Philco Radio & Television Corp.

	Model: 89, Code 123	Chassis:	Year: Pre October 1936
	Power:	Circuit:	IF:
	Tubes:		
	Bands:		

Resources
Riders Volume 7 - PHILCO 7-77
Riders Volume 7 - PHILCO 7-78
Riders Volume 7 - PHILCO 7-79

PHILCO RADIO & TELEV. CORP.

MODEL 89(Code 123)
Schematic
Socket, Trimmers

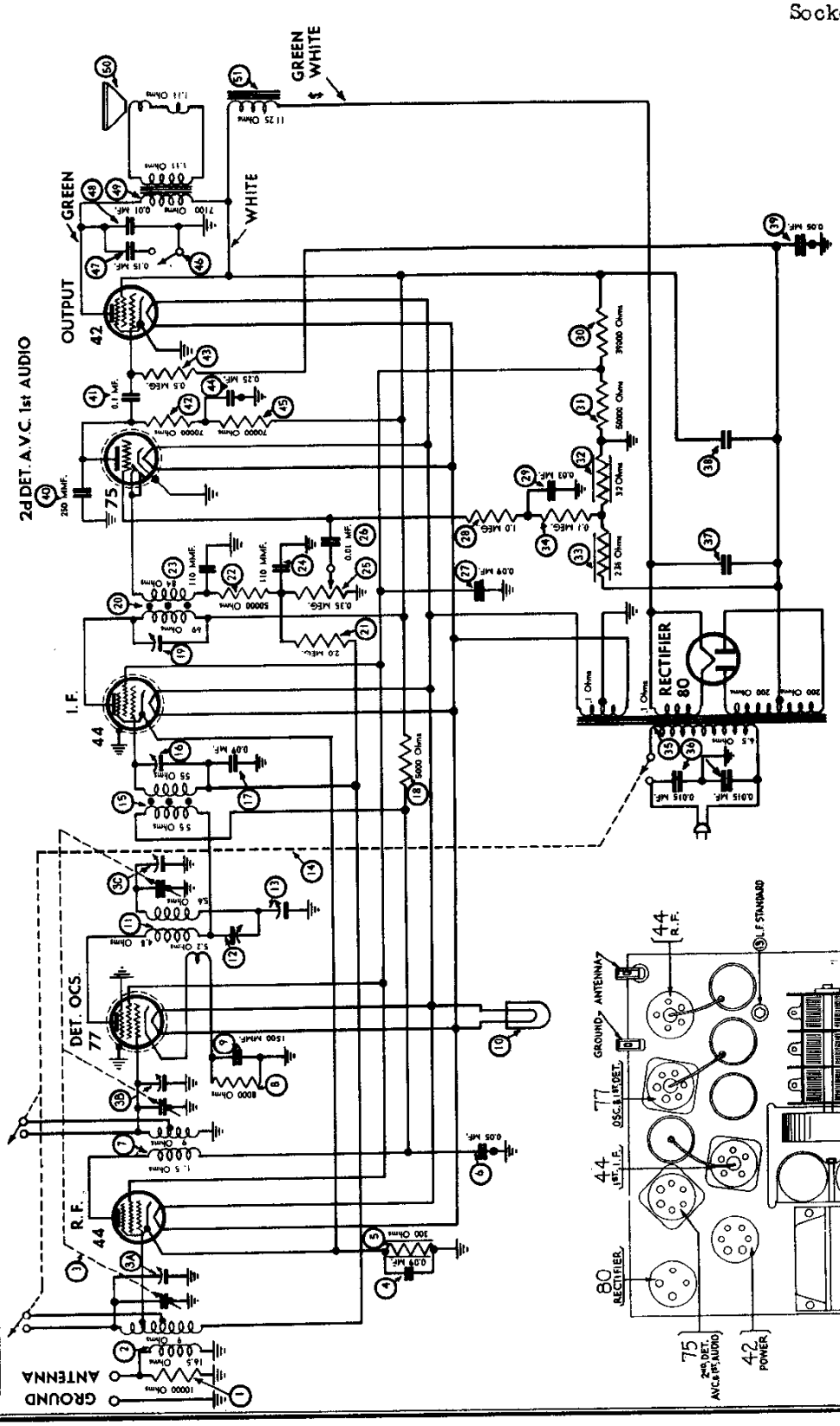

Fig. 2. Location of Compensating Condensers

BAND COVERAGE: Number one—550 to 1500 K. C.; number two—1.5 to 3.2 M. C.
NUMBER OF TUBES: Six.
NUMBER OF ACTUAL TUBE FUNCTIONS: Nine.
POWER SUPPLY: 115 volts, alternating current.
CURRENT CONSUMPTION: 60 watts.
SPEAKER: K-21.
TONE CONTROL: 2 point.
INTERMEDIATE FREQUENCY: 260 K. C.

MODEL 89(Code 123)
Voltage,Trimmers
Alignment

PHILCO RADIO & TELEV. CORP.

