

PHILCO

REG. U.S. PAT. OFF.

Service Bulletin—No. 161

MODEL 17

The Philco Radio Model 17 is an eleven tube superheterodyne, designed for operation on alternating current. The same superheterodyne circuit is used for standard broadcast, police broadcast and airport and aircraft reception. The frequency coverage upon the two bands is,—

520—1500 K. C.
1500—4000 K. C. (4.0 megacycles).

The receiver employs a Philco Type 78 tube in the pre-selection circuit, a Type 6A7 as a combination first detector and oscillator, a Type 78 for the intermediate frequency, a Type 37 for second detector, a Type 37 for automatic volume control, and a Type 78 for automatic interstation noise suppression. The first audio frequency stage is a Type 77 tube, the driver (2nd A.F.) is a Type 42; the class "A" amplification is accomplished with two Type 42's as triodes, and the rectifier is a Type 5Z3. The intermediate frequency used in adjusting the superheterodyne circuit is 175 kilocycles. The power consumption is 130 watts.

**Table 1—Tube Socket Data*—A. C. Line
Voltage 115 Volts**

Circuit	R.F.	Det. Osc.	I.F.	2nd Det.	A. V. C.	Inter-Station Noise Suppr. Crt.	1st A.F.	Driver	Output	Rectifier	
Type Tube	78	6A7	78	37	37	78	77	42	42	42	5Z3
Filament Volts—F to F..	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.7
Plate Volts—P to K....	220	220	225	0	0	45	45	230	340	340	400
Screen Grid Volts—Sg to K... (6A7-G3-5 to K)	75	58	75	—	—	50	50	230	340	340	...
Control Grid Volts—CG to K.. (6A7-G4 to K)	Negligible	Negligible	3.7	.25	.25	.24	.24	.24	34.	34.	...
Cathode Volts—K to F..	0	0	3.7	0	11.	0	0	0	0	0	...

NOTE: These values are for Model 17-122. Model 17-121 uses a Type 80 Rectifier. See note, Page 2, at end of Parts List.

Table 2—Power Transformer Data

Terminal	A. C. Volts	Circuit	Color
1- 2	105-125	Primary	White
3- 5	6.3	Filament	Black
6- 7	5.0	Filament of 5Z3	Blue
8-10	800	Plates of 5Z3	Yellow
4	...	Center Tap of 3-5	Black—Yellow Tracer
9	...	Center Tap of 8-10	Yellow—Green Tracer

6A7-G1 to K = 22.0 Volts
6A7-G2 to K = 140.0 Volts

*All of the above readings were taken from the underside of the chassis, using test prods and leads, with a suitable A. C. voltmeter for filament voltages, and a high-resistance multi-range D. C. voltmeter for all other readings. Volume control at maximum and station selector turned to low frequency end; interstation noise suppression circuit potentiometer turned all the way to right; and toggle switch (interstation noise suppression circuit) in "ON" position. Readings taken with a radio set tester and plug-in adapter will NOT be satisfactory.

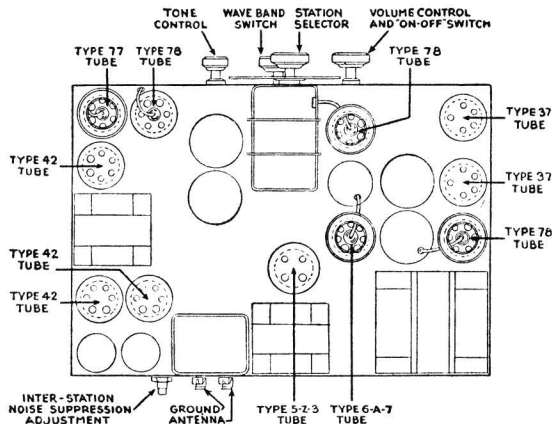


Fig. 1—Top View of Chassis, showing Tube Locations, and Major Parts

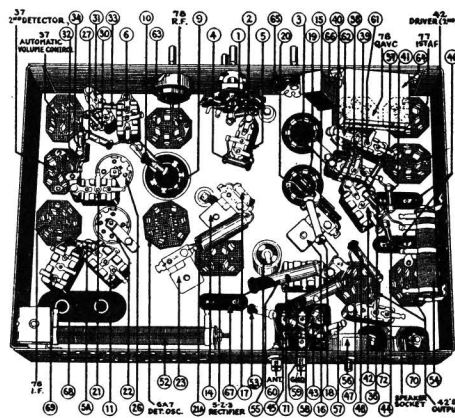


Fig. 2—Bottom View of Chassis, showing Parts



77) Sockets



6A7 Socket



37 Socket



42 Socket



5Z3 Socket

Terminal Arrangement of Tube Sockets Viewed from Under Side of Chassis.

