



PHILCO



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Model K-628T (12 volts)

Model K-628S (6 volts)

TYPE CIRCUIT: Six-valve Superheterodyne for Medium and Long Wavebands. The Receiver, Speaker and Philco Full-Wave Vibrator are housed in a single, rugged, compact, fully shielded container, which is designed for quick and easy installation on the dash of all cars. Pentode output (2.5 watts).

POWER SUPPLY: The Receiver is all-electric, operating entirely from the car battery system.

WAVEBANDS: COVERAGE: Two; (a) Medium, 532-1,520 Kc. (566-197.2 metres); (b) Long, 150-316 Kc. (2,000-950 metres).

AUTOMATIC VOLUME CONTROL: The full A.V.C. system used gives that smooth elastic control which counteracts fading while driving along and prevents blasting on local stations.

INTERFERENCE SUPPRESSION: Noise filters to cut out engine interference set up by the car ignition system, and specially designed shielding make the Receiver especially easy to instal.

CONTROLS: Remote controls are supplied for fitting to the dashboard or steering column. The tuning control is geared 15:1 ratio, enabling smooth and accurate tuning to be obtained.

INTERMEDIATE FREQUENCY: 125 Kc.

POWER CONSUMPTION: Model K-628-T, 2.3 amps. approx.; Model K-628-S, 4.5 amps. approx.

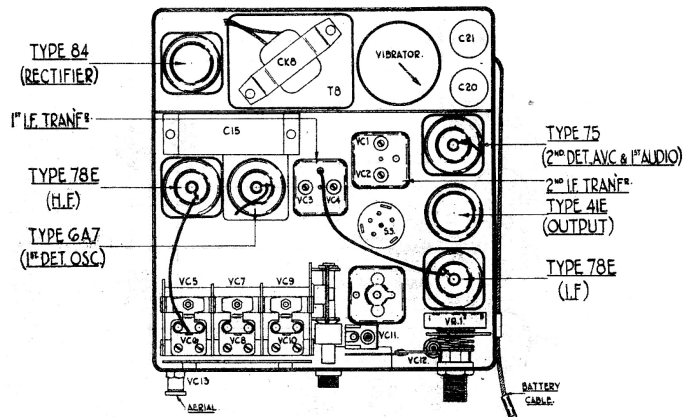


DIAGRAM SHOWING VALVE POSITIONS AND TRIMMERS

TABLE I - VOLTAGES.

Valve socket readings to chassis taken with an 065 or 077 Philco Set Tester, using the 500, 250 and 10 volts ranges. Volume control at minimum, wave-change switch in M.W. position, gang condenser fully open, and no aerial connected.

POSITION.	VALVE.	ANODE.	SCREEN.	BIAS.
H.F. Amplifier, S.1	78E	Pin 3. 250 v.	Pin 4. 60 v.	Pin 6. 5 v.
1st Detector and Oscillator, S.2	6A7	Pin 3. 250 v. Pin 5. 130 v.*	Pin 4. 60 v.	Pin 7. 5 v.
I.F. Amplifier, S.3	78E	Pin 3. 250 v.	Pin 4. 60 v.	Pin 6. 5 v.
2nd Detector, A.V.C. and 1st L.F. Amplifier, S.5	75	Pin 3. 120 v.	—	Pin 6. 2 v.
Pentode Output, S.4	41E	Pin 3. 240 v.	Pin 4. 250 v.	—18 v. †
Full-Wave Rectifier, S.6	84	Pin 3. 270 v. A.C. Pin 4. 270 v. A.C.	—	—

* Oscillator Anode Volts.

† Bias measured between CK.4/2 and chassis. Total D.C., 270 volts (measured between CK.4/2 and V.6/5). Heaters each 6.3 volts D.C. measured between Pins 1 and 2 on each socket.

TABLE 2 - RESISTANCES OF COILS.