Model 89 (Code 123)

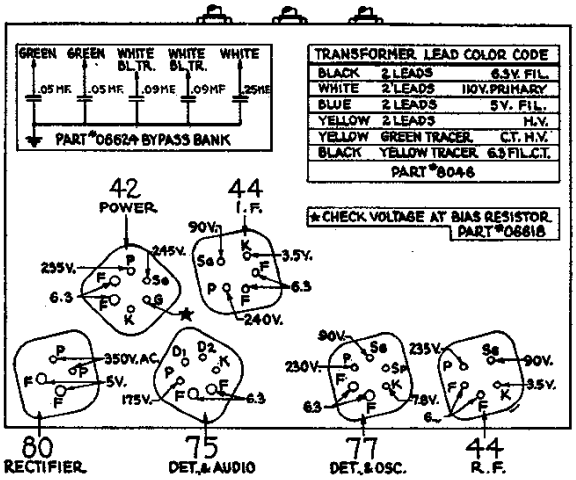

Fig. 1. Bottom View of Tube Sockets (Showing Voltages)

Description

The **PHILCO Model 89**, code 123, is of advanced design, incorporating a highly selective and very efficient R. F. Preamplifier, using the type 44 high mu tube.

The 1st detector and oscillator are combined in one tube, a type 77. The design of the oscillator circuit is such that changes in climatic conditions do not affect its stability. A single intermediate frequency stage designed around the high gain type 44 tube is used, insuring a maximum of power; a saving of two tubes is accomplished in the second detector unit by using a type 75 tube. This tube is a combination diode, triode; the diode functioning as a detector and automatic volume control and the triode as a separate audio amplifier.

The power or output stage uses a type 42 (6.3 fil.) pentode and is capable of delivering 3 watts undistorted output.

Adjusting Compensating Condensers

Adjustment of compensating condensers in the Model 89 requires an accurate signal generator covering the intermediate frequency as well as the standard broadcast range. The **PHILCO Model 088** or **024** can be used for this purpose.

Some instrument for measuring the output of the receiver while adjustments are being made is necessary. The **PHILCO 025 Circuit Tester** incorporates an output meter that is ideal for this purpose.

A **PHILCO No. 3164 Fibre Wrench** completes the equipment needed.

The location of the various compensating condensers is shown in Fig. 2 and Fig. 3. Connect the output meter to the plate and cathode terminals of the type 42 power tube, using the adapters provided with the "025" and set it for the 0–30 volt range.

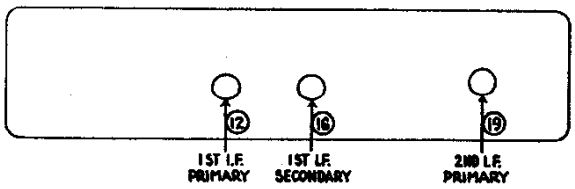

Fig. 3. I. F. Padder View from Rear of Chassis

I.F.—Set the signal generator at 260 K. C. and attach its antenna lead to the grid of the type 44 I.F. tube. Connect the ground lead of signal generator to the ground post of chassis. Turn the dial of the set to 540 K. C. and the volume control to the extreme right (maximum). Wave band switch in No. 1 position (left), tone control also in No. 1 position (left), adjust the signal generator attenuator for approximately ¼ scale reading on output meter. Using the fibre tuning wrench adjust condenser ⑲ (2nd I.F.) for maximum output meter reading. Remove the signal generator antenna lead from the grid of the 44 I.F. tube and connect it to the grid (removing grid clip), of the type 77, 1st detector and oscillator tube. Adjust the signal generator attenuator as before for ¼ scale output meter reading. With the fibre tuning wrench adjust condensers ⑯ and ⑫ (1st I.F.) for maximum output meter reading.

STANDARD (broadcast) and POLICE: Remove the antenna lead of the signal generator from the grid of the type 77 tube (replacing grid clip) and attach it to the antenna post on the chassis. Set the signal generator at 1500 K. C. and tune the set to 150 (1500 K. C.). Adjust signal generator attenuator as before for ¼ scale output meter reading. With the fibre tuning wrench adjust condensers ③A, ②B and ①C, for maximum output meter reading. Set the signal generator at 550 K. C. and tune the set to 55 (550 K. C.) adjust condenser ⑬ for maximum output meter reading. Readjust condenser ③C at 1500 K. C. During adjustments keep the output meter reading approximately ¼ scale to insure proper peaking of transformers.

Parts List

PHILCO RADIO & TELEV. CORP.