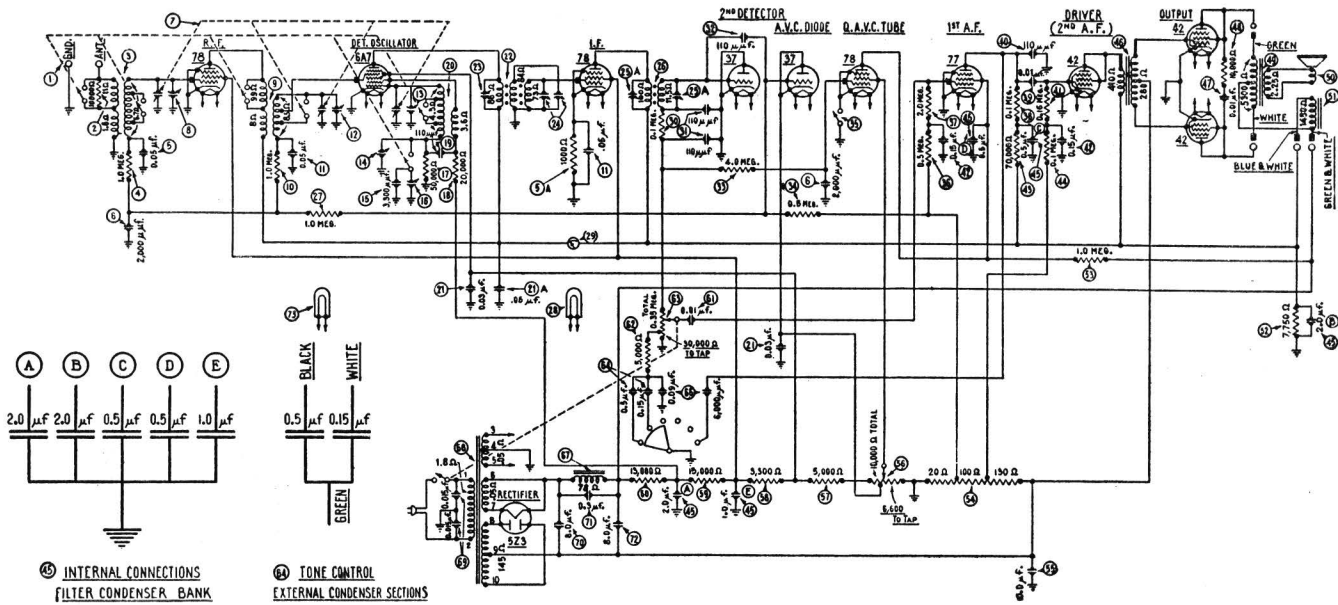


Fig. 3—Schematic Wiring Diagram

REPLACEMENT PARTS FOR MODEL 17

No. on Figs.	Description	Part Number	List Price	No. on Figs.	Description	Part Number	List Price
①	Wave Band Switch.....	42-1035	.....	③⑧	Resistor (White-White-Orange).....	4411	.20
②	Resistor (Brown-Black-Orange).....	4412	.25	③⑨	Condenser.....	3903-L	.16
③	Antenna Transformer.....	32-1170	.....	④⑩	Condenser.....	4519	.18
④	Resistor (Brown-Black-Green).....	4409	.20	④①	Resistor (Brown-Blue-Yellow).....	5331	.20
⑤	Condenser.....	3615-BC	.....	④②	Condenser.....	6287-H	.20
⑤a	Resistor (Brown-Black-Red).....	5837	.20	④③	Resistor (Violet-Black-Orange).....	5385	.20
⑥	Condenser (Double).....	7296-E	.....	④④	Resistor (White-White-Orange).....	4411	.20
⑦	Tuning Condenser Assembly.....	31-1041	.....	④⑤	Filter Condenser Bank.....	30-4026	.....
⑧	Compensating Condenser (Ant.; Part of ⑦).....	.....	.....	④⑥	Input Transformer.....	32-7057	.....
⑨	1st Detector Transformer.....	32-1171	.....	④⑦	Condenser.....	3903-F	.15
⑩	Resistor (Brown-Black-Green).....	4409	.20	④⑧	Resistor (Brown-Black-Orange).....	3524	.20
⑪	Condenser (Double).....	3615-AP	.....	④⑨	Output Transformer.....	32-7052	.....
⑫	Compensating Condenser (Det.; Part of ⑦).....	.....	.....	⑤①	Voice Coil & Cone Assembly.....	36-3061	.....
⑬	Compensating Cond. (Osc.; Part of ⑦).....	.....	.....	⑤②	Speaker Field, Assembled with Pot, (U-2).....	36-3088	.....
⑭	Compensating Condenser (Oscillator).....	04000-R	.....	⑤③	Resistor (Wire-Wound).....	33-3020	.....
⑮	Condenser.....	7301	.35	⑤④	Resistor (Brown-Black-Green).....	4409	.20
⑯	Compensating Cond. (High Freq.).....	04000-R	.....	⑤⑤	Voltage Divider Resistor (Wire-Wound).....	33-3021	.....
⑰	Resistor (Green-Brown-Orange).....	4518	.20	⑤⑥	Condenser (Electrolytic).....	30-2003	.....
⑱	Resistor (Red-Black-Orange).....	6649	.20	⑤⑥	Potentiometer (Interstation Noise Supp. Ckt.).....	33-5015	.....
⑲	Condenser.....	4519	.18	⑤⑦	Resistor (Green-Black-Red).....	5310	.20
⑳	Oscillator Transformer.....	32-1172	.....	⑤⑧	Resistor (Orange-Orange-Red).....	7238	.20
㉑	Condenser (Double).....	8318-C	.....	⑤⑨	Resistor (Brown-Green-Orange).....	5718	.40