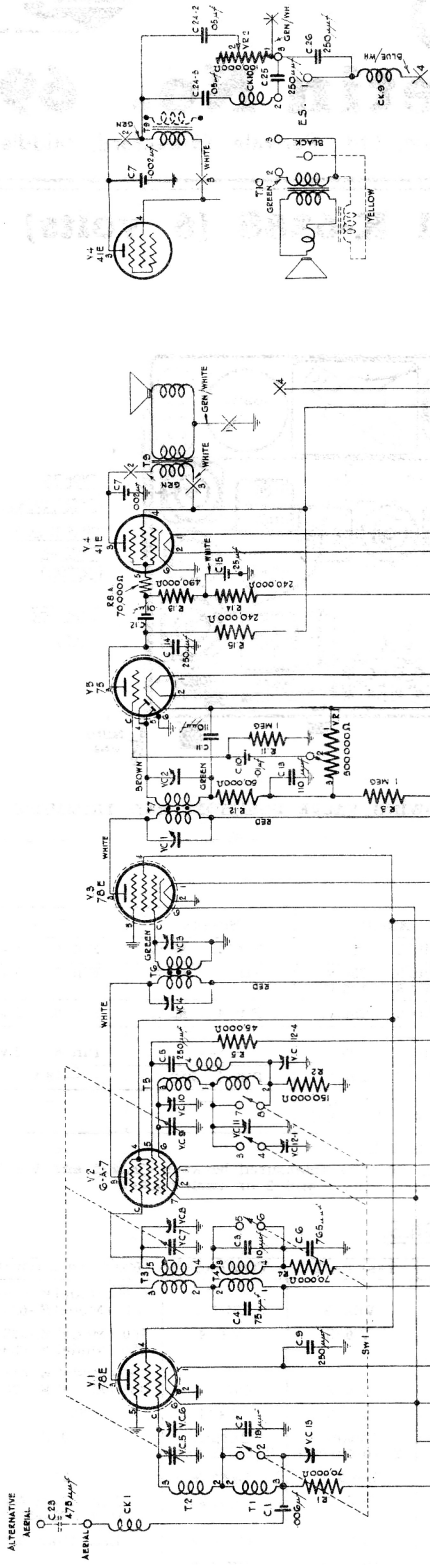
REF. NO.	TEST PROD 1	TEST PROD 2	RESISTANCE (OHMS)	REF. NO.	TEST PROD 1	TEST PROD 2	RESISTANCE (OHMS)
CK.1	Aerial Socket	Joint of CK.1 & C.1	0.5	T.8 Primary tap	Vib./3	TB.3/2	0.25 (Model K-628-T) 0.1 (Model K-628-S)
T.1	T.1/2	T.1/3	SW.1. L.W. 50 M.W. Zero	T.8 Secondary	V.6/3	V.6/4	700 (Model K-628-T) 650 (Model K-628-S)
T.2	V.1 Cap	T.2/2	6	T.8 Secondary tap	V.6/3	CK.4/2	350 (Model K-628-T) 325 (Model K-628-S)
T.3 Primary	V.1/3	T.3/2	75	T.9 Primary	V.4/3	V.4/4	350
T.3 Secondary	VC.7 tag	T.3/4	7.5	T.9 Secondary	Output Transformer	Output Transformer	0.2**
T.3 Secondary tap	VC.7 tag	V.2 Cap	2.5	Speech Coil	Lead 1	Lead 2	2**
T.4 Primary	T.4/2	CK.4/1	200	CK.2	V.6/2	V.4/2	Less than 0.1 (Model K-628-T)
T.4 Secondary	T.4/3	T.4/4	SW.1. L.W. 50 M.W. Zero	CK.3	V.2/1	CK.6/2	Less than 0.1
T.5	V.2/6	VC.12/4	SW.1. M.W. 17.5 L.W. 45	CK.4	CK.4/1	CK.4/3	5
T.5 Reaction	T.5/4	VC.12/4	2.5	CK.5	CK.6/1	CK.6/3	Less than 0.1
T.6 Primary	V.2/3	CK.4/1	100	CK.6	CK.6/2	TB.3/2	0.1
T.6 Secondary	V.3 Cap	Chassis	100	CK.7	CK.6/2	CK.6/1	Less than 0.1
T.7 Primary	V.3/3	CK.4/1	100	CK.8	CK.4/2	Chassis	450
T.7 Secondary	V.5/4	TB.1	100	Vibrator Coil	Vib./1	Chassis	10††
T.8 Primary	Vib./3	Vib./4	0.5 (Model K-628-T) 0.2 (Model K-628-S)				