MODEL 89(Code 123) Chassis

Replacement Parts for Model 89 (Code 123)

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE

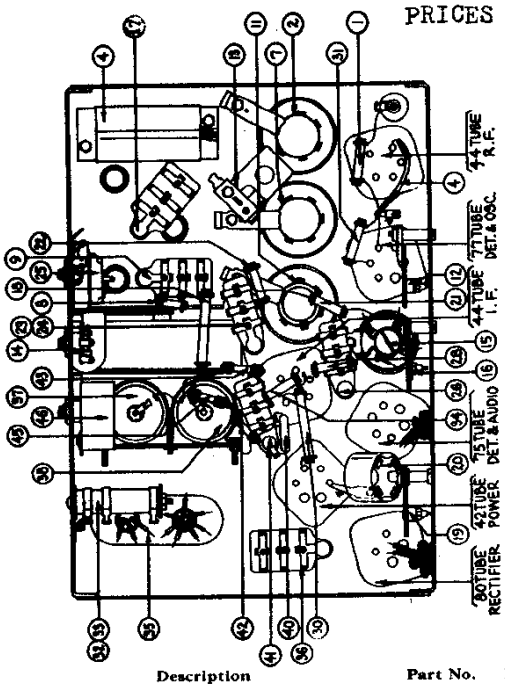

Fig. 5. Bottom View of Chassis

	Description	Part No.	List Price
①	Resistor (10,000 ohms)	4412	$0.20
②	Antenna Transformer	32-1062	.70
③	Tuning Condenser Gang	31-1053	4.80
③a	Compensator (Antenna)	Part of ③	....
③b	Compensator (R. F.)	Part of ③	....
③c	Compensator (Osc.)	Part of ③	....
④	Condenser (.09-.05-.09-.05-.25 mf.)	06624	.90
⑤	Resistor (300 ohms)	33-3010	.20
⑥	Condenser (0.05 mf.)	Part of ④	....
⑦	Detector Coil	32-1063	.50
⑧	Resistor (8,000 ohms)	33-1114	.20
⑨*	Condenser (.0015 mf. and .05 mf.)	3615-XG	.40
⑩	Pilot Light	6608	.09
⑪	Oscillator Coil	06620	.90
⑫	Compensating Condenser (Pri. 1st I. F.)	31-6024	.25
⑬	Compensating Condenser (L. F. Series)	04000-S	.35
⑭	Waveband Switch	42-1016	1.25
⑮	1st I. F. Transformer	32-1289	.60
⑯	Compensating Condenser (1st I. F. Sec.)	04000-M	.20
⑰	Condenser (0.09 mf.) (Twin)	4989-DG	.40
⑱	Resistor (5,000 ohms)	3526	.20
⑲	Compensating Condenser (2nd I. F. Pri.)	04000-A	.15

*The .05 mf. section connects the same as condenser ⑥.

	Description	Part No.	List Price
⑳	2nd I. F. Transformer	06622	$1.20
㉑	Resistor (2.0 meg.)	5872	.20
㉒	Resistor (50,000 ohms)	4518	.20
㉓	Condenser (.00011 mf.)	8035-DG	.25
㉔	Condenser (.00011 mf.)	Part of ㉓	....
㉕	Volume Control, On-Off Switch	33-5004	1.45
㉖	Condenser (0.01 mf.)	3903-SU	.25
㉗	Condenser (0.09 mf.)	Part of ④	....
㉘	Resistor (1.0 meg.)	4409	.20
㉙	Condenser (0.09 mf.)	Part of ⑰	....
㉚	Resistor (39,000 ohms)	33-1027	.20
㉛	Resistor (50,000 ohms)	4518	.20
㉜	B. C. Resistor (32 ohms)	7998	.20
㉝	B. C. Resistor (235 ohms)	Part of ㉜	....
㉞	Resistor (100,000 ohms)	4411	.20
㉟	Power Transformer	8046	3.50
㊱	Condenser (0.015-0.015 mf.)	3793-DG	.40
㊲	Condenser (Electrolytic) (8 mf.)	7558	1.25
㊳	Condenser (Electrolytic) (8 mf.)	7558	1.25
㊴	Condenser (0.05 mf.)	Part of ④	....
㊵	Condenser (250 mmf.)	5858	.25
㊶	Condenser (0.01 mf.)	3903-SU	.25
㊷	Resistor (70,000 ohms)	5385	.20
㊸	Resistor (500,000 ohms)	4517	.20
㊹	Condenser (0.25 mf.)	Part of ④	....
㊺	Resistor (70,000 ohms)	5385	.20
㊻	Tone Control	06764	.50
㊼	Condenser (0.015 mf.)	Part of ㊻	....
㊽	Condenser (0.01 mf.)	Part of ㊻	....
㊾	Output Transformer	2580	1.00
㊿	Replacement Cone Assembly (K-21)	36-3159	.80
(51)	Replacement Field Coil Assembly (K-21)	36-3245	4.00
	I. F. Shield	4450	.15
	R. F. Shield	5084	.15
	R. F. Shield	8000	.12
	Tube Shield Body	28-2726	.10
	Tube Shield Base	28-2725	03
	Speaker Cable	02720	.35
	Drive Cord Spring	7776	2.00C
	Drive Cord	31-1457	.10
	Dial Hub and Scale	31-1590	.40
	Bezel	27-4113	.20
	Bezel Screws	W841B	.50C
	Knob (Tuning)	27-4051	.10
	Knob (Volume, Tone, Wave Switch)	27-4052	.10