㉑a	Condenser.....	30-4012	.15	⑥①	Resistor (Brown-Orange-Orange).....	6450	.35
㉒	1st I. F. Transformer.....	32-1173	.....	⑥②	Condenser.....	3903-L	.16
㉓	Compensating Cond. (1st, I. F. Pri.).....	04000-M	.16	⑥③	Resistor (Green-Black-Red).....	5310	.20
㉔	Compensating Cond. (1st, I. F. Sec.).....	31-6001	.....	⑥④	Volume Control & "On-Off" Switch.....	33-5013	.....
㉕	Compensating Cond. (1st, I. F. Tert.).....	31-6001	.....	⑥⑤	Condenser (External to ⑤⑤).....	06713	.45
㉕a	Compensating Cond. (2nd, I. F. Pri.).....	31-6000	.....	⑥⑤	Tone Control.....	30-4028	.....
㉕a	Compensating Cond. (2nd, I. F. Sec.).....	31-6000	.....	⑥⑥	Condensers (Internal to ⑤⑤).....	.....	.....
㉖	2nd, I. F. Transformer.....	32-1174	.....	⑥⑦	Filter Choke.....	32-7056	.....
㉗	Resistor (Brown-Black-Green).....	4409	.20	⑥⑧	Power Transformer (50-60 \sim).....	32-7058	.....
㉘	Pilot Lamp (Shadow Tuning Meter); (Part of ②⑨).....	.....	.....	⑥⑨	Condenser (Double).....	3793-R	.25
②⑨	Shadow Tuning Meter.....	6497	2.25	⑦①	Condenser (Electrolytic).....	30-2011	.....
③①	Resistor (White-White-Orange).....	4411	.20	⑦②	Condenser.....	6287-F	.12
③②	Condenser (Double).....	8035-C	.....	⑦③	Condenser (Electrolytic).....	30-2011	.....
③③	Condenser.....	4519	.18	⑦④	Pilot Lamp (Station Selector).....	6608	.12
③④	Resistor (Yellow-Black-Green).....	6010	.20	⑦⑤	Tube Shield.....	28-1107	.10
③⑤	Resistor (Yellow-White-Yellow).....	3769	.20	⑦⑥	Four Prong Socket.....	7545	.08
③⑥	Switch (Toggle); (Interstation Noise Supp. Ckt.).....	42-1036	.....	⑦⑦	Five Prong Socket.....	7546	.10
③⑦	Resistor (Yellow-White-Yellow).....	4517	.20	⑦⑧	Six Prong Socket.....	7547	.10
③⑧	Resistor (Red-Black-Green).....	5872	.20	⑦⑨	Seven Prong Socket.....	27-6005	.10
				⑧①	Knob (large).....	03063	.08
				⑧②	Knob (small).....	03064	.06

NOTE: Model 17-121 uses a Type 80 tube in lieu of 5Z3; Power Transformer (50-60 \sim) ⑥⑧ No. 32-7080; Resistors (Brown-Black-Orange) No. 33-1024 in both ⑤⑥ and ⑥①; Electrolytic Condensers ⑦① No. 6707 and ⑦② No. 7464; Speaker "K-17"; Speaker Socket No. 7084; Speaker Cable L-1632.

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