** Resistance of Secondary alone and Speech Coil alone (taken when disconnected).

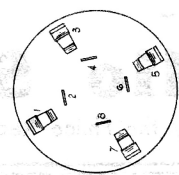
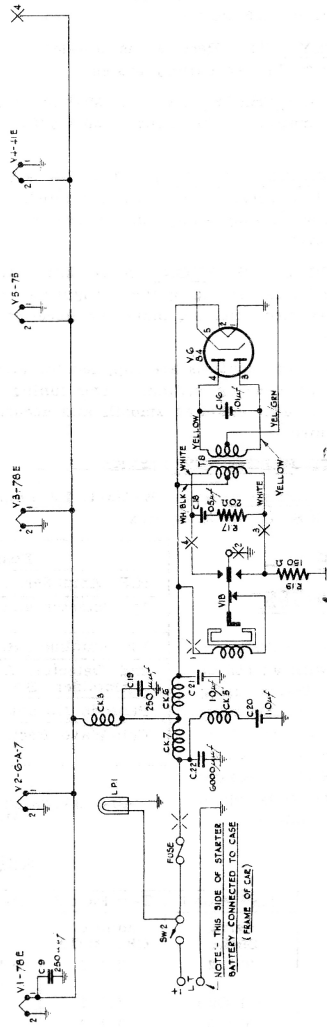
†† Resistance of Vibrator Coil taken with V.6 removed and SW.2 in "OFF" position.

NOTE: Reference numbers for valves should be read in conjunction with the socket numbers, e.g., V.1-S.1.

MODEL K 628 T



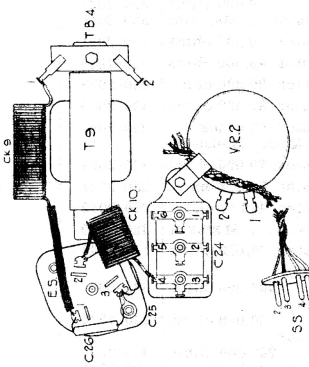
OUTPUT CIRCUIT FOR MODELS L 628 T & S



REVISED WIRING & REMOVAL OF CK 2, R 8, R 16, R 18 & R 19
FOR MODELS K 628 S & L 628 S

REAR VIEW OF SW 1
YET BEING ON THE RIGHT

CIRCUIT DIAGRAM.



NOTE—INTERNAL SPEAKER MOUNTED IN I.D. FOR MODELS K-628 T.R. 5
 ABOVE PARTS MOUNTED IN PLACE OF INTERNAL SPEAKER
 ON MODELS K-628 T.R. 5

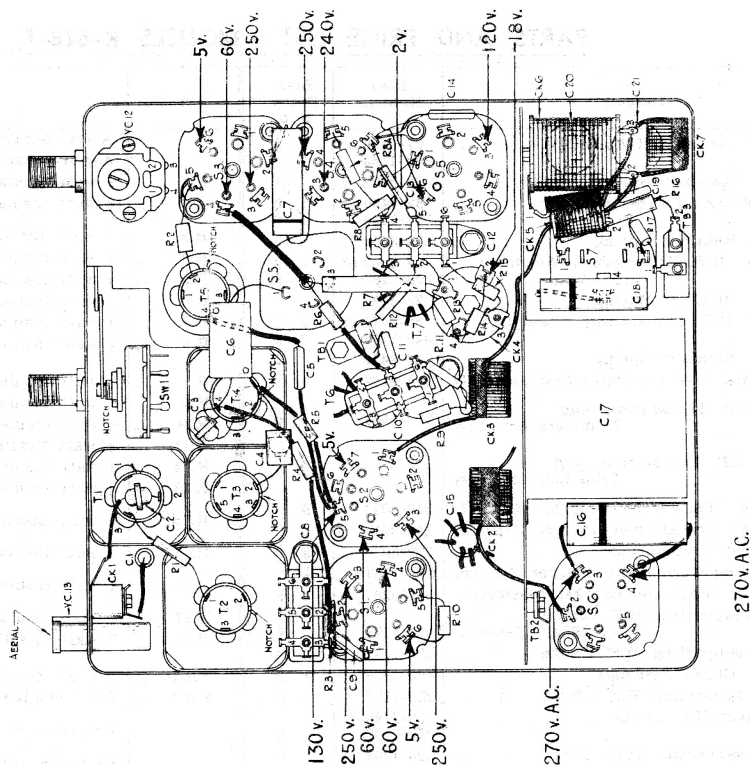


DIAGRAM SHOWING INTERIOR.

