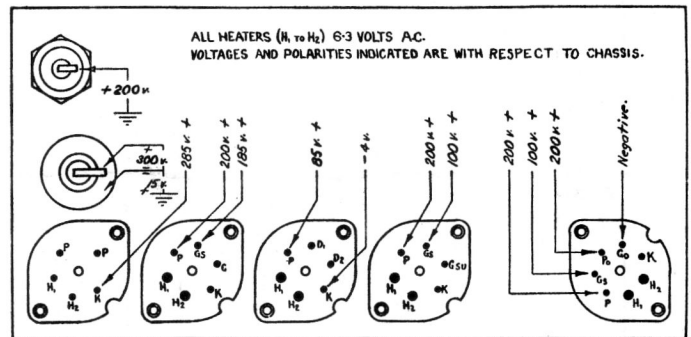


FIG. 1.—Socket Voltages—Underside of Chassis View.
Model 39-3A2

The Voltages indicated by arrows were measured with a Philco 026 Circuit Tester which contains a sensitive voltmeter. Volume Control at minimum—Tuning condenser set for no signal—line voltage 115 A.C.

- 1 Turn the tuning condenser to maximum capacity position (plates fully meshed).
- 2 Holding the tuning condenser in this position, turn the pointer until it is $\frac{1}{8}$ of an inch below the three lines of the scale at the 550 K.C. end. (See Fig. 3.) This is the correct position of pointer at maximum capacity of tuning condenser.

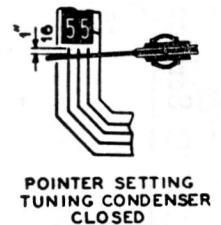


FIG. 3.—Dial Pointer Calibration.

Intermediate Frequency Circuit

Insert the signal generator shielded output lead into 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. for maximum output.
- 2 Turn the receiver dial to 580 K.C. short Osc. section of gang.
- 3 Receiver volume control maximum.
- 4 Adjust compensators, (A), (B), (C), for maximum output. If the output meter goes off scale when adjusting the compensators, retard the signal generator attenuator.

Radio Frequency Circuit

TUNING RANGE: 540 to 1720 K.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 100 mmfd. condenser to the blue aerial wire (rear of chassis). Connect the signal generator ground to the brown lead or to the chassis of the receiver.
- 2 Set the controls and adjust the R.F. compensators as follows:

Signal Generator Volume Control Max.	R.F. Compensators and Receiver Dial 1400 K.C.	R.F. Compensators in Order (D) (E)
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Replacement Parts