ALIGNMENT PROCEDURE.

Before leaving the Factory, all Philco Receivers are accurately aligned, but if misalignment is suspected through damage, no alteration should be made without instruction in the correct adjustment of the trimming and padding condensers. It should only be carried out with the aid of an accurately calibrated Signal Generator, and for this purpose the PHILCO ALL-PURPOSE SET TESTER MODEL 077 is recommended.

Disconnect the aerial and lift the lid from the Receiver. Connect the Output Meter across the Primary of the Output Transformer, i.e., green and white leads.

Set wave-change switch in M.W. position (anti-clockwise rotation of control), turn gang condenser to fully closed position and volume control to maximum.

IMPORTANT. The following order of alignment must be strictly followed.

The I.F. trimmers should first be carefully adjusted by feeding in a 125 Kc. signal from the Signal Generator via a .1 mfd. condenser to the grid cap of the I.F. valve, V.3 (with grid lead connected), and the Signal Generator earthed to the Receiver chassis. Adjust the Signal Generator attenuator to give a half-scale reading on the output meter, and trim VC's 2 and 1 for maximum output.

Remove Signal Generator lead and connect it to the grid cap of the 6A7 valve (with grid lead connected). Now trim VC's 3 and 4 for maximum output, afterwards retrimming VC's 2, 1, 3 and 4 in that order until satisfied that no further gain can be obtained.

NOTE: Sometimes a "tweet" will be noticed with the gang condenser fully closed. In this case, turn the gang condenser sufficiently to eliminate the "tweet."

Transfer Signal Generator lead via the .1 mfd. condenser to the grid cap of the H.F. valve, V.1 (with grid lead connected.)

With the wave-change switch in the M.W. position, open gang condenser to its fullest extent, feed in a signal of 1,520 Kc. and adjust VC.10 for maximum output.

Feed in and tune a 1,400 Kc. signal and adjust VC.8 for maximum output.

Turn wave-change switch to the L.W. position (clockwise rotation of control). Feed in and tune a 290 Kc. signal. Rock gang and trim VC.11 for maximum output. Feed in and tune a 160 Kc. signal. Rock gang and pad VC.12 (nut) for maximum output.

NOTE: If any of the above adjustments were very far from optimum, the entire procedure must be repeated to ensure correct settings, as the adjustments are interdependent.

Return the wave-change switch to the M.W. position. Feed in and tune a signal of 600 Kc. Rock gang and pad VC.12 (screw) for maximum output.

Transfer Signal Generator lead via a 200 mmfd. dummy to the aerial socket. Feed in and tune a signal of 1,400 Kc and trim VC.6 for maximum output.

AERIAL TRIMMING. To obtain the best results, the aerial trimmer (VC.13) should be adjusted to suit the particular aerial with which the Receiver is to be used. Insert the shorting plug and insulator provided with the Receiver in the aerial socket, then fit the aerial securely in the socket. Radiate a 600 Kc. signal by means of a short length of wire attached to the Signal Generator lead. No direct connection must be made to the Receiver. With the wave-change switch set in the M.W. position, tune this signal and adjust VC.13 only for maximum output. If a signal peak cannot be obtained by adjusting the trimmer, or if its mechanical setting seems loose, remove the aerial from the socket, and replace the shorting plug and insulator with the plug-in condenser, C.23 (also provided with the Receiver) and reconnect the aerial. Repeat the procedure outlined above.

NOTE: Either the metal plug and insulator or the plug-in tubular condenser must be inserted in the aerial socket before connecting the aerial cable plug, or no connection will be made from the aerial to the input circuit. NEVER use the plug-in condenser unless required, as more gain can be obtained with low capacity aeriels without its use. Check sensitivity and calibration.

NOTE—CK.2, RB, K, RIG. REMOVED FOR MODELS K-628S, K-628S 5, K-628S 5

PARTS AND PRICE LIST - MODELS K-628-T, K-628-S.

REF. NO.	DESCRIPTION	PART NUMBER	LIST PRICE S. D.	REF. NO.	DESCRIPTION	PART NUMBER	LIST PRICE S. D.		
T.1	L.W. Aerial Coil Assembly	32-2470 or 320-1169	1 8 1 8		Aerial Socket Shorting Plug	28-6423	1		
	Coil Retainer Spring	28-8422	1 8	R.1	Aerial Socket Insulator	27-8199	2		
T.2	M.W. Aerial Coil Assembly	32-2469 or 320-1166	1 8 1 8	R.2	1/2 watt Insulated Resistor, 70,000 ohms	330-2034	9		
	Coil Retainer Spring	28-8652	2 2	R.3	150,000 ohms	330-2037	9		
T.3	M.W. H.F. Transformer Assembly	32-2463 or 320-1168	2 10 2 10	R.4	1/2 watt Insulated Resistor, 1 Megohm	330-2030	9		
	Coil Retainer Spring	28-8422	1	R.5	1/2 watt Insulated Resistor, 70,000 ohms	330-2034	9		
T.4	L.W. H.F. Transformer Assembly	32-2471 or 320-1167	3 2 3 2	R.6	1/2 watt Insulated Resistor, 45,000 ohms	330-2038	9		
	Coil Retainer Spring	28-8422	1	R.7	1/2 watt Insulated Resistor, 20,000 ohms	330-2033	9		
T.5	M. and L.W. Oscillator Coil Assembly	320-1162	4 3	R.8	1 watt Insulated Resistor, 32,000 ohms	330-2040	9		
T.6	1st I.F. Transformer and Trimmers Assembly	320-1164	5 0	R.8A	1/2 watt Insulated Resistor, 63 ohms (Model K-628-T)	330-2044	9		
VC.3					R.9	1/2 watt Insulated Resistor, 70,000 ohms	330-2034	9	
VC.4				R.9	1/2 watt Insulated Resistor, 600 ohms	330-2041	9		
T.7	2nd I.F. Transformer and Trimmers Assembly	320-1160	5 3	R.10	1/2 watt Insulated Resistor, 450 ohms	330-2042	9		
VC.1					R.11	1/2 watt Insulated Resistor, 1 Megohm	330-2030	9	
VC.2				R.12	1/2 watt Insulated Resistor, 50,000 ohms	330-2043	9		
T.8	Power Transformer (Model K-628-T)	320-8024	9 6	R.13	1/2 watt Insulated Resistor, 490,000 ohms	330-2001	9		
	Power Transformer (Model K-628-S)	320-8015	6 5	R.14	1/2 watt Insulated Resistor, 240,000 ohms	330-2002	9		
T.9	Output Transformer	320-8036	5 0	R.15	1/2 watt Insulated Resistor, 240,000 ohms	330-2002	9		
	Internal Permanent Magnet Speaker	360-1107†	16 3	R.16	1 watt Insulated Resistor, 43 ohms (Model K-628-T)	330-2045	9		
CK.1	Aerial Choke and Bracket Assembly	380-5287	1 9	R.17	1/2 watt Insulated Resistor, 20 ohms	330-2046	9		
CK.2	Self-supporting H.F. Choke (Model K-628-T)	320-1171	4	R.18	2 watt Spaghetti Resistor, 30 ohms (Model K-628-T)	33-3036	1 6		
CK.3	Self-supporting H.F. Choke	320-1172	4	VR.1	Volume Control, 500,000 ohms	33-5197	2 3		
CK.4	H.F. Choke Assembly	320-1096	1 2	SW.1	Wave-change Switch, Part No. 420-1019	Complete Assembly 380-5361	5 0		
CK.5	Self-supporting H.F. Choke	320-1173	3		Actuating Arm and Link Assembly, Part No. 380-5396				
CK.6	4-Layer H.F. Choke	32-2480 or 320-1192	1 8 1 8		Switch Bracket, Part No. 280-1410				
CK.7	Self-supporting H.F. Choke	320-1201	5		Clutch Bracket, Part No. 280-1414				
CK.8	L.F. Choke	32-7545 or 320-8023	3 9 3 9	SW.2	On/Off Switch	42-1160	9		
VC.5	3-gang Condenser and Trimmers Assembly	310-1028	19 6	R.19	Vibrator Unit (Model K-628-T)	41-3286-3	25 0		
VC.6					R.19	1/2 watt Insulated Resistor, 400 ohms			