Models 39-3A1 and 39-3A2

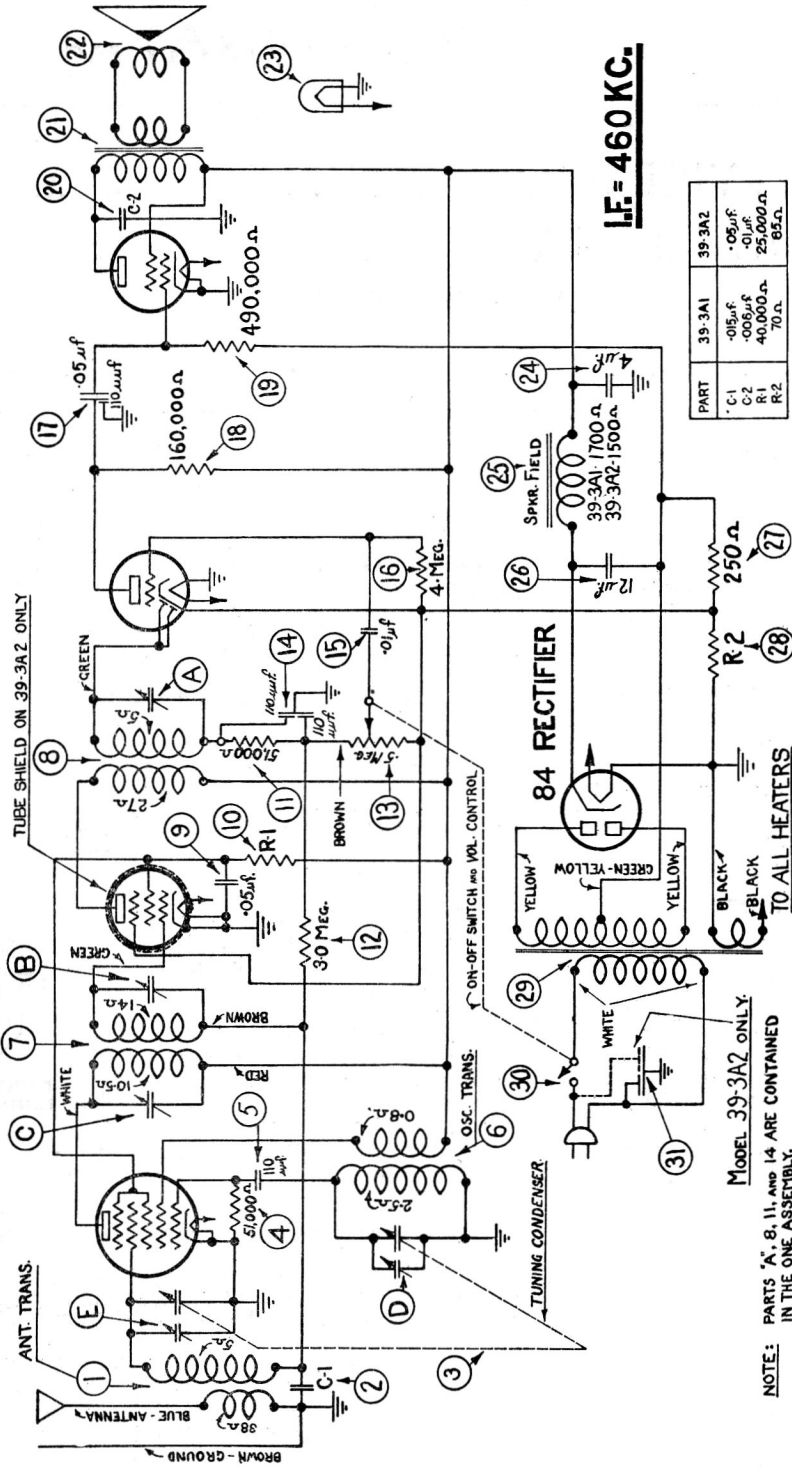
Schematic No.	Description	Part No.
1	Antenna Transformer	32-3045
2	Condenser (39-3A1) .015 mfd.	30-4515
3	Condenser (39-3A2) .05 mfd.	30-4444
4	Tuning Condenser	31-2277
5	Resistor (51,000 ohms)	33-551344
6	Condenser (110 Mmfd.)	30-1031
7	Oscillator Transformer	32-3049
8	1st I.F. Transformer	32-3018
9	2nd I.F. Transformer	32-2944
10	Condenser (.05 Mfd.)	30-4444
11	Resistor (39-3A1) 40,000 ohms	33-340344
12	Resistor (39-3A2) 25,000 ohms	33-325344
13	Resistor (51,000 ohms)	Part of 8
14	Resistor (3.0 megohm)	33-530344
15	Volume Control	33-5279
16	Condenser (110-110 Mmfd.) Part of 8	
17	Condenser (.01 Mfd.)	30-4479
18	Resistor (4.0 megohm)	33-540344
19	Condenser (.05 Mfd-110 Mmfd.)	30-4575
20	Resistor (160,000 ohms)	33-416344
21	Resistor (490,000 ohms)	33-449344
22	Condenser (39-3A1) .006 Mfd.	30-4125
23	Condenser (39-3A2) .02 mfd.	30-4572
24	Output Transformer	32-7904
25	Cone & Voice Coil Ass'y	x
26	Pilot Lamp	34-2064
27	Condenser 4 Mfd. (39-3A1)	30-2327
28	Condenser 4 Mfd. (39-3A2)	30-2236
29	Speaker Field Coil	x
30	Condenser 12 Mfd. (39-3A1)	30-2326
31	Condenser 12 Mfd. (39-3A2)	30-2235
32	Resistor (250 ohms)	33-125431
33	Resistor (39-3A1) 70 ohms	33-070344
34	Resistor (39-3A2) 85 ohms	33-085344
35	Power Transformer 25 cy.	32-7983
36	(39-3A1)	32-8004
37	Power Transformer 60 cy.	32-7982
38	(39-3A1)	32-7987
39	60 cy. (39-3A2)	Part of 13
40	On-Off Switch	
41	Buffer Condenser, (39-3A1) Single .01 Mfd.	3903SG
42	(39-3A2) Twin .01 Mfd.	3903DG

6ATE
DET-OSC.

78E
I.F. AMP.

75
2ND DET-AVC-1st AUDIO

4IE
OUTPUT



Dial Assembly (39-3A1)	31-2289
Dial Assembly (39-3A2)	31-2293
Dial Pointer (39-3A1)	28-5185
Dial Pointer (39-3A2)	28-5201
Dial Drive Cord Ass'y	31-2292
Knobs (Brown)	27-4604
Knobs (Ivory Cabinet)	27-4787
Socket (5 prong)	27-6035
Socket (6 prong)	27-6036
Socket (7 prong)	27-6037
Complete Spkr Ass'y (39-3A1)	36-1429
Complete Spkr Ass'y (39-3A2)	36-1443

x Parts not supplied. Complete speaker must be replaced.

PHILCO PRODUCTS LIMITED PARTS AND SERVICE DIVISION

Toronto

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FIG. 4.—Socket Voltages—Underside of Chassis View.
Model 39-3A1

The Voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a sensitive voltmeter. Volume Control at minimum—Tuning condenser set for no signal—line voltage 115 A.C.