VC.7					VIB.	Vibrator Unit (Model K-628-S)	41-3170-3	25 0	
VC.8						1/2 watt Insulated Resistor, 150 ohms			
VC.9						6-prong Valve Holder	27-6036	5	
VC.10						7-prong Valve Holder	27-6037	5	
VC.11	Single Padder, 4-30 mmfd.	31-6165	6		5-prong Valve Holder	27-6035	5		
VC.12	Double Padder, 125-375+125-375 mmfd.	310-6042	1 9	VIB. Socket	4-prong Socket	27-6044	4		
VC.13	Aerial Trimmer, 250-700 mmfd.	31-6082	1 2	S.S.	4-prong Speaker Socket	27-6081	4		
C.1	Tubular Condenser, .006 mfd.	30-4445	4		Valve Shield	28-2726	2		
C.2	Ceramic Condenser, 19 mmfd.	300-1067	10		Grid Clip	28-2214	doz. 5		
C.3	Ceramic Condenser, 10 mmfd.	300-1068	10		Volume Control Cable	L-2639 or LO-1064	—		
C.4	Ceramic Condenser, 75 mmfd.	300-1069	10		Battery Cable Assembly (Receiver)	41-3187	3 0		
C.5	Mica Condenser, 250 mmfd.	30-1032 or 300-1041	6 6		Battery Cable Assembly (External), 32in.	380-5404	9		
C.6	Mica Condenser, 765 mmfd.	30-1069 or 300-1066	8 8		Speaker Cable and Plug Assembly	410-3017	8		
C.7	Tubular Condenser, .002 mfd.	30-4177	7		Earthing Clips for Covers	28-2488	doz. 6		
C.8	Moulded Condenser, .05 mfd.	3615-SG	1 0		Rubber Cushion	270-7417	2		
C.9	Mica Condenser, 250 mmfd.	30-1032 or 300-1041	6 6		Mounting Template	390-3469	2		
C.10	Moulded Condenser, .01 mfd.	3903-SU	1 6		Receiver Mounting Kit, "M" Envelope Suppression Equipment,	400-8008	1 3		
C.11	Mica Condenser, 110 mmfd.	30-1031 or 300-1040	6 6		"N" Envelope	400-8009	7 3		
C.12	Moulded Condenser, .01 mfd.	3903-SU	1 6		"O" Envelope	400-8010	6		
C.13	Mica Condenser, 110 mmfd.	30-1031 or 300-1040	6 6	or	Steering Column Mounting Kit, "P" Envelope	400-8011	2 3		
C.14	Mica Condenser, 250 mmfd.	30-1032 or 300-1041	6 6		Aerial and Earth Cable Assembly	410-3019	3 6		
C.15	Block Condenser, 5+.25+.1+.01 mfd.	30-4506 or 300-4032	— 6 3		Fuse (10 amps.)	5676	3		
C.16	Tubular Condenser, .01 mfd.	300-4023	1 0		Fuse Insulator	270-2056	doz. 3		
C.17	Electrolytic Condenser, 8+4 mfd.	30-4502 or 300-4033	— 5 0	or	Control Head Assembly, 21in. Cables	420-5043	—		
C.18	Tubular Condenser, .05 mfd.	30-4020 or 30-4444	6 6	LP.1	Control Head Assembly, 32in. Cables	420-5044	—		
C.19	Mica Condenser, 250 mmfd.	30-1032 or 300-1041	6 6	V.1	Pilot Lamp	34-2040	1 4		
C.20	Metal Cased Tubular Condenser, 1 mfd.	30-4497	2 0	V.2	Type 78E Variable-mu H.F. Pentode Valve	8315E	12 6		
C.21	Metal Cased Tubular Condenser, 1 mfd.	30-4497	2 0	V.3	Type 6A7 Variable-mu Heptode Valve	34-2002	15 0		
C.22	Mica Condenser, 6,000 mmfd.	30-1043	1 7	V.4	Type 78E Variable-mu H.F. Pentode Valve	8315E	12 6		
C.23	Aerial Socket Cartridge Condenser, 475 mmfd.	30-4412	9	V.5	Type 41E Pentode Output Valve	6446E	13 6		
				V.6	Type 75 Double Diode Triode Valve	8002	12 6		
					Type 84 Full-Wave Rectifier Valve	34-2001	10 6		
					Knob, Part No. 270-4112	Complete Grubscrew, Part No. WB-208	270-4103	6	
					On/Off Switch Knob	270-4169	2		

† When ordering Speaker parts, the letter which will be found in the part number of the Speaker must also be given.

ABOVE PRICES DO NOT APPLY IN I.F.S.

Model L-628T (12 volts)

Model L-628S (6 volts)

Models L-628-T and L-628-S are similar to Models K-628-T and K-628-S respectively, but with the following refinements:—

TONE CONTROL. This is continuously variable, enabling a fine degree of tone between brilliant and mellow to be obtained.

SPEAKER. No internal speaker is fitted in the Receiver. The Primary winding of the Output Transformer (T.9) is used in conjunction with additional components listed below to provide choke-capacity coupling to an external speaker, which may be of the small permanent-magnet or large energised type.

Table 1—Voltages and Alignment Procedure are the same as for Models K-628-T and K-628-S respectively.

TABLE 2 – RESISTANCES OF COILS.

Add:—

REF. NO.	TEST PROD 1.	TEST PROD 2	RESISTANCE (OHMS)
CK.9	S.S.4	E.S.1	Less than 0.1
CK.10	E.S.2	C.24/3	Less than 0.1
T.10 Primary	E.S.2	E.S.3	350
T.10 Secondary ..	Output Transformer	Output Transformer	0.2**

** Resistance of Secondary alone (taken with Speech Coil disconnected).

PARTS AND PRICE LIST.

Remove:—Internal Permanent-Magnet Speaker, Part No. 360-1107.

Add:—

REF. NO.	DESCRIPTION	PART NUMBER	LIST PRICE s. d.
T.10	Small External Permanent-Magnet Speaker Assembly ..	400-7016	—
	or Large External Energised Speaker Asssmbly	400-7017	—
	Speaker Cable and Plug Assembly	410-3007	4 6
E.S.	3-prong Speaker Socket	27-6030	5
CK.9	Self-supporting H.F. Choke	320-1207	5
CK.10	Self-supporting H.F. Choke	320-1173	3
C.24	Moulded Condenser, .05+.05 mfd.	3615-DG	1 0
C.25	Mica Condenser, 250 mmfd.	300-1057	8
C.26	Mica Condenser, 250 mmfd.	300-1057	8
VR.2	Tone Control, 100,000 ohms	33-5101	5 6
	Knob, Part No. 270-4033	Complete	
	Knob Spring, Part No. 280-5262	270-4086	6

ABOVE PRICES DO NOT APPLY IN I.F.S.

CONTROL CABLES

21" Cables

380.5386	...	Tune shaft and Cable Assembly	...	...	...	6/-
380.5387	...	Wave change and V.C. Cable Assembly	...	...	...	8/6

32" Cables

380.5399	...	Tune shaft and Cable Assembly	...	...	...	7/-
380.5400	...	Wave change and V.C. Cable Assembly	...	...	...	9/6

MODELS L-628 T & S.

Small Extension Speaker Assembly. Part No. 400-7016. ... 65/-

Output Transformer,	Pt. No. 320-8036	5/-	) Complete
Speech Coil & Cone,	Pt. No. 360-4004	5/6	) Speaker
Permanent Magnet			) 360-1103 * 21/9

MODEL L-628 TC.

Large Energised Extension Speaker Assembly. Part No. 400-7017. ... 65/-

Output Transformer,	Pt. No. 320-7033	5/9	) Complete
Speech Coil & Cone,	Pt. No. 360-3027	6/-	) Speaker
Field Coil			) 360-1036 * 23/-
Speaker Cable			410-3007 4/6
Mounting Kit, "R" envelope			400-8012 1/3

* When ordering speaker parts, the letter which will be found in the part number of the speaker must also be